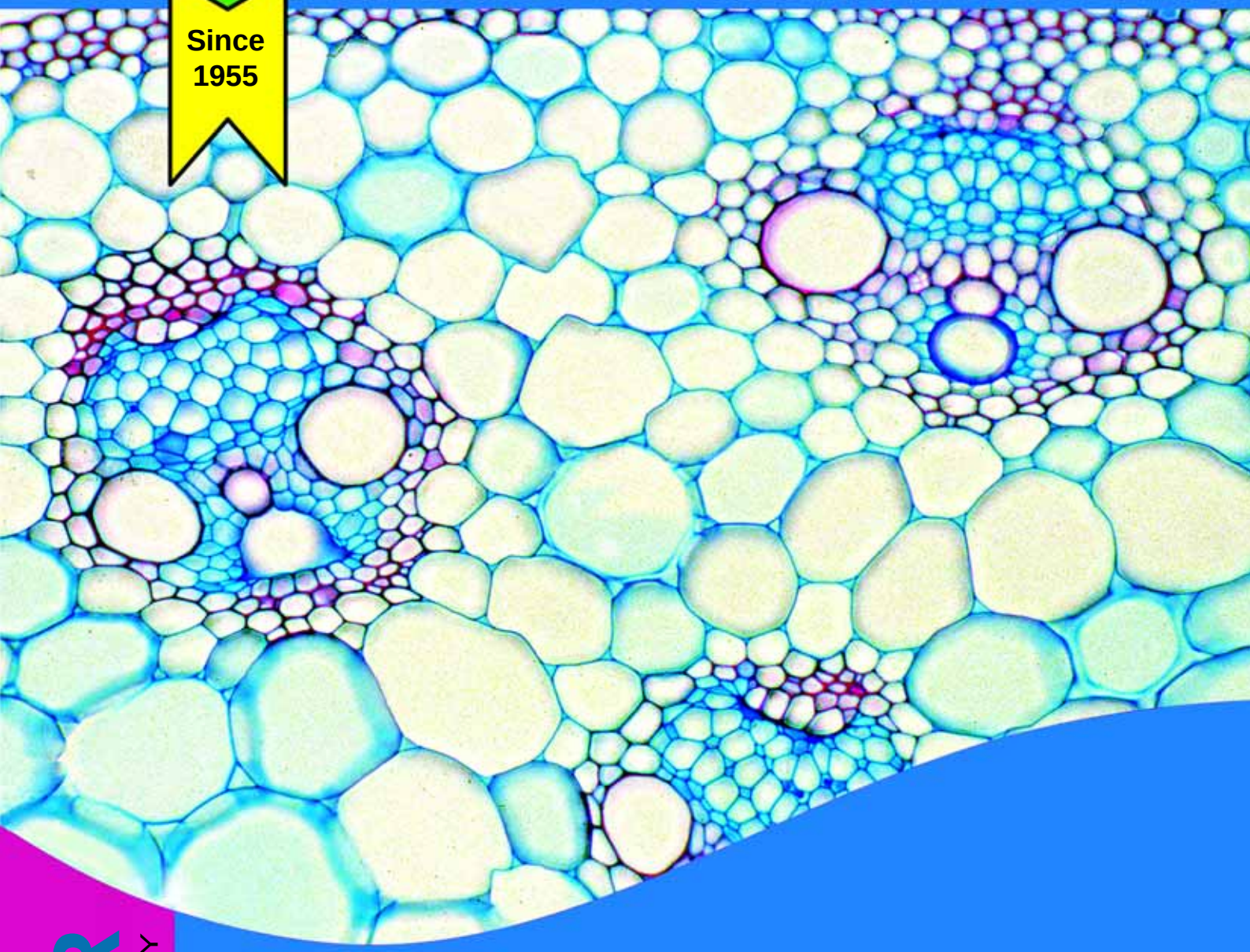
BIOLOGY

50

Since 1955

Catalogue No. 32E



Prepared Microscope Slides
Multimedia-Program for Biology
Multimedia Packages for Teachers and Students
Overhead Transparencies
CD-ROM for School and Education
Color Slides and Photomicrographs
Drawing Sheets and Textbooks

LIEDER

MADE IN GERMANY

Catalogue No. 32E

GENERAL INFORMATION

We are pleased to present our new comprehensive catalogue no.32E, offering a wide variety of microscope slides, color slides and transparencies for biology, human science, histology, zoology, botany, ecology, vocational training, physics and chemistry. We hope our customers will find the new catalogue a convenient and informative guide to selecting the materials they need.

- All prepared microscope slides, color slides, photomicrographs and transparencies **are manufactured in Premium Quality in our laboratories in Ludwigsburg / Germany.** They can be purchased **as complete sets and as individual slides**.
- When ordering please give the **complete catalogue numbers**, the **quantities** and the abbreviated **descriptions** of the requested items. This will help to minimize the processing of your orders, and to avoid errors.
- Please mention the **required mode of dispatch**, e.g. airmail parcel, SAL parcel, airfreight, special courier (DHL, FEDEX or others). Without your forwarding instructions we will use our best judgement. We will not dispatch the consignments via surface or sea mail unless expressly required.
- When ordering prepared microscope slides, please specify the **required slide boxes**. Without your specification we supply standard type boxes of suitable size for our microscope slide sets and individual slides.
- Prices are listed in the enclosed **price-list**. Transportation, packing, and shipping containers are charged at cost. For your convenience, **order blanks** are enclosed in our catalogues.
- We will gladly make special offers for any slides or transparencies not listed in our catalogues. Please send your inquiries and specification lists and we will make our best quotations immediately.
- Welcome in our new **HOMEPAGE www.lieder.com** . Visiting our web-site you will find a comprehensive depictured presentation of our product-line in five languages (English, German, Portuguese, Spanish and French). Any news will be published on our web-site first. You are kindly invited to downloading and printing the requested files.

We would appreciate your orders and promise you prompt service at all time. Should you have additional questions, feel free to contact us.

Logos used in this Catalogue:

MEDIEN SYSTEM — **Media Program Biology ABCD**

Overhead-Projector Transparencies

Prepared Microscope Slides in Sets and Series

CD-ROM LIEDER CD-ROM LIEDER — **CD-ROM for School and Education**

Prepared Microscope Slides in Systematic Order

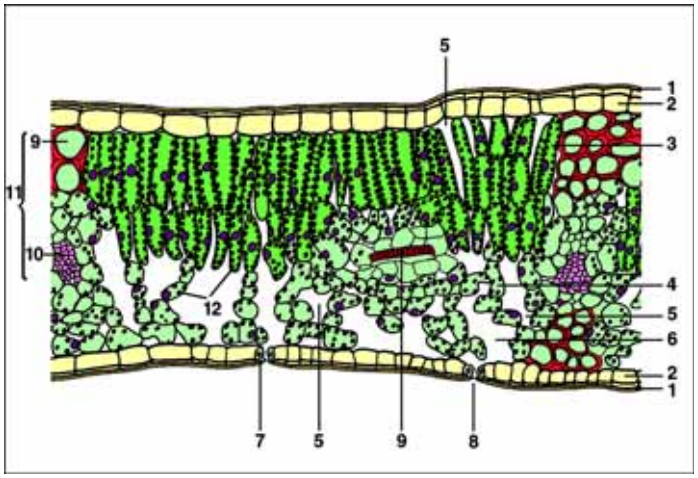
Color Slides 35 mm Photomicrographs

MULTIMEDIA PACKAGES — **Multimedia Packages for Teachers and Students**

Worksheets and textbooks

Contents of the Catalogue No. 32E

Page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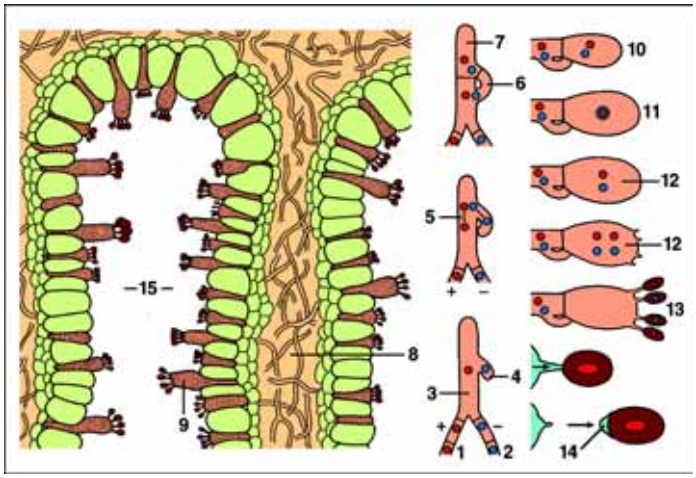
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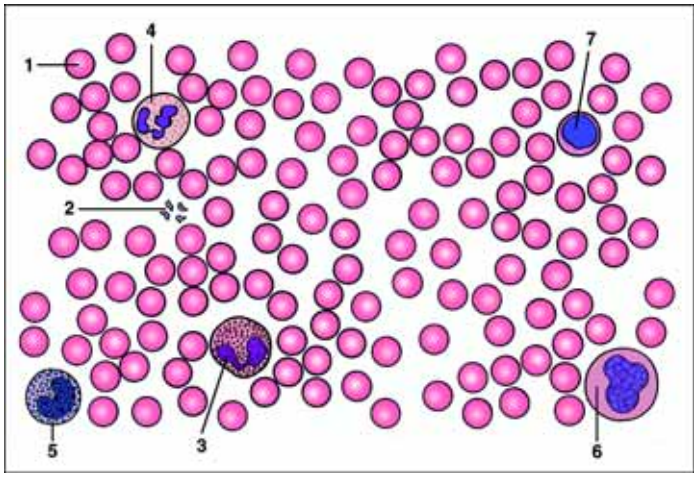
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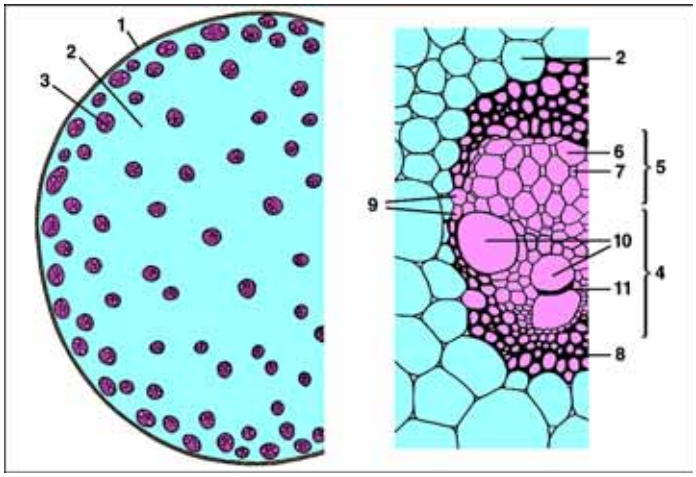
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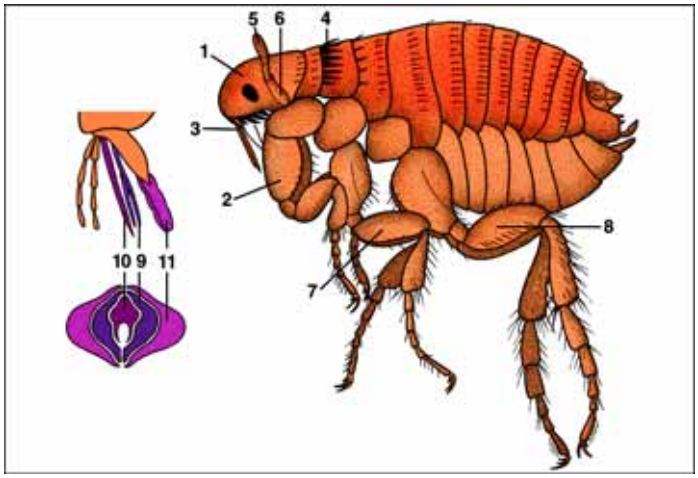
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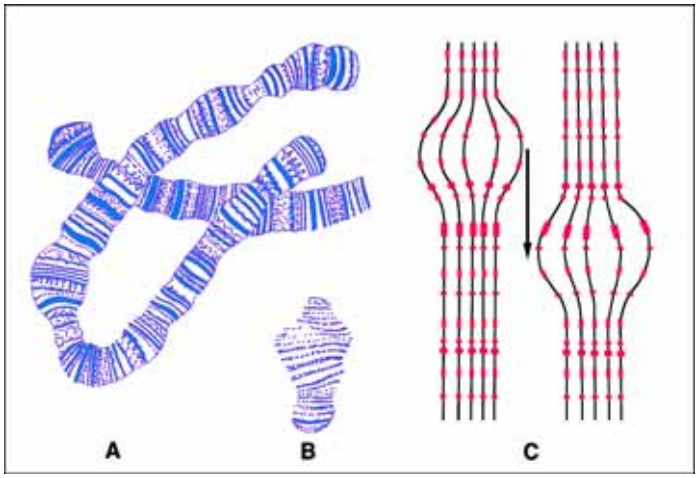
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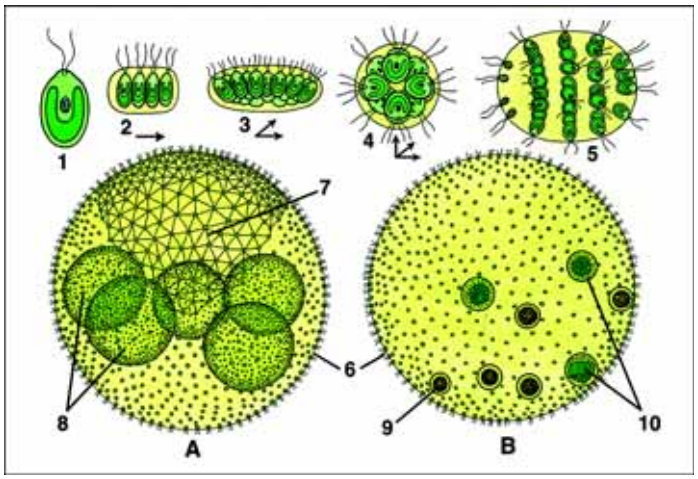
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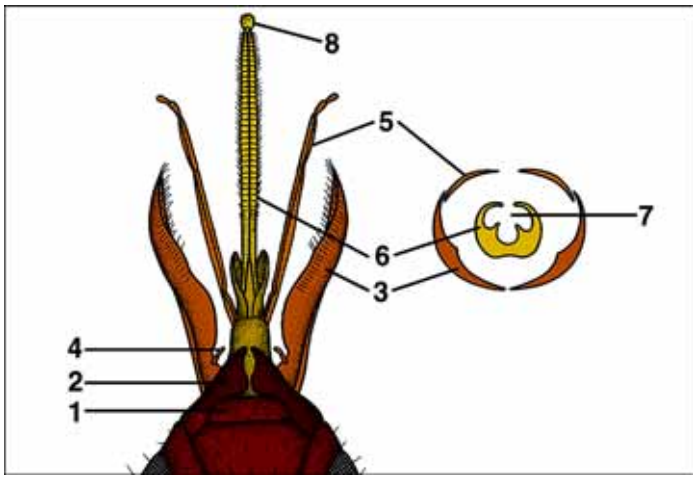
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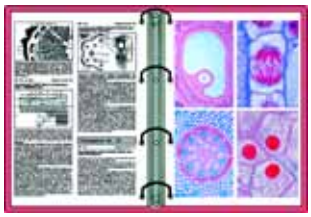
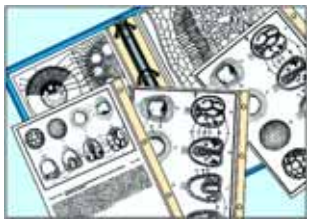
THE MULTIMEDIA PROGRAM MICROSCOPIC BIOLOGY ABCD

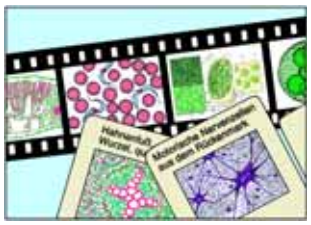
FOR INTERACTIVE TEACHING AND LEARNING

The new MULTIMEDIA PROGRAM FOR MICROSCOPIC BIOLOGY aims to give a strictly outlined synopsis of all those lines of biology important for instruction at schools, colleges and universities and suitable for working with the microscope.

A considerable part of the Program is an extensive manual with detailed descriptions and drawings of the prepared microscope slides and photomicrographs of the school series A, B, C and D. A well selected complementary media package with overhead transparencies, sketch- and work sheets, descriptions and pictures of the drawings, and new CD-ROM serves the teacher to work with the subject during the lessons. The abundant material offers the teacher the opportunity to select and to vary the content to tailor the lesson for each class.



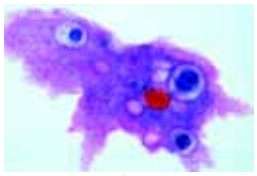




The following media are offered with the Multimedia Program:

1. **Prepared Microscope Slides**
2. **Manual with Texts and Drawings**
3. **Color Atlas of Overhead Projector Transparencies**
4. **CD-ROM for Interactive Learning**
5. **Media Package with Transparencies, Texts, Sketch- and Work Sheets**
6. **Color Photomicrographs 35 mm (original exposure)**
7. **Additional Microscope Slides**

Please note: The Multimedia-Program ABCD with all its parts is also available in the following languages: **German, English, French, Spanish, Portuguese and Italian.** Please name the requested language when ordering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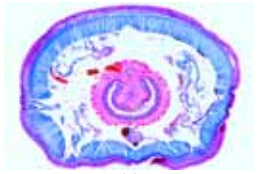
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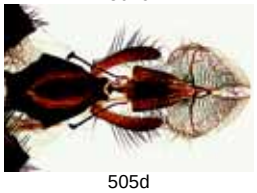
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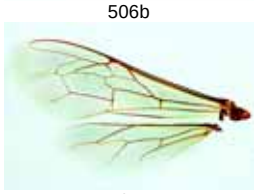
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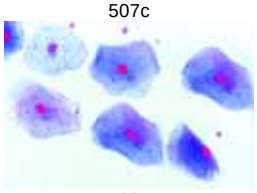
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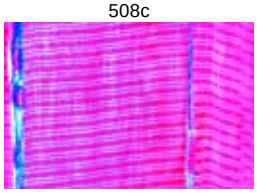
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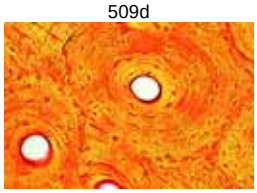
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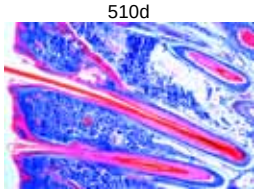
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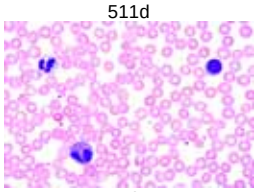
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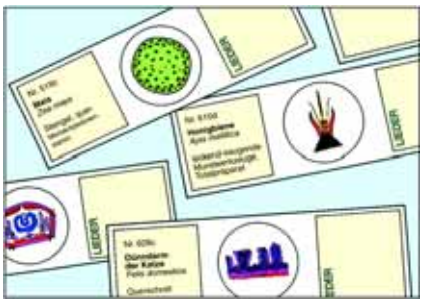
1. Prepared Microscope Slides



Basic component of the program are the A, B, C and D series comprising of 175 microscope slides. The four series are arranged systematically and constructively compiled, so that each enlarges the subject line of the proceeding one. They contain slides of typical micro-organisms, of cell division and of embryonic developments as well as of tissues and organs of plants, animals and man. Each of the slides has been carefully selected on the basis of its instructional value.
LIEDER prepared microscope slides are made in our laboratories under scientific control. They are the product of long experience in all spheres of preparation techniques. Microtome sections are cut by highly skilled staff, cutting technique and thickness of the sections are adjusted to the objects. Out of the large number of staining techniques we select those ensuring a clear and distinct differentiation of the important structures combined with best permanency of the staining. Generally, these are complicated multicolor stainings. LIEDER prepared microscope slides are delivered on best glasses with ground edges of the size 26 x 76 mm (1 x 3"). – Every prepared microscope slide is unique and individually crafted by our well-trained technicians under rigorous scientific control. We therefore wish to point out that delivered products may differ from the pictures in this catalog due to natural variation of the basic raw materials and applied preparation and staining methods.

The number of series in hand should correspond approximately to the number of microscopes to allow several students to examine the same prepared microscope slides at the same time. For this reason all slides out of the series can be ordered individually also. So, important microscope slides can be supplied for all students.

No. 500 School Set A for General Biology, Elementary Set
25 microscope slides

Zoology

501e **Amoeba proteus**, w.m. showing nucleus and pseudopodia
502e **Hydra**, w.m. extended specimen to show foot, body, mouth, and tentacles
503c **Lumbricus**, earthworm, typical t.s. back of clitellum showing muscular wall, intestine, typhlosole, nephridia etc.
504c **Daphnia and Cyclops**, small crustaceans from fresh water
505d **Musca domestica**, house fly, head and mouth parts (proboscis) w.m.
506b **Musca domestica**, leg with clinging pads (pulvilli)
507c **Apis mellifica**, honey bee, anterior and posterior wing

Histology of Man and Mammals

508c **Squamous epithelium**, isolated cells from human mouth
509d **Striated muscle**, l.s. showing nuclei and striations
510d **Compact bone**, t.s. special stained for cells, lamellae, and canaliculi
511d **Human scalp**, vertical section showing l.s. of hair follicles, sebaceous glands, epidermis
512c **Human blood smear**, stained for red and white corpuscles

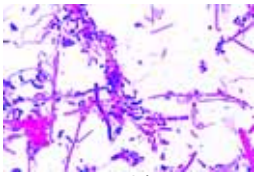
Botany, Bacteria and Cryptogams

513d **Bacteria from mouth**, smear Gram stained showing bacilli, cocci, spirilli, spirochaetes
514c **Diatoms**, strewn slide of mixed species
515c **Spirogyra**, vegetative filaments with spiral chloroplasts
516c **Mucor or Rhizopus**, mold, w.m. of mycelium and sporangia
517c **Moss** stem with leaves w.m.

Botany, Phanerogams

518c **Ranunculus**, buttercup, typical dicot root t.s., central stele
519c **Zea mays**, corn, monocot stem with scattered bundles t.s.
520c **Helianthus**, sunflower, typical herbaceous dicot stem t.s.
521c **Syringa**, lilac, leaf t.s. showing epidermis, palisade parenchyma, spongy parenchyma, vascular bundles
522d **Lilium**, lily, anthers with pollen grains and pollen sacs t.s.
523d **Lilium**, ovary t.s. showing arrangement of ovules
524c **Allium cepa**, onion, w.m. of epidermis shows simple plant cells with cell walls, nuclei, and cytoplasm
525d **Allium cepa**, l.s. of root tips showing cell divisions (mitosis) in all stages, carefully stained

***NEW:* No. CD050 Interactive CD-ROM with Teaching Material to School Set A**
(Description see page 10)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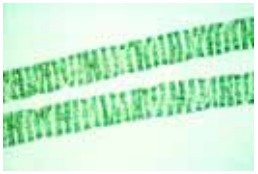
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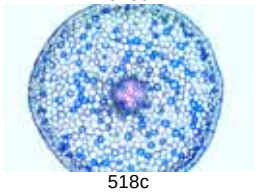
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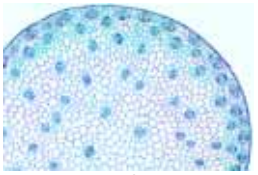
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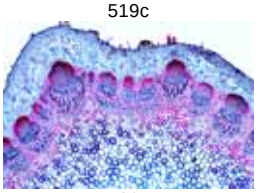
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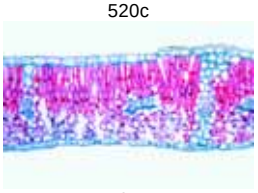
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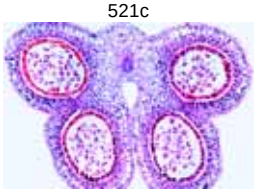
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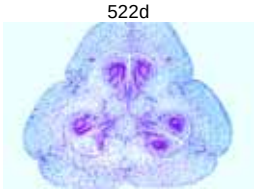
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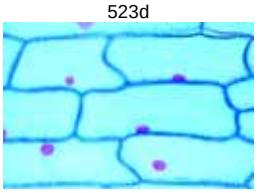
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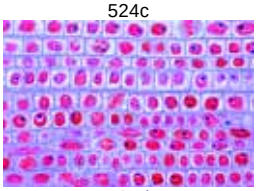
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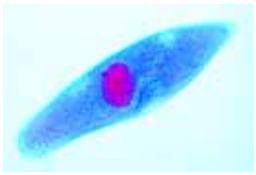
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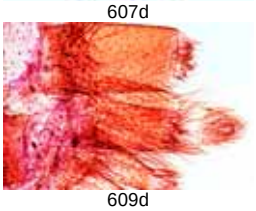
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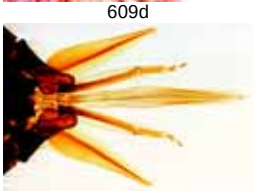
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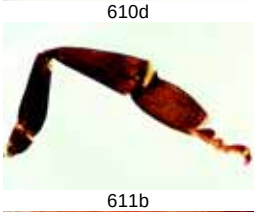
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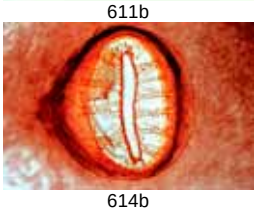
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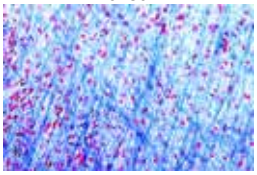
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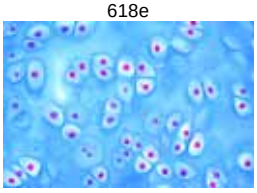
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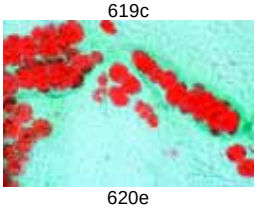

620e

No. 600 School Set B for General Biology, Supplementary Set
50 microscope slides

Zoology and Parasitology

601d **Paramecium**, nuclei stained
602c **Euglena**, a common flagellate with eyespot
603c **Sycon**, a marine sponge, t.s. of body
604e **Dicrocoelium lanceolatum**, sheep liver fluke, w.m.
605c **Taenia saginata**, tapeworm, proglottids of various ages t.s.
606d **Trichinella spiralis**, l.s. of skeletal muscle showing encysted larvae
607d **Ascaris**, roundworm, t.s. of female in region of gonads
608b **Araneus**, spider, leg with comb w.m.
609d **Araneus**, spider, spinneret w.m.
610d **Apis mellifica**, honey bee, mouth parts of worker w.m.
611b **Apis mellifica**, hind leg of worker with pollen basket w.m.
612e **Periplaneta**, cockroach, chewing mouth parts w.m.
613b **Trachea** from insect w.m.
614b **Spiracle** from insect w.m.
615d **Apis mellifica**, sting and poison sac w.m.
616b **Pieris**, butterfly, portion of wing with scales w.m.
617d **Asterias rubens**, starfish, arm (ray) t.s. showing tube feet, digestive gland, ampullae

Histology of Man and Mammals

618e **Fibrous connective tissue** of mammal
619c **Hyaline cartilage** of mammal, t.s.
620e **Adipose tissue**, stained for fat
621d **Smooth (involuntary) muscle** l.s. and t.s.
622e **Medullated nerve fibres**, teased preparation of osmic acid fixed material showing Ranvier's nodes
623c **Frog blood smear**, showing nucleated red corpuscles
624d **Artery and vein** of mammal, t.s.
625d **Liver** of pig, t.s. showing well developed connective tissue
626c **Small intestine** of cat, t.s. showing mucous membrane
627c **Lung** of cat, t.s. showing alveoli, bronchial tubes

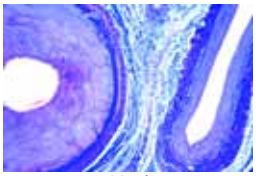
Botany, Cryptogams

628c **Oscillatoria**, a common blue green filamentous alga
629e **Spirogyra** in scalariform conjugation, formation of zygotes
630c **Psalliota**, mushroom, t.s. of pileus with basidia and spores
631c **Morchella**, morel, t.s. of fruiting body with asci and spores
632d **Marchantia**, liverwort, antheridial branch with antheridia l.s.
633d **Marchantia**, archegonial branch with archegonia l.s.
634d **Pteridium**, braken fern, rhizome with vascular bundles t.s.
635d **Aspidium**, t.s. of leaf with sori showing sporangia and spores

Botany, Phanerogams

636e **Elodea**, waterweed, stem apex l.s. showing meristematic tissue and leaf origin
637d **Dahlia**, t.s. of tuber with inuline crystals
638b **Allium cepa**, onion, w.m. of dry scale showing calcium oxalate crystals
639d **Pyrus**, pear, t.s. of fruit showing stone cells
640c **Zea mays**, corn, typical monocot root t.s.
641c **Tilia**, lime, woody dicot root t.s.
642c **Solanum tuberosum**, potato, t.s. of tuber with starch and cork cells
643c **Aristolochia**, birthwort, one year stem t.s.
644c **Aristolochia**, older stem t.s. shows secondary growth
645d **Cucurbita**, pumpkin, l.s. of stem with sieve tubes, annular and reticulate vessels, sclerenchyme fibres
646d **Root tip** and root hairs
647c **Tulipa**, tulip, epidermis of leaf with stomata and guard cells w.m., surface view
648c **Iris**, typical monocot isobilateral leaf, t.s.
649c **Sambucus**, elderberry, stem showing lenticells and cork cambium, t.s.
650e **Triticum**, wheat, grain (seed) sagittal l.s. with embryo and endosperm

NEW: **No. CD060 Interactive CD-ROM with Teaching Material to School Set B**
(Description see page 10)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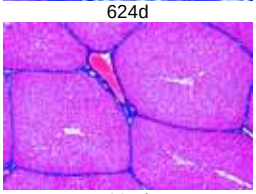
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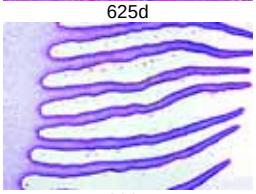
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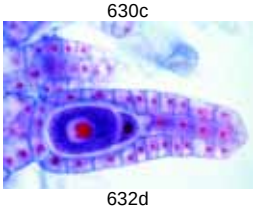
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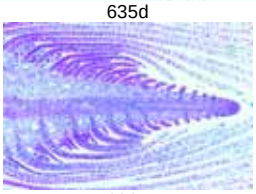
634d


635d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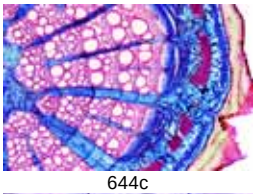
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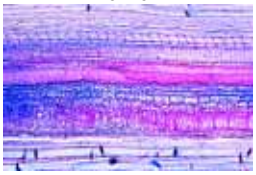
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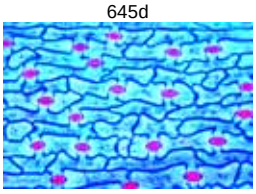
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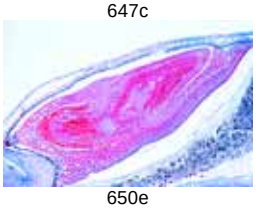
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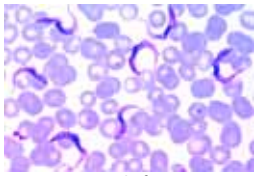
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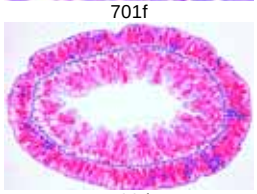
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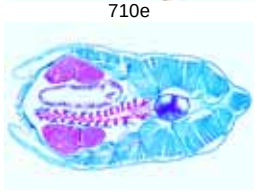
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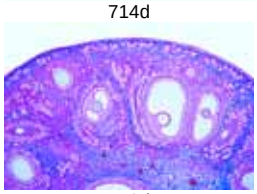
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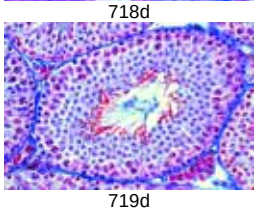
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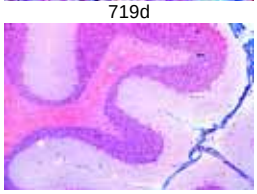
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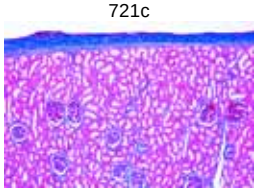
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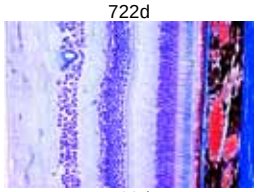

723d

No. 700 School Set C for General Biology, Supplementary Set
50 microscope slides

Zoology and Parasitology

701f **Trypanosoma gambiense**, causing sleeping disease, blood smear
702f **Plasmodium berghei**, malaria parasite, blood smear
703d **Radiolaria**, strewn slide of mixed species
704d **Foraminifera**, strewn slide of mixed species
705d **Obelia hydroid**, w.m. of colony with hydrants and gonothecae
706d **Hydra**, t.s. of body in different levels. Ectoderm, entoderm
707c **Planaria**, typical t.s. through the body
708e **Apis mellifica**, honey bee, head with compound eyes and brain t.s.
709d **Apis mellifica**, abdomen of worker t.s., with intestine and nephridia
710e **Ctenocephalus canis**, dog flea, adult w.m.
711d **Dermanyssus gallinae**, chicken mite, adult w.m.
712d **Helix pomatia**, snail, hermaphrodite gland (ovotestis), t.s. with developing ova and spermatozoa
713d **Mya arenaria**, clam, gills t.s. and l.s. showing ciliated epithelium
714d **Branchiostoma lanceolatum** (Amphioxus), typical t.s. of body with gills, liver, and gonads
715c **Bird feathers**, w.m. of two types: wing or vane and down feathers

Embryology

716e **Salamandra larva**, sections from selected material showing mitotic stages in skin and other organs
717f **Chicken embryo**, 48 hour, t.s. with neural tube and chorda

Histology of Man and Mammals

718d **Ovary** of cat, t.s. with primary, secondary, and Graafian follicles
719d **Testis** of mouse, t.s. showing spermatogenesis in all stages
720d **Cerebellum** of cat, t.s. shows Purkinje cells
721c **Spinal cord** of cat, t.s. showing white and grey matter, nerve cells
722d **Kidney** of cat, t.s. through cortex and medulla
723d **Retina** of cat, t.s. for detail of rods and cones
724e **Tongue** of rabbit, t.s. of papilla foliata with abundant taste buds

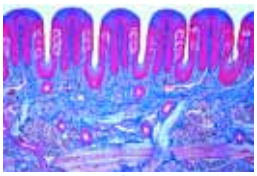
Botany, Bacteria and Cryptogams

725d **Bacillus subtilis**, hay bacillus, smear with bacilli and spores
726d **Streptococcus lactis**, milk souring organisms, smear showing chains
727e **Volvox**, with daughter colonies and sexual stages, w.m.
728d **Fucus vesiculosus**, brown alga, female conceptacle with oogonia t.s.
729d **Fucus vesiculosus**, male conceptacle with antheridia t.s.
730c **Cladophora**, green alga, branched filaments with multinucleate cells
731c **Claviceps purpurea**, ergot, sclerotium t.s.
732d **Puccinia graminis**, wheat rust, uredinia on wheat leaf t.s.
733d **Puccinia graminis**, aecidia and pycnidia on barberry leaf t.s.
734b **Saccharomyces**, yeast, budding cells w.m.
735d **Physcia**, foliose lichen, thallus with symbiotic algae t.s.
736e **Fern prothallium**, w.m. showing sex organs
737d **Equisetum**, horse tail, strobilus with spores l.s.

Botany, Phanerogams

738d **Lupinus**, lupin, root nodules with symbiotic bacteria t.s.
739c **Euphorbia**, spurge, stem with lactiferous ducts l.s.
740d **Pinus**, pine, three sections of wood: transverse, radial, tangential
741d **Tilia**, lime, three sections of wood: transverse, radial, tangential
742d **Elodea**, waterweed, aquatic stem with primitive bundle t.s.
743d **Cucurbita**, pumpkin, stem t.s. showing bicollateral bundles and sieve plates
744d **Fagus**, beech, sun and shade leaves, two t.s. for comparison
745c **Nerium**, oleander, xerophytic leaf with sunken stomata, t.s.
746d **Pinus**, pine, male cone with pollen l.s.
747d **Pinus**, female cone with ovules l.s.
748b **Pinus**, mature pollen grains with wings w.m.
749f **Lilium**, lily, t.s. of very young anthers showing meiotic stages of the pollen mother cells
750d **Taraxacum**, dandelion, composite flower l.s.

NEW: **No. CD070 Interactive CD-ROM with Teaching Material to School Set C**
(Description see page 10)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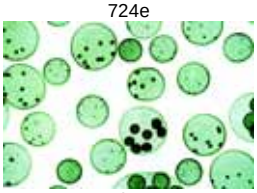
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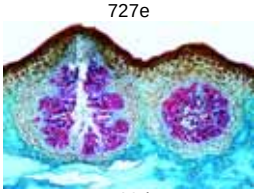
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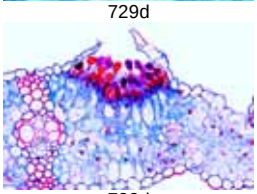
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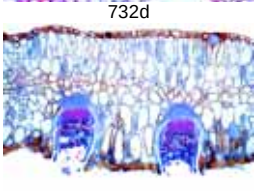
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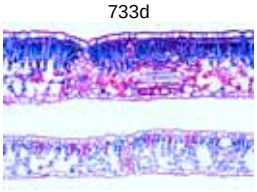
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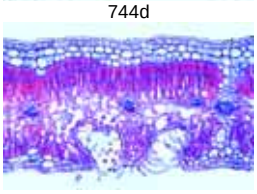
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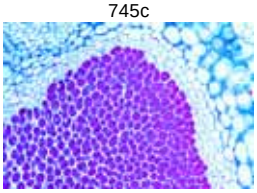
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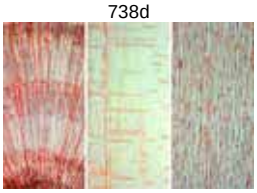
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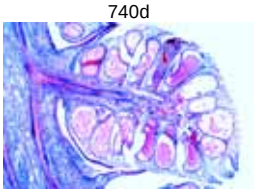
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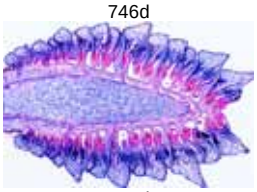
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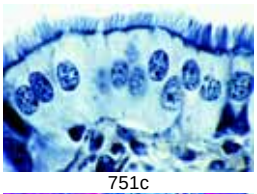
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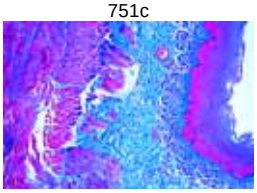
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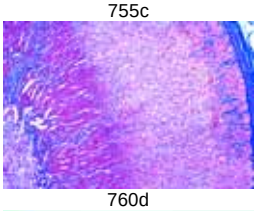
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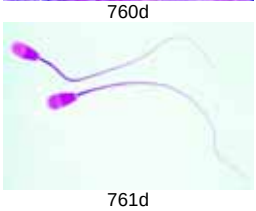
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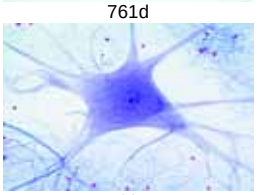
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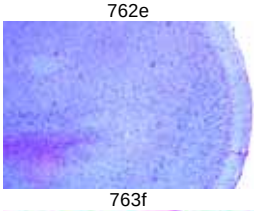
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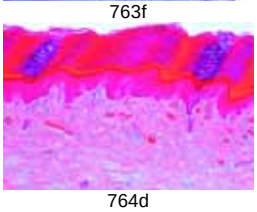
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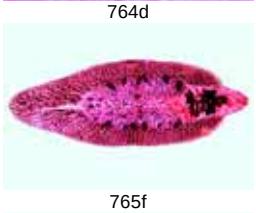
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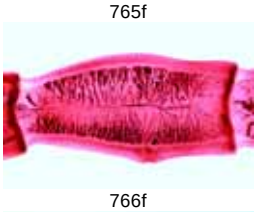
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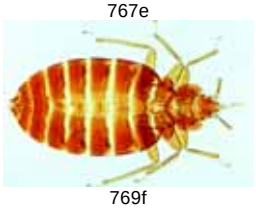
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No. 750 School Set D for General Biology, Supplementary Set
50 microscope slides

Histology of Man and Mammals

751c **Ciliated epithelium**, in t.s. of fallopian tube of pig
752d **Tendon** of cow, l.s. showing white fibrous tissue, stained for fibres and cells
753f **Heart muscle**, human, t.s. and l.s., branched fibres with nuclei and intercalated discs
754c **Lymph gland** of pig, t.s. showing lymphoid tissue
755c **Esophagus** of cat, t.s. with stratified squamous epithelium, muscular layers
756d **Stomach** of cat, t.s. through fundic region showing gastric glands
757d **Large intestine (colon)**, t.s. special stained for the mucous cells
758d **Pancreas** of pig, sec. showing islets of Langerhans
759d **Thyroid gland** of pig, sec. showing glandular epithelium and colloid
760d **Adrenal gland** of cat, t.s. through cortex and medulla
761d **Sperm** of bull (spermatozoa), smear
762e **Motor nerve cells**, smear from spinal cord of cow showing w.m. of motor nerve cells and their processes
763f **Cerebrum**, human, t.s. of cortex showing pyramidal cells and fibrous region
764d **Human skin** from palm, v.s. showing cornified epidermis, germinative zone, sweat glands

Zoology

765f **Distomum hepaticum (Fasciola),** beef liver fluke, w.m. and stained for general study
766f **Taenia spec**., tapeworm, w.m. of mature proglottids
767e **Culex pipiens**, mosquito, head and piercing-sucking mouth parts of female, w.m.
768e **Culex pipiens**, mosquito, head and reduced mouth parts of male, w.m.
769f **Cimex lectularius**, bed bug, w.m. of adult specimen

Cytology and Genetics

770f **Mitochondria**, in thin sec. through liver or kidney, special staining technique
771g **Golgi apparatus**, t.s. through spinal ganglion, special staining technique
772d **Chloroplasts**, in leaf of Elodea or Mnium, special stained
773c **Aleurone grains**, in sec. of Ricinus endosperm
774f **Storage**, section of liver or kidney, vital stained with trypan-blue to demonstrate storage in epithelial cells
775g **DNA in cell nuclei**, demonstrated by Feulgen staining technique
776g **DNA and RNA**, fixed and stained with methyl green and pyronine to show DNA and RNA in different colors
777f **Giant chromosomes** from the salivary gland of Chironomus. Individual genes and puffs can be observed
778h **Human chromosomes**, spread in the stage of metaphase, for counting chromosomes
779f **Meiotic and mitotic stages** in sec. of crayfish testis. Nuclear spindles are present
780f **Maturation divisions** in ova of Ascaris megalocephala, iron-hematoxylin stained
781f **Cleavage stages** in ova of Ascaris megalocephala, iron-hematoxylin stained

Bacteria and Diseased Organs of Man

782d **Escherichia coli**, bacteria from colon, probably pathogenic, smear Gram stained
783d **Eberthella typhi**, causing typhoid fever, smear from culture, Gram stained
784e **Tuberculous lung**, t.s. of diseased human lung showing miliary tubercles in tissue
785e **Coal dust lung (Anthracosis pulmonum)**, t.s. of human smoker's lung
786e **Liver cirrhosis** of man caused by alcohol abuse, t.s. showing degeneration of cells
787e **Arteriosclerosis**, t.s. of diseased human coronary with sclerotic changes in the wall
788e **Metastatic carcinoma (cancer)** of human liver, t.s.

Embryology

789e **Sea-urchin development** (Psammechinus miliaris), composite slide with two cell, four cell and eight cell stages
790e **Sea-urchin development** (Psammechinus miliaris), composite slide with morula, blastula and gastrula stages
791f **Frog embryology** (Rana spec.), sec. trough the blastula stage showing the blastocoel
792f **Frog embryology** (Rana spec.), sag. sec. through young larva in the tail bud stage, with primordia of organs

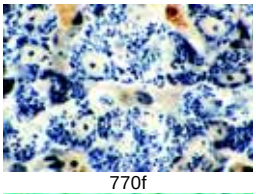
Ecology and Environment

793e **Leaf (needle) of fir** (Abies), two t.s. of leaves, healthy and damaged by environmental influences (acid rain)
794e **Leaf of beech** (Fagus), two t.s. of leaves, healthy and damaged by environmental influences (acid rain)
795d **Bacteria from waste-water**, smear with many typical forms

Botany

796c **Nostoc**, blue green alga, filamentous colonies within gelatinous sheaths
797e **Desmids (Desmidiaceae),** strewn slide of various species
798c **Sphagnum**, peat moss, w.m. of leaf showing chlorophyll-bearing and hyaline cells.
799c **Triticum**, wheat, t.s. of stem of a gramineous plant with central pith and circular arrangement of bundles
800c **Salvia**, sage, t.s. of a square stem with angular collenchyma

NEW: **No. CD075 Interactive CD-ROM with Teaching Material to School Set D**
(Description see page 10)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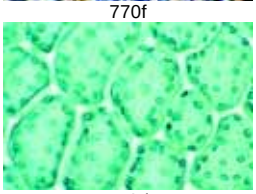
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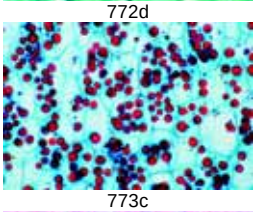
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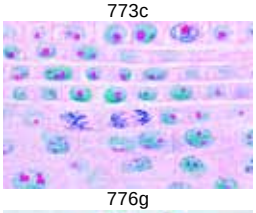
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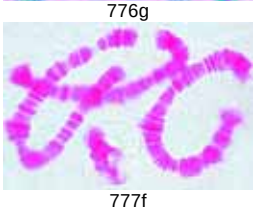
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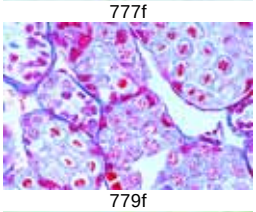
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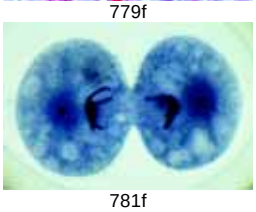
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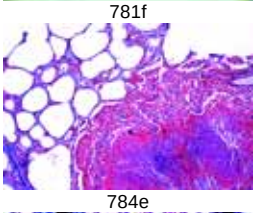
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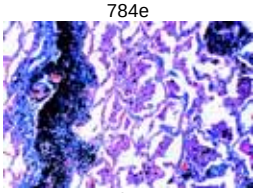
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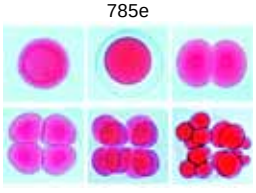
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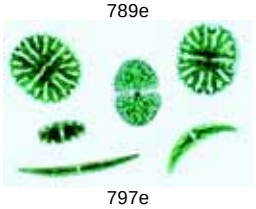
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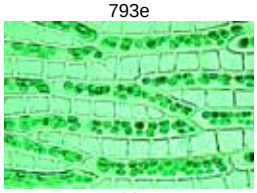
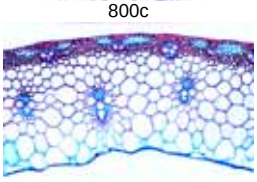

798c

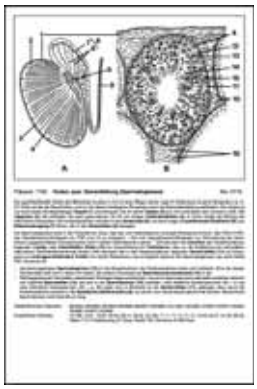
No. 500 **Microscope Slides, School Set A for General Biology,** 25 slides
No. 600 **Microscope Slides, School Set B for General Biology,** 50 slides
No. 700 **Microscope Slides, School Set C for General Biology,** 50 slides
No. 750 **Microscope Slides, School Set D for General Biology,** 50 slides
No. 850 **Microscope Slides, School Set A, B, C and D together.** 175 slides

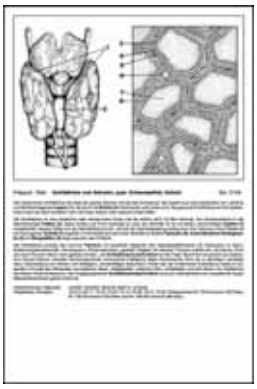

800c


799c

Prices of individual microscope slides: Each slide in our catalogues is identified by a list number which ends with a small letter. This end-letter designates the price of the slide according to the code specified in the enclosed price-list.

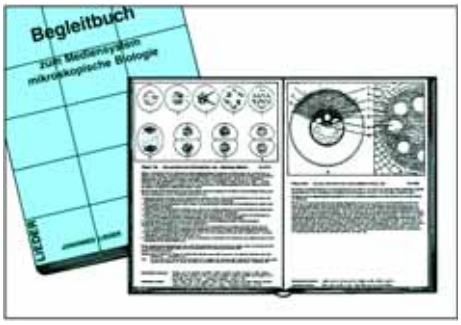
Boxes for prepared microscope slides: Microscope slides can be shipped in special slide boxes only for technical reasons. These boxes are available in various types and price categories and should be ordered together with the slides. Unless specified by the customer we supply standard type boxes of suitable size for our microscope slide sets and individual slides (e.g. K12, K25, K50, K100). Please see price-list.



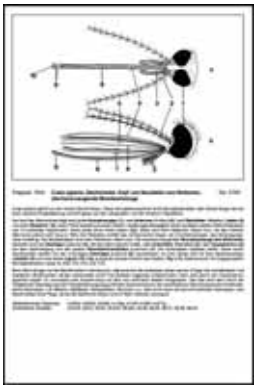


2. Manual with Texts and Drawings

With this manual the intent is to facilitate the study of microscope slides and photomicrographs and their interpretation.

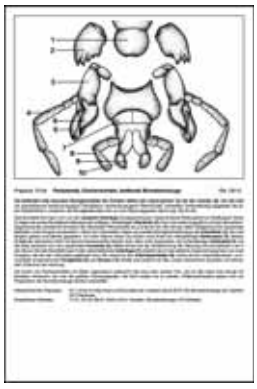


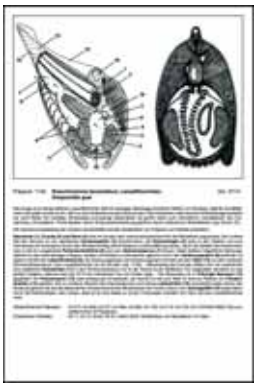
The Multimedia Program consisting of 175 microscope slides, color photomicrographs 35mm, overhead transparencies, sketch- and work sheets, and wall charts constituted the basis for the conception of the manual. However, anyone who works with microscopic slides and photomicrographs will find the manual helpful in the discovery of new details, their interpretation and understanding.



The Drawings.

Microscope slides, the basic medium, are studied under the microscope using different magnifications to discover details. The projection of the color photomicrographs 35mm immediately demonstrates in optimum magnification the desired detail of the slide, thus enabling the pupil to easily and quickly find this detail in his mount.
The semidiagrammic drawings, the third medium, separate the important from the unimportant, interpreting and introducing connections.





The Descriptions.

The text pertaining to each of the 175 drawings gives a detailed description of the microscopic slide, the photomicrograph 35mm and the drawing. It also makes suggestions for the best use of the Multimedia Program in class.

- The morphological structures are described and the code of numbers in the drawings is explained.
- Information is given about systematic and physiological connections as well as biological principles: the evolution from primitive to highly developed organisms, division of labour, specialization and how organisms solve certain problems. Life cycles of parasitic plants and animals are discussed.
- Information is further given about methods of collecting and studying living material to make lessons interesting. Microtechnical methods of fixing, staining and mounting are explained where possible.
- Each text refers to supplementary microscope slides and projection slides which enable the teacher to intensify and increase the knowledge of the subject. Due to the limited space only catalogue numbers of these supplementary media materials are given. Their exact labels and detailed descriptions are listed on the respective pages of this catalogue.

No. T8500E **Manual to the Multimedia Program Microscopic Biology, 190 pages with 175 drawings and texts**

3. Color Atlas of Overhead Projector Transparencies
New 7th Edition 2011

The atlas comprises 45 transparency sheets (size 22 x 28 cm) showing the 175 color photomicrographs of the series A, B, C and D, but often in several magnifications, therefore the total number of individual pictures is over 252. The compilation and the individual titles of the atlas also corresponds to the A, B, C and D series of prepared microscope slides. Transparencies immediately show, on the screen, the details of the specimen required for demonstration at the most suitable magnification. The student subsequently finds it easier to locate the relevant part of the microscopic slide under the microscope. The transparencies are printed by a special process and excel by reason of their high projection quality. They are held in a strong plastic file with ring mechanism. This OHP Transparency Atlas is offered for teachers who prefer classroom work with the OHP projector instead of the 5 x 5 cm slide projector.
For detailed description please see page 115 in this catalogue.

No. 8236E **Transparency-Atlas with the Pictures of Sets A, B, C, D**

*Atlas of 45 OHP Transparencies comprising over 252 color photomicrographs according to the 175 Prepared Microscope Slides of the **MULTIMEDIA-SYSTEM FOR BIOLOGY A, B, C and D**. This atlas of OHP transparencies is intended to present a clear-cut outline of all fields of biology and cover all the organisms studied in schools. Each of the specimens has been carefully chosen on the basis of its instructional value. - Text: Dr. K.-H. Meyer, B.S. - NEW EDITION*

***NEW in 2011:* Sketch and work-sheets with semidiagrammatic designs and texts. Teacher may take photocopies from the sheets and use for classroom work and tests.**

Zoology. - Amoeba proteus - Radiolaria, mixed - Foraminifera, mixed - Euglena, flagellate - Trypanosoma gambiense, blood smear - Plasmodium, malaria, blood smear - Paramaecium, nuclei stained - Sycon, marine sponge t.s. - Hydra, w.m. - Hydra, t.s. - Obelia hydroid - Planaria, t.s. - Dicrocoelium lanceolatum, sheep liver fluke - Distomum hepaticum (Fasciola), beef liver fluke - Taenia saginata, tapeworm, proglottids t.s. - Taenia, tapeworm, w.m. proglottid - Trichinella spiralis, encysted larvae - Ascaris, roundworm, t.s. female - Lumbricus, earthworm, typical t.s. back of clitellum - Daphnia and Cyclops - Araneus, spider, leg with comb - Araneus, spinneret - Dermanyssus gallinae, chicken mite - Musca domestica, house fly, head and mouth parts - Musca, leg - Apis mellifica, honey bee, mouth parts - Apis, wings - Apis, hind leg of worker - Apis, sting and poison sac - Apis, head with compound eyes t.s. - Apis , abdomen of worker t.s. - Periplaneta, cockroach, chewing mouth parts - Culex pipiens, mosquito, mouth parts of female - Culex, mouth parts of male - Trachea from insect - Spiracle from insect - Pieris, butterfly, wing with scales - Ctenocephalus canis, dog flea - Cimex lectularius, bed bug - Helix pomatia, snail, hermaphrodite gland t.s. - Mya, clam, gill sec. - Bird feathers - Asterias rubens, starfish, arm t.s. - Branchiostoma (Amphioxus), typical t.s.

Histology of Human and Mammals. Squamous epithelium - Ciliated epithelium, t.s. - Fibrous connective tissue - Tendon , l.s. white fibrous tissue - Adipose tissue, fat - Hyaline cartilage t.s. - Compact bone, t.s. - Striated muscle, l.s. - Heart muscle, human, l.s. intercalated discs - Smooth muscle l.s. and t.s. - Lung of cat, t.s. - Human blood smear - Frog blood smear - Artery and vein of mammal, t.s. - Lymph gland of pig, t.s. - Thyroid gland of pig, sec. colloid - Adrenal gland of cat, t.s. - Esophagus of cat, t.s. - Stomach of cat, t.s. fundic - Small intestine of cat, t.s. - Large intestine, t.s. mucous cells - Liver of pig, t.s. - Pancreas of pig, sec. with islets of Langerhans - Kidney of cat, t.s. - Ovary of cat, t.s. with follicles - Testis of mouse, t.s. spermatogenesis - Sperm of bull, smear - Medullated nerve fibres, Ranvier's nodes - Motor nerve cells, smear from spinal cord - Spinal cord of cat, t.s. - Cerebrum, human, t.s. pyramidal cells - Cerebellum of cat, t.s. Purkinje cells - Retina of cat, t.s. - Tongue of rabbit, t.s. with taste buds - Human skin from palm, v.s. sweat glands - Human scalp, l.s. of hair follicles

Botany, Bacteria and Cryptogams. Bacteria from mouth - Bacillus subtilis, hay bacillus - Streptococcus lactis, milk souring - Oscillatoria - Nostoc - Diatoms, mixed - Cladophora, green alga, multinucleate cells - Volvox, daughter colonies and sexual stages - Spirogyra, vegetative - Spirogyra in conjugation - Desmids, various species - Fucus, brown alga, female conceptacle t.s. - Fucus , male conceptacle t.s. - Mucor, mold - Morchella, morel, t.s. of asci and spores - Claviceps, ergot, sclerotium t.s. - Saccharomyces, yeast, budding - Psalliota, mushroom, t.s. of pileus - Puccinia, wheat rust, uredinia t.s. - Puccinia, aecidia and pycnidia t.s. - Physcia, lichen, thallus with symbiotic algae t.s. - Marchantia, liverwort, antheridia l.s. - Marchantia, archegonia l.s. - Moss stem with leaves w.m. - Sphagnum, peat moss, w.m. of leaf - Fern prothallium, sex organs - Pteridium, fern, rhizome t.s. - Aspidium, t.s. leaf with sori - Equisetum, horse tail, strobilus l.s.

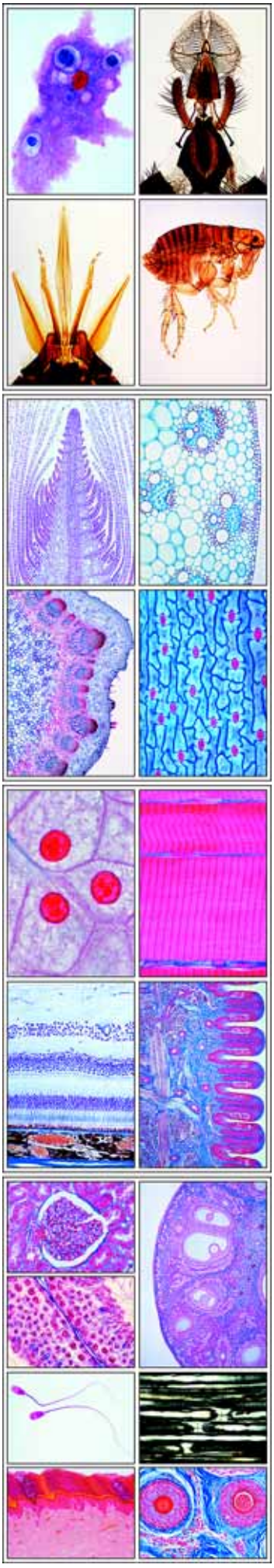
Botany, Phanerogams. Allium cepa, onion, w.m. of epidermis - Root tip and root hairs - Zea mays, corn, monocot root t.s. - Ranunculus, buttercup, dicot root t.s. - Tilia, lime, woody dicot root t.s. - Dahlia, t.s. tuber with inuline - Lupinus, lupin, root nodules with symbiotic bacteria t.s. - Elodea, stem apex l.s. - Zea mays, corn, monocot stem t.s. - Helianthus, sunflower, dicot stem t.s. - Pyrus, pear, t.s. stone cells - Solanum tuberosum, potato, tuber t.s. - Elodea, aquatic stem t.s. - Triticum, wheat, t.s. stem - Aristolochia, one year stem t.s. - Aristolochia, older stem t.s. - Sambucus, stem with lenticells t.s. - Tilia, lime, three sections of wood - Cucurbita, pumpkin, stem l.s. of sieve tubes - Cucurbita, stem t.s. of sieve plates - Euphorbia, spurge, stem with lactiferous ducts l.s. - Salvia, sage, t.s. of a square stem - Tulipa, epidermis of leaf with stomata w.m. - Iris, monocot leaf t.s. - Syringa, lilac, leaf t.s. - Fagus, beech, sun and shade leaves, two t.s. - Nerium, oleander, leaf with sunken stomata, t.s. - Lilium, lily, anthers t.s. - Lilium, ovary t.s. - Taraxacum, dandelion, composite flower l.s. - Triticum, wheat, grain with embryo l.s. - Pinus, pine, three sections of wood - Pinus, pine, male cone l.s. - Pinus, female cone l.s. - Pinus, pollen grains

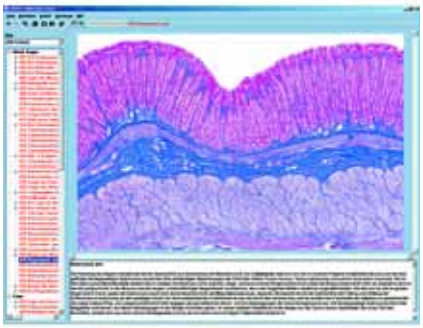
Cytology and Genetics. Allium cepa, l.s. of root tips showing mitosis - Lilium, t.s. of young anthers, meiotic stages - Salamandra, sections with mitotic stages - Mitochondria - Golgi apparatus, t.s. spinal ganglion - Chloroplasts, in leaf of Mnium - Aleurone grains - Allium , onion, showing calcium oxalate crystals - Storage, section of liver, vital stained - DNA in cell nuclei, Feulgen - DNA and RNA in different colors - Giant chromosomes from salivary gland of Chironomus - Human chromosomes, stage of metaphase - Crayfish testis, with nuclear spindles - Maturation divisions in ova of Ascaris megalocephala - Cleavage stages in ova of Ascaris

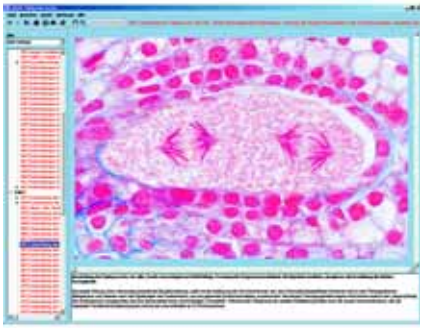
Embryology. Chicken embryo, 48 hour, t.s. with neural tube and chorda - Sea-urchin development, two cell, four cell and eight cell stages - Sea-urchin, morula, blastula and gastrula - Frog embryology (Rana), sec. blastula - do. sag. sec. young larva in tail bud stage

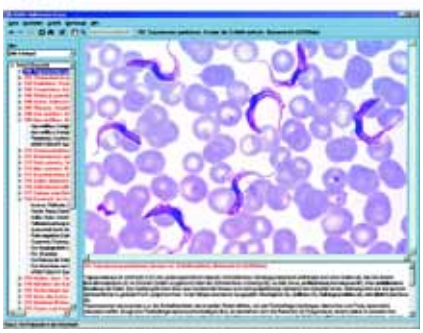
Bacteria and Diseased Organs of Man. Escherichia coli - Eberthella typhi, typhoid fever - Tuberculous lung of man, t.s. - Coal dust lung of man, t.s. (smoker's lung) - Liver cirrhosis of man caused by alcohol abuse, t.s. - Arteriosclerosis, t.s. of coronary artery - Metastatic carcinoma (cancer) of human liver, t.s.

Ecology and Environment. Leaf (needle) of fir (Abies), two t.s. of leaves, healthy and damaged by environmental influences (acid rain) - Leaf of beech (Fagus), two t.s. of leaves, healthy and damaged by environmental influences (acid rain) - Bacteria from waste-water









4. New Amazing Interactive Educational CD-ROM for the Series A, B, C and D

NEU!

We offer a new range of about 42 CD-ROM for interactive learning and teaching in school and education. All pictures and illustrations are taken from our own stocks to guarantee superior quality. Newly developed programs guarantee easy installation and unproblematic running of the program. Every CD comprises the following topics:

- Comprises a great variety of beautiful **diagrams, color photos, tables, anatomical pictures, electron and X-ray photographs, impressive life cycles, human photographs, landscape photographs, scenes, test data and results**, necessary for teaching the subjects.
- Comprises all necessary **photomicrographs of microscopic slides**, which can be observed by **five different steps of magnification** by using **a „MicroScope"**. The slides can be moved under this microscope and can be observed in all its parts.
- Comprises all necessary **drawings** matching the pictures, with **explanations** of all the parts.
- The same number of comprehensive **explanatory texts** to help understanding the pictures.
- A special **test program** to check the students' knowledge in several levels of difficulty. A variable number of random selected pictures have to be identified. After a successful run the students receive notes about their progress in learning. By repeating the test any success will by revealed by the program.
- A comprehensive **index, a search function** and a comfortable **browser** for all pictures and texts on every CD-ROM.
- All pictures can be shown also in **full-screen size**, just by pressing the ENTER button.
- Special **accompanying material,** which enables evaluation of what has been seen, and creative learning is an important part of the program. **Drawings, sketch- and worksheets** are supplied for many of the pictures on the CD. They are stored in **full printing quality (high resolution** of 300 to 600 dpi). After printing the drawings may be supplemented or colored. In addition, the worksheets – which are allowed to be copied – can be used as **accompanying material for class tests**.
- The novel **demo program** features the functionality to start a self-running demo of the program in sequential or random order. A sophisticated **presentation mode** allows the user to prepare a collection of chosen pictures for an impressive full-screen presentation.
- The complete set of images on this CD can be displayed in **thumbnail view** for a comprehensive overview of all available material. Thus, the user is also able to compile pictures around topics of special interest for the classroom.
- A comprehensive **index**. The entire set of material, that is, pictures, supplemental texts and slides, and drawings, are accessible via the main program's dropdown-menu Tools – „Search picture…" or „Select picture".
- The texts will be provided in **up to five languages** (English, German, French, Spanish and Portuguese) by pre-selection when starting the program. The program surface is adapted to the well-known „WINDOWS™-LOOK".
- All pictures and texts can be **printed** by the user.
- The CD works with all Windows versions (WINDOWS™ 95, 98, NT, 2000, XP and higher). The resolution is **960 x 640 or higher for superior quality.** Full color representation with **over 1 Million colors** (depending on the screen). Optionally the CD runs also on PowerMac G4 and higher with WINDOWS™ emulation.
- The size of the **desktop** and the **windows for texts and pictures** can be scaled and adapted to the requirements of the user.

NEW INTERACTIVE EDUCATIONAL CD-ROM FOR THE SERIES A, B, C, D.

Our new amazing CD-ROM for the MULTI-MEDIA PROGRAM SCHOOL-SETS A, B, C, D of **BIOLOGY** comprise all necessary **photomicrographs of microscopic slides**, which can be observed by different magnifications by using **a „MicroScope**". Beautiful **color drawings** matching the slides, with detailed **explanations**.

CD050 **MICROSCOPIC BIOLOGY - Set A** *(Available for immediate delivery)*
Photomicrographs, diagrams, explanations, test program and teaching material to School Set no. A. *Comprising about 240 pictures and 1175 texts*

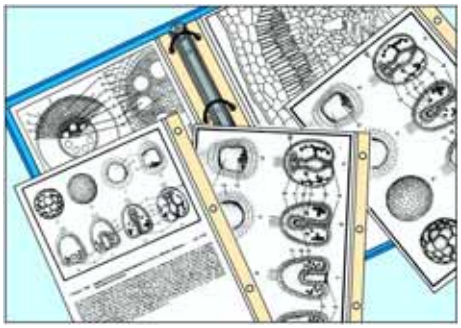
CD060 **MICROSCOPIC BIOLOGY - Set B** *(Available for immediate delivery)*
Photomicrographs, diagrams, explanations, test program and teaching material to School Set no. B. *Comprising about 570 pictures and 2835 texts*

CD070 **MICROSCOPIC BIOLOGY - Set C** *(Available for immediate delivery)*
Photomicrographs, diagrams, explanations, test program and teaching material to School Set no. C. *Comprising about 400 pictures and 1960 texts*

CD075 **MICROSCOPIC BIOLOGY - Set D** *(Available for immediate delivery)*
Photomicrographs, diagrams, explanations, test program and teaching material to School Set no. D. *Comprising about 440 pictures and 2125 texts*

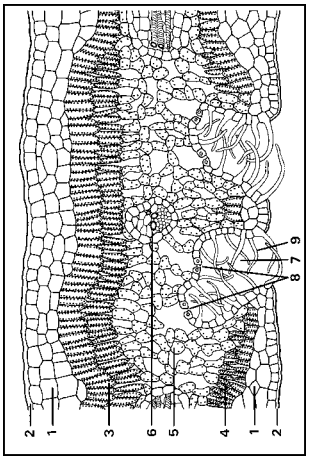
CD085 **MICROSCOPIC BIOLOGY - Set A, B, C and D together.**
All 4 CD-ROM can be copied into one big file during installation, *providing access to more than **2.200 pictures** and **8.100 texts***

5. Media Package, Sketch- and Work Sheets for Copying

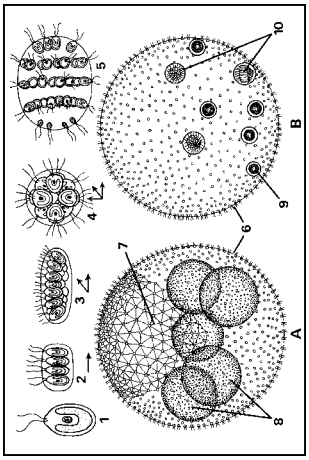


Strictly adapted and corresponding with the manual, the microscope slides and the transparencies, the media package comprises the following parts, assorted in proof plastic files with ring mechanism:

- **Overhead Transparencies of the Drawings**. The complete set of 175 pictures, printed on best, hard-wearing support foil, size 21 x 29 cm.
Suitable for daylight-projection in classroom. Details of the drawing can be colored by the teacher while projecting. He may explain the structures marked with numbers or write on the transparencies using a felt-tipped pen.



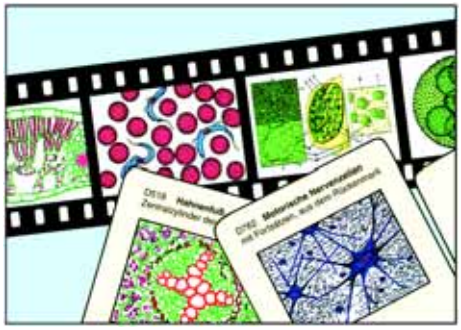
- **Sketch- and Work Sheets of the Drawings**. The complete set of 175 pictures, printed on strong paper, size 21 x 29 cm. Suitable for taking photocopies for all students. They serve to facilitate seeing his way through the prepared microscope slides and finding the detail important in the lesson. They start processes of learning and understanding by comparing microscope slides with the diagrammatic drawings, thus to identify and label the details relevant in the lesson. They allow completing or coloring the drawings according to own observations, and finally the sheets can be used for tests.

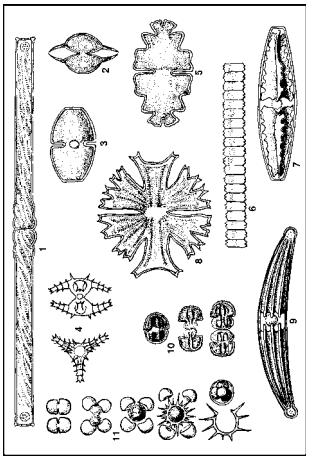


- **Descriptions and Pictures** of the manual pages, each page with text and picture on a separate sheet.
- **Transparencies, Sketch- and Work Sheets, and Manual Pages** are kept in 175 separate clear-view envelops, therefore the single titles can be taken out of the files separately.

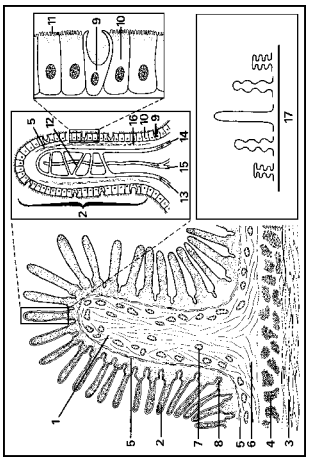
No. M500 **Media Package, Sketch- and Work Sheets, Part A, 25 items, in file**
No. M600 **Media Package, Sketch- and Work Sheets, Part B, 50 items, in file**
No. M700 **Media Package, Sketch- and Work Sheets, Part C, 50 items, in file**
No. M750 **Media Package, Sketch- and Work Sheets, Part D, 50 items, in file**
No. M850 **Media Package, Sketch- and Work Sheets, Parts A, B, C, D together, 175 items**

6. Color Photomicrographs 35 mm (original exposure)





The projection of a 35 mm photomicrograph going with the prepared slide makes it easier for the student to discover and interpret the important structures of the microscope slide under the microscope. LIEDER color photomicrographs show on the screen the requested section in the best magnification.
Our photomicrographs are full color 35 mm transparencies of maximum quality made from excellent and carefully selected prepared microscope slides. In order to obtain the highest quality for the projection all transparencies are original exposures, i.e. each LIEDER color photomicrograph is individually photographed from the specimen through high standard microscopes with automatic cameras of the most advanced technique. Consequently, there is no loss of quality which could arise from a copying process.
LIEDER color photomicrographs are of high definition and clarity, coupled with color reproduction which has resulted in slides of unsurpassed quality. Such high quality transparencies enables the maximum amount of information to be illustrated in such a manner that it can be readily appreciated by the student. LIEDER photomicrographs are mounted between glass in solid dust-proof 50 x 50 mm (2x2'') frames. Compilation and individual titles of the A, B, C and D series of PHOTOMICROGRAPHS correspond strictly to those of the A, B, C and D series of PREPARED MICROSCOPE SLIDES.



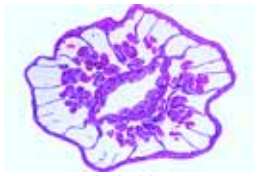
No. D50 **Photomicrographs 35mm, School Set A General Biology, Elementary Set**
25 projection slides *List of Contents and Individual Titles see Microscope Slide School Set A, page 4*

No. D60 **Photomicrographs 35mm, School Set B General Biology, Supplementary Set**
50 projection slides *List of Contents and Individual Titles see Microscope Slide School Set B, page 5*

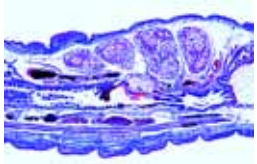
No. D70 **Photomicrographs 35mm, School Set C General Biology, Supplementary Set**
50 projection slides *List of Contents and Individual Titles see Microscope Slide School Set C, page 6*

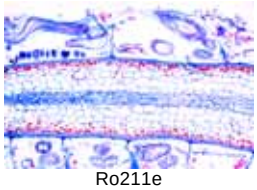
No. D75 **Photomicrographs 35mm, School Set D General Biology, Supplementary Set**
50 projection slides *List of Contents and Individual Titles see Microscope Slide School Set D, page 7*

No. D85 **Photomicrographs 35mm, School Sets A, B, C, D together. All four sets,**
175 projection slides

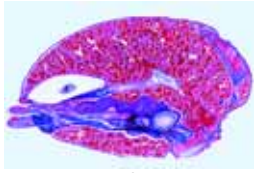

Co2193e


An124d


An144e


Ro211e


Ar111e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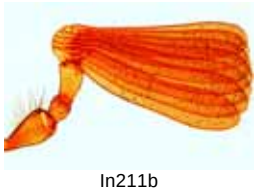
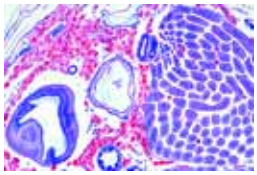
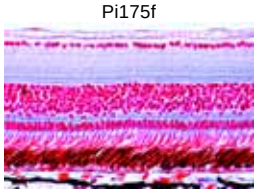
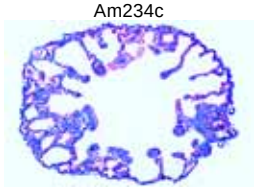

In211b


In255e


Pi175f


Am234c


Am212c

7. Additional Microscope Slides to the School Series A, B, C, and D

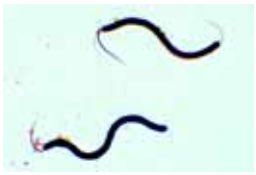
Selected supplementary prepared microscope slides matching the school series A, B, C, and D. All the slides can be purchased either in complete sets or series or individually. The procurement and processing of the original material for some preparations presents special problems. For this reason, these preparations can often only be manufactured in small quantities entailing a longer delivery period. This applies particularly to the preparations marked with an asterisk * in the catalogue, for which we can not guarantee delivery.

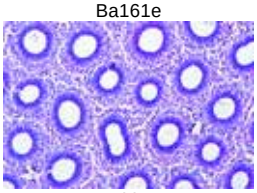
850E01 Zoology

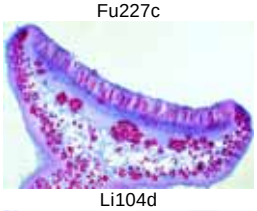
Pr422e **Vorticella,** a common stalked ciliate w.m.
Pr440f **Mixed protozoa,** many different forms are found on this slide
Po121d **Spongilla,** fresh water sponge, t.s. showing choanocytes, incurrent and excurrent channels
Po128c **Euspongia,** a commercial sponge, macerated skeleton shows horny fibres, w.m.
Co112f **Hydra** with bud, fresh water polyp, w.m. *
Co2193e **Actinia, (Metridium),** sea anemone, t.s. and l.s. through entire young specimen on one slide
An124d **Hirudo medicinalis,** medicinal leech, t.s. through the body for demonstrating general structures of a leech
An144e **Lumbricus,** earthworm, anterior end including gonads, l.s.
An143c **Lumbricus,** earthworm, clitellum t.s.
Ro211e **Plumatella,** moss animals, w.m. or section
Cr120c **Small crustaceans,** mixed species of fresh water plankton
Ar111e **Spider,** entire young specimen, w.m.
Ar127e **Spider,** sagittal l.s. of abdomen showing the book or trachea lung
Mo1515e **Snail,** typical l.s. of small specimen for general study
In119d **Formica sp.,** ant, head and mouth parts w.m.
In211b **Melolontha,** cockchafer, laminate antenna with sensory organs w.m.
In215b **Apis mellifica,** honey bee, anterior leg with eye brush w.m.
In255e **Testis**, in t.s. of abdomen of drone of Apis mellifica, honey bee
In311d **Drosophila,** fruit fly, adult male or female w.m.
Pi160c **Cyprinus,** carp, gills t.s.
Pi162c **Cyprinus,** carp, blood smear showing nucleate red corpuscles
Pi175f **Fish scales** composite slide, shows cycloid, ctenoid and placoid scales on one slide, w.m.
Am234c **Rana,** frog, skin with skin glands, vertical l.s.
Am212c **Rana,** frog, lung t.s., simple bag-like lung with large central cavity
Re213c **Lacerta,** lizard, lung t.s. Enlargement of respiratory surface
Av111c **Gallus domesticus,** chicken, blood smear

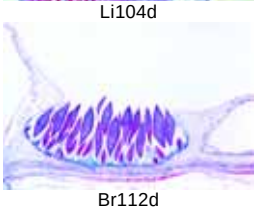
850E02 Bacteria and Cryptogams

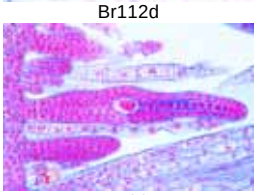
Ba161e **Spirillum volutans,** a very large spirillum, smear *
Ag117c **Chroococcus,** large single celled blue-green algae w.m.
Ag174d **Eudorina,** biflagellate cells within gelatinous sheaths forming spherical colonies of thirty-two cells w.m.
Fu131d **Rhizopus or Mucor,** mold, conjugation stages and formation of zygospores w.m.
Fu161c **Penicillium,** blue mold, mycelium and conidiophores, w.m.
Fu227c **Boletus edulis,** pore fungus, horizontal sec. of pileus showing c.s. of pores
Li104d **Physcia,** lichen, t.s. through apothecium showing asci and spores
Br112d **Marchantia,** liverwort, cupule with gemmae, l.s. showing vegetative reproduction of liverworts
Br123d **Polytrichum,** moss, l.s. of sporophyte with spores
Br125e **Mnium,** moss, l.s. of antheridia
Br126e **Mnium,** moss, l.s. of archegonia
Pt113e **Lycopodium,** club moss, l.s. of young sporophyll showing developing spores


Ba161e

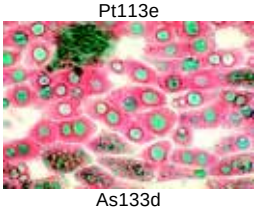

Fu227c

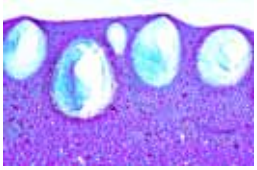

Li104d

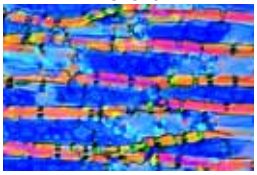

Br112d


Br126e

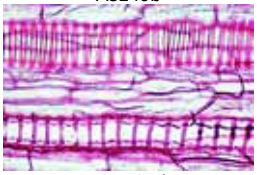

Pt113e


As133d


As134c


As146d


As149b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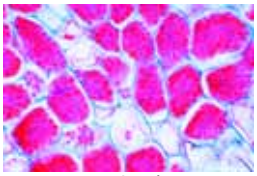
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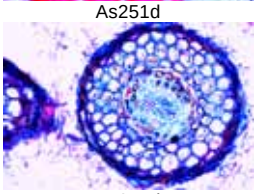
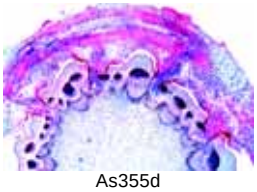
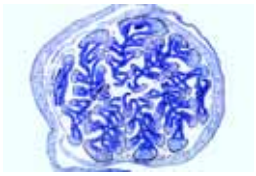
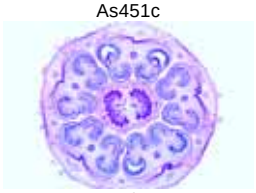
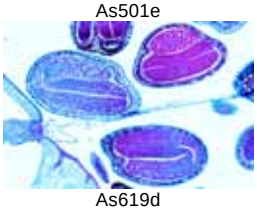

As255d


As259c


As355d


As451c

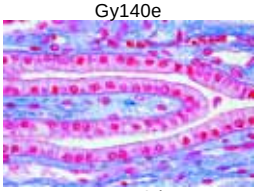

As501e


As619d


Gy125c


Gy135f


Gy140e

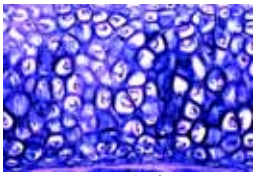

Ma118d

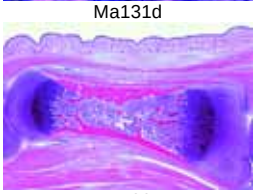
850E03 Phanerogams

As133d **Fat,** t.s. of endosperm of Corylus (hazel) stained for fat
As134c **Lysigenous oil glands,** t.s. rind of Citrus fruit
As136d **Acid tannic,** t.s. bark of Rosa
As146d **Reserve cellulose,** t.s. seed of Phoenix (date)
As1491b **Scale-like stellate hairs,** isolated and w.m. from Elaeagnus (olive tree)
As149b **Branched leaf hairs,** isolated and w.m. from Verbascum (mullein)
As1525d **Annular and spiral vessels,** isolated and w.m.
As202e **Herbaceous and woody roots,** two t.s. on one slide for comparison
As251d **Alnus,** alder, root nodules with symbiotic actinomycetes (Streptomyces alni) t.s.
As255d **Fagus,** beech, root with ectotrophic mycorrhiza, t.s.
As256d **Neottia nidus avis,** orchid, root with endotrophic mycorrhiza, l.s.
As259c **Dendrobium,** orchid, aerial root with velamen t.s.
As307e **Herbaceous and woody stems,** two t.s. on one slide for comparison
As314c **Juncus,** bulrush, stem with internal stellate cells t.s.
As355d **Cuscuta,** dodder, t.s. through stem of host showing the haustoria of the parasite
As285e **Viscum album,** mistletoe, sec. showing parasitic root in wood of apple tree
As3772e **Fagus,** beech, three sections of wood: t.s., r.l.s., t.l.s.
As320c **Acorus calamus,** sweet flag, rhizome t.s. showing storage of starch
As4112c **Iris,** leaf epidermis w.m. showing stomata in rows
As412c **Zea mays,** corn, monocot gramineous leaf t.s.
As4567c **Ammophila,** marram grass, xerophytic leaf t.s.
As459c **Ficus elastica,** India rubber plant, leaf with cystoliths t.s.
As465d **Utricularia,** bladderwort, w.m. of bladder
As470d **Nepenthes,** pitcher plant, t.s. of pitcher with digestive glands
As473d **Helleborus,** t.s. of a typical mesophytic dicot leaf for general study, showing large cellular structures
As451c **Fagus,** beech, t.s. of leaf bud showing developing leaves, meristematic tissue and midrib
As501e **Monocot and dicot flower buds** t.s. on same slide for comparison of the floral diagrams
As605d **Taraxacum,** dandelion, t.s. of composite flower showing tubular florets and ligulate florets
As606d **Papaver,** poppy, t.s. of flower shows parietal placentation
As613d **Solanum tuberosum,** potato, t.s. flower bud for floral diagram
As631d **Lycopersicum,** tomato, young berry type fruit t.s.
As638d **Phaseolus,** bean, t.s. of pod showing pericarp and seed
As619d **Capsella bursa pastoris,** shepherd's purse, l.s. of ovule with embryos in situ for general study
As630c **Mixed pollen types,** showing various forms of many different species
Gy125c **Pinus,** pine, older stem with annual rings, resin ducts t.s.
Gy135f **Pinus,** ovule l.s. showing archegonia,
Gy140e **Pinus,** mature embryo with endosperm t.s.

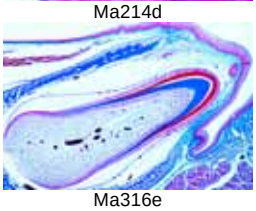
850E04 Histology and Human Science

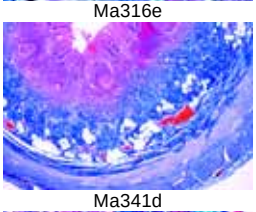
Ma118d **Cuboidal epithelium,** in sec. of kidney papilla
Ma127d **Mucous tissue,** t.s. of navel string (umbilical cord)
Ma131d **Yellow elastic cartilage,** section specially stained for elastic fibres
Ma138e **Bone development,** intracartilaginous ossification in foetal finger or toe, l.s.
Ma214d **Trachea** of cat or rabbit, t.s. with ciliated epithelium, cartilage etc.
Ma255e **Pituitary gland (hypophysis),** sag. l.s. of complete organ from cow or pig showing adeno- and neurohypophysis
Ma311d **Tooth** human, t.s. of crown
Ma316e **Tooth development,** medium stage l.s.
Ma337c **Duodenum** of cat or dog, t.s. showing Brunner's glands
Ma341d **Vermiform appendix**, human t.s.
Ho4368e **Uterus,** human, t.s. for general structure
Ho440e **Placenta,** human t.s. with chorion and blood vessels
Ma434d **Ovary**, sec. selected to show Corpus luteum
Ma636d **Human scalp**, horizontal sec. shows t.s. of hair follicles

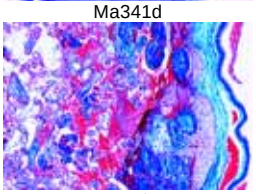

Ma131d

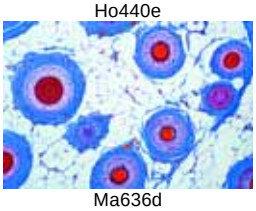

Ma138e

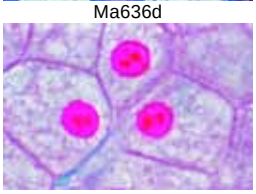

Ma214d

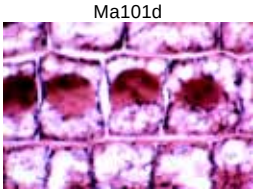

Ma316e

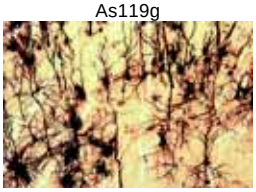

Ma341d

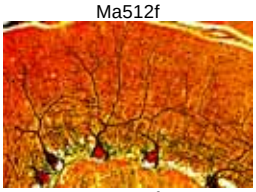

Ho440e


Ma636d


Ma101d

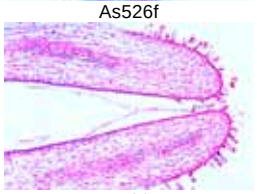

As119g

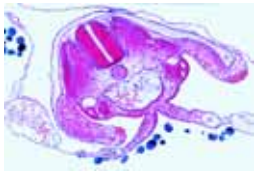

Ma512f


Ma515f


Ma552h


As526f


As530e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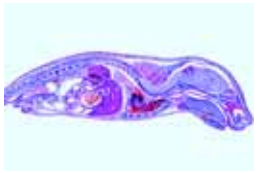
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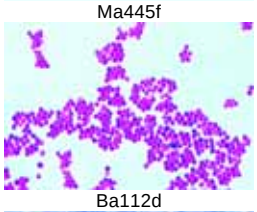
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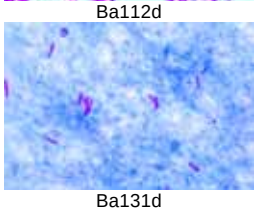
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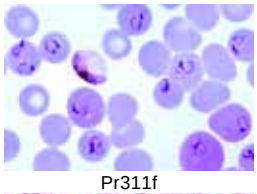
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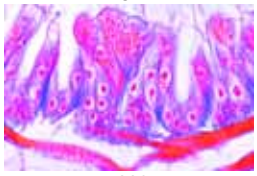

Pr330e


Ar1515e


Ne135f

850E05 Cytology and Genetics, Embryology

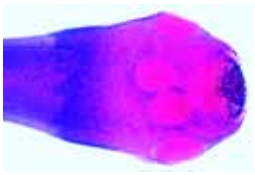
Ma101d **Simple animal cells** in sec. of salamander liver showing nuclei, cell membranes and cytoplasm. For general study of the animal cell
As1155g **Mitosis,** squash preparation from Allium root tip, shows intact mitotic stages, Feulgen stain *
As115d **Mitosis,** t.s. from Allium root tips showing all stages of plant mitosis in polar view
As119g **Mitochondria,** thin l.s. of Allium root tips specially fixed and stained to show the mitochondria clearly
Ma1045f **Barr bodies** (human sex chromatin) in smear from female squamous epithelium *
Ma512f **Cerebral cortex**, t.s. stained by Golgi's silver method to show the pyramidal cells
Ma515f **Cerebellum**, t.s. stained by Golgi's silver method to show the Purkinje cells
Ma528f **Spinal cord** of cat, t.s. silvered for nerve cells and fibres
Ma552h **Motor nerve endings,** muscle stained with gold chloride showing the motor end plates *
As526f **Lilium, anther** t.s., microspore mother cells in tetrad stage
As530e **Lilium,** l.s. through pistil and stigma with pollen and pollen tubes
Em718f **Chicken,** 72 hour, t.s. in region of heart and eyes
Ma445f **Embryo of mouse**, sagittal l.s. of entire specimen showing all organs in situ

850E06 Parasites and Pests

Ba112d **Staphylococcus aureus,** pus organism, smear from culture
Ba131d **Mycobacterium tuberculosis,** smear from culture
Ba136d **Corynebacterium diphtheriae,** smear from culture
Ba145d **Salmonella paratyphi,** paratyphoid fever, smear
Ba149d **Shigella dysenteriae,** causes bacillary dysentery, smear
Pr311f **Plasmodium falciparum,** malignant tertian malaria of man, blood smear with typical ring stages
Pr330e **Nosema apis,** honey bee dysentery, sec. of diseased intestine
Ar1515e **Varroa,** parasitic mite of bees w.m.
Ne131d **Ascaris lumbricoides,** roundworm, ova in faeces w.m.
Ne135f **Enterobius vermicularis (Oxyuris),** pin worm, w.m. of an adult specimen
Ne170g **Mixed ova** in faecal material. Slide containing eggs of parasitic worms of different species i.e. Ascaris, Ancylostoma, Trichuris, Taenia, Enterobius, Schistosoma *
Py324i **Taenia pisiformis,** tapeworm, w.m. of scolex with four suckers and hooklets *
Py3272t **Dipylidium caninum,** tapeworm, w.m. of scolex with suckers and rostellum, and immature proglottids *
Py337f **Echinococcus granulosus,** dog tapeworm (also harmful to human), cyst wall and scolices t.s.
In125f **Anopheles,** head and mouth parts of female w.m.
In124f **Anopheles,** malaria mosquito, head and mouth parts of male w.m.
In325f **Pediculus humanus,** louse, adult male or female w.m.

850E07 Ecology and Environment, Pests in Agriculture

4542e **Putrefactive bacteria** (Spirillum) from sludge poor in oxygen, smear
Ag1176c **Microcystis,** blue-green algae, irregular colonies growing in eutrophicated water, w.m.
4555d **Rotifers**, Rotatoria, small animals from putrid water
4559d **Skin of fish**, injured by water highly polluted with chemicals, t.s.
4560d **Skin ulcer** of an amphibian, t.s. caused by environmental influences
4586c **Constituents of humus soil**, strewn slide
4598b **Asbestos powder** (cancerogenous), strewn slide
In132e **Gipsy,** Lymantria, mouth parts of larva w.m.
In339c **Plant lice,** Aphidae sp., w.m. of several specimens
7502d **Potato black scab,** Synchytrium endobioticum, infected tissue
7503d **Downy mildew of grapes,** Plasmopara viticola, infected leaf, t.s.
7509d **Grape mildew,** Uncinula necator (Oidium Tuckeri), t.s.
7508d **Rose mildew,** Erysiphe pannosa, infected leaf with conidia t.s.
7510d **Gooseberry mildew,** Sphaerotheca mors uvae, perithecia on diseased fruit, t.s.
7512c **Monilia,** Sclerotinia fructigena, diseased fruit with conidia t.s.
Fu211d **Cornsmut,** Ustilago zeae, t.s. of pustule with spores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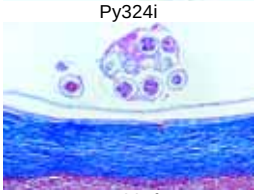
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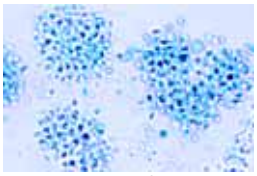
In124f


In325f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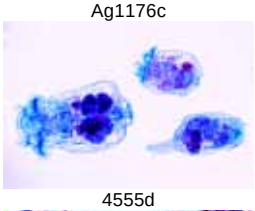
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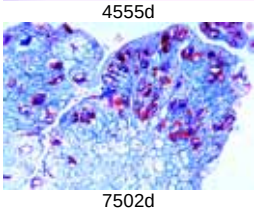
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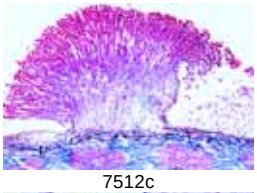
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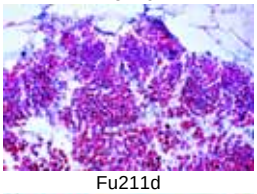
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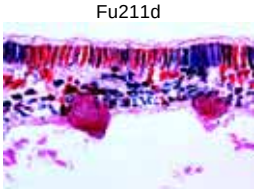
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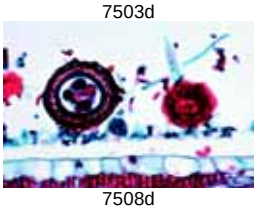
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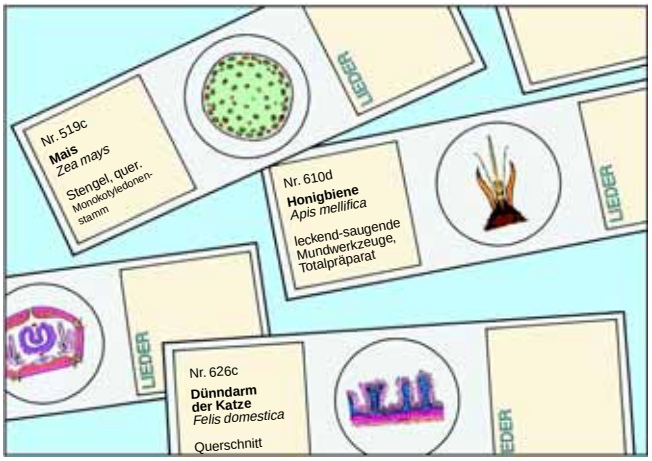
PREPARED MICROSCOPE SLIDES



The microscope is an essential instrument for modern biological studies in schools, colleges and universities. The well prepared microscope slide is a most important means of demonstration which can be examined at different magnifications so that increasing amount of detail can be resolved. In this sense it is inexhaustible.

LIEDER PREMIUM PREPARED MICROSCOPE SLIDES are made in our laboratories in Ludwigsburg/ Germany under rigourous scientific control. They are the product of long experience combined with the most up to date techniques.

The prerequisite for excellent preparations is good material, well preserved and fixed so that the finer structures are retained in as life-like a way as possible. Microtome sections are cut from this material by our highly skilled and experienced staff. They are of a thickness which will finally result in slides from which the maximum resolution of the structural components can be obtained.

Particular attention is paid to the staining technique and in each case the selected method for a particular specimen will ensure the best possible differentiation combined with clear definition and permanency of staining.

LIEDER prepared microscope slides are delivered on best glasses with fine ground edges of the size 26 x 76 mm (1'' x 3'') and are mailed in solid boxes of different sizes and prices. Further information is available in the enclosed price-list.

The procurement and processing of the original material for some preparations presents special problems. For this reason, these preparations can often only be manufactured in small quantities entailing a longer delivery period. This applies particularly to the preparations marked with an asterisk * in the catalogue, for which we can not guarantee delivery.

All the slides can be purchased either in complete sets or series or individually. We reserve the right to make minor alterations to the sets and compilations.

New sets for GEOLOGY consisting of rocks and minerals ground thin are listed on page 46. We will gladly make special offers for any slides or sets which are not listed in our catalogue.

Abbreviations:

t.s. transverse or cross section l.s. longitudinal section w.m. whole mount or entire specimen

NEW!

NEW! **Microscope Slides on CD-ROM**. The new amazing **CD-Program** for interactive learning and teaching in school and education comprise all necessary **photomicrographs of microscopic slides**, which can be observed by using **a „Virtual Microscope**". Beautiful **color drawings** matching the slides, with detailed **explanations** (please see pages 129 – 136).

INDEX: MICROSCOPE SLIDE SETS

PREPARED MICROSCOPE SLIDE SETS

Our supply of microscope slide sets has been considerably enlarged and rearranged. This list shall help you in the selection of your slides. We offer:

- **School sets**. Conceived as structural series, they give a survey of those fields of biology which are of interest for teaching in schools. The sets are also component of our „Multimedia Program of Microscopic Biology".
- **Comprehensive sets** are bigger and sum up larger fields. Basic and supplementary sets add to each other and treat the same topic.
- **Detail sets** are usually smaller and treat special subjects in detail, e.g. systems of organs, representative and typical members of important groups of animals and plants, physiological and ecological subjects.

Every prepared microscope slide is unique and individually crafted by our well-trained technicians under rigorous scientific control. We therefore wish to point out that delivered products may differ from the pictures in this catalog due to natural variation of the basic raw materials and applied preparation and staining methods.

Accompanying Brochures for Microscope Slide Series

In response to recurrent requests, we have started to prepare and release accompanying texts for a large part of our microscope slide series.

These explanatory brochures will be provided free of charge – as soon as they are released – along with every order for a complete series. They are intended to help you make more effective use of our teaching material both in the classroom and during individual study. They are depictured with photo-micrographs, drawings or diagrams.

The texts provide a description of the morphological structures involved, making it considerably easier to look for and find the relevant spots in the microscope slides. They also furnish information regarding systematic and physiological relationships and general biological principles, as well as stimulating classroom interpretation and didactic use of the observations made, without having to resort to the exact composition of the corresponding microscope slides in all cases. This is particularly so in the case of the microscope slide series, whose compilation may present minor differences with the version described in the catalogue.

Owners of previously acquired Microscope Slide Series can back-order the accompanying texts.

SCHOOL SETS FOR GENERAL BIOLOGY

Our school sets A, B, C, and D are arranged to cover in detail all fields of biology. Each microscope slide is carefully selected and checked for its usefulness and value in instruction. Those slides were preferred which are typical of the corresponding group of plants or animals.
All of the four series are arranged in taxonomic order and composed in such a way that one adds to the other and helps to broaden the knowledge attained by teaching the previous one.

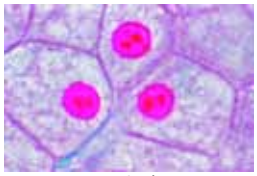
The series are also part of our comprehensive MULTIMEDIA PROGRAM FOR GENERAL BIOLOGY. For list of contents and detailed description of the series A, B, C, D please see page 4 – 7 in this catalogue.

No. 500 **School Set A for General Biology, Elementary Set** – 25 microscope slides

No. 600 **School Set B for General Biology, Supplementary Set to A** – 50 microscope slides

No. 700 **School Set C for General Biology, Supplementary Set to A and B** – 50 microscope slides

No. 750 **School Set D for General Biology, Supplementary Set to A, B and C** – 50 microscope slides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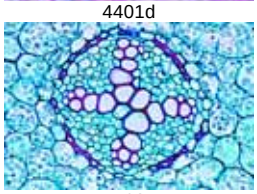
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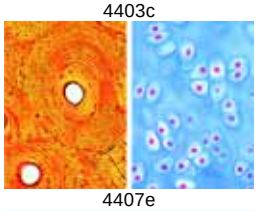
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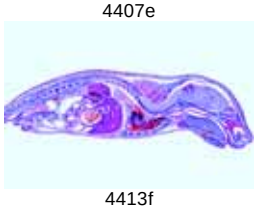
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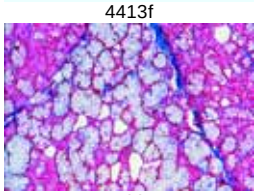
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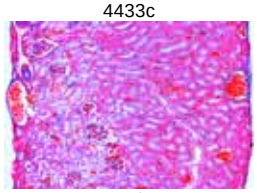
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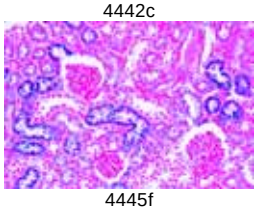
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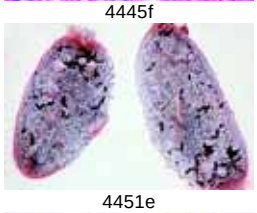
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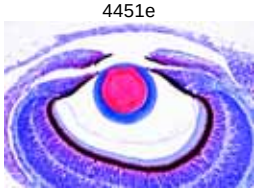
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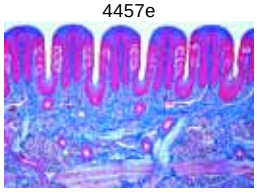
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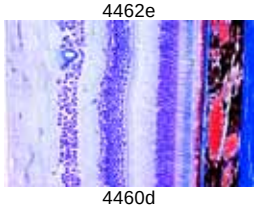

4460d

SERIES FOR SECONDARY SCHOOLS

No. 4410 Set No. I. Cells, Tissues and Organs

13 Microscope Slides.
With depictured accompanying brochure

4401d Simple animal cells in sec. of salamander liver
4402d Mitosis, l.s. from Allium root tips showing all stages of mitosis
4403c Ranunculus, buttercup, t.s. of a typical dicot root
4404e Monocot and dicot stems, two t.s. for comparison
4405c Syringa, lilac, t.s. of a typical mesophytic dicot leaf
4406c Columnar epithelium, t.s of blind gut from rabbit
4407e Bone and hyaline cartilage, t.s.
4408d Striated muscles of mammal, l.s.
4409d Smooth muscles of mammal, l.s. and t.s.
4410c Lung of cat, t.s.
4411c Human blood smear
4412d Human body skin, l.s.
4413f Young mouse, sag. s. of entire specimen for all structures

No. 4430 Set No. II. Metabolism

15 Microscope Slides.
With depictured accompanying brochure

4431e Hydra, fresh water polyp, t.s. with ectoderm and entoderm
4432d Carabus, ground beetle, gizzard
4433c Salivary gland of cat, t.s.
4434c Esophagus of cat, t.s.
4435d Fundic stomach of cat, t.s.
4436c Small intestine of cat, t.s. routine stained
4437f Small intestine of cat, t.s. blood vessels injected
4438d Appendix of human, t.s.
4439c Large intestine of cat, t.s.
4440c Liver of pig, t.s.
4441d Malpighian tubules of insect, t.s.
4442c Primordial kidney (mesonephros) of frog, t.s.
4443c Hind-kidney (metanephros) of rabbit, t.s.
4444d Kidney of mouse with pelvis, l.s.
4445f Kidney of mouse, t.s. injected with trypane blue to demonstrate the storage

No. 4450 Set No. III. Organs of Sense

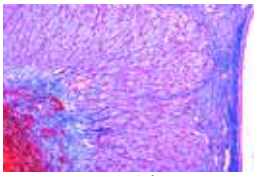
16 Microscope Slides
With depictured accompanying brochure

4451e Paramecium, silvered to show the neuroformative system
4452d Lumbricus, earthworm, t.s. with ventral nerve cord
4453e Insect brain, frontal l.s.
4454e Planaria, sec. through ocelli
4455f Haliotis, marine snail, pinhole camera eye l.s.
4456e Helix, snail, eye l.s. lens, cornea, pigmented and visual cells
4457e Alloteuthis, cuttlefish, camera eye l.s.
4458e Compound eye of insect, l.s.
4459e Young rat, head with eyes t.s. for general study
4460d Retina of cat, t.s. for finer detail of rods and cones
4461e Internal ear (cochlea) from guinea pig, l.s.
4462e Taste buds from tongue of rabbit, t.s.
4463e Peripheral nerve fibres of osmic acid fixed material showing Ranvier's nodes and medullary sheaths
4464c Spinal cord of cat t.s. showing large motor nerve cells
4465c Cerebellum of cat, t.s. routine stained
4466f Cerebrum of cat, t.s. silvered to show the pyramid cells

No. 4470 Set No. IV. Hormone Organs and Hormonal Functions

7 Microscope Slides.
With depictured accompanying brochure

4471d Ovary of cat, with follicles and corpus luteum t.s.
4472d Testis of mouse, t.s. showing Leydig's cells
4473d Adrenal (suprarenal) gland of cat, t.s. cortex and medulla
4474d Pancreas of cat, t.s. showing islets of Langerhans,
4475f Thyroid gland showing normal function t.s.
4476f Thyroid gland showing over-activity of the gland t.s.
4477f Hypophysis (pituitary body) sagittal l.s. with adeno- and neurohypophysis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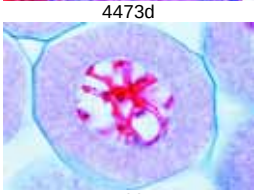
No. 4480 Set No. V. Genetics, Reproduction and Embryology

19 Microscope Slides.
With depictured accompanying brochure

4481g DNA and RNA stained in different colours, l.s. onion root tips
4482e Lilium, young anthers, meiosis, early prophase stage, t.s.
4483e Lilium, young anthers, meiosis, diplotene stage, t.s.
4484d Lilium, ovary with embryosac t.s.
4485d Capsella bursa pastoris, l.s. of embryos
4486h Human chromosomes, spread in the metaphase stage, w.m.
4487g Lamp brush chromosomes
4488e Hydra with testis t.s., sexual reproduction
4489e Hydra with ovaries t.s., sexual reproduction
4490f Tapeworm (Taenia), mature proglottid w.m.
4491f Ascaris embryology, sec. of uteri showing maturation of ova
4492e Cockchafer (Melolontha), ovaries t.s.
4493d Frog (Rana), testis t.s. showing spermatogenesis
4494f Frog (Rana) embryology: four cell stage t.s.
4495f Frog (Rana) embryology: morula stage l.s.
4496f Frog (Rana) embryology: neurula stage t.s.
4497f Chicken (Gallus) embryology: 24 hour t.s.
4498f Chicken (Gallus) embryology: 72 hour t.s.
4499d Mouse, uterus containing embryo t.s.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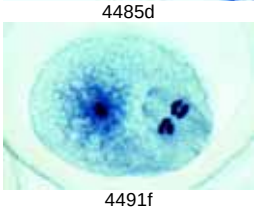
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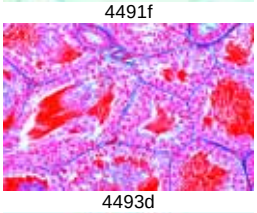

4493d


4496f

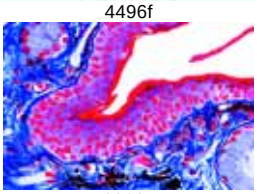
HISTOLOGY AND HUMAN SCIENCE

COMPREHENSIVE SETS

No. 2300 Histology of Vertebrata excluding Mammalia

Fishes, Amphibians, Reptiles, Birds
25 Microscope Slides.
With depictured accompanying brochure

2301c Cyprinus, carp, liver t.s.
2302c Cyprinus, carp, testis t.s. showing spermatozoa
2303c Cyprinus, carp, small intestine t.s.
2304c Cyprinus, carp, kidney t.s.
2305c Cyprinus, carp, gills t.s.
2306c Cyprinus, carp, skin t.s.
2307f Fish scales, cycloid, ctenoid, and placoid scales w.m.
2308c Salamandra, skin with poison glands t.s.
2309d Salamandra, t.s. through thorax and forelegs of larva
2310c Rana, frog, lung t.s., a simple bag-like lung
2311c Rana, frog, blood smear, with nucleated corpuscles
2312c Rana, frog, stomach t.s.
2313c Rana, frog, large intestine t.s., with goblet cells
2314c Rana, frog, liver t.s. showing bile ducts
2315c Rana, frog, kidney t.s.
2316c Rana, frog, testis t.s. to show spermatogenesis
2317c Rana, frog, skin t.s. showing glands
2318d Lacerta, lizard, skin with scales, sagittal l.s.
2319c Gallus, chicken, blood smear, with nucleate red corpuscles
2320c Gallus, chicken, lung t.s.
2321c Gallus, chicken, glandular stomach t.s.
2322d Gallus, chicken, ovary with developing eggs t.s.
2323d Gallus, chicken, skin with developing feathers t.s. or l.s.
2324c Gallus, chicken, unfeathered skin of foot t.s.
2325c Gallus, chicken, wing and down feathers w.m.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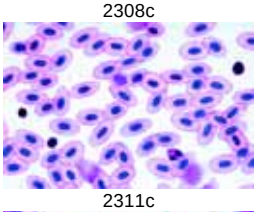
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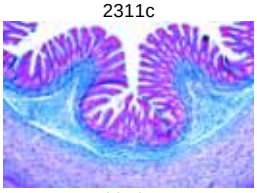
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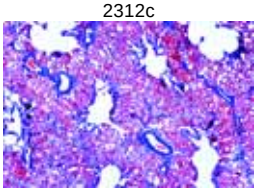
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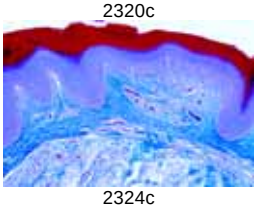
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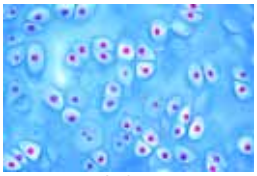
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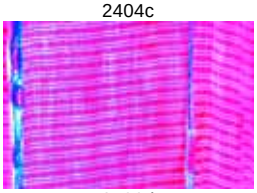
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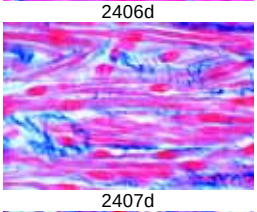
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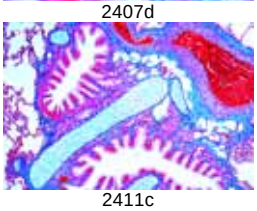
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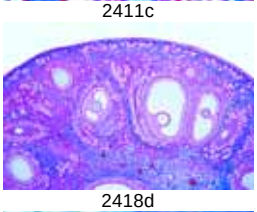
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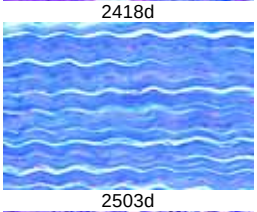
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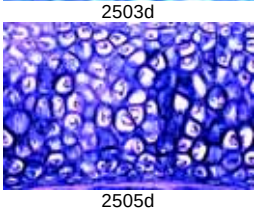
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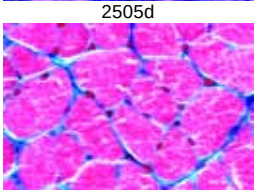
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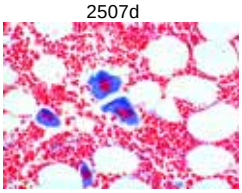
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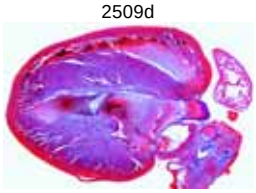
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2526c

No. 2400 Histology of Mammalia Elementary Set

Tissues, circulatory system, respiratory system, digestive system, urogentinal system, nervous system, organs of sense, skin. – 25 Microscope Slides
With depictured accompanying brochure

2401c Squamous epithelium from human cheek, isolated cells
2402e Fibrous connective tissue, w.m. from pig mesentery
2403e Adipose tissue of mammal, fat stained
2404c Hyaline cartilage of calf, t.s.
2405e Compact bone of cow, t.s. special stained to show cells and canaliculi
2406d Striated (skeletal) muscles of cat, l.s. stained for striations
2407d Smooth (involuntary) muscles of cat, t.s. and l.s. on one slide
2408c Blood smear, human. Giemsa or Wright stain
2409d Artery of cat or rabbit, t.s.
2410d Vein of cat or rabbit, t.s.
2411c Lung of cat, t.s.
2412c Pancreas of pig with islets of Langerhans t.s.
2413c Tongue of cat, t.s. with cornified papillae
2414d Stomach of cat, fundic region t.s.
2415c Small intestine of cat or rabbit, t.s.
2416d Liver of pig, t.s.
2417d Kidney of cat, t.s. of cortex and medulla showing Malpighian corpuscles
2418d Ovary of rabbit, t.s., showing developing follicles in all stages
2419d Testis of mouse, t.s., showing spermatogenesis, carefully stained
2420d Cerebrum of cat, t.s.
2421d Cerebellum of cat, t.s.
2422c Spinal cord of cat, t.s.
2423e Nerve fibres isolated, special stained to show Ranvier's nodes
2424e Motor nerve cells, smear from spinal cord
2425d Scalp, human, l.s. of hair follicles

No. 2500 Histology of Mammalia, Supplementary Set

Complementary to Set No. 2400
50 Microscope Slides.
With depictured accompanying brochure

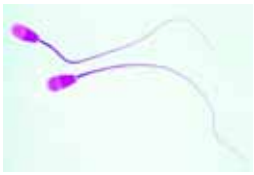
2501c Columnar epithelium of mammal
2502c Ciliated epithelium of mammal
2503d White fibrous connecrtive tissue, l.s. of tendon of cow
2504d Mucous tissue, t.s. of navel string
2505d Elastic cartilage of mammal, sec. stained for elastic fibres
2506d Bone development, l.s. of foetal finger showing all stages of development
2507d Striated (skeletal) muscle of cat, t.s. of muscle bundle
2508c Heart (cardiac) muscle of cat, l.s. and t.s.
2509d Red bone marrow of cow, sec. or smear
2510f Heart of mouse, sagittal l.s.
2511d Trachea of rabbit, t.s.
2512c Spleen of cat, t.s.
2513c Lymph gland of cat or rabbit, t.s.
2514d Adrenal (suprarenal) gland of rabbit, t.s.
2515e Epiphysis (pineal body) of cow or pig, t.s.
2516e Hypophysis (pituitary body) of cow or pig, l.s.
2517d Thyroid gland of cow, t.s.
2518d Thymus gland of cow, t.s. with Hassall bodies
2519d Parotid gland of cat or dog, t.s. of a pure serous gland
2520d Tooth, t.s. through root or crown
2521c Esophagus of rabbit, t.s.
2522c Vermiform appendix of rabbit, t.s.
2523c Large intestine (colon) of rabbit, t.s. stained for mucous cells
2524c Gall bladder of rabbit, t.s.
2525f Kidney t.s., vital stained with trypane blue showing storage
2526c Ureter of rabbit, t.s.
2527c Urinary bladder of rabbit, t.s.
2528d Ovary with corpus luteum t.s.
2529c Fallopian tube of pig, t.s.
2530c Uterus of rabbit, t.s.
2531c Placenta of rabbit, t.s.
2532d Uterus of rat, containing embryo t.s.
2533d Vagina of rabbit, t.s.
2534c Epididymis of rabbit, t.s.
2535d Sperm smear of bull
2536d Penis of rabbit, t.s.
2537d Prostate gland of pig, t.s.
2538e Brain of mouse, l.s. of entire organ showing all parts
2539f Cerebellum, t.s. silvered or Golgi stained to show the Purkinje cells
2540e Sympathetic ganglion, t.s. with multipolar nerve cells
2541c Peripheral nerve of cat or rabbit, l.s.
2542e Eye of cat, anterior part with cornea, iris, ciliary body, t.s.
2543e Eye of cat, posterior part with retina t.s.
2544e Cochlea (internal ear) of Guinea pig, l.s. shows organ of Corti
2545d Olfactory region of dog or rabbit, t.s.
2546e Taste buds in tongue of rabbit (Papilla foliata), t.s.
2547d Skin of human palm, t.s. showing cornified layers, sweat glands
2548d Scalp, human, section showing t.s. of hair follicles and sebaceous glands
2549d Nail development of embryo, sagittal l.s.
2550c Mammary gland of cow, t.s. showing the active stage

No. 9000 Normal Human Histology Basic Set

40 Microscope Slides.
With depictured accompanying brochure

When compiling the series, basically only top quality, histologically fixed material was used for the preparation of the slides. The cutting thickness of the microtome sections is normally 6 – 8 µm. The use of special staining methods guarantees a clear, multicoloured representation of all tissue structures. This slide series occupies a special position due both to the quality of the original material and also with regard to the carefulness of the preparation.

9001c Squamous epithelium, human, isolated cells
9002f Areolar connective tissue, human w.m.
9003f Hyaline cartilage, human t.s.
9004f Compact bone, human t.s.
9005f Striated muscle, human l.s.
9006f Heart muscle, human l.s. and t.s.
9007f Artery, human t.s.
9008f Vein, human t.s.
9009f Lung, human t.s.
9010c Blood smear, human
9011f Spleen, human t.s.
9012f Thyroid gland, human t.s.
9013f Thymus gland from human child t.s.
9014f Tongue, human t.s.
9015f Tooth, human l.s.
9016f Parotid, human gland t.s.
9017f Esophagus, human t.s.
9018f Stomach, human, fundic region t.s.
9019f Duodenum, human t.s. (small intestine)
9020f Colon, human t.s. (large intestine)
9021f Pancreas, human t.s.
9022f Liver, human t.s.
9023e Vermiform appendix, human t.s.
9024f Kidney, human t.s.
9025f Adrenal (suprarenal) gland, human t.s.
9026f Ovary, human t.s.
9027f Uterus, human t.s.
9028f Placenta, human t.s.
9029f Testis, human t.s.
9030f Epididymis, human t.s.
9031f Cerebrum, human t.s.
9032f Cerebellum, human t.s.
9033f Spinal cord, human t.s.
9034f Sympathetic ganglion, human t.s.
9035e Skin of palm, human t.s.
9036e Scalp, human, l.s. of hair follicles
9037e Scalp, human, t.s. of hair follicles
9038f Retina, human t.s.
9039e Finger tip from fetus with nail development l.s.
9040f Mammary gland, human t.s.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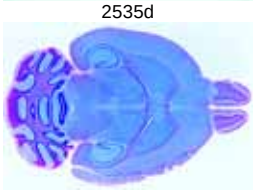
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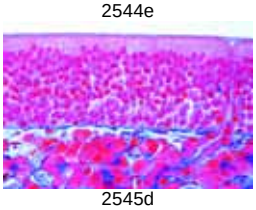
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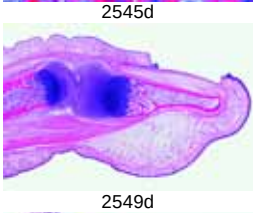
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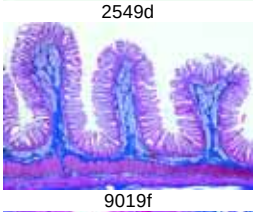
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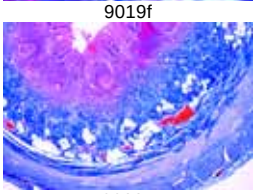
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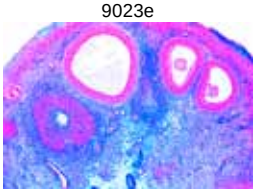
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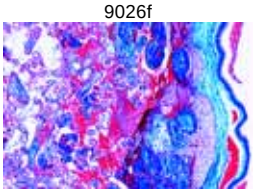
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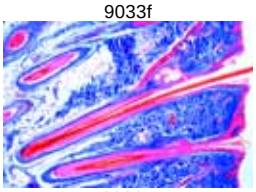
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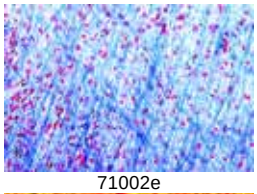
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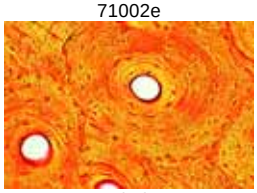
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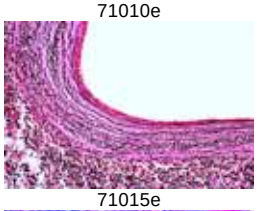
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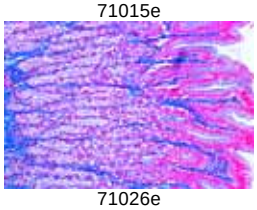
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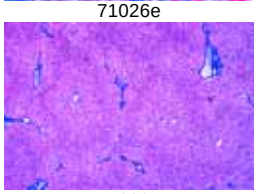
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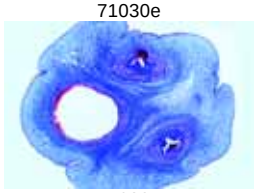
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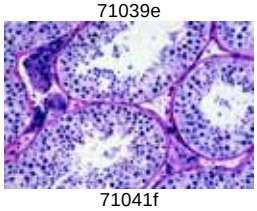
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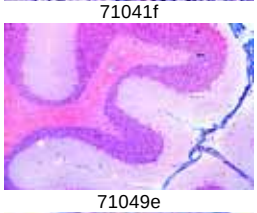
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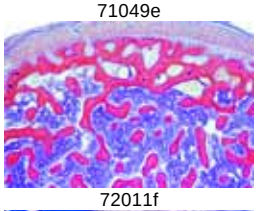
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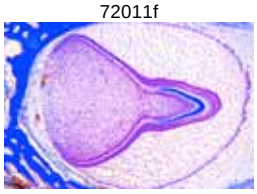
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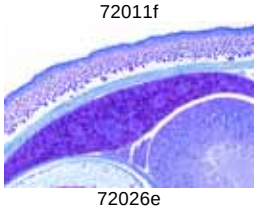
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No. 71000 Human Histology, Large Set Part I.

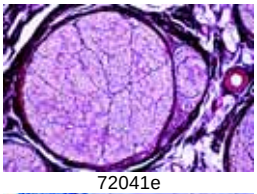
50 Microscope Slides
With depictured accompanying brochure

71001c	Isolated squamous epithelium, human
71002e	Connective tissue, human, sec.
71003e	Columnar epithelium, human gall bladder, t.s.
71004e	Ciliated epithelium, human trachea, t.s.
71005e	Smooth muscles, human, l.s. and t.s.
71006e	Striated muscles, human, l.s.
71007e	Heart muscles, human, l.s. and t.s.
71008e	Hyaline cartilage, human, sec.
71009e	Elastic cartilage of epiglottis, human, t.s.
71010e	Bone, compact substance, human, t.s.
71011e	White fibrous tissue (tendon), human, l.s.
71012e	Red bone marrow, human, t.s.
71013d	Scalp, human, l.s. of hair follicles
71014e	Artery, human, t.s.
71015e	Vein, human, t.s.
71016c	Blood smear, human, Giemsa stain
71017e	Lung, human, t.s.
71018f	Larynx of human foetus, t.s.
71019e	Lymph gland, human, t.s.
71020e	Thyroid gland, human, t.s.
71021f	Pituitary gland, human, t.s.
71022e	Spleen, human, t.s.
71023e	Tongue, human, t.s.
71024e	Oesophagus, human, t.s.
71025e	Sublingual gland, human, t.s.
71026e	Stomach, pyloric region, human, t.s.
71027e	Pancreas, human, t.s.
71028e	Small intestine, human, t.s.
71029e	Large intestine, human, t.s.
71030e	Liver, human, t.s.
71031e	Kidney, human, t.s.
71032f	Adrenal gland, human, t.s.
71033e	Ureter, human, t.s.
71034e	Urinary bladder, human, t.s.
71035f	Ovary, human, t.s.
71036e	Uterus, human, t.s.
71037e	Uterine tube, human, t.s.
71038e	Placenta, human, t.s.
71039e	Umbilical cord, human, t.s.
71040e	Mammary gland, human, sec.
71041f	Testis, human, t.s.
71042e	Epididymis, human, t.s.
71043f	Olfactory epithelium, human, t.s.
71044f	Retina, human, t.s.
71045g	Internal ear, human foetal, t.s.
71046f	Touch corpuscles in human skin, t.s.
71047e	Nerve, human, l.s.
71048e	Spinal cord, human, t.s.
71049e	Cerebellum, human, t.s.
71050e	Cerebrum, cortex, human, t.s.

No. 72000 Human Histology, Large Set Part II.

50 Microscope Slide
With depictured accompanying brochure

72001e	Soft palate, human t.s.
72002e	Adipose tissue, human, sec. stained for fat
72003f	White fibrous cartilage, human intervertebral disc, sec.
72004e	Striated (skeletal) muscle, human t.s.
72005e	Spongy (cancellous) bone, human t.s.
72006e	Bone development (intermembranous), vertical l.s. of foetal skull-cap (cranial bone)
72007e	Bone development (intracartilaginous), l.s. of foetal finger
72008e	Joint of human foetus, l.s.
72009e	Tooth, human, t.s. of crown
72010f	Tooth, human, complete l.s.
72011f	Tooth development from human foetus, medium stage l.s.
72012e	Aorta, human, t.s. routine stained
72013e	Trachea from human fetus t.s.
72014f	Thymus from human child, t.s.
72015f	Parathyroid gland (Gl. parathyreoidea), human t.s.
72016e	Tonsil (Tonsilla palatina), human t.s.
72017e	Parotid gland (Gl. parotis), human t.s.
72018e	Submaxillary gland (Gl. submandibularis), human t.s.
72019e	Stomach, fundic region, human t.s.
72020e	Stomach, cardiac region, human t.s.
72021e	Jejunum, human t.s.
72022f	Small intestine (Duodenum) t.s. colouring of goblet cells, PAS-HE
72023e	Vermiform appendix, human t.s.
72024e	Rectum, human t.s.
72025e	Gall bladder, human t.s.
72026e	Liver of human foetus sec., developing blood cells
72027e	Urethra, human, t.s.
72028e	Seminal vesicle (Gl. vesiculosa), human t.s.
72029e	Spermatic cord (Ductus deferens), human t.s.
72030e	Prostate, human, t.s.
72031e	Sperm smear, human
72032f	Corpus luteum in t.s. of human ovary
72033e	Vagina, human t.s.
72034g	Cerebral cortex, human, t.s. silvered (Golgi or Palmgren)
72035g	Cerebral cortex, human, t.s. stained for neuroglial cells after Held
72036g	Cerebellum, human, t.s. silvered (Golgi or Palmgren)
72037f	Thalamus, human, stained after Klüver - Barrera
72038f	Medulla oblongata, human, t.s. routine stained
72039g	Spinal cord, human, t.s. silvered (Golgi or Palmgren)
72040f	Sympathetic ganglion, human t.s. routine stained
72041e	Peripheral nerve, human t.s.
72042e	Optic nerve, human t.s.
72043e	Cornea from eye, human t.s.
72044e	Eyelid, human, t.s.
72045e	Skin from finger tip, human, vertical l.s.
72046d	Scalp, human, horizontal l.s. shows t.s. of hair follicles,
72047e	Nail development, sagittal l.s. finger tip of human foetus
72048h	Human chromosomes in smear from culture of blood, male
72049i	Human chromosomes in smear from culture of blood, female
72050f	Barr bodies (human sex chromatin) in smear from female squamous epithelium *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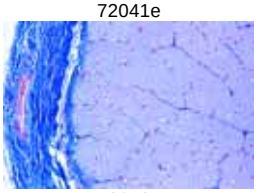
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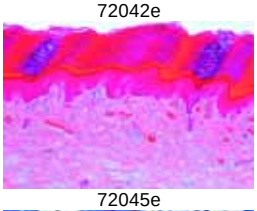
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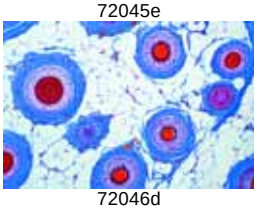
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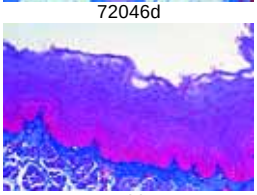
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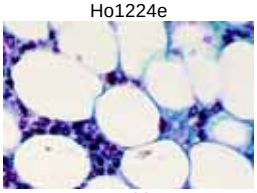
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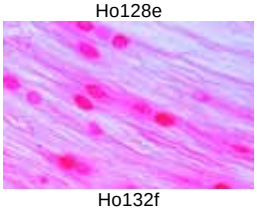
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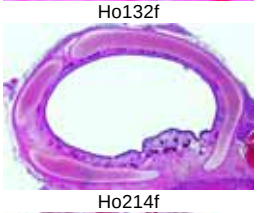
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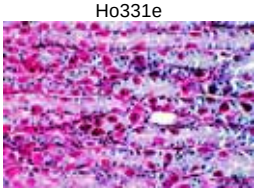
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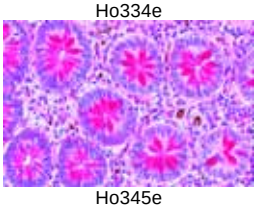
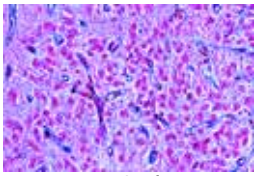

Ho345e

No. 79500 Normal Human Histology, Special Complete Set of 100 slides.

(Staining technology mostly with Hematoxylin-Eosin)
With depictured accompanying brochure

	Tissues
Ho111c	Squamous epithelium, isolated cells from human mouth, smear
Ho1224e	Stratified, non-cornified squamous epithelium, section of oesophagus
Ho114e	Simple columnar epithelium, in sec. of secreting tubules of human kidney
Ho116e	Simple ciliated columnar epithelium, in t.s. of oviduct
Ho118e	Simple cuboidal epithelium, in sec. of human thyroid gland
Ho120e	Transitional epithelium, in sec. of human bladder
Ho1202e	Glandular epithelium, in sec. of human colon with unicellular mucous glands
Ho121e	Areolar connective tissue, human w.m.
Ho126d	Embryonic connective tissue from human foetus, sec.
Ho128e	Adipose tissue, human, sec. fat removed to show the cells
Ho130e	Hyaline cartilage, human t.s.
Ho131e	Yellow elastic cartilage, human, sec. stained for elastic fibres
Ho135e	Compact bone, human t.s.
Ho136e	Compact bone, human l.s.
Ho138e	Bone development (intracartilaginous), l.s. of foetal finger
Ho139e	Bone development (intermembranous), vertical l.s. of foetal skull-cap (cranial bone)
Ho151e	Striated (skeletal) muscle, human l.s.
Ho152e	Striated (skeletal) muscle, human t.s.
Ho154e	Smooth (involuntary) muscle, human l.s. and t.s.
Ho156e	Heart (cardiac) muscle, human l.s. and t.s.
	Respiratory and circulatory systems
Ho172e	Artery, human, t.s. stained for elastic fibres
Ho174e	Vein, human, t.s. stained for elastic fibres
Ho176e	Aorta, human, t.s. routine stained
Ho1802c	Blood smear, human, Wright's stain
Ho214f	Trachea, human t.s.
Ho215f	Trachea, human l.s.
Ho2152e	Trachea from human fetus t.s.
Ho216e	Lung, human, sec. routine stained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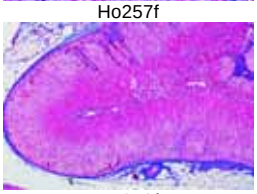
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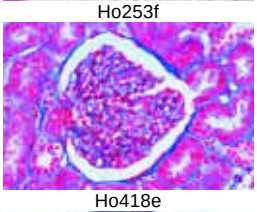
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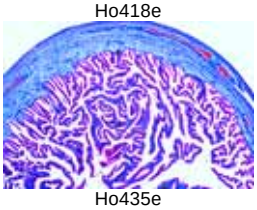
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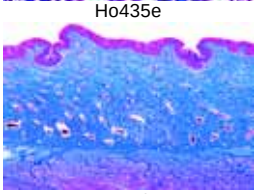
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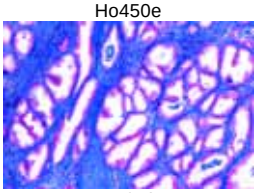
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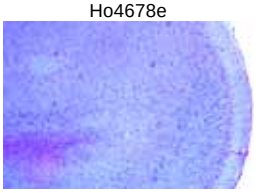
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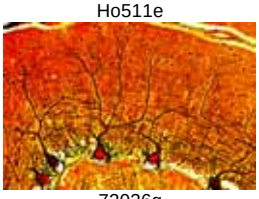
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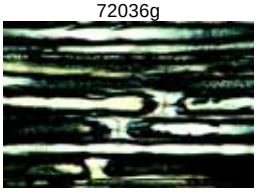
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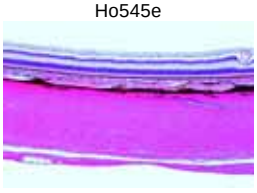
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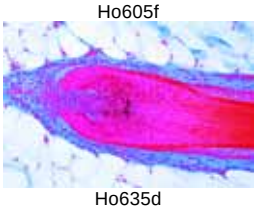

Ho635d

Ho219e Lung from human foetus, sec.

Lymphatic system

Ho231e Lymphnode, human t.s.
Ho233e Tonsil (Tonsilla palatina), human t.s.
Ho234e Spleen, human t.s.
Ho236e Bone marrow, human t.s.
Ho238f Thymus from human child, t.s.

Endocrine glands

Ho252e Thyroid gland (Gl. thyreoidea), human t.s.
Ho253f Adrenal gland (Gl. suprarenalis), human t.s.
Ho255f Pituitary gland (Hypophysis), human t.s.

Digestive system

Ho310f Lip, human vertical l.s.
Ho311e Tooth, human, t.s. of crown
Ho313f Tooth, human, l.s. of entire specimen
Ho316f Tooth development from human foetus, medium stage l.s.
Ho3234f Tongue, human, sec. with filiform papillae
Ho3235f Tongue, human, sec. with fungiform papillae
Ho326e Soft palate, human t.s.
Ho331e Oesophagus, human t.s.
Ho334e Stomach, fundic region, human t.s.
Ho337f Duodenum, human t.s.
Ho338e Jejunum, human t.s.
Ho339e Ileum, human t.s.
Ho341e Vermiform appendix, human t.s.
Ho345e Colon, human t.s.
Ho351e Parotid gland (Gl. parotis), human t.s.
Ho352e Submaxillary gland (Gl. submandibularis), human t.s.
Ho354e Pancreas, human t.s.
Ho357e Liver, human t.s.
Ho362e Gall bladder, human t.s.

Excretory system

Ho411e Kidney, human t.s.
Ho418e Renal papilla, human t.s.
Ho419e Kidney from human foetus, t.s.
Ho421e Ureter, human t.s.
Ho422e Urinary bladder, human t.s.
Ho423e Urethra, prostatic part, human t.s.

Reproductive system

Ho429f Ovary, mature, human t.s.
Ho434f Ovary with Corpus luteum, human t.s.
Ho435e Oviduct (fallopian tube), t.s. in region of ampulla
Ho437f Uterus, human, proliferative stage t.s.
Ho4395f Uterus, human, pregnant (gravid), t.s.
Ho440e Placenta, human t.s.
Ho4404e Umbilical cord (navel string), human t.s.
Ho450e Vagina, human t.s.
Ho460f Testis from human child, t.s.
Ho461f Testis from human adult, mature stage t.s.
Ho463e Epididymis, human t.s.
Ho464e Sperm smear, human
Ho466e Spermatic cord (Ductus deferens), human t.s.
Ho467e Seminal vesicle (Gl. vesiculosa), human t.s.
Ho4678e Prostata of young man, t.s.

Nervous system and organs of sense

Ho511e Cerebral cortex, human, t.s. routine stained
Ho514e Cerebellum, human, t.s. routine stained
Ho5155e Cerebellum from human foetus, t.s. routine stained
Ho516g Cerebrum and cerebellum composite slide, human, t.s. routine stained
Ho525g Medulla oblongata, human, t.s. routine stained
Ho5254f Medulla oblongata from human foetus, t.s.
Ho531e Spinal cord, human t.s. of cervical region
Ho532e Spinal cord, human t.s. of thoracic region
Ho533e Spinal cord, human t.s. of lumbar region
Ho5335f Spinal cord, human l.s. routine stained
Ho543f Spinal ganglion, human t.s.
Ho544e Peripheral nerve, human t.s.
Ho545e Peripheral nerve, human l.s.
Ho549e Optic nerve, human t.s.
Ho605f Retina from eye, t.s.
Ho612f Olfactory epithelium, human t.s.

Integument (skin)

Ho633e Skin from palm, human, vertical l.s.
Ho6334d Body skin, white, vertical l.s.
Ho635d Scalp, vertical l.s. shows l.s. of hair follicles, human
Ho636d Scalp, horizontal l.s. shows t.s. of hair follicles, human
Ho637e Scalp of human foetus, vertical l.s. shows l.s. of hairs
Ho638e Finger tip of human foetus, sagittal l.s. showing nail development
Ho645f Mammary gland, active, human t.s.

No. 9200 Human Pathology, Basic Set

50 Microscope Slides
With depictured accompanying brochure

Abnormal alterations of cells and tissues

9201e Parenchymatous and fatty degeneration of liver
9202e Hemosiderosis of liver
9203e Glycogenosis of kidney
9204e Pigmentary cirrhosis of liver
9205e Necrotic esophagitis
9206e Foreign body granulome with hemosiderin and giant cells
9207e Tonsillitis
9208e Liver cirrhosis

Injury of circulatory organs and blood-forming organs

9209e Adiposis of heart
9210e Cardiac callosity
9211e Myocarditis chronica acute recidivans
9212e Organized venous thrombosis of muscle
9213e Infarct of spleen
9214e Chronic myeloid leukemia of spleen
9215g Malarial melanemia of spleen

Pathologic alterations of lung and liver, tuberculosis, pneumonia

9216e Anthracosis of lung
9217e Hemorrhagic infarct of lung
9218e Influenzal pneumonia
9219e Croupous pneumonia
9220e Chronic pneumonia
9221e Necrotic (cheesy) pneumonia
9222e Miliary tuberculosis of lung
9223e Chronic tuberculous pulmonary cavity with bacteria
9224e Icterus hepatis

Reaction of kidney after arteriosclerosis, disturbance of metabolism, and inflammation; colitis

9225e Glomerular atrophy of kidney
9226e Amyloid degeneration of kidney
9227e Acute hemorrhagic nephritis
9228e Chronic glomerulonephritis
9229e Septic embolic nephritis
9230e Colitis dysenterica Shiga-Kruse

Specific inflammations after infection with syphilis spirochaetes

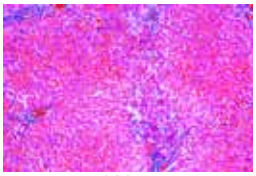
9231g Congenital syphilis of liver, spirochaetes silvered after Levaditi
9232f Congenital syphilis of liver (feuerstein liver), routine stained
9233f Gumma of testicle

Progressive alteration of injured tissues and organs (Hypertrophy and hyperplasia)

9234e Atheroma of head
9235e Goiter of thyroid gland (Struma colloides)
9236f Undescended testicle showing hyperplasia of Leydig's cells
9237e Hypertrophy of prostate
9238f Giant cell sarcoma of maxilla

Benignant and malignant tumors

9239e Chondroma of pubic bone
9240e Myoma of uterus
9241e Fibroadenoma of breast
9242e Fibroepithelial mixed tumor of parotid gland
9243e Melanosarcoma of skin
9244e Spindle cell sarcoma
9245e Carcinoma cervicis uteri
9246e Sarcoma of testicle
9247e Cystadenoma papilliferum of ovary
9248e Gelatinous carcinoma of rectum
9249e Lymphosarcoma mediastini
9250e Metastatic carcinoma of liver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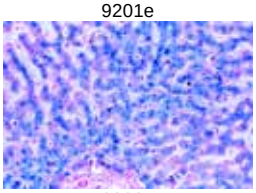
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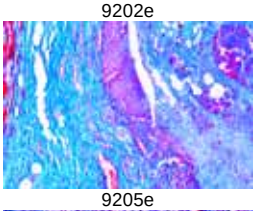
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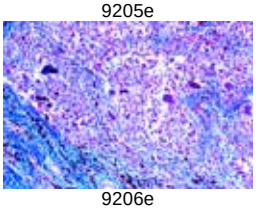
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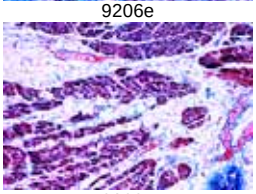
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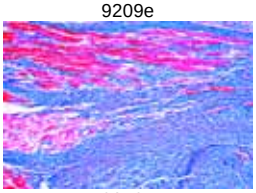
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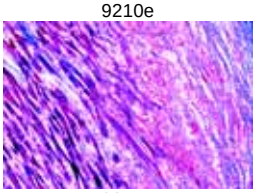
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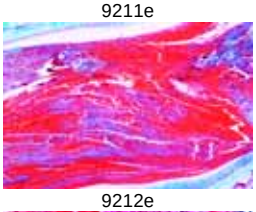
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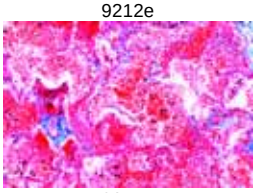
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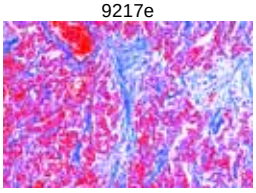
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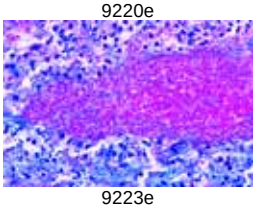
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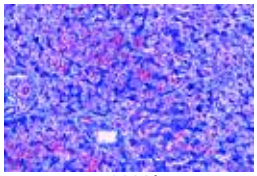
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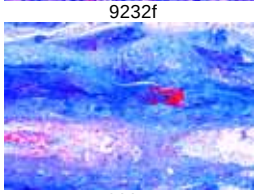
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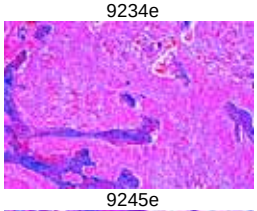
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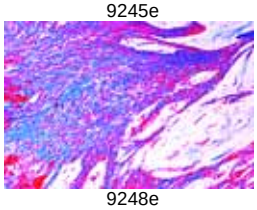
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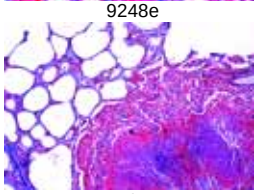
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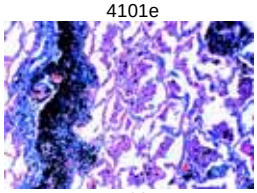
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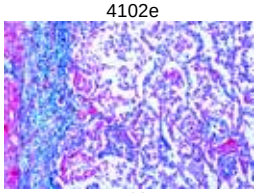
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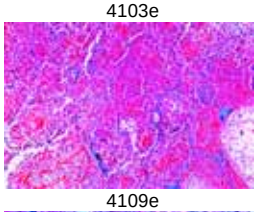
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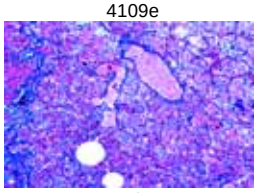
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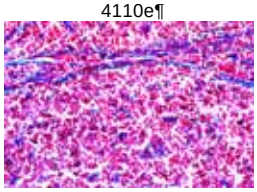
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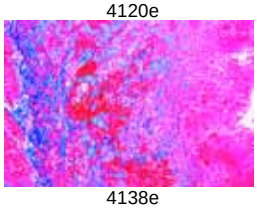
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4100N Human Pathology, Part I

40 Microscope Slides
With depictured accompanying brochure

4101e Miliary tuberculosis of lung
4102e Anthracosis of lung
4103e Croupous pneumonia
4105e Cyanotic induration of lung
4106e Chronic pneumonia
4107e Chronic pulmonary emphysema
4109e Necrotic (cheesy) pneumonia
4110e Influenzal pneumonia
4111e Myeloid sarcoma of spleen
4113g Malaria melanemia of spleen
4114e Myocarditis chronica acute recidivans
4115e Amyloid degeneration of spleen
4116e Adiposis of heart
4118e Cardiac callosity
4119e Cor villosum
4120e Lymphosarcoma mediastini
4122e Myxoma mandibulae
4123e Erysipelas of spleen
4124e Tuberculosis of lymph glands
4125e Scirrhous carcinoma of thyroid gland
4127e Fibroepithelial mixed tumor of parotid gland
4128e Carcinoma medullare glandulae
4129e Struma colloides
4130e Miliary tuberculosis of liver
4133e Parenchymatous and fatty degeneration of liver
4134e Pigmentary cirrhosis of liver
4135e Hemosiderosis of liver
4137e Adenocarcinoma of colon
4138e Colitis dysenterica Shiga-Kruse
4139f Cirrhosis hepatis luetica
4140e Carcinoma of liver, primary
4141e Cyanotic atrophy of liver (nutmeg liver)
4142e Hemorrhagic necrosis of liver (eclampsia)
4143e Amyloid degeneration of liver
4144e Brown atrophy of liver
4145e Lymphatic leukemia of liver
4146e Icterus hepatis
4147e Necrotic oesophagitis
4148e Parenchymatous degeneration of liver
4149e Cavernous hemangioma of liver

No. 4200N Human Pathology, Part II

40 Microscope Slides
With depictured accompanying brochure

4201e Liver metastasis from a melanosarcoma rectis
4202e Malignant tumor of gall bladder
4204e Myoma of uterus
4205e Cardiac kidney
4206e Chronic glomerulonephritis
4207e Amyloid degeneration of kidney
4209e Carcinoma cervicis uteri
4210e Septic embolic nephritis
4211e Cystadenoma papilliferum of ovary
4212e Papilloma of uterine fundus
4213e Tuberculosis of kidney
4214f Undescended testicle with hyperplasia of Leydig's cells
4215e Perenchymatous degeneration of kidney
4216e Acute nephritis
4217e Acute hemorrhagic nephritis
4218e Glycogenosis of kidney
4219e Glomerularatrophy of kidney
4220e Adenoma of ovary
4221e Hypernephroma of kidney
4222e Malignant ovarian tumor
4223e Sarcoma of testicle
4224e Ovarian cysts
4225e Hypertrophy of the prostate
4226e Fibromyoma uteri
4227e Glioma cerebri
4229e Organized venous thrombosis of muscle
4232e Fibroadenoma of breast
4233e Spindle cell sarcoma
4234e Scirrhous carcinoma of breast
4235e Chondroma of pubic bone
4236f Giant cell sarcoma of maxilla
4237e Fibroadenoma intracanaliculare of mamma
4238e Melanosarcoma of skin
4239e Sarcoma of thigh
4240e Fibroma of skin
4242e Myxofibroma of abdominal wall
4244e Zenker's degeneration of M. rectus abdominis (influenza)
4246e Cicatricial tissue
4247e Carcinoma solidum simplex of breast
4248e Fat embolism after fracture of the leg
4250e Abscessus lumbalis

9245e

No. 71100 Human Pathology, Supplementary Set

Complementary to 4100 and 4200 – 41 Microscope Slides
With depictured accompanying brochure

71101e Tuberculosis of lung
71102e Tuberculous coal lung
71103e Carcinoma of lung
71104e Carcinoma of large intestine
71105e Carcinoma of stomach
71106e Carcinoma of squamous epithelium, skin
71107e Carcinoma of mammary gland
71108e Nephritis, sec. of kidney
71109e Adenoma of adrenal gland
71110e Arteriosclerosis
71111f Meningitis
71112g Leukaemia, blood smear
71113g Anaemia, blood smear
71114e Adrenal adenoma
71115e Struma nodosa of thyroid gland
71116e Inflammation of appendix
71117e Tonsillitis, sec. of palatine tonsil
71118e Ovary, cyst
71119e Ovary, teratoma, sec.
71120e Uterus, myom, sec.
71121e Tuberculosis, liver, sec.
71122e Liver, fatty degeneration, sec.
71123e Liver, carcinoma, sec.
71124e Peritoneal metastasis of hepatoma, sec.
71125g Syphilis of kidney
71126e Cirrhosis of kidney
71127e Tuberculosis of kidney
71128e Icterus (jaundice), sec. of kidney
71129e Bleeding of kidney
71130e Pneumonia, sec. of lung
71131e Papilloma of urinary bladder
71132f Diphtheria, sec. of trachea
71133e Hypertrophy of prostate
71134e Thickening of intestine
71135f Bleeding of intestine caused by sublimate
71136e Fibroadenoma of mammary gland
71137e Icterus (jaundice) of testis
71138e Atrophy of testis
71139f Inhibition of spermatogenesis, testis (caused by hormone disorder)
71140e Carcinoma of praeputium
71141e Inflammation of gall bladder

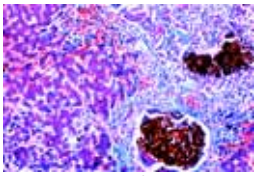
HISTOLOGY AND HUMAN SCIENCE

DETAIL SETS I

No. 70100 Tissues, connective tissues, system of movement, skin

15 Microscope Slides
With depictured accompanying brochure

70101c Squamous epithelium, scrapings from human mouth, w.m.
70103e Columnar epithelium, human gall bladder, t.s.
70104e Ciliated epithelium, human trachea, t.s.
70115d Skin, human, from general body surface showing sweat glands
70116d Human scalp, longitudinal section of hair
70122d Developing of nail, human embryo, l.s.
70123e Hyaline cartilage, human, t.s.
70125d Elastic cartilage, ear of pig, t.s.
70128e Developing cartilaginous bone, joint of human foetus, l.s.
70130e Compact bone, c.s. and l.s.
70136f Striated muscle, human, l.s., staining of striations
70138e Striated muscle, human, t.s.
70139e Smooth muscle, human, t.s. and l.s.
70141e White fibrous tissue, human tendon, l.s.
70144e Adipose tissue, human, t.s.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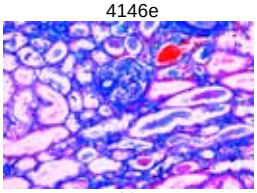
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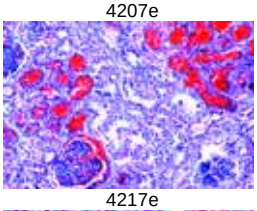
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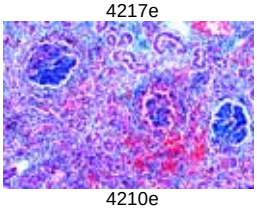
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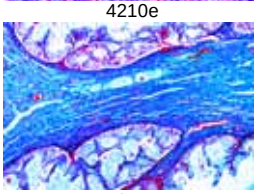
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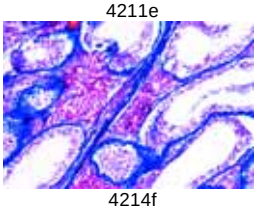
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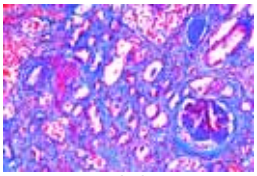
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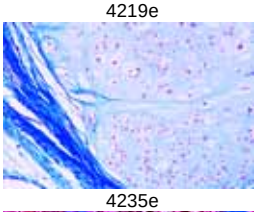
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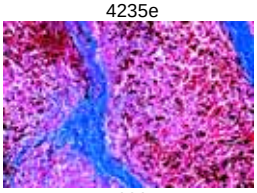
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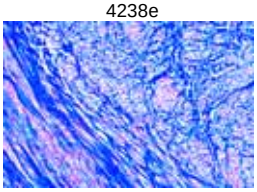
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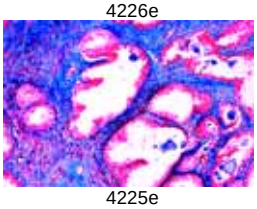
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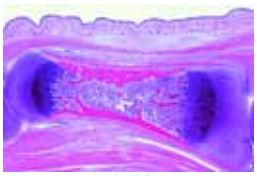
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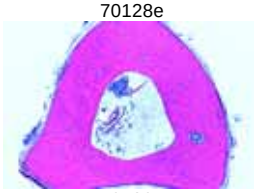
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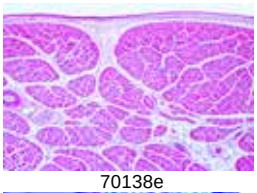
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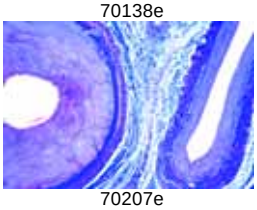
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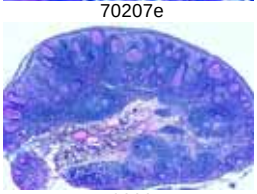
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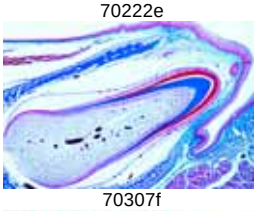
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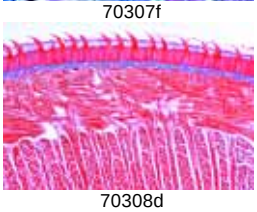
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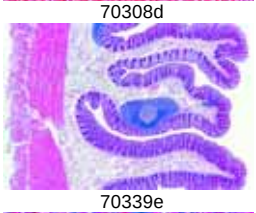
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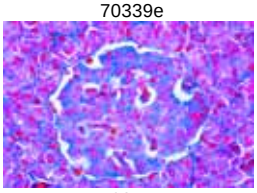
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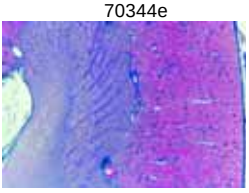
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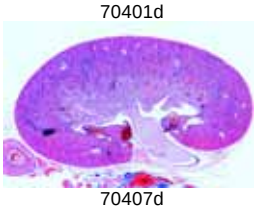
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No. 70200 Respiratory and Circulatory System

10 Microscope Slides
With depictured accompanying brochure

70201d Trachea, cat, t.s. showing cartilage, ciliated epithelium
70202e Lung, human t.s. showing alveoli, blood vessels and pleura
70204c Blood, human, Giemsa or Wright stained smear
70205e Artery, human, t.s., elastica stained
70206e Vein, human, t.s., elastica stained
70207e Artery and vein of smaller size, human, t.s., routine stained
70208e Aorta, human, t.s.
70210e Heart muscle, human t.s. and l.s., striations, intercalated discs
70222e Lymph gland, human, t.s.
70230e Red bone marrow, human rib, t.s. Giemsa stained

70300 Digestive System

11 Microscope Slides
With depictured accompanying brochure

70301e Lip, human foetus, t.s.
70307f Tooth, developing, human foetus, l.s.
70308d Tongue, cat, t.s. showing cornified papilla and muscular layers
70311e Sublingual gland, human, t.s.showing a pure mucous gland
70317d Oesophagus of rabbit, t.s.
70322e Stomach, human, pyloric region, t.s.routine stained
70334e Small intestine of cat, t.s. stained for goblet cells (PAS-HE)
70338e Appendix, human, t.s. showing the lymphatic tissue
70339e Colon (large intestine), human, t.s. stained for mucous glands
70344e Pancreas, human, t.s. showing islets of Langerhans
70347e Liver, human, t.s.

No. 70400 Urinary system –

10 Microscope Slides
With depictured accompanying brochure

70401d Kidney, cat, t.s. showing cortex and medulla with glomeruli
70402f Kidney, pig, t.s. showing injected vessels
70403e Kidney, human, t.s. showing cortex and medulla with glomeruli
70406c Kidney, rat, t.s. of the whole organ
70407d Kidney, rat, l.s. of the whole organ
70408f Kidney of mouse, t.s. vital stained with trypane blue to demonstrate storage
70411e Ureter, human, t.s.
70412c Urinary bladder, cat, t.s.
70414e Urethra, human, t.s.
70415d Penis, rabbit, t.s.

No. 70500 Genital system

14 Microscope Slides
With depictured accompanying brochure

70501d Testis of rabbit, t.s. showing alll stages of spermatogenesis
70507c Epididymis, rat, t.s.
70510e Spermatozoa, human, smear
70511e Vas deferens, human, t.s.
70513c Prostate of rat or cat, t.s.
70517d Ovary of cat or rabbit, t.s. to show alll stages of egg development, quadruple stained
70524c Fallopian tube (uterine tube), rabbit, t.s. with mucous folds and ciliary epithelium
70528d Uterus, rabbit, t.s.
70531d Uterus with embryo, rat, t.s.
70537c Vagina, rabbit, t.s.
70539d Mammary gland, cow, t.s. active stage
70543e Placenta, human, t.s.
70545e Umbilical cord, human, t.s.
70546f Mouse embryo, l.s.of entire young mouse showing all organs

No. 70600 Endocrine System

6 Microscope Slides
With depictured accompanying brochure

70602f Pituitary gland (hypophysis), human or mammal, t.s.
70604d Pineal gland (epiphysis), sheep or other mammal, l.s.
70606d Thyroid gland, sheep, t.s. showing glandular lobules and colloid
70609d Pancreas with islets of Langerhans, cat, t.s.
70611d Adrenal gland, cat, t.s.
70615d Corpus luteum in ovary of pig, t.s.

No. 70700 Sensory Organs

10 Microscope Slides
With depictured accompanying brochure

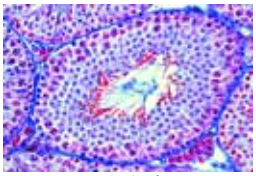
70701e Tongue, rabbit, t.s., of papilla foliata with taste buds
70704f Touch corpuscles in human skin, t.s.
70707d Olfactory epithelium, dog, t.s.
70711g External and internal ear with eardrum and cochlea, l.s.
70713f Eye, retina, human, t.s.
70715e Eye, optic nerve, human, t.s.
70717e Eye of mammal, t.s. through cornea, iris and ciliary body
70718f Eye, cornea of cow, t.s.
70720c Eyelid, cat, t.s. showing Meibomian gland
70722f Eye, posterior part with entrance of optic nerve in the retina, t.s.

No. 70800 Nervous System

11 Microscope Slides
With depictured accompanying brochure

70801e Cerebrum, human, t.s. of cortex, routine stained
70803e Cerebellum, human, t.s. routine stained
70805f Cerebellum, human, t.s., Weigert stained for medullary sheaths
70812e Spinal cord, human, t.s. routine stained for general structure
70817e Nerve, human, l.s.
70818e Nerve, human, t.s.
70825f Spinal cord, cat, t.s., stained after Klüver-Barrera
70826e Spinal cord, cow, t.s., special stained for Nissl-bodies
70829f Cerebrum, cat, t.s., Golgi stained to show the Purkinje cells
70833e Brain of rat, median sagittal section, routine stained
70834d Vertebra with spinal cord, rat, t.s.

NEW! **Microscope Slides on CD-ROM.**
The new amazing **CD-Program** for interactive learning and teaching in school and education comprise all necessary **photomicrographs of microscopic slides**, which can be observed by using **a „Virtual Microscope**“. Beautiful **color drawings** matching the slides, with detailed **explanations** (please see pages 129 – 136).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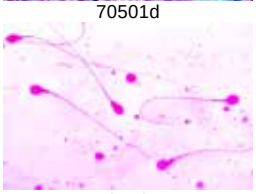
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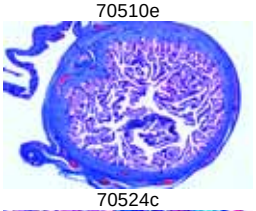
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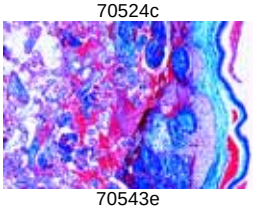
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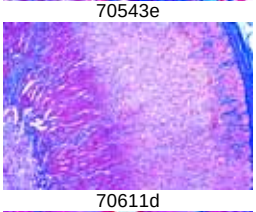
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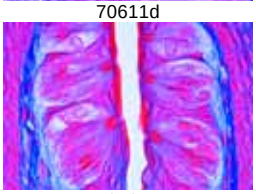
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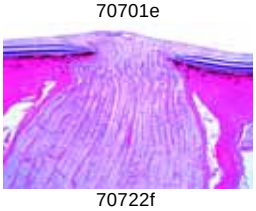
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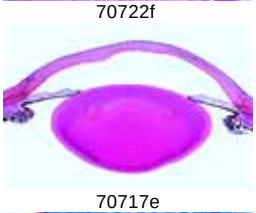
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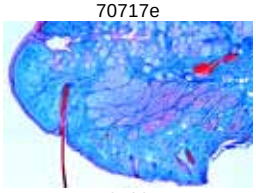
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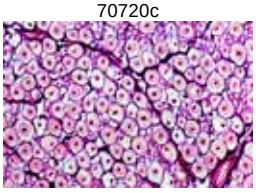
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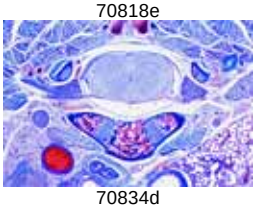
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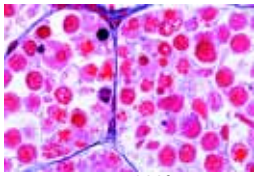
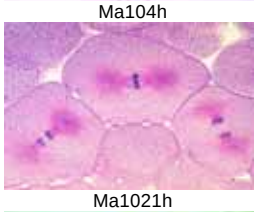

Ma1033f

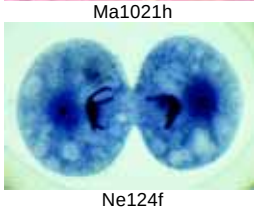
HISTOLOGY AND HUMAN SCIENCE
DETAIL SETS II

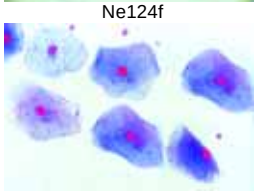

Ma104h

No. 72100 Histology: Cell Structure and cell division (Cytology)
10 microscope slides
With depictured accompanying brochure

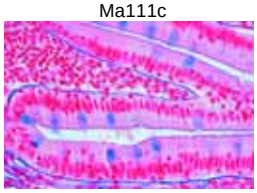

Ma1021h

Ma101d Simple animal cells in sec. of salamander liver showing nuclei, cell membranes and cytoplasm. For general study of the animal cell
Ma102f Mitotic stages in sec. through red bone marrow of mammal
Ma1033f Meiotic (maturation) stages in sec. through testis of salamander, selected material showing large structures *
Ma104h Human chromosomes in smear from culture of blood, male or female
Ma105f Mitochondria in thin sec. of kidney or liver, specially prepared and stained
Ma1058e Pigment cells in skin
Ma1061e Storage of glycogen in liver cells, sec. stained with carmine after Best or PAS reaction
Ma1021h Mitotic stages in sec. of whitefish blastula showing spindles *
Ne122f Ascaris megalocephala embryology. Sec. of uteri showing maturation stages (meiosis). Polar bodies can be seen.
Ne124f Ascaris megalocephala embryology. Sec. of uteri showing early cleavage stages (mitosis)

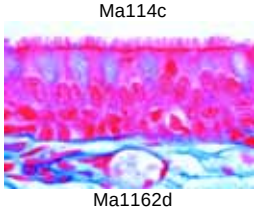

Ne124f

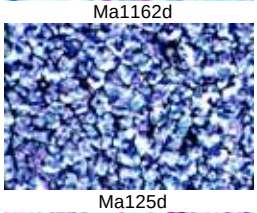

Ma111c

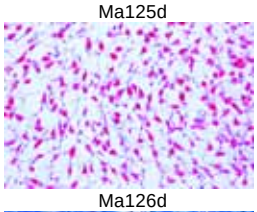
No. 72130 Histology: Epithelial tissue,
10 microscope slides
With depictured accompanying brochure


Ma114c

Ma111c Squamous epithelium, isolated cells from human mouth, smear
Ma112c Stratified, non-cornified squamous epithelium, in section through buccal gum
Ma114c Simple columnar epithelium, in t.s. of small intestine
Ma116d Simple ciliated columnar epithelium, in t.s. of oviduct
Ma1162d Pseudostratified ciliated columnar epithelium, in t.s. of trachea
Ma118d Cuboidal epithelium, in sec. of kidney papilla
Ma1182e Cuboidal epithelium, in sec. of human thyroid gland
Ma1201d Transitional epithelium, in sec. of urinary bladder of sheep
Ma1127d Stratified, cornified squamous epithelium, in vertical l.s. of human body skin
Ma1202d Goblet cells in sec. of colon, stained with mucicarmine

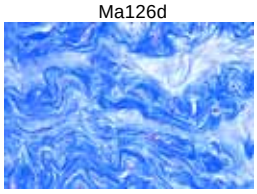

Ma1162d

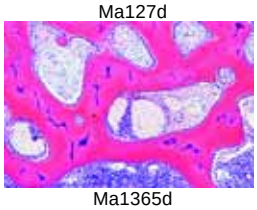

Ma125d


Ma126d

No. 72150 Histology: Connective tissues,
10 microscope slides
With depictured accompanying brochure

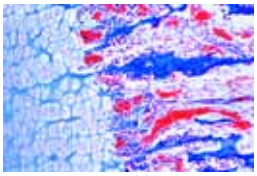
Ma121e Areolar connective tissue, w.m. and stained for fibres and cells
Ma123d White fibrous tissue, l.s. of tendon
Ma124d Yellow elastic fibrous tissue, l.s. of Ligamentum nuchae
Ma1244d Elastic tissue, fibres teased and w.m.
Ma125d Reticular tissue t.s.
Ma126d Embryonic connective tissue t.s.
Ma127d Mucous tissue, t.s. of navel string (umbilical cord)
Ma128c Adipose tissue, section fat removed to show the cells
Ma129e Adipose tissue, section showing fat in situ stained by sudan
Ma1242e Yellow elastic fibrous tissue, t.s. of Ligamentum nuchae

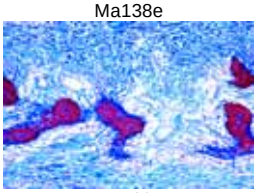

Ma127d

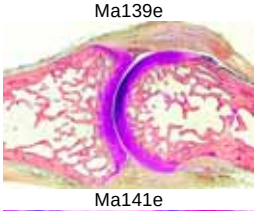

Ma1365d

No. 72180 Histology: Cartilage and Bones,
11 microscope slides
With depictured accompanying brochure

Ma1302c Hyaline cartilage of cat, t.s.
Ma1305d Fetal hyaline cartilage, t.s.
Ma131d Yellow elastic cartilage, section specially stained for elastic fibres
Ma132d White fibrous cartilage, section
Ma135d Compact bone, t.s. specially prepared to show the cells and canaliculi
Ma136d Compact bone, l.s. specially prepared to show the cells and canaliculi
Ma1365d Cancellous (spongy) bone, t.s.
Ma138e Bone development, intracartilaginous ossification in foetal finger or toe, l.s.
Ma139e Bone development, intermembranous ossification in foetal head (cranial bone), vertical l.s.
Ma140d Yellow bone marrow t.s.
Ma141e Joint of finger or toe, sagittal l.s.

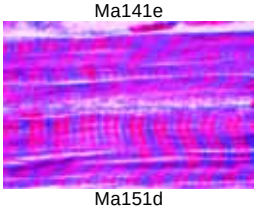

Ma138e

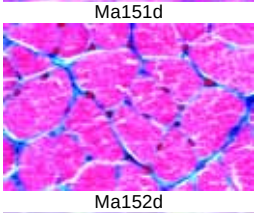

Ma139e


Ma141e

No. 72230 Histology: Muscle tissues,
6 microscope slides
With depictured accompanying brochure

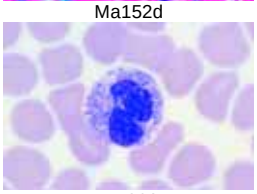
Ma151d Striated muscle l.s. Detailed structures, contractile fibrils, isotropic and anisotropic substances, nuclei
Ma152d Striated (skeletal) muscle t.s.
Ma154d Smooth (involuntary) muscle l.s. Detailed structure, spindle-shaped cells with central nuclei
Ma156d Cardiac (heart) musclels. Detailed structure, branched fibres, striations, intercalated discs, nuclei
Ma1537f Striated (skeletal) muscle, thin l.s. specially stained to show details of the striations
Ma157e Heart muscle, l.s. and t.s. specially stained for intercalated discs

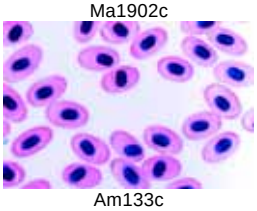

Ma151d


Ma152d

No. 72200 Histology: Blood,
10 microscope slides
With depictured accompanying brochure

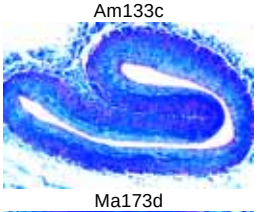
Ma1902c Human blood smear, Wright's stain
Ma195c Rabbit blood smear, Giemsa stain
Ma196c Cat blood smear, Giemsa stain
Ma1965c Rat blood smear, Giemsa stain
Ma197c Rana, Frog, blood smear, nucleated erythrocytes
Am133c Salamandra, blood smear
Re211c Lacerta, lizard, blood smear
Av111c Gallus domesticus, chicken, blood smear
Pi162c Cyprinus, carp, blood smear
Ma236d Red bone marrow of cow, thin sec.

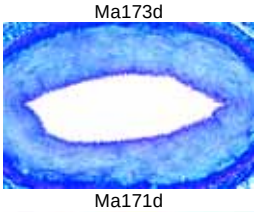

Ma1902c


Am133c

No. 72300 Histology: Circulatory System,
8 microscope slides
With depictured accompanying brochure

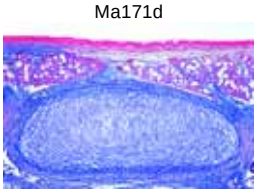
Ma171d Artery of rabbit, t.s. routine stained
Ma172d Artery of rabbit, t.s. stained for elastic fibres
Ma173d Vein of rabbit, t.s. routine stained
Ma174d Vein of rabbit, t.s. stained for elastic fibres
Ma175d Artery and vein of smaller size in one slide, guinea pig, t.s.
Ma1762d Aorta of rabbit, t.s. stained for elastic fibres
Ma179f Heart of mouse, entire sagittal l.s.
Ma180d Heart of mouse, t.s.


Ma173d

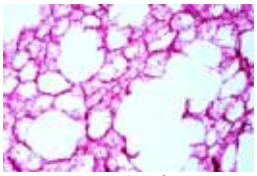

Ma171d

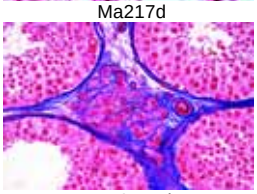
No. 72330 Histology: Lymphatic Tissues,
6 microscope slides
With depictured accompanying brochure

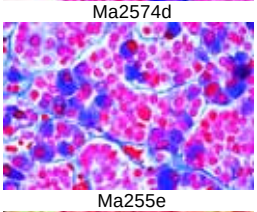
Ma2323c Lymph node of cat, t.s. routine stained
Ma231c Lymph node of pig, t.s. routine stained
Ma233e Tonsil, human, t.s.
Ma234c Spleen of rabbit, t.s. showing capsula, pulp etc.
Ma239d Thymus of young cat, t.s. with Hassall bodies
Ma237d Red bone marrow of cow, smear specially stained


Ma214d


Ma211e

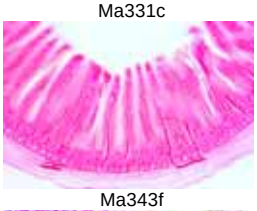

Ma217d

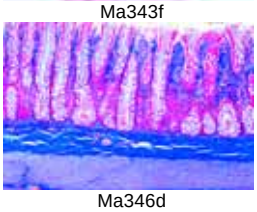

Ma2574d

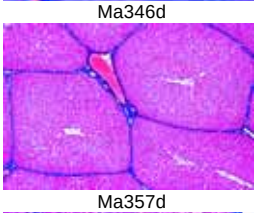

Ma255e

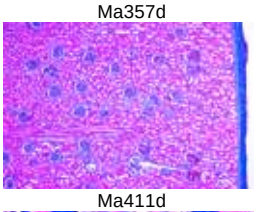

Ma312d


Ma331c

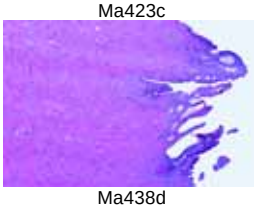

Ma343f


Ma346d


Ma357d


Ma411d


Ma423c


Ma438d

No. 72400 Histology: Respiratory System,

6 microscope slides
With depictured accompanying brochure

Ma211e Nasal region of small mammal (mouse or rat), t.s. showing respiratory and olfactory epithelium, bone etc.
Ma215d Trachea of cat or rabbit, l.s.
Ma214d Trachea of cat or rabbit, t.s. with ciliated epithelium, cartilage etc.
Ma216c Lung of cat, t.s. routine stained for all details
Ma217d Lung of cat, t.s. stained for elastic fibres
Pa4101e Miliary tuberculosis of lung

No. 72420 Histology: Hormone organs

6 microscope slides
With depictured accompanying brochure

Ma2523d Thyroid gland of cat, sec.
Ma253d Adrenal gland (Gl. suprarenalis) of rabbit, t.s. through cortex and medulla
Ma2543d Pancreas with islets of Langerhans of cat, sec.
Ma255e Pituitary gland (hypophysis), sag. l.s. of complete organ from cow or pig showing adeno- and neurohypophysis
Ma2574d Leydig's cells in testis of mouse, t.s.
Ma434d Ovary, sec. selected to show Corpus luteum

No. 72380 Histology: Digestive System,

15 microscope slides
With depictured accompanying brochure

Ma312d Tooth human, t.s. of root
Ma316e Tooth development, medium stage l.s.
Ma323d Tongue of cat, papilla with thick cornified layer, l.s.
Ma331c Oesophagus of cat or dog, t.s.
Ma334d Stomach of cat, fundic region t.s.
Ma337c Duodenum of cat or dog, t.s. showing Brunner's glands
Ma338c Jejunum of cat or dog, t.s.
Ma343f Small intestine of dog, injected to show the blood vessels and capillary network t.s.
Ma341d Vermiform appendix, human t.s.
Ma346d Colon, t.s. stained with muci-carmine or PAS for demonstration of mucous cells
Ma351d Parotid gland of cat, t.s. of a pure serous gland
Ma352d Submaxillary gland of cat, t.s. of a mixed serous and mucous gland
Ma354d Pancreas of pig, t.s. showing islets of Langerhans
Ma357d Liver of pig, t.s. showing well developed connective tissue
Ma3634c Gall bladder of sheep, t.s.

No. 72430 Histology: Excretory System,

6 microscope slides
With depictured accompanying brochure

Ma411d Kidney of cat, t.s. showing cortex with Malpighian corpuscles and medulla with tubules, Mallory's stain
Ma413e Kidney of mouse, sagittal l.s. through complete organ with cortex, medulla and pelvis
Ma415f Kidney of mouse, t.s. vital stained with trypan-blue to demonstrate storage
Ma4214d Ureter of pig, t.s.
Ma422c Urinary bladder of rabbit, t.s.
Ma423c Urethra of rabbit, t.s.

No. 72450 Histology: Female Reproductive System,

10 microscope slides
With depictured accompanying brochure

Ma431d Ovary of cat, t.s. for general study, shows primary, secondary and Graafian follicles
Ma434d Ovary, sec. selected to show Corpus luteum
Ma435c Fallopian tube of pig, t.s.
Ma437d Uterus of pig, resting stage, t.s.
Ma438d Uterus of pig, pregnant stage, t.s.
Ma439d Uterus of rat with embryo in situ, t.s.
Ma440e Placenta, human , t.s.
Ma445f Embryo of mouse, sagittal l.s. of entire specimen
Ma451d Vagina of pig, t.s.
Ma454d Umbilical cord of pig, t.s.

No. 72480 Histology: Male Reproductive System,

7 microscope slides
With depictured accompanying brochure

Ma4613d Testis of rat, t.s. showing spermatogenesis
Ma463d Epididymis of bull, t.s.
Ma464d Sperm smear of bull
Ma466d Spermatic cord (Ductus deferens) of pig or rabbit, t.s.
Ma467d Seminal vesicle (Gl. vesiculosa) of pig, t.s.
Ma468d Prostate gland of monkey, t.s.
Ma470d Penis of rabbit, t.s.

No. 72250 Histology: Nerve tissues,

10 microscope slides
With depictured accompanying brochure

Ma511d Cerebral cortex of cat or dog, t.s. routine stained
Ma512f Cerebral cortex, t.s. stained by Golgi's silver method to show the pyramid cells
Ma514d Cerebellum of cat or dog, t.s. routine stained
Ma515f Cerebellum, t.s. stained by Golgi's silver method to show the Purkinje cells
Ma526d Spinal cord of cat, t.s. routine stained
Ma527e Spinal cord of cat, t.s. stained for Nissl bodies
Ma544c Peripheral nerve of cow or pig, l.s. routine stained
Ma545c Peripheral nerve of cow or pig, t.s. routine stained
Ma547e Peripheral nerve, teased material of osmic acid fixed material showing Ranvier's nodes and medullary sheaths
Ma551e Motor nerve cells, smear preparation from spinal cord of ox shows nerve cells and their appendages

No. 72280 Histology: Sense Organs,

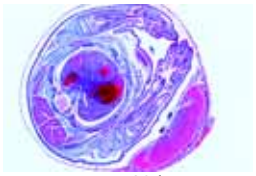
10 microscope slides
With depictured accompanying brochure

Ma601e Eye of cat, posterior part with retina, sagittal l.s.
Ma602e Eye of cat, anterior part with iris, ciliary body, cornea, sagittal l.s.
Ma608e Developing eyes in t.s. of head from guinea pig embryo
Ma6034d Retina of cat, t.s. for general study
Ma606f Retina of pig, sec. with entrance of optic nerve
Ma607d Cornea of eye from pig, sagittal l.s.
Ma609e Cochlea (internal ear) from guinea pig, l.s. showing organ of Corti
Ma612d Olfactory region from nose of rabbit, t.s.
Ma614e Taste buds, t.s. of papilla foliata in tongue of rabbit shows abundant taste buds, carefully stained
Ma617e Tactile hairs with blood sinus, l.s. or t.s.

No. 72350 Histology: Skin and integument

10 microscope slides
With depictured accompanying brochure

Ma632d Human skin from palm, vertical sec. showing cornified layers, sweat glands, etc.
Ma633d Human skin from palm, horizontal sec.
Ma635d Human scalp, sagittal l.s.sec. showing l.s. of hair follicles, sebaceous glands, etc.
Ma636d Human scalp, horizontal sec. shows t.s. of hair follicles
Ma637d Human skin from foetus, vertical sec. showing hair development
Ma638e Finger tip from human foetus, sagittal l.s. of nail development
Ma6404c Skin with hairs, cat, vertical sec.
Ma6402c Eyelid of cat, t.s. showing Meibomian gland
Ma647b Human hair, w.m.
Ma6468d Mammary gland of cow, active t.s.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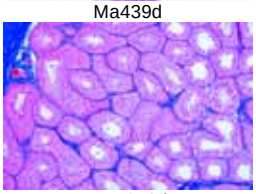
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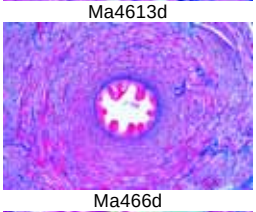
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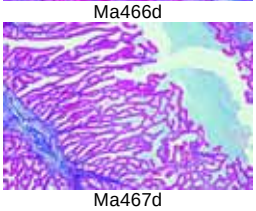
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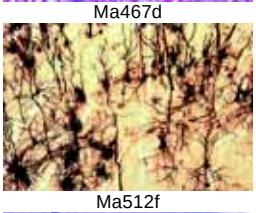
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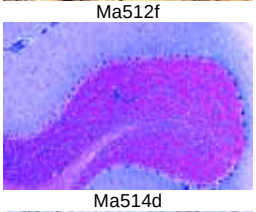
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Ma551e


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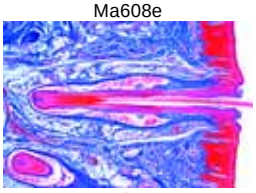
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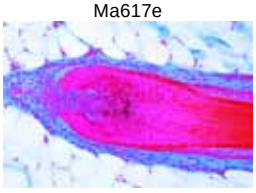
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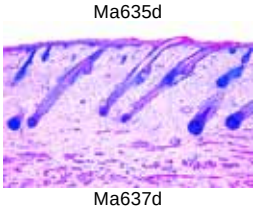
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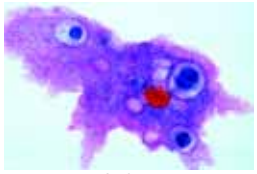

2101e

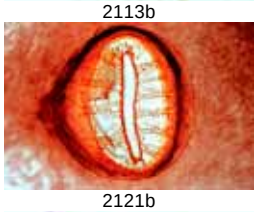
ZOOLOGY

COMPREHENSIVE SETS


2113b

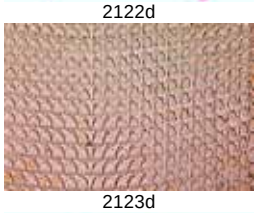
No. 2100 Invertebrata, Elementary Set

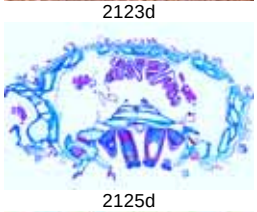
The most important representatives of Protozoa, Sponges, Coelenterata, Vermes, Arthropoda, Insecta, Mollusca, Echinodermata, Acrania – 25 Microscope Slides
With depictured accompanying brochure

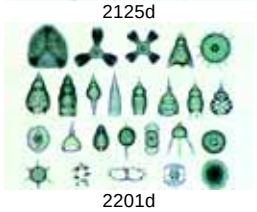

2121b

2101e Amoeba proteus, showing nucleus and pseudopodia w.m.
2102c Euglena, a common flagellate with eye spot
2103d Paramecium, a common ciliate, nuclei stained
2104c Sycon, marine sponge, t.s. of body
2105e Hydra, extended specimen for general body structure w.m.
2106e Dicrocoelium lanceolatum, sheep liver fluke, w.m.
2107c Planaria, t.s. of body for general study
2108c Taenia saginata, tapeworm, proglottids in different stages t.s.
2109d Trichinella spiralis, l.s. of muscle with encysted larvae
2110c Lumbricus, earthworm, t.s. of body in region of typhlosole
2111c Daphnia, water flea w.m.
2112c Cyclops, copepod w.m.
2113b Spider, leg with comb w.m.
2114c Spider, spinneret w.m.
2115c Musca domestica, house fly, head and mouth parts w.m.
2116e Periplaneta, cockroach, biting mouth parts w.m.
2117e Apis mellifica, honey bee, mouth parts of worker w.m.
2118b Musca domestica, house fly, leg with pulvilli w.m.
2119b Apis mellifica, anterior and posterior wing w.m.
2120b Trachea from insect w.m.
2121b Spiracle from insect w.m.
2122d Drosophila, fruit fly, sagittal l.s. of adult specimen
2123d Snail, radula w.m. or section
2124d Snail, t.s. through body showing internal organs
2125d Asterias, starfish, t.s. of arm (ray)


2122d


2123d


2125d


2201d

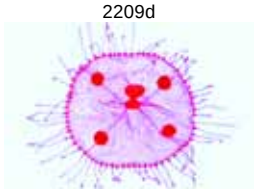
No. 2200 Invertebrata, Supplementary Set

Complementary to Set No. 2100
50 Microscope Slides
With depictured accompanying brochure


2208c

2201d Radiolaria, strewn slide of mixed species
2202d Foraminifera, strewn slide of mixed species
2203c Ceratium, dinoflagellates from plankton
2204f Trypanosoma, causing sleeping disease, blood smear
2205f Plasmodium, malaria parasite, blood smear
2206d Eimeria stiedae, in t.s. of rabbit liver with parasites in situ
2207b Spongilla, fresh water sponge, gemmulae (winter bodies)
2208c Hydra, t.s. of body showing ectoderm and entoderm
2209d Obelia hydroid, w.m. of colony, hydrants and gonothecae
2210e Obelia medusa, jellyfish. w.m. for general study
2211d Actinia, sea anemone, t.s. young specimen
2212c Fasciola hepatica, beef liver fluke, t.s. of body
2213c Fasciola hepatica, ova w.m.
2214d Ascaris, roundworm, t.s. of female in region of gonads
2215d Ascaris, t.s. of male in region of gonads
2216e Lumbricus, earthworm, l.s. of anterior region with gonads
2217c Lumbricus, sperm smear with developing spermatozoa
2218d Hirudo medicinalis, leech, t.s. of body
2219d Sagitta, arrow worm, entire specimen w.m.
2220c Astacus, crayfish, gills t.s.
2221c Astacus, crayfish, liver t.s.
2222e Astacus, crayfish, testis t.s. showing spermatogenesis


2209d


2210e


2218d

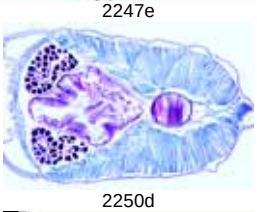
2223d Astacus, crayfish, ovary t.s. showing developing ova
2224c Astacus, crayfish, intestine t.s.
2225d Spider, abdomen with internal organs l.s.
2226d Dermanyssus gallinae, chicken mite w.m.
2227e Pieris, butterfly, head and mouth parts (sucking tube) w.m.
2228e Vespa, wasp, biting mouth parts w.m.
2229f Carabus, ground beetle, biting mouth parts w.m.
2230d Culex pipiens, mosquito, piercing-sucking mouth parts w.m.
2231b Melolontha, cockchafer, antenna w.m.
2232b Apis mellifica, honey bee, anterior leg with eye brush w.m.
2233b Apis mellifica, posterior leg with pollen basket w.m.
2234b Pieris, butterfly, portion of wing with scales w.m.
2235b Apis mellifica, honey bee, cornea from eye w.m.
2236d Apis mellifica, honey bee, sting with poison sac w.m.
2237d Culex pipiens, common mosquito, t.s. of abdomen
2238e Apis mellifica, honey bee, head with compound eyes and brain t.s.
2239d Apis mellifica, honey bee, abdomen of worker t.s.
2240e Ctenocephalus, dog flea, w.m. of adult
2241c Chironomus, gnat, larva w.m.
2242d Bombyx mori, silkworm, t.s. of caterpillar, spinning glands
2243d Helix, snail, hermaphrodite gland (ovotestis) t.s.
2244c Helix, snail, liver t.s.
2245e Helix, snail, eye l.s.
2246d Mya arenaria, clam, gills t.s. and l.s.
2247e Asterias, starfish, horizontal section of young specimen
2248d Psammechinus, sea urchin, pluteus larva w.m.
2249d Branchiostoma lanceolatum, t.s. of body with testis
2250d Branchiostoma lanceolatum, t.s. of body with ovaries


2226d


2232b


2238e

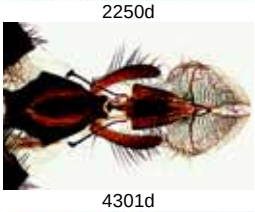

2247e


2250d

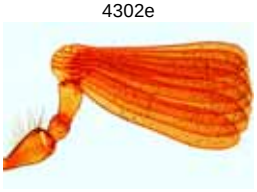
No. 4300 Insecta, Elementary Set

25 Microscope Slides
With depictured accompanying brochure

4301d Musca domestica, housefly, leaking-sucking mouth parts w.m.
4302e Pieris, butterfly, sucking mouth parts w.m.
4303f Carabus, ground beetle, biting mouth parts (carnivore) w.m.
4304f Melolontha, cockchafer, chewing mouth parts (herbivore) w.m.
4305e Pyrrhocoris, bug, piercing sucking mouth parts w.m.
4306d Bombyx mori. silkworm moth, chewing mouth parts
4307e Apis mellifica, honey bee, leaking sucking mouth parts of worker w.m.
4308e Culex pipiens, mosquito, piercing sucking mouth parts w.m.
4309b Melolontha, cockchafer, antenna with sense organs w.m.
4310b Bombyx mori, silkworm moth, feathered antenna w.m.
4311b Apis mellifica, anterior leg with eye brush w.m.
4312b Apis mellifica, posterior leg with pollen basket w.m.
4313b Musca domestica, house fly, leg with pulvilli w.m.
4314c Apis mellifica, anterior and posterior wings w.m.
4315b Pieris, butterfly, portion of wings with scales w.m.
4316b Trachea from insect w.m.
4317b Spiracle from insect w.m.
4318b Cornea isolated from insect eye w.m.
4319d Apis mellifica, honey bee, sting and poison sac w.m.
4320e Apis mellifica, head with compound eyes and brain t.s.
4321d Bombyx mori, silkworm, t.s. showing silk spinning glands
4322d Drosophila, fruit fly, w.m. of adult
4323e Ctenocephalus canis, dog flea, w.m. of adult
4324d Culex pipiens, mosquito, w.m. of larva
4325d Chironomus, gnat, w.m. of larva


4301d


4302e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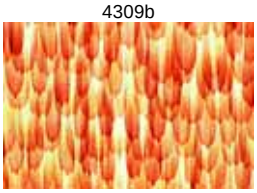
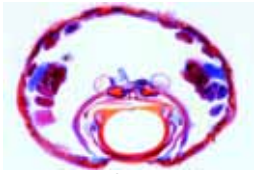

4315b


4316b


4318b


4353f


4355e


4357e


4363c


4368d

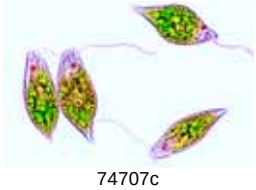

4371f


4372d


4381d


4386d


74704d


74707c

No. 4350 Insecta, Supplementary Set

Complementary to Set No. 4300
36 Microscope Slides
With depictured accompanying brochure

4351e Gomphocerus, grasshopper, biting mouth parts of a herbivore w.m.
4352e Vespa vulgaris, wasp, biting mouth parts of carnivore w.m.
4353f Periplaneta, cockroach, chewing biting mouth parts w.m.
4354e Apis mellifica, honey bee, mouth parts of worker t.s.
4355e Culex pipiens, mosquito, mouth parts of female t.s.
4356e Pieris, butterfly, mouth parts t.s.
4357e Pyrrhocoris, bug, mouth parts t.s.
4358e Curculionidae, weevil, head with mouth parts and geniculate antennae w.m.
4359e Chironomus, gnat, head with mouth parts and feathered antennae w.m.
4360b Pieris, butterfly, clubbed antenna w.m.
4361b Pieris, butterfly, walking leg w.m.
4362b Pieris, butterfly, abdominal foot of caterpillar w.m.
4363c Melolontha, cockchafer, digging leg w.m.
4364b Aquatic insect, swimming leg w.m.
4365c Gomphocerus, grasshopper, leg with stridulatory organ w.m.
4366c Chrysopa, wing of neuroptera w.m.
4367d Musca domestica, house fly, wing and haltere w.m.
4368d Cantharis, beetle, chitinous and membranous wings w.m.
4369f Drosophila, fruit fly, sagittal l.s. for general insect anatomy
4370d Carausius, walking stick, abdomen t.s. for internal organs
4371f Cloeon or Baetis, May fly, head and eyes t.s.
4372d Carabus, ground beetle, gizzard t.s.
4373d Periplaneta, chyle, middle intestine t.s. (Malpighian tubules)
4374d Periplaneta, rectum with ampulli t.s.
4375e Ovaries of insect, sagittal l.s. for developing ova
4376f Testis of insect, t.s. to show spermatogenesis and cell division
4377d Colembola, spring tail, adult w.m.
4378e Caenis, May fly, adult w.m.
4379d Caenis, nymph with tracheal gills w.m.
4380f Pediculus humanus, human louse, adult w.m.
4381d Thysanoptera, thrips, adult w.m.
4382c Aphidae, plant lice adults and larvae w.m.
4383d Psylla, adult w.m.
4384e Chironomus, gnat, adult male w.m.
4385d Corethra, gnat, larva w.m.
4386d Lasius, ant, adult w.m.

ZOOLOGY

DETAIL SETS

No. 74700 Protozoa

10 Microscope Slides
With depictured accompanying brochure

74701e Amoeba proteus, Rhizopoda, w.m. showing nucleus and pseudopodia
74703d Radiolaria, mixed species, fossil
74704d Foraminifera from Mediterranean sea, mixed species, recent
74707c Euglena viridis, a common green flagellate, w.m.
74709c Ceratium hirundinella, fresh-water Dinoflagellate w.m.
74711f Trypanosoma gambiense, causes African sleeping sickness, blood smear
74712f Plasmodium, causes human malaria, blood smear
74720d Eimeria stiedae, causing coccidiosis, t.s. of infected liver, different phases of developing
74723d Paramecium, a common ciliate, micro- and macronuclei stained
74724e Vorticella, a coloniate ciliate

No. 74600N Porifera and Coelenterata

10 Microscope Slides
With depictured accompanying brochure

74624e Sycon, a small marine sponge of the sycon type, l.s. and t.s. on one slide
74621d Spongilla, fresh-water sponge, t.s.
74623d Euspongia, commercial sponge, t.s.
74625c Sponge spicules of different kinds, mixed species w.m.
74601e Hydra, fresh water polyp, extended and w.m.
74603d Hydra, fresh water polyp t.s. in different levels showing the layerrs of the body wall
74608d Laomedea, w.m. of colony, vegetative and reproductive polyps
74609e Obelia, w.m. of medusa
74615e Aurelia, jellyfish, w.m. of ephyra
74619e Actinia, sea anemone, l.s. and t.s.showing the construction of an actinian

No. 74500 Vermes (Helminthes)

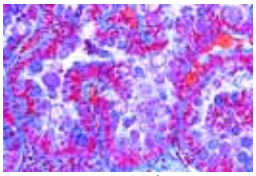
20 Microscope Slides
With depictured accompanying brochure

74501f Planaria, (Turbellaria) w.m. *
74502c Planaria, t.s. for general structure
74508f Fasciola hepatica, large liver fluke, w.m. and stained for internal organs
74509c Fasciola hepatica, t.s. of middle region of body
74515f Taenia sp., tapeworm, proglottids, w.m.of mature or gravid segments
74517c Taenia sp., mature proglottids, t.s.
74521g Taenia or Moniezia, tapeworm, scolex and proglottides, w.m.
74526f Echinococcus multilocularis, infected liver with scolices, sec.
74530f Enterobius vermicularis, pinworm, w.m.
74532d Trichinella spiralis, encysted larvae in muscles, l.s.
74539e Ascaris lumbricoides, roundworm, adult male and female, t.s.
74542d Nemertine, marine species, t.s. of middle region of body
74545d Nereis, seaworm, t.s. of midbody for general structure
74548d Tubifex, fresh water oligochaete, w.m.
74549d Hirudo medicinalis, leech, t.s. for general structure
74552e Lumbricus, earthworm, anterior end with mouth and esophagus, l.s.
74553c Lumbricus, earthworm, region of seminal vesicles, t.s.
74555d Lumbricus, earthworm, t.s. with stomach
74557c Lumbricus, earthworm, t.s. with intestine and nephridia
74562d Lumbricus, earthworm, t.s. selected to show the setae

No. 74400 Crustacea

10 Microscope Slides
With depictured accompanying brochure

74401c Daphnia sp., water flea, w.m.
74403c Cyclops sp., copepode, w.m.
74405e Gammarus, amphipode, w.m.
74406d Lepas anatifera, barnacle, w.m. of catching leg
74410d Artemia salina, brine shrimp, various developing stages on each slide, w.m.
74411c Nauplius larva, w.m.
74414e Astacus, crayfish, eye, l.s.
74420c Astacus, gills, t.s.
74422c Astacus, stomach, t.s.
74425c Astacus, intestine, t.s.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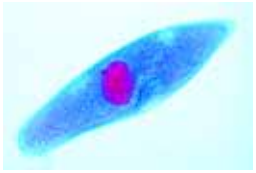
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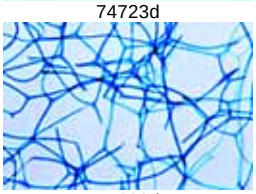
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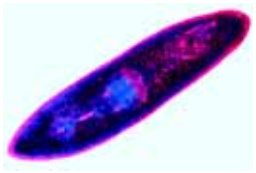
74619e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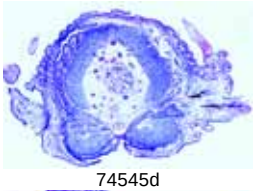
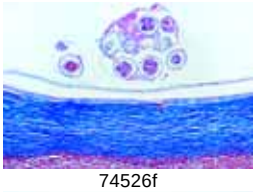

74545d


74562d


74539e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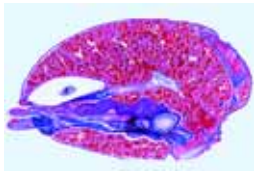
74403c


74405e

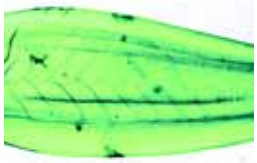

74323d


74301e


74306e


74304d


74202d


74205c


74105f


74108e


74116f


74007d


74011b

No. 74300N Arachnoidea and Myriapoda

12 Microscope Slides
With depictured accompanying brochure

74301e Garden spider, chelicera and pedipalp, female, w.m.
74303b Garden spider, w.m. of leg
74304d Garden spider, w.m. of spinnerets
74306e Garden spider, abdomen with book-lungs and other organsl.s.
74307f Garden spider, l.s. of the cephalothorax showing the central nervous system
74310e Varroa, Acarapis woody, parasitic mite of bees w.m.
74313c Tyroglyphus farinae, mite from meal, w.m.
74325d Dermanyssus gallinae, chicken mite, w.m.
74316e Sarcoptes, infected skin, showing eggs and mites. sec.
74317e Lithobius, centipede, w.m. of mouth parts
74320d Lithobius, centipede, body, t.s.
74323d Diplopoda sp, body, t.s.

No. 74200N Insecta: Apterigota and Orthoptera

10 Microscope Slides
With depictured accompanying brochure

74201d Lepisma, silverfish, w.m. of scales from body
74202d Podura, spring tail, adult w.m.
74203d Forficula, earwig, forceps of male, w.m.
74204d Forficula, earwig, w.m. of upper and lower wing
74210f Periplaneta, cockroach, w.m. of dissected biting-lapping mouth parts
74209e Periplaneta, cockroach, gizzard with chitinous teeth w.m.
74211e Gomphocerus spec. , grasshopper, mouth parts w.m.
74205c Gomphocerus spec. , grasshopper, w.m. of jumping leg
74212d Cricket, t.s. of the body showing Malpighian tubules and intestine
74208f Carausius, grasshopper, t.s. of testis showing spermatogenesis, carefully stained for meiotic and mitotic stages

No. 74100N Insecta: Archiptera and Rhynchota

10 Microscope Slides
With depictured accompanying brochure

74113d Thysanoptera, thrips, w.m. of adult
74114e Caenis, May fly, adult w.m.
74103d Caenis, May fly, nymph, w.m. of trachea gill
74105f Pediculus corporis, human body louse, w.m. adult
74108e Louse eggs attached to the hair, w.m.
74107d Aphidae spec., plant lice, w.m. of several per slide
74109d Squash bug, wings, w.m.
74110d Squash bug, mouth parts w.m., long piercing-sucking tube
74116f Cimex lectularius, bed bug, adult w.m.
74117d Diving beetle or water bug (Gerris), swimming leg w.m.

No. 74000 Insecta: Neuroptera and Lepidoptera

10 Microscope Slides
With depictured accompanying brochure

74001c Chrysopa perla, w.m. of a typical neuroptera wing
74004d Caterpillar of Bombyx mori (silkworm moth) , t.s. of the body with spinning glands
74005b Caterpillar of Bombyx mori (silkworm moth), pro-legs, w.m.
74010d Pieris, (Lepidoptera), mouth parts of butterfly with long sucking tube, w.m.
74007d Caterpillar of Pieris, butterfly, biting mouth parts, w.m.
74002d Caterpillar of butterfly, w.m. of entire young specimen
74006b Caterpillar of Bombyx, trachea w.m. showing cellular structure, tracheal rings and fine branches
74011b Lepidoptera, wing showing scales of butterfly, w.m.
74008b Lepidoptera, wing showing scales of moth, w.m.
74009d Lepidoptera, antennae of butterfly and of moth, w.m.

No. 73900N Insecta: Hymenoptera and Coleoptera

15 Microscope Slides
With depictured accompanying brochure

73901d Lasius, ant, worker w.m.
73902c Apis mellifica, Honeybee, wings with hooks and ridge for locking the wings, w.m.
73903b Apis mellifica, hind leg with pollen basket, w.m.
73917b Apis mellifica, anterior leg with eye brush w.m.
73904d Apis mellifica, sting apparatus with poison sac, w.m.
73905d Apis mellifica, mouth parts, dissected and w.m.
73918e Apis mellifica, posterior leg with pollen basket w.m.
73906e Vespa vulgaris, wasp, biting mouth parts of a carnivore, w.m.
73907b Melolontha, cockchafer, laminate antenna, w.m.
73919e Melolontha, cockchafer, ovary t.s.
73908c Water beetle, stigma, w.m.
73911e Colorado beetle, w.m. of chewing mouth parts,
73912c Cornea, isolated from eye of house fly, w.m. showing facets
73914c Beetle, w.m. of digging leg
73915c Water beetle (Gyrinus), w.m. of swimming leg

No. 73800N Insecta: Diptera and Aphaniptera

15 Microscope Slides
With depictured accompanying brochure

73801d Musca domestica, House fly, proboscis, lapping, w.m.
73803b Musca domestica, leg with clinging pads, w.m.
73807b Musca domestica, w.m. of wing
73811b Musca domestica, aristate antenna, w.m.
73809e Musca domestica, compound eye, rad. sec.
73816e Midge, haltera, w.m.
73819d Drosophila, fruit fly, w.m. of adult specimen, male or female
73802e Stomoxys calcitrans, stable fly, piercing sucking mouth parts w.m.
73804e Culex pipiens, mosquito, head, with piercing mouth parts, w.m.
73806d Culex pipiens, mosquito, larva, w.m.
73805d Culex pipiens, mosquito, pupa w.m.
73814f Culex pipiens, mosquito, adult female w.m.
73815f Culex pipiens, mosquito, adult male w.m.
73818d Chironomus, gnat, larva w.m.
73810e Ctenocephalus, dog flea, w.m. of adult specimen, male or female

No. 73700N Mollusca

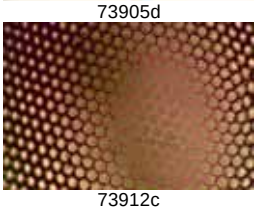
15 Microscope Slides
With depictured accompanying brochure

73701d Chiton sp., t.s. of midbody to show the internal organs
73703e Anodonta, mussel, t.s. of midbody to show the internal organs
73705d Mya arenaria, clam, t.s. and l.s. of gills showing well developed ciliated epithelium
73707d Mussel, t.s. of siphonal tube
73708d Mya arenaria, clam, adductor muscle of shell, l.s.
73709e Pecten opercularis, clam, t.s. of mantle margin showing primitive eye
73712e Anodonta, mussel, glochidia (larvae) w.m.
73728d Snail, typical t.s. of small specimen for general study
73720c Helix pomatia, snail, t.s. of lung cavity
73717c Helix pomatia, snail, t.s. of digestive gland (liver)
73718c Helix pomatia, snail, t.s. of kidney
73716d Helix pomatia, snail, t.s. of hermaphrodite gland (ovotestis)
73714f Helix pomatia, snail, l.s. of tentacle showing well developed lens eye
73724f Alloteuthis, young cuttlefish, l.s. of entire young specimen
73729d Octopus, cuttlefish, section through sucking tube


73907b


73902c


73905d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73807b


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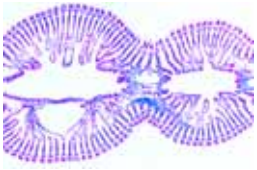
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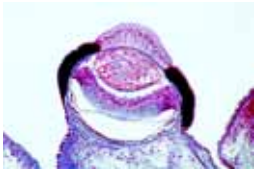
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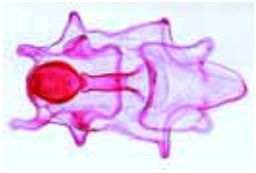
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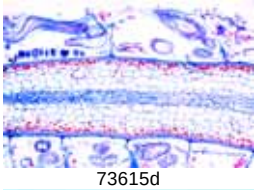
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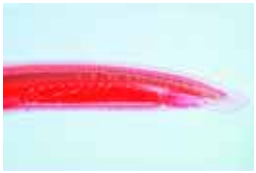
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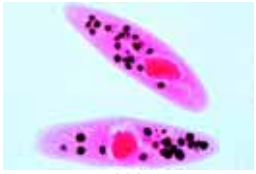
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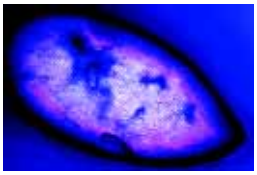
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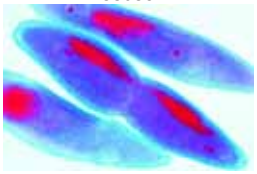
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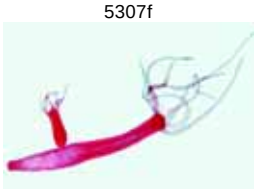
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5358d

No. 73600 Echinodermata, Bryozoa and Brachiopoda

10 Microscope Slides
With depictured accompanying brochure

73606d Asterias, starfish, t.s. of ray showing general structure
73604e Young starfish, horizontal sec. or w.m.
73601f Asterias, starfish, bipinnaria larva, w.m.
73609d Echinus, young sea urchin, radial section
73607e Development of sea urchin, eggs in different stages
73608d Echinus, sea urchin, pluteus larva
73612e Holothuria, sea cucumber, t.s.
73613c Holothuria, w.m. of limy bodies
73615d Bryozoa, moss animals, colony, sec.
73617f Lingula, Brachiopode, t.s.

No. 73500 Cephalochordata (Acrania)

10 Microscope Slides
With depictured accompanying brochure

73501f Botryllus schlosseri, tunicate colony, w.m.
73503e Clavelina, tunicate, l.s. showing gill, intestine, gonads
73504d Clavelina, t.s. region of gills and intestine
73508f Balanoglossus, t.s. region of gonads
73512d Sagitta, arrow worm, w.m.
73515f Amphioxus, Branchiostoma, adult specimen, w.m.
73514f Amphioxus, Branchiostoma, larva, w.m.
73517d Amphioxus, Branchiostoma, t.s. region of gills and intestine
73518d Amphioxus, Branchiostoma, t.s. region of intestine
73521d Amphioxus, Branchiostoma, head region, t.s. showing light sensitive pigment cells

No. 5300 The Paramecium

8 Microscope Slides
With depictured accompanying brochure

5301d Paramecium, macro- and micronuclei stained
5302e Paramecium, food vacuoles and nuclei doubly stained
5303e Paramecium, pellicle stained after Bresslau
5304e Paramecium, silver stained to show the silver line system
5305e Paramecium, trichocysts shown by special preparation
5306f Paramecium, conjugation or after conjugation stages, nuclei stained
5307f Paramecium, fission stages, nuclei stained
5308d Paramecium, sections through many specimens, stained for internal structure

No. 5350 The Hydra

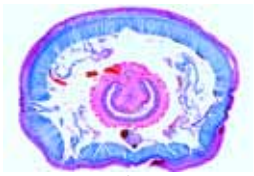
8 Microscope Slides
With depictured accompanying brochure

5351e Hydra, extended specimen for general body structure, carefully stained and w.m.
5352f Hydra with one or more buds w.m.
5353d Hydra, t.s. through body in different levels showing ectoderm with nematocysts, supporting lamella and entoderm
5354d Hydra, l.s. through body and tentacles
5355e Hydra with testis t.s.
5356e Hydra with ovaries t.s.
5357d Hydra, isolated cells showing the different cell types, nematocysts
5358d Hydra with food in digestive cavity, t.s.

No. 5400 The Earthworm (Lumbricus terrestris)

12 Microscope Slides
With depictured accompanying brochure

5401c Earthworm, region of typhlosolis, back of clitellum, the standard t.s.
5402c Earthworm, region of typhlosolis, back of clitellum, sagittal l.s.
5403c Earthworm, region of mouth, t.s. shows pharynx
5404e Earthworm, region of cerebral ganglion t.s.
5405c Earthworm, region of esophagus and heart t.s.
5406e Earthworm, region of gonads, section selected to show the ovary, t.s.
5407e Earthworm, region of gonads, section selected to show the testis, t.s.
5408c Earthworm, region of clitellum t.s.
5409e Earthworm, region of mouth, esophagus and hearts (1st to 9th segment) sag. l.s.
5410e Earthworm, region of gonads, seminal vesicles, (9th to 16th segment) sag. l.s.
5411e Earthworm, region of crop and gizzard (16th to 23rd segment) sag. l.s.
5412d Earthworm, spermatozoa in various stages of development, smear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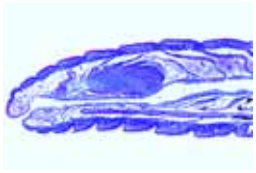
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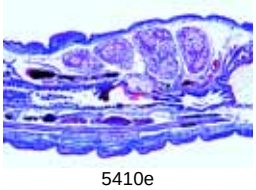
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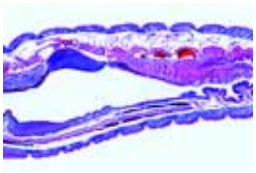
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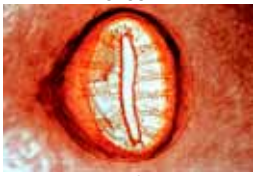
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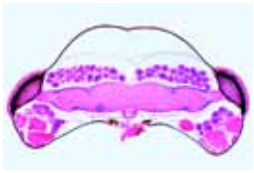
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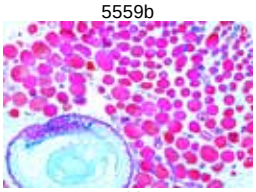
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No. 5450 The Cockchafer (Melolontha vulgaris)

9 Microscope Slides
With depictured accompanying brochure

5451b Cockchafer, antenna w.m.
5452f Cockchafer, mouth parts, dissected and w.m.
5453f Cockchafer, head with brain and compound facet eyes t.s.
5454c Cockchafer, digging leg w.m.
5455d Cockchafer, intestine t.s.
5456e Cockchafer, ovary t.s.
5457e Cockchafer, testis t.s.
5458g Cockchafer, aedeagus w.m., male copulating organ
5459c Cockchafer, spiracle w.m.

No. 75400 The House Fly (Musca domestica)

7 Microscope Slides
With depictured accompanying brochure

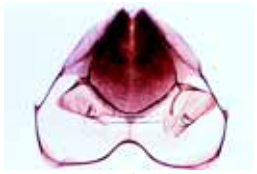
75401d House fly, lapping mouth parts with proboscis, w.m.
75402b House fly, leg with clinging pads, w.m.
75403b House fly, wing, w.m.
75404e House fly, compound eye, rad. sec.
75405d House fly, haltera, rudimentary under wing, w.m.
75406c House fly, cornea,isolated and flat mount, showing facets
75407c House fly, aristate antenna, w.m.

No. 5550 The Honey Bee (Apis mellifica)

18 Microscope Slides
With depictured accompanying brochure

5551e Honey bee, mouth parts of worker, w.m.
5552e Honey bee, mouth parts of worker, t.s.
5553e Honey bee, head with compound eyes and brain, t.s.
5554c Honey bee, cornea from eye, isolated and w.m.
5555d Honey bee, ocelli, w.m.
5556b Honey bee, antenna with sensory organs, w.m.
5557c Honey bee, anterior and posterior wing, w.m.
5558b Honey bee, anterior leg with eye brush, w.m.
5559b Honey bee, posterior leg with pollen basket, w.m.
5560d Honey bee, sting and poison sac, w.m.
5561c Honey bee, wax plate of worker, w.m.
5562d Honey bee, abdomen of worker, t.s. with intestine, nephridia, wax glands
5563e Honey bee, abdomen of queen, t.s. showing ovaries
5564e Honey bee, abdomen of drone, t.s. showing testis
5565e Honey bee, thorax of worker, t.s. showing muscle bundles
5566d Honey bee, young larva, entire specimen, sagittal l.s.
5567e Nosema apis, causing bee dysentery, t.s. of diseased intestine
5568d Bacillus larvae, bacteria causing foul brood, smear


5560d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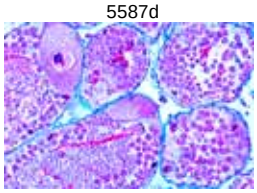
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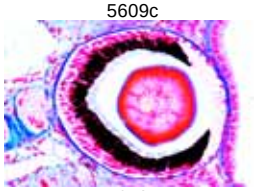

5612e

No. 5570 The Mouth Parts of Insects

20 Microscope Slides
With depictured accompanying brochure

5571f Periplaneta, cockroach, chewing biting mouth parts, dissected w.m.
5572f Carabus, ground beetle, biting mouth parts of a carnivore showing extraintestinal digestion, w.m.
5573e Gomphocerus, grasshopper, biting mouth parts of a herbivore w.m.
5574e Vespa vulgaris, wasp, biting mouth parts of a carnivore w.m.
5575f Melolontha, cockchafer, chewing mouth parts of a herbivore, dissected and w.m.
5576e Apis mellifica, honey bee, leaking sucking mouth parts of worker w.m.
5577e Apis mellifica, honey bee, t.s. of mouth parts
5578e Pieris, butterfly, sucking mouth parts w.m.
5579e Pieris, butterfly, t.s. of mouth parts
5580e Pyrrhocoris, bug, piercing sucking mouth parts w.m.
5581e Pyrrhocoris, bug, t.s. of mouth parts
5582e Culex pipiens, common mosquito, piercing sucking mouth parts of female w.m.
5583e Culex pipiens, common mosquito, mouth parts of male w.m.
5584e Culex pipiens, t.s. of female mouth parts
5585e Stomoxys or Tabanus, stable fly, piercing sucking mouth parts w.m.
5586e Tabanus, t.s. of mouth parts
5587d Musca domestica, house fly, leaking sucking mouth parts w.m.
5588e Musca domestica, house fly, t.s. of mouth parts
5589d Bombyx mori, silkworm moth, chewing mouth parts w.m.
5590e Curculionidae, weevil, head with mouth parts w.m.

No. 5600 The Snail (Helix pomatia)

12 Microscope Slides
With depictured accompanying brochure

5601c Helix, snail, foot t.s., mucous and serous glands, muscles
5602c Helix, snail, mantle margin t.s., chalk glands, mantle glands
5603c Helix, snail, stomach t.s., digestive glands
5604c Helix, snail, intestine t.s., mucous membrane, muscles
5605c Helix, snail, digestive gland, "liver" t.s., chalk cells and liver cells
5606d Helix, snail, hermaphrodite gland (ovotestis) t.s., ova and spermatozoa
5607d Helix, snail, crystalline style and glands t.s.
5608c Helix, snail, penis t.s., or spermoviduct, t.s.
5609c Helix, snail, flagellum t.s.
5610d Helix, snail, heart and kidney t.s.
5611c Helix, snail, lung, t.s., showing the respiratory epithelium
5612e Helix, snail, eye with lens and retina l.s.

No. 5700 The Crayfish (Astacus fluviatilis)

12 Microscope Slides
With depictured accompanying brochure

5701c Astacus, crayfish, gills t.s., epithelium and vessels
5702d Astacus, crayfish, striated muscle l.s., showing striations very clearly
5703d Astacus, crayfish, antenna (decalcified) t.s., showing the chitinous skeleton
5704e Astacus, crayfish, compound eye l.s.
5705f Astacus, crayfish, cerebral ganglion t.s., nerve cells and fibres
5706d Astacus, crayfish, blood smear, with blood cells
5707c Astacus, crayfish, green gland t.s., an excretory organ
5708c Astacus, crayfish, stomach t.s., internal chitineous layer
5709c Astacus, crayfish, intestine t.s., folds of mucous membrane
5710c Astacus, crayfish, liver t.s., glandular tubules for reabsorption of food
5711d Astacus, crayfish, ovary t.s., development of ova
5712e Astacus, crayfish, testis t.s., spermatogenesis, cell division stages

No. 5800 The Amphioxus (Branchiostoma lanceolatum)

8 Microscope Slides
With depictured accompanying brochure

5801f Branchiostoma, entire specimen, stained and w.m. for general body study
5802d Branchiostoma, mouth region t.s., shows buccal cirri
5803d Branchiostoma, anterior pharynx with gills and notochord t.s.
5804d Branchiostoma, region of liver and ovaries t.s.
5805d Branchiostoma, region of liver and testis t.s.
5806d Branchiostoma, region of intestine t.s.
5807d Branchiostoma, tail t.s.
5808d Branchiostoma, midbody sagittal l.s.

No. 5900 Histology of the Frog (Rana sp.)

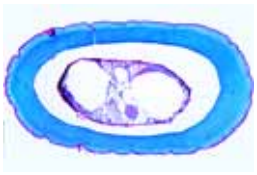
20 Microscope Slides
With depictured accompanying brochure

5901c Rana, frog, lung t.s., simple sac-like respiratory organ
5902d Rana, frog, heart l.s. through the entire organ
5903c Rana, frog, blood smear, shows nucleated red corpuscles
5904c Rana, frog, spleen t.s., lymphatic tissue
5905c Rana, frog, tongue t.s., papillae, glands, muscle bundles
5906c Rana, frog, esophagus t.s., shows ciliated epithelium
5907c Rana, frog, stomach t.s., showing glandular epithelium
5908c Rana, frog, small intestine t.s., folds of intestinal membrane, chyle
5909c Rana, frog, large intestine (colon) t.s. showing the goblet cells
5910c Rana, frog, pancreas t.s., showing islets of Langerhans
5911c Rana, frog, liver t.s., showing liver parenchyma cells and bile ducts
5912c Rana, frog, kidney t.s., Malpighian corpuscles, renal vessels
5913c Rana, frog, urinary bladder t.s., smooth muscles, transitional epithelium
5914d Rana, frog, ovary t.s. shows follicle development, formation of yolk
5915d Rana, frog, testis t.s. showing spermatogenesis and mature spermatozoa
5916c Rana, frog, fallopian tube (Müllerian duct) t.s., glandular cells
5917c Rana, frog, interior brain t.s. showing nerve cells and nerve fibres
5918d Rana, frog, spinal cord t.s., showing motor nerve cells
5919d Rana, frog, t.s. of the posterior part of the eye showing the retina with rods and cones
5920c Rana, frog, skin t.s., skin glands, epidermis, pigment cells

No. 5950 Histology of the Rabbit (Lepus cuniculus)

25 Microscope Slides
With depictured accompanying brochure

5951d Rabbit, elastic cartilage from ear pinna, sec.
5952c Rabbit, striated muscle l.s.
5953c Rabbit, subcutaneous fat tissue, t.s.
5954c Rabbit, heart (cardiac) muscle l.s. and t.s.
5955c Rabbit, blood smear
5956c Rabbit, trachea t.s. with ciliated epithelium
5957c Rabbit, lung t.s.
5958d Rabbit, spleen t.s.
5959d Rabbit, thyroid gland t.s. with colloid
5960c Rabbit, tongue t.s., muscular layers
5961d Rabbit, stomach with digestive glands t.s.
5962c Rabbit, small intestine (duodenum) with villi, t.s.
5963c Rabbit, blind gut (caecum) t.s.
5964d Rabbit, symbiotic bacteria from the blind gut
5965d Rabbit, rectum with goblet cells, t.s.
5966c Rabbit, salivary gland t.s.
5967c Rabbit, liver t.s.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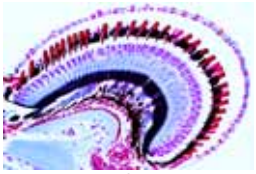
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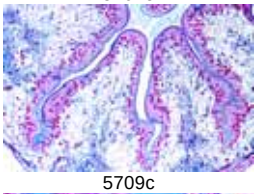
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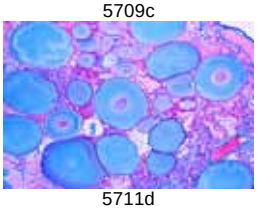
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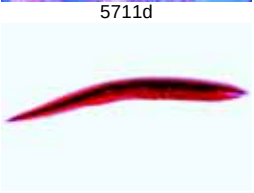
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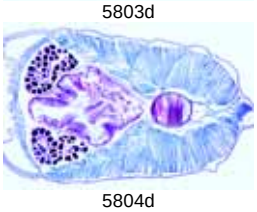
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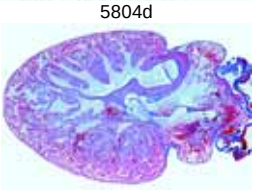
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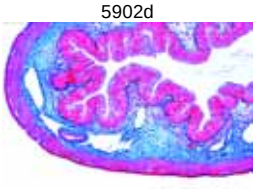
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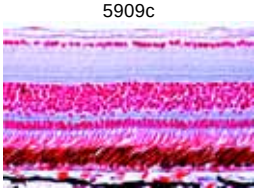
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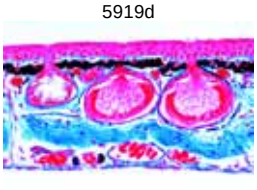
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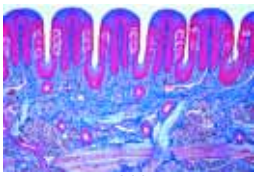
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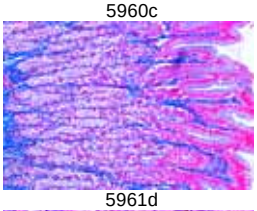
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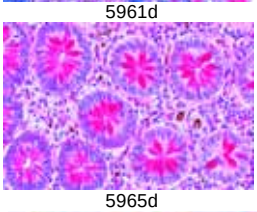
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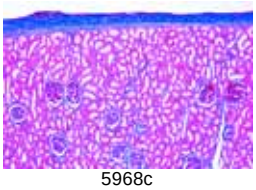
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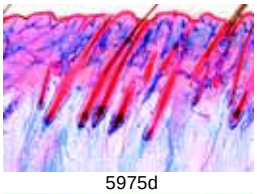
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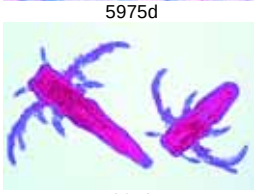
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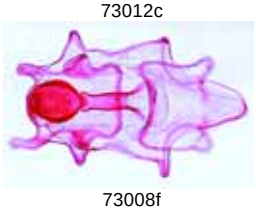
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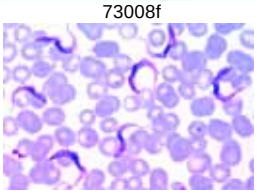
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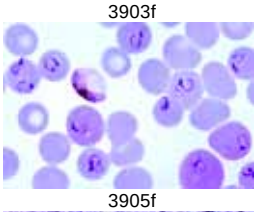
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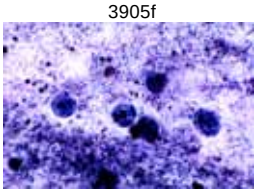
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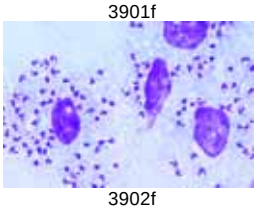
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5968c Rabbit, kidney, sec. through cortex and medulla
5969d Rabbit, ovary t.s. showing follicles
5970c Rabbit, uterus t.s.
5971d Rabbit, testis t.s., showing spermatogenesis
5972d Rabbit, spermatozoa, smear
5973d Rabbit, olfactory region of nose, t.s.
5974c Rabbit, hair w.m.
5975d Rabbit, skin of body with hair follicles, l.s.

No. 73000 Different Types of Larvae *

15 Microscope Slides
With depictured accompanying brochure

73001g Planula larva, Aurelia
73002f Actinula larva, Tubularia
73003f Trochophora larva, Polychaeta
73004g Trochophora larva in metamorphosis, Annelida
73005e Veliger larva, snail
73006f Actinotrocha larva, Phoronis
73007f Tornaria larva, Balanogossus
73008f Bipinnaria larva, starfish
73009f Bipinnaria larva in metamorphosis, starfish
73010d Pluteus larva, sea-urchin
73011e Glochidia of clam
73012c Nauplius larva, Copepoda
73013e Zoea larve, Decapoda
73014e Cypris larva, Balanus
73015d Larva of Culex

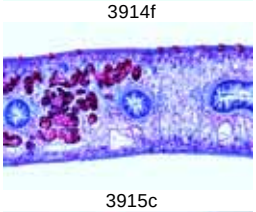
PARASITES AND PATHOGENIC BACTERIA

No. 3900 General Parasitology, Large Set

50 Microscope Slides
With depictured accompanying brochure

3901f Entamoeba histolytica, amebic dysentery, smear or section
3902f Leishmania donovani, causes Kala-Azar, smear or section
3903f Trypanosoma gambiense, Central African sleeping disease, blood smear
3904f Trypanosoma cruzi, Chagas disease, blood smear, Giemsa stain
3905f Plasmodium falciparum, human malaria, blood smear with typical ring stages
3906f Plasmodium berghei, malaria in rodents, blood smear with vegetative forms and schizogony stages
3907g Plasmodium sp., malaria melanemia in human spleen, sec. showing pigment granules in endothelium
3908f Toxoplasma gondii, causing toxoplasmosis, smear or section of cyst
3909f Babesia canis, blood smear shows very heavy infection
3910f Sarcocystis sp., section of muscle showing the parasites in Miescher's tubes
3911e Nosema apis, honey bee dysentery, t.s. of diseased bee intestine
3912d Monocystis agilis, from earthworm seminal vesicle
3913d Eimeria stiedae, causes coccidiosis in rabbit liver, t.s. shows parasites in all stages
3914f Fasciola hepatica, beef liver fluke, w.m. of adult flat mount and carefully stained
3915c Fasciola hepatica, typical t.s. of body in different regions
3916d Fasciola hepatica, ova w.m.
3917h Fasciola hepatica, miracidia w.m. *
3918h Schistosoma mansoni, bilharziosis, adult male or female w.m.
3919g Schistosoma mansoni, section of infected snail liver showing redia and cercaria *
3920e Schistosoma mansoni, ova in faeces *
3921t Taenia spec. or Moniezia spec., tapeworm, scolex w.m.
3922f Taenia pisiformis, dwarf tapeworm, mature proglottids w.m.
3923d Taenia saginata, tapeworm, proglottids in different stages t.s.
3924d Taenia saginata, tapeworm, ova in faeces w.m.
3925f Hymenolepis nana, dwarf tapeworm, proglottids w.m.
3926f Echinococcus granulosus, dog tapeworm, scolices from cyst w.m. showing hooklets
3927f Echinococcus granulosus, cyst wall and scolices sec.
3928d Ascaris lumbricoides, roundworm of human, adult female t.s. in region of gonads
3929d Ascaris lumbricoides, adult male t.s. in region of gonads
3930d Ascaris lumbricoides, roundworm, ova from faeces w.m.
3931f Enterobius vermicularis (Oxyuris), pin worm, adult specimen w.m.
3932d Trichinella spiralis, muscle with encysted larvae l.s.
3933h Ancylostoma, hookworm, adult male or female w.m.
3934d Trichuris trichiura, whip worm, ova from faeces w.m.
3935e Strongyloides stercoralis, larvae w.m.
3936f Heterakis spumosa, intestinal parasite of rat, adult male or female
3937g Ixodes sp., tick, adult w.m. Carrier of relapsing fever and borreliosis
3938d Dermanyssus gallinae, chicken mite w.m. of adult specimen
3939e Acarapis woodi, varroa, parasitic mite of honey bee, w.m.
3940e Sarcoptes scabiei (Acarus siro), section of diseased skin with parasites
3941e Stomoxys calcitrans, stable fly, piercing sucking mouth parts w.m.
3942f Anopheles, malaria mosquito, head and mouth parts of female w.m.
3943e Culex pipiens, common mosquito, head and mouth parts of female w.m.
3944f Anopheles, malaria mosquito, larva w.m.
3945d Culex pipiens, common mosquito, larva w.m.
3946d Culex pipiens, common mosquito, pupa w.m.
3947f Cimex lectularius, bed bug, w.m. of adult specimen
3948f Pediculus humanus, human louse, w.m. of adult specimen
3949e Pediculus humanus, louse eggs attached to the hair, w.m.
3950e Ctenocephalus canis, dog flea, adult male or female, w.m.


3914f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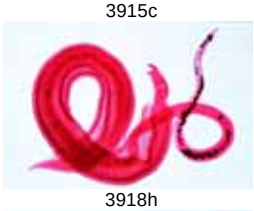
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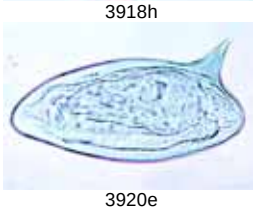
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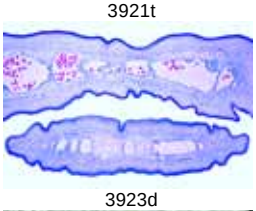
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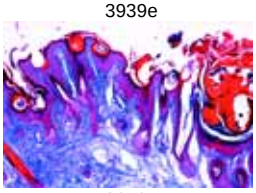
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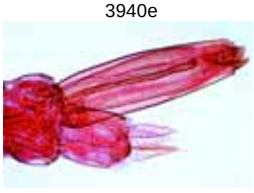
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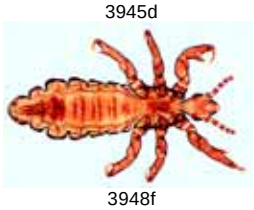
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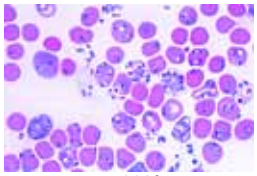
NEW! **Microscope Slides on CD-ROM.** The new amazing **CD-Program** for interactive learning and teaching in school and education comprise all necessary **photomicrographs of microscopic slides**, which can be observed by using **a „Virtual Microscope"**. Beautiful **color drawings** matching the slides, with detailed **explanations** (please see pages 129 – 136).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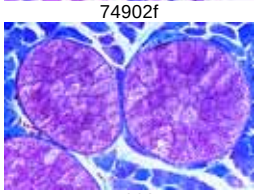
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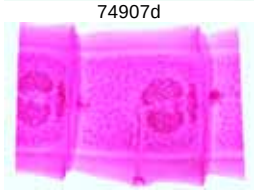
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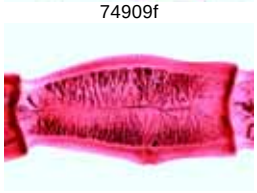
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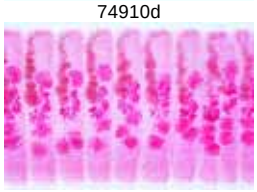
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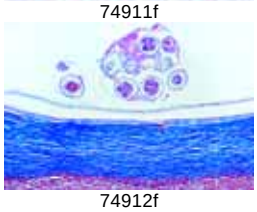
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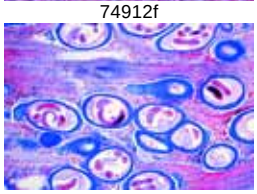
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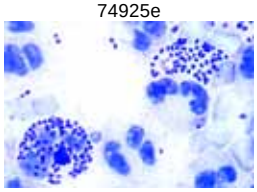
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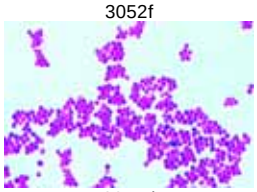
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No. 74900 General Parasitology, Short Set

25 Microscope Slides
With depictured accompanying brochure

74901f Trypanosoma gambiense, Central African sleeping disease, blood smear
74902f Plasmodium berghei, malaria in rodents, blood smear with vegetative forms and schizogony stages
74903f Sarcocystis sp., section of muscle showing the parasites in Miescher's tubes
74904e Nosema apis, honey bee dysentery, t.s. of diseased bee intestine
74905d Eimeria stiedae, causes coocidiosis in rabbit liver, t.s. shows parasites in all stages
74906f Fasciola hepatica, beef liver fluke, w.m. of adult flat mount and carefully stained
74907d Fasciola hepatica, ova w.m.
74908t Taenia spec. or Moniezia spec., tapeworm, scolex (head) w.m.
74909f Taenia pisiformis, dog tapeworm, mature proglottids w.m.
74910d Taenia saginata, tapeworm, proglottids in different stages t.s.
74911f Hymenolepis nana, dwarf tapeworm, proglottids w.m.
74912f Echinococcus granulosus, cyst wall and scolices sec.
74913d Ascaris lumbricoides, roundworm of human, adult female t.s. in region of gonads
74914d Ascaris lumbricoides, roundworm, ova from faeces w.m.
74915f Enterobius vermicularis (Oxyuris), pin worm, adult specimen w.m.
74916d Trichinella spiralis, muscle with encysted larvae l.s.
74917g Ixodes sp., tick, adult w.m. Carrier of relapsing fever and borreliosis
74918d Dermanyssus gallinae, chicken mite w.m. of adult specimen
74919e Acarapis woodi, varroa, parasitic mite of honey bee, w.m.
74920e Sarcoptes scabiei (Acarus siro), section of diseased skin with parasites
74921f Anopheles, malaria mosquito, head and mouth parts of female w.m.
74922e Culex pipiens, common mosquito, head and mouth parts of female w.m.
74923f Cimex lectularius, bed bug, w.m. of male or female
74924f Pediculus humanus, human louse, w.m. of male or female
74925e Ctenocephalus canis, dog flea, adult male or female, w.m.

No. 3050 Pathogenic Bacteria

25 Microscope Slides
With depictured accompanying brochure

3051e Diplococcus pneumoniae, causing croupous pneumonia, smear
3052f Neisseria gonorrhoeae, causing gonorrhoea, smear *
3053e Neisseria meningitidis (intracellularis), causing epidemic meningitidis, smear from culture
3054d Staphylococcus aureus, pus organism, smear from culture
3055d Streptococcus pyogenes, smear from culture showing short chains
3056d Corynebacterium diphtheriae, smear from culture
3057e Mycobacterium tuberculosis, smear from positive sputum stained after Ziehl-Neelsen
3058e Bacterium erysipelatos (Erysipelothrix rhusiopathiae), smear
3059d Brucella abortus, causing abortation in cattle (Bang disease), smear
3060d Proteus vulgaris, inflammation of urinary system, smear from culture
3061d Escherichia coli, colon bacteria, possibly pathogen, smear
3062d Eberthella typhi, causing typhoid fever, smear from culture
3063d Salmonella paratyphi, paratyphoid fever, smear from culture
3064d Hemophilus influenzae (Pfeiffer), smear from culture
3065e Klebsiella pneumoniae (Friedlander), causing pneumonia smear
3066f Pasteurella (Yersinia) pestis, bubonic plague, smear
3067d Salmonella enteritidis, causes meat poisoning, smear
3068d Shigella dysenteriae, causes bacillary dysentery, smear
3069d Bacillus anthracis, causes wool sorter's disease, smear
3070e Clostridium botulinum, causing food poisoning, smear
3071d Clostridium septicum, smear from culture
3072e Clostridium tetani, causing lockjaw, smear
3073d Clostridium perfringens, causing gas gangrene, smear
3074f Vibrio comma, causing Asiatic cholera, smear
3075g Borrelia duttoni (Spirochaeta recurrentis), causes Central African relapsing fever, blood smear with organisms

BOTANY

COMPREHENSIVE SETS

No. 3000 Bacteria, Basic Set

25 Microscope Slides
With depictured accompanying brochure

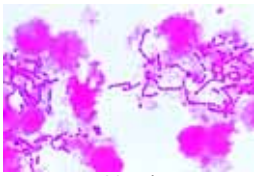
3001d Staphylococcus aureus, pus organism, smear from culture
3002d Sarcina lutea, chromogenic rods, smear from culture
3003e Streptococcus pyogenes, pus organism
3004d Streptococcus lactis, milk souring organism, short chains
3005d Bacillus subtilis, hay bacillus, smear with bacilli and spores
3006d Bacillus mycoides, soil organism
3007e Bacillus anthracis, wool sorters disease, smear from culture
3008e Mycobacterium tuberculosis, causing tuberculosis, smear from positive sputum
3009d Corynebacterium diphtheriae, causing diphtheria, smear from culture
3010e Bacterium erysipelatos, causing red murrain, smear from culture
3011d Rhizobium radicicola, nitrogen fixing bacteria in root nodules, section or smear
3012d Proteus vulgaris, putrefaction causing germs, smear from culture
3013d Escherichia coli, colon bacteria, smear from culture
3014d Eberthella typhi, causing typhoid fever, smear from culture
3015d Salmonella paratyphi, causing paratyphoid fever, smear from culture
3016f Vibrio comma, Asiatic cholera, smear from culture
3017d Shigella dysenteriae, bacillary dysentery, smear from culture
3018d Hemophilus influenzae, Pfeiffer bacillus, smear from culture
3019e Spirillum volutans, smear from putrid water
3020d Rhodospirillum rubrum, chromogenic spirilli, smear from culture
3021e Clostridium botulinum (botulism), causing food poisoning, smear
3022g Spirochaeta duttoni (Borrelia recurrentis), in blood smear
3023d Bacteria from mouth, smear with Gram positive and negative rods
3024d Bacteria from bread
3025d Bacteria from cheese

No. 3800 Bacteria, Large Set (New version)

50 Microscope Slides
With depictured accompanying brochure

Spherical bacteria, cocci

3801e Diplococcus pneumoniae, causing croupous pneumonia, smear
3802d Gaffkya tetragena, occurring as tetrads, smear
3803f Neisseria gonorrhoeae, causing gonorrhoea, smear *
3804e Neisseria meningitidis (intracellularis), causing epidemic meningitidis, smear from culture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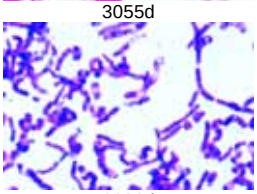
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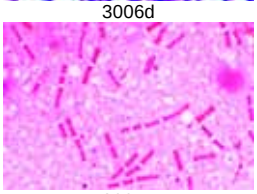
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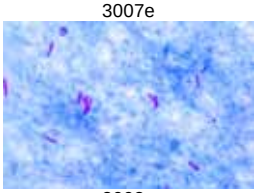
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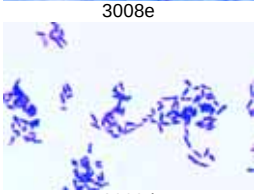
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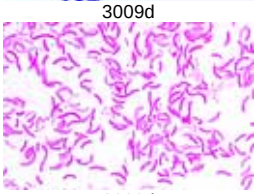
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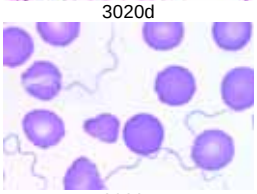
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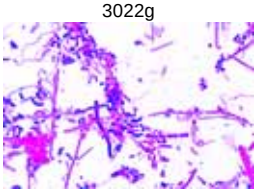
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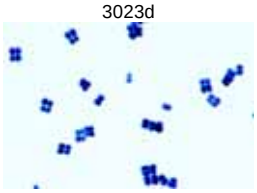
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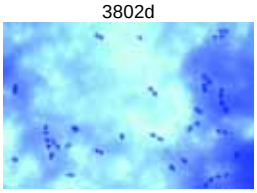
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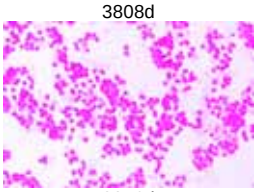
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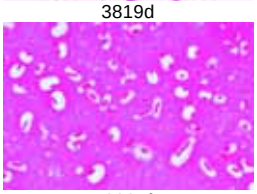
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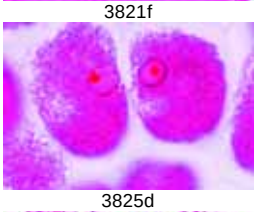
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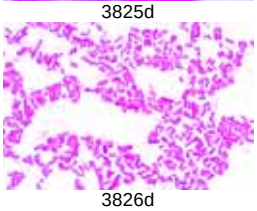
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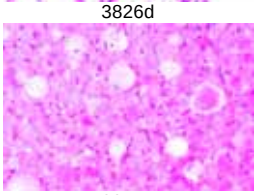
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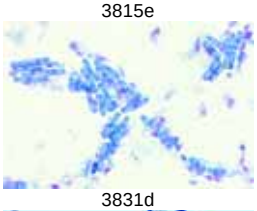
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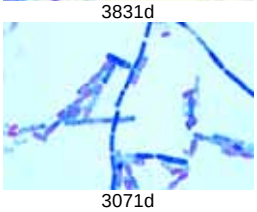
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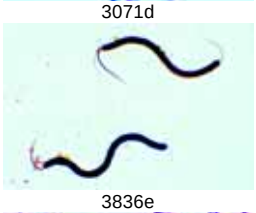
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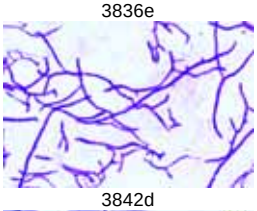
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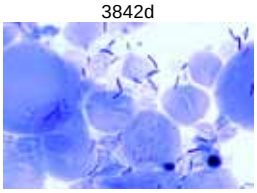
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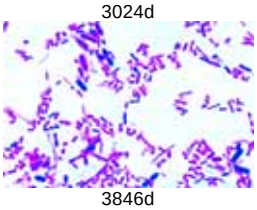

3846d

3805d Sarcina lutea, chromogenic rods occurring in packets
3806d Staphylococcus aureus, pus organism, smear from culture
3807d Streptococcus pyogenes, smear from culture showing short chains
3808d Streptococcus lactis, milk souring organism, smear from culture showing short chains

Rod-shaped bacteria, non spore-forming, gram-positive

3809d Corynebacterium diphtheriae, smear from culture
3810d Lactobacillus bulgaricus (Thermobacterium), Yoghurt bacteria (Bulgarian soured milk), from culture
3811h Mycobacterium leprae, causing leprosy, smear or tissue section *
3812e Mycobacterium tuberculosis, smear from positive sputum stained after Ziehl-Neelsen

Rod-shaped bacteria, non spore-forming, gram-negative

3813d Acetobacter aceti, manufacture of vinegar, smear
3814d Azotobacter, rods from soil, smear
3815e Bacterium erysipelatos (Erysipelothrix rhusiopathiae), smear
3816d Bacterium prodigiosum (Serratia marcescens), formation of red pigment, smear
3817d Brucella abortus, causing abortation in cattle (Bang disease), smear
3818d Eberthella typhi, causing typhoid fever, smear
3819d Escherichia coli, colon bacteria, smear
3820d Hemophilus influenzae (Pfeiffer), smear
3821f Klebsiella pneumoniae (Friedlander), causing pneumonia smear
3822f Pasteurella pestis, bubonic plague, smear
3823d Proteus vulgaris, putrefaction, smear from culture
3824d Rhizobium radicicola, smear from culture
3825d Rhizobium radicicola, nitrogen fixing organisms, section through root nodule of lupin showing bacteria in situ
3826d Salmonella enteritidis, causes meat poisoning, smear
3827d Salmonella paratyphi, paratyphoid fever, smear
3828d Shigella dysenteriae, causes bacillary dysentery, smear

Rod-shaped bacteria, spore-forming (bacilli)

3829d Bacillus anthracis, smear from culture
3830d Bacillus mycoides, large soil organisms growing in chains
3831d Bacillus subtilis, hay bacillus, smear showing bacilli and spores doubly stained
3832e Clostridium botulinum, causing food poisoning, smear
3833d Clostridium perfringens, causing gas gangrene, smear
3834e Clostridium tetani, causing lockjaw, smear

Spiral bacteria and spirochaetes

3835f Vibrio comma, causing Asiatic cholera, smear
3836e Spirillum volutans, a very large spirillum, smear *
3837d Rhodospirillum rubrum, chromogenic rods, smear
3838g Borrelia duttoni (Spirochaeta recurrentis), causes Central African relapsing fever, blood smear with organisms

Miscellaneous groups

3839d Actinomyces alni, sec. of root nodule showing mycorrhiza of alder
3840d Sphaerotilus natans, from putrid water, long chains with sheaths
3841d Methanobacterium, forming methane, smear
3842d Streptomyces griseus, streptomycin antibiotic, smear
3843d Bacteria from mouth, Gram positive and negative bacteria can be observed in this slide, ideal for demonstration
3844d Bacteria from sauerkraut, smear
3845d Bacteria from cheese, smear or section
3846d Bacteria from human intestine, smear

Cytological slides, special staining techniques

3847d Typical mixed bacteria, including Gram-positive and Gram-negative rods, smear
3848g Monotrichous flagella on Vibrio or Pseudomonas, specially stained *
3849g Peritrichous flagella on Salmonella or Proteus, specially stained
3850g Nuclear stain (Bacillus cereus), smear specially stained for nuclear material (DNA)

No. 2600 Cryptogamae, Elementary Set

25 Microscope Slides
With depictured accompanying brochure

2601e Bacteria type slide shows cocci, bacilli, spirilli
2602c Oscillatoria, blue green alga
2603c Pleurococcus, green alga
2604d Eudorina, small colonies
2605c Diatoms, strewn slide of mixed species
2606e Spirogyra in conjugation with zygotes
2607d Fucus, brown alga, female conceptacle with oogonia t.s.
2608d Fucus, brown alga, male conceptacle with antheridia t.s.
2609c Mucor, black mold, mycelium and sporangia
2610c Peziza, apothecium with asci t.s.
2611e Claviceps purpurea, ergot, stroma with perithecia l.s.
2612c Morchella, morel, fruiting body with asci t.s.
2613b Saccharomyces, yeast, budding cells
2614c Psalliota, gill fungus, pileus with lamellae t.s.
2615c Coprinus, mushroom, t.s. showing typical basidia and spores
2616d Lobaria pulmonaria, foliose lichen, thallus with symbiotic algae t.s.
2617d Moss stem with leaves w.m.
2618d Marchantia, liverwort, thallus with cupule and gemmae l.s.
2619d Marchantia, liverwort, antheridia l.s.
2620d Marchantia, liverwort, archegonia l.s.
2621d Polytrichum, moss, capsule with spores t.s.
2622d Equisetum, horsetail, strobilus with spores l.s.
2623c Aspidium (Dryopteris), stem t.s.
2624d Aspidium (Dryopteris), leaf with sporangia and spores t.s.
2625d Fern prothallium w.m.

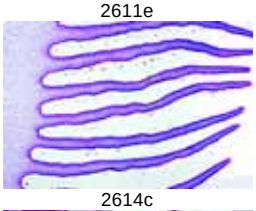
No. 2700 Cryptogamae, Supplementary Set I

Complementary to Set No. 2600
25 Microscope Slides
With depictured accompanying brochure

2701d Streptococcus lactis, milk souring bacteria
2702d Bacillus subtilis, hay bacillus, with spores
2703c Nostoc, blue green alga with heterocysts
2704e Volvox, with daughter colonies
2705d Zygnema, vegetative and conjugation stages with zygotes
2706d Closterium, crescent shaped desmid
2707d Chara, stonewort, thallus with reproductive organs
2708d Ectocarpus, brown alga, plurilocular gametangia
2709d Rhodomela, marine red alga, tetraspores
2710c Plasmodiophora brassicae, club root, host cells with spores t.s.
2711c Albugo candida, white rust of cruzifers, t.s.
2712c Penicillium, blue mold, mycelium and conidiophores
2713c Sclerotinia (Monilia), plum rot, host tissue with conidia t.s.
2714c Boletus, pore fungus, pileus t.s.
2715d Ustilago zeae, corn smut, pustule with spores t.s.
2716d Puccinia graminis, wheat rust, uredinia on wheat t.s.
2717d Puccinia graminis, aecidia and pycnidia on barberry leaf t.s.
2718d Xanthoria, lichen, apothecium with asci and ascospores t.s.
2719d Moss protonema w.m.
2720c Sphagnum, peat moss, leaf w.m.
2721c Polytrichum, moss, stem with leaves t.s.
2722e Selaginella, strobilus with spores l.s.
2723b Equisetum, horse tail, spores with elaters w.m.
2724c Pteridium, braken fern, rhizome t.s.
2725d Phyllitis scolopendrium, fern, leaf with sori and sporangia t.s.


2604d


2611e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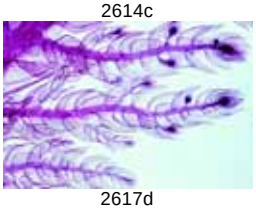
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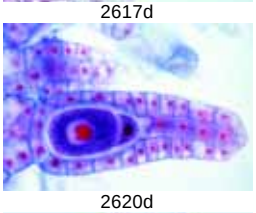
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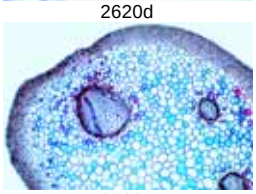
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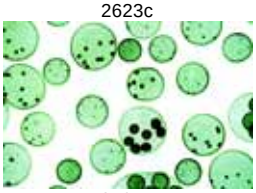
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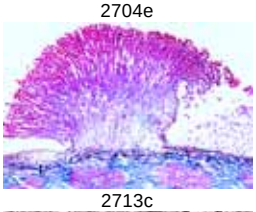
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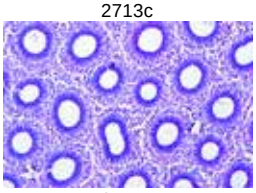
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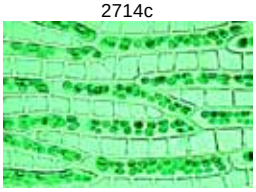
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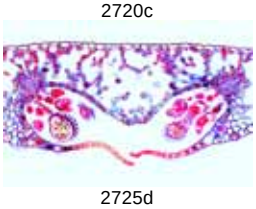
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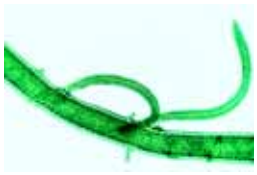
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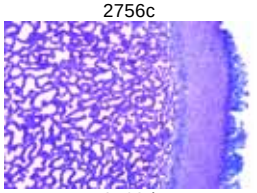
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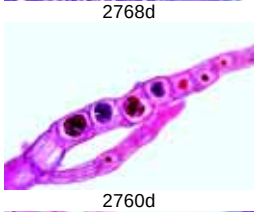
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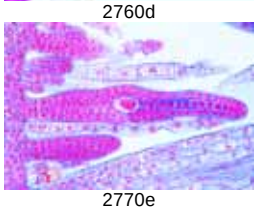
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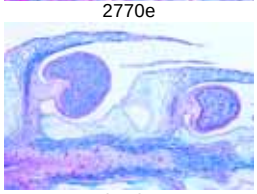
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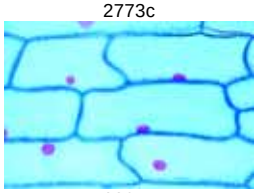
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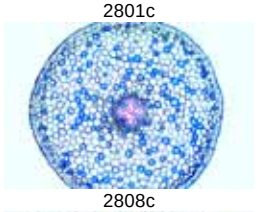
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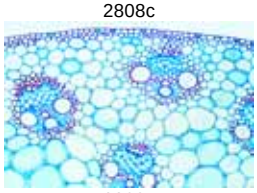
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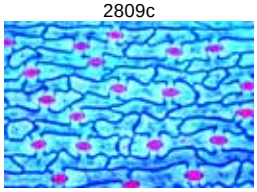
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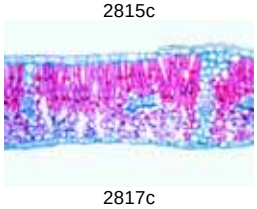

2817c

No. 2750 Cryptogamae, Supplementary Set II

Complementary to 2600 and 2700
25 Microscope Slides
With depictured accompanying brochure

2751d Sphaerotilus natans, bacteria from putrid water, long chains
2752d Cosmarium, desmid
2753c Chlamydomonas, biflagellate algae, stained and w.m.
2754c Cladophora, green alga, branched filaments and multinucleate cells, w.m.
2755c Oedogonium, green alga, simple vegetative filaments
2756c Enteromorpha, seaweed, inflated narrow frond w.m.
2757c Laminaria saccharina, t.s. showing thallus with sporangia
2758d Polysiphonia, marine red alga, antheridia
2759d Polysiphonia, marine red alga, cystocarps
2760d Polysiphonia, marine red alga, tetraspores
2761d Batrachospermum, fresh water red alga
2762d Exoascus pruni (Taphrina), plum pockets, infected tissue t.s.
2763d Erysiphe pannosa, rose mildew, conidia t.s.
2764c Tuber rufum, truffle, t.s. of fruiting body
2765c Venturia pirinum (Fusicladium), pear scab, t.s. with conidia
2766c Rhytisma acerinum, tar-spot of maple, leaf with sclerotia t.s.
2767c Botrytis allii, grey mold of onions, infected tissue t.s.
2768d Scleroderma vulgare, puff ball, young fruiting body t.s.
2769e Mnium, moss, antheridia l.s.
2770e Mnium, moss, archegonia l.s.
2771d Psilotum, primitive fern, stem and leaflets t.s.
2772e Lycopodium, clubmoss, sporophyll with spores l.s.
2773c Lycopodium, clubmoss, stem with stele t.s.
2774c Equisetum, horse tail, stem t.s.
2775c Salvinia natans, water fern, sporocarp t.s.

No. 2800 Phanerogamae, Elementary Set

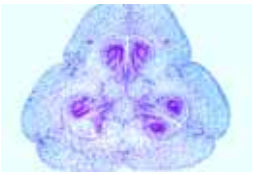
Plant cells, cell division, cell walls, metabolic products in the cell, roots, stems and vascular bunbdles, leaves, flowers and fruits, seeds,
25 Microscope Slides
With depictured accompanying brochure

2801c Simple plant cells, epidermis of Allium cepa w.m.
2802d Cell division (mitosis) all stages, in Allium root tips l.s.
2803c Starch grains, in t.s. of potato tuber
2804c Cork cells, in sec. of bark of Quercus
2805d Stone cells, in sec. of fruit of Pirinus (pear)
2806d Root hairs on root tip
2807c Zea mays, corn, typical monocot root t.s.
2808c Ranunculus, buttercup, typical dicot root t.s.
2809c Zea mays, corn, typical monocot stem t.s.
2810c Triticum, wheat, gramineous stem t.s.
2811c Aristolochia, birthwort, one year stem t.s.
2812c Aristolochia, birthwort, older stem t.s.
2813d Cucurbita, pumpkin, stem with bundles and sieve tubes l.s.
2814c Sambucus, elderberry, stem with lenticels t.s.
2815c Tulipa, tulip, leaf epidermis with stomata and guard cells w.m.
2816c Zea mays, corn, leaf t.s., a monocot gramineous leaf
2817c Syringa, lilac, leaf t.s., a typical dicot leaf
2818c Fagus, beech, leaf bud t.s. shows leaf origin and development
2819d Lilium, lily, flower bud t.s. shows flower diagram
2820d Lilium, lily, anthers t.s. shows pollen chambers and pollen grains
2821d Lilium, lily, ovary t.s. showing embryosac for general study
2822e Lilium, lily, stigma with pollen and pollen tubes l.s.
2823c Pinus, pine, leaf (needle) t.s.
2824d Triticum, wheat, grain (semen) t.s. shows embryo and endosperm
2825d Capsella, shepherd's purse, l.s. of embryos in situ

No. 2900 Phanerogamae, Supplementary Set

Complementary to Set No. 2800
50 Microscope Slides
With depictured accompanying brochure

2901d Stem apex and meristematic tissue of Asparagus near median l.s.
2902c Aleurone grains, t.s. of Ricinus endosperm
2903d Fat in sec. through endosperm of Corylus (hazel), stained for fat
2904c Lysigenous oil glands, t.s. through rind of Citrus fruit
2905d Inulin crystals, t.s. of Dahlia tuber
2906b Calcium oxalate crystals, in w.m. of Allium (onion) dry shell
2907b Wood cells, macerated and w.m.
2908c Lactiferous vessels, l.s. through stem of Euphorbia (spurge)
2909d Chloroplasts, leaf of Elodea w.m.
2910b Branched leaf hairs, isolated from Verbascum (mullein)
2911d Reserve cellulose, t.s. of Phoenix (date) seed
2912c Rheum, rhubarb, root with crystals t.s.
2913c Dendrobium, orchid, aerial root with velamen t.s.
2914c Pinus, pine, older woody root t.s.
2915c Smilax, root with thickened endodermis t.s.
2916d Lupinus, lupin, root nodules with nitrogen fixing bacteria t.s.
2917c Quercus, oak, older woody root t.s.
2918c Daucus carota, carrot, storage root t.s.
2919c Pinus, pine, older woody stem t.s.
2920c Zea mays, corn, monocot stem with vascular bundles l.s.
2921c Elodea, waterweed, aquatic stem with primitive bundle t.s.
2922c Juncus, bulrush, stem with internal stellate cells t.s.
2923c Pelargonium, geranium, young stem of an annual plant t.s.
2924d Tilia, lime, older woody stem t.s. and l.s.
2925c Acorus calamus, sweet flag, rhizome t.s.
2926d Pinus, pine, three sections of wood: transverse, radial, tangential
2927d Fagus, beech, three sections of wood: transverse, radial, tangential
2928c Bryonia, stem with sieve plates t.s.
2929c Ribes, currant, stem with phellogen t.s.
2930c Helianthus, sunflower, typical dicot stem t.s.
2931c Salvia, sage, square stem with angular collenchyma t.s.
2932c Nymphaea, water lily, floating leaf of an aquatic plant t.s.
2933c Dionaea, Venus fly trap, leaf with digestive glands t.s.
2934d Fagus, beech, sun and shadow leaves on one slide t.s.
2935c Pinguicula, butterwort, leaf with glandular hairs t.s.
2936c Nerium, oleander, xeromorphe leaf with sunken stomata t.s.
2937d Drosera, sundew, insectivorous leaf with glandular hairs w.m.
2938d Urtica, stinging nettle, leaf with stinging hairs
2939c Utricularia, bladderwort, w.m. or section of catching bladders
2940d Pinus, pine, male cone with pollen grains l.s.
2941d Pinus, pine, young female cone with ovules l.s.
2942f Pinus, pine, ovule with archegonia l.s.
2943e Pinus, pine, mature embryo with endosperm t.s.
2944b Pinus, pine, pollen grains with wings w.m.
2945f Lilium, lily, young anthers showing meiosis of pollen mother cells
2946d Tulipa, tulip, ovary t.s. showing arrangement of ovules
2947d Taraxacum, dandelion, composite flower l.s.
2948d Papaver, poppy, flower, t.s. shows floral diagram
2949d Phaseolus, bean, t.s. of pod showing pericarp and seed
2950d Lycopersicum, tomato, young fruit t.s.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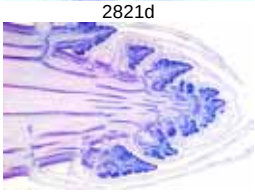
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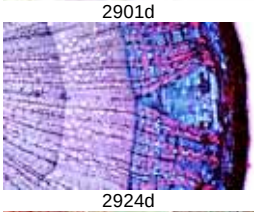
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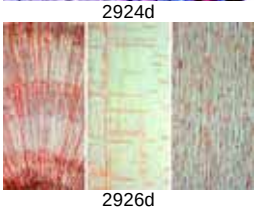
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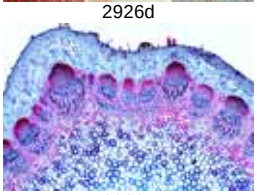
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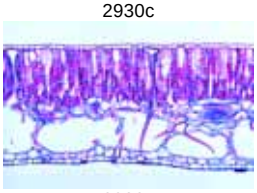
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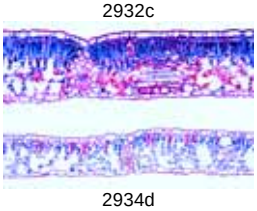
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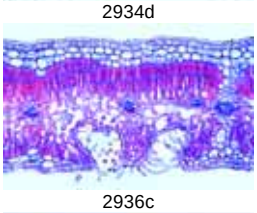
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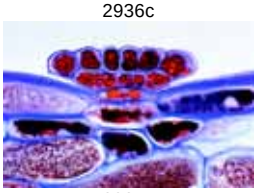
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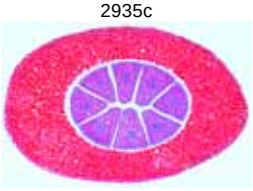
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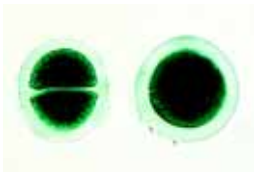
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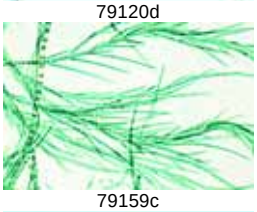
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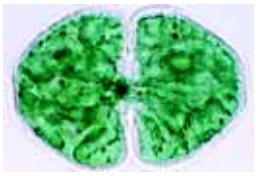
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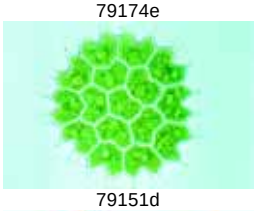
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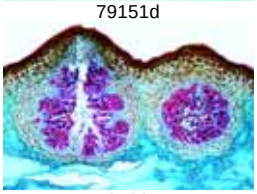
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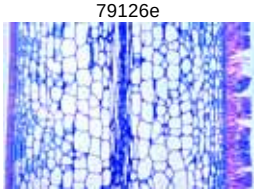
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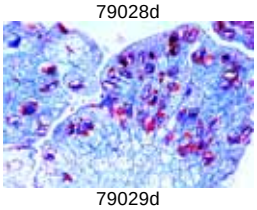
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BOTANY

DETAIL SETS

No. 79100 Algae

30 Microscope Slides
With depictured accompanying brochure

Cyanophyceae

79101c Chroococcus, a single-cell blue-green alga, w.m.
79103c Anabaena sp., blue-green alga, w.m. of filaments with heterocysts
79106d Nostoc sp., blue-green alga, sec. through colony with hormogonia
79108d Aphanizomenon sp., blue-green alga, w.m. showing heterocysts
79112c Scytonema, unbranched filaments with false branching, w.m.
79113d Stigonema, blue-green alga, branching filaments, w.m.

Chromophyta

79116c Diatoms, fresh water, recent, mixed species
79120d Diatoms, showing protoplasmic structure, mixed

Conjugatae

79166c Spirogyra sp., vegetative filaments w.m.
79167e Spirogyra sp., scalariform conjugation and zygotes following conjugation, w.m.
79169c Zygnema sp., w.m. of vegetative filaments
79174e Desmids, strewn slide showing several selected forms

Chlorophyceae

79145c Chlamydomonas, biflagellate cells, w.m.
79147d Pandorina morum, biflagellate cells in a spherical colony, w.m.
79149e Volvox, spherical colonies with daughter cells, w.m.
79151d Pediastrum sp., stellate colonies, w.m.
79156d Oedogonium sp., w.m. of filaments with sex organs, macrandrous
79158c Cladophora sp., branching filaments with multinucleate cells
79159c Draparnaldia glomerata, w.m. of filaments with clusters of branches
79162d Ulva lactuca, green alga showing thallus of one celled layer
79115d Vaucheria sp., w.m. of oogonia and antheridia

Charophyceae

79164d Chara vulgaris, w.m. of thallus with sex organs

Phaeophyceae

79126e Fucus serratus, antheridia and oogonia t.s. on one slide
79127d Fucus spiralis, monecious, t.s. of conceptacle with oogonia and antheridia
79129d Ectocarpus, plurilocular, w.m.
79123c Laminaria saccharina, thallus with sporangia t.s.

Rhodophyceae

79137d Polysiphonia, marine red alga, w.m. of thallus with antheridia
79138d Polysiphonia, marine red alga, w.m. of thallus with cystocarps
79139d Polysiphonia, marine red alga, w.m. of thallus with tetraspores
79141d Batrachospermum moniliforme, fresh-water red alga, w.m.

No. 79000 Fungi and Lichenes

20 Microscope Slides
With depictured accompanying brochure

Phycomycetes

79025c Mucor mucedo, w.m. of hyphae showing sporangia
79028d Rhizopus nigricans, w.m. of hyphae with developing zygotes
79029d Synchytrium endobioticum, potato black wart, sec. of infected tissue
79030c Plasmodiophora, sec. of cabbage rot

Ascomycetes

79015c Claviceps purpurea, t.s. of sclerotium
79016c Tuber rufum, truffle, sec. fruiting body showing asci
79018c Peziza sp., cup-fungus, t.s. of fruiting body with asci
79019d Erysiphe sp., mildew, t.s. of leaf with perithecia
79021d Penicillium sp., blue mold on orange-rind, sec. of hyphae with conidiophores
79022c Aspergillus glaucum, brown-mold, w.m. of hyphae with sporangia
79023b Saccharomyces sp., yeast, showing budding cells, w.m.
79013d Taphrina pruni (Exoascus pruni), plum pockets, t.s. of host tissue with haustoria and asci

Basidiomycetes

79002d Puccinia graminis, t.s. of uredinia on wheat, black rust
79001d Puccinia graminis, wheat rust, t.s. of aecidia on infected barberry leaf
79007d Ustilago zeae, corn smut, infected tissue with spores, sec.
79008c Psalliota sp., mushroom, l.s. through pileus and lamellae showing basidia and spores
79010c Boletus edulis, pore fungus, l.s. through pileus with pores
79012c Lycoperdon gemmatum, puff-ball, sec. of fruiting body

Lichenes

79033d Xanthoria parietina, t.s. of thallus showing hyphae with symbiotic algae
79034d Xanthoria parietina, t.s. of apothecium showing asci and spores

No. 78900 Bryophyta (Liverworts and Mosses)

15 Microscope Slides
With depictured accompanying brochure

Liverworts (Hepaticae)

78907d Marchantia, liverwort, t.s. of thallus with gemma cup
78908d Marchantia, liverwort, l.s. of antheridial branch
78910d Marchantia, liverwort, l.s. of archegonial branch
78913d Marchantia, liverwort, l.s. of mature sporogon
78904e Ricciocarpus, t.s. of thallus showing sexual organs
78905e Ricciocarpus, t.s. of thallus showing sporophytes

Mosses (Musci)

78914c Polytrichum, moss, t.s. of stem
78915c Polytrichum, moss, t.s. of leaves
78916e Polytrichum, moss, l.s. of antheridial branch
78917e Polytrichum, moss, l.s. of archegonial branch
78919d Polytrichum, moss, l.s. of capsule (sporogon)
78922d Polytrichum, moss, w.m. of protonema
78923d Mnium, moss, w.m. of leaf showing chloroplasts
78926c Sphagnum, peat moss, w.m. of branch with leaves, showing water storing cells
78928d Sphagnum, l.s. of capsule with spores

No. 78800 Pteridophytes (Ferns and Fern Allies)

15 Microscope Slides
With depictured accompanying brochure

Primitive ferns (Psilophytatae)

78801d Psilotum, primitive fern, t.s. of rhizome showing protostele
78802d Psilotum, t.s. of stem showing squamous leaves, aktinostele

Clubmosses (Lycopodiatae)

78805c Lycopodium, clubmoss, t.s. of stem showing plectostele
78807e Lycopodium, clubmoss, t.s. of strobilus showing isospores
78811c Selaginella, t.s. of stem showing siphonostele

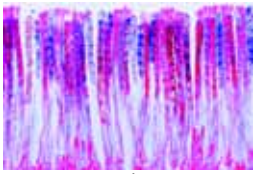
Horse-tails (Equisetatae)

78816c Equisetum, t.s. of stem
78818d Equisetum, t.s. of strobilus showing spores
78820b Equisetum, w.m. of spores with elaters

Ferns (Filicatae)

78825c Aspidium, common fern, t.s. of root
78826c Aspidium, t.s. of stem
78827d Aspidium, t.s. of leaf showing sori
78830f Aspidium, w.m. of prothallium showing antheridia and archegonia
78834d Pteridium, t.s. of rhizome
78845c Osmunda, royal fern, rhizome with ectophloic siphonostele t.s.
78847d Phyllitis scolopendrium, hart's tongue fern, leaf with sori and sporangia t.s.


79015c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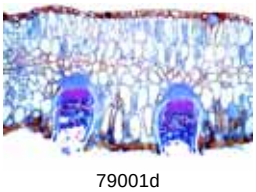
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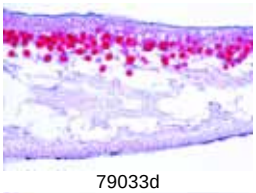
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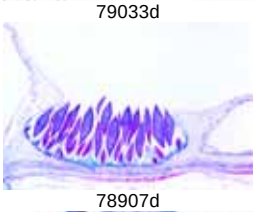
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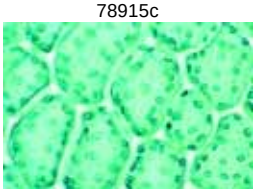
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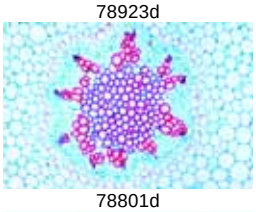
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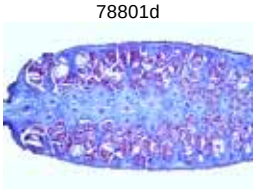
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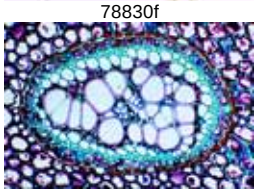
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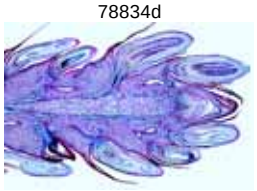
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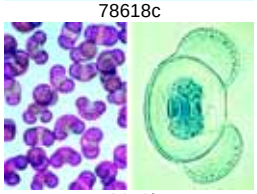
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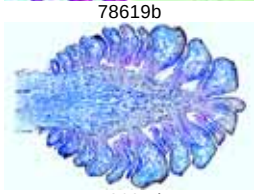
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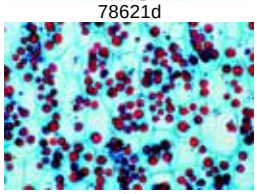
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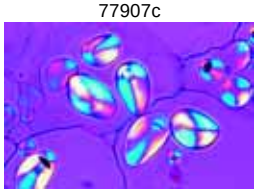
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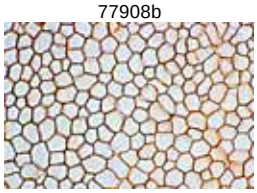
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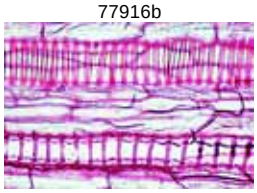
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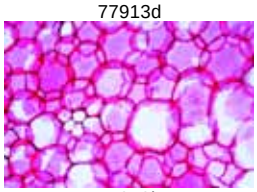
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No. 78600 Gymnospermae

15 Microscope Slides
With depictured accompanying brochure

78602e Ephedra, l.s. of male cone
78603f Ephedra, l.s. of female cone at pollination time
78605c Ginkgo, young sprout, t.s.
78607c Ginkgo, t.s. of a primitive gymnosperm leaf
78611c Pinus, pine, t.s. of young root showing primary structures
78612c Pinus, pine, t.s. of first year stem
78614e Pinus, pine, l.s. of bud showing vascular anatomy and origin of leaves
78616d Pinus, pine, wood, transverse, radial and tangential sections
78618c Pinus, pine, t.s. of needles (leaves)
78619b Pinus, pine, w.m. of mature pollen grains showing wings
78620d Pinus, pine, l.s. of mature male cone with pollen grains
78621d Pinus, pine, l.s. of young female cone showing developing ovules
78626c Larix, larch, t.s. of needles (leaves)
78627d Larix, larch, l.s. of male cone
78628e Larix, larch, l.s. of female cone with ovules

No. 77900 Angiospermae, Cells and Tissues

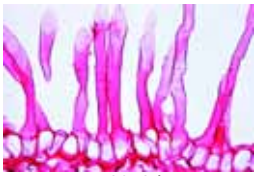
20 Microscope Slides
With depictured accompanying brochure

77901c Epidermal cells of Allium cepa (onion), flat mount shows typical plant cells with nuclei, cytoplasm and cell walls
77902d Mitosis, l.s. from Allium root tips showing all stages of plant mitosis carefully stained with iron-hematoxyline after Heidenhain
77903f Meiosis, t.s. of Lilium anthers showing different stages of meiotic divisions
77904d Stem apex and meristematic tissue of Asparagus l.s.
77905d Chloroplasts, w.m. of leaf of Elodea or Spinacea showing detail of large chloroplasts
77906c Chromoplasts, t.s. of root of Daucus carota (carrot)
77907c Aleurone grains, sec. of Ricinus endosperm
77908b Starch grains, different kinds of mixed species w.m.
77909d Fat, t.s. of endosperm of Corylus (hazel) stained for fat
77910d Inulin crystals, t.s. of tuber of Dahlia
77911d Acid tannic, t.s. bark of Rosa
77912b Calcium oxalate crystals in w.m. of dry Allium scale
77913d Annular and spiral vessels, isolated and w.m.
77914c Wood cells, macerated and w.m.
77915c Lactiferous vessels, l.s. stem of Euphorbia (spurge)
77916b Cork cells, t.s. bark of Quercus suber (oak) showing simple plant cell walls
77917b Scale-like stellate hairs, isolated w.m. from Elaeagnus (olive tree)
77918c Lysigenous oil glands, t.s. of the rind of Citrus fruit
77919b Parenchyme cells, t.s. of marrow of Sambucus niger (elderberry)
77920d Stone cells, shown in t.s. fruit of Pyrus communis (pear)

No. 78000 Angiospermae, Roots

15 Microscope Slides
With depictured accompanying brochure

78001d Allium cepa, onion, root tips, l.s. showing all stages of mitosis
78002c Zea mays, corn, t.s. through typical monocot root with central stele
78009c Iris, t.s. of typical monocot root
78018c Ranunculus, buttercup, t.s. of a typical dicot root for general study showing all structures very clearly
78003c Sarothamnus, broom, t.s. through woody root, special stained
78004c Taraxacum, dandelion, t.s. through tap root showing lactiferous duct.
78006d Vicia faba, bean, root nodule t.s. showing nitrogen fixing bacteria
78007d Ranunculus ficaria, tuber during fall season, t.s. showing starch
78011d Alnus, alder, t.s. of tuber showing symbiotic actinomycetes
78010d Neottia, orchid, t.s. of root showing endotrophic mycorrhiza
78008d Cuscuta, dodder, on host, t.s. showing haustorium
78013d Root hairs, w.m. of root tip showing root cap and root hairs, stained
78014d Zea mays, root tip, medium, l.s. showing central pith, cap and starch
78021c Monstera, aerial root t.s.
78027c Elodea, Canadian waterweed, t.s. of an aquatic root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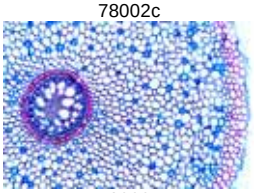
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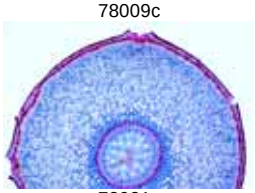
No. 78100 Angiospermae, Stems

20 Microscope Slides
With depictured accompanying brochure

78101c Tulipa, t.s. of typical monocot stem showing scattered bundles
78102f Aristolochia, t.s. of one year stem with widely separate bundles, two years stem and older stem, all 3 in on slide
78103e Dicot and monocot stem, t.s. of Helianthus and Canna on one slide
78104e Dicot and monocot stem, t.s. of Ranunculus and Zea on one slide
78115e Tilia, lime, two t.s. of stems, first year growth and two years on one slide
78140d Fagus silvatica, beech, three sections of wood, t.s., r.l.s., t.l.s.
78170d Fraxinus excelsior, ash, three sections of wood, t.s., r.l.s., t.l.s.
78120c Quercus, oak, t.s. of stem showing cambium and bark
78112c Sambucus niger, elder, t.s. of bark showing lenticells
78107c Linum, flax, t.s. of stem showing husk fibres
78108b Linum, flax, isolated husk fibres, w.m.
78109d Ranunculus, l.s. of herbaceous stem showing all vascular elements in the bundles
78110d Cucurbita pepo, l.s. of stem with sieve tubes and sieve plates
78126d Sieve plates in top view, t.s. of Cucurbita stem showing large structures
78111c Lamium, t.s. of typical square stem showing collenchyma cells
78131c Secale, rye, t.s. of typical grass stem
78114c Nymphaea, water lily, t.s. of aquatic stem showing reduced vascular tissue and spicular cells
78105c Hippuris, t.s. of stem showing typical aquatic stem with large central pith
78118d Urtica, nettle, stinging hairs with poison ducts
78169c Solanum tuberosum, potato, t.s. of tuber with starch grains and cork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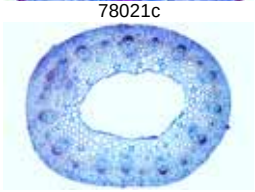
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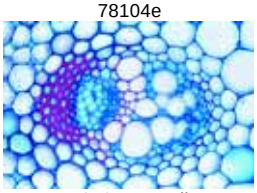
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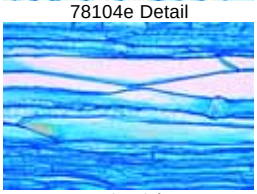
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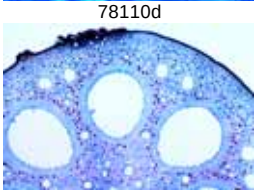
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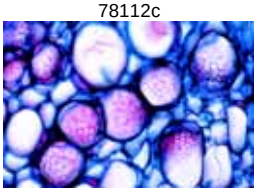
78112c

No. 78200 Angiospermae, Leaves

15 Microscope Slides
With depictured accompanying brochure

78201d Elodea, med. l.s. of stem tip showing apical meristem and origin of leaves
78212d Leaves, monocot and dicot, Zea and Ranunculus, t.s.
78206c Syringa, lilac, t.s. of typical dicot leaf showing numerous stomata, palisade layer and parenchyma
78232c Iris, typical monocot isobilateral leaf, t.s.
78246c Eucalyptus, a bifacial foliage leaf with schizogenous oil glands t.s.
78210d Fagus, beech, t.s. of sun and shade leaves on one slide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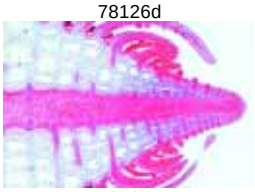
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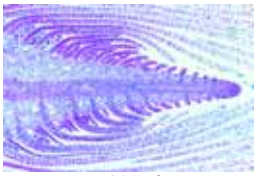
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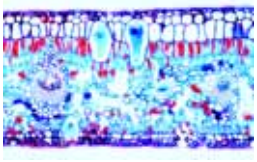
78203c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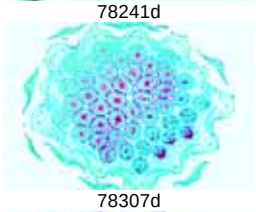
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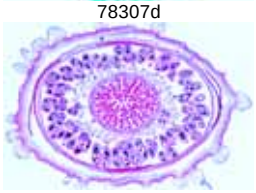
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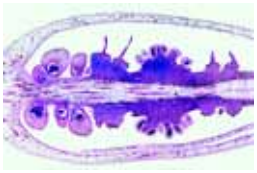
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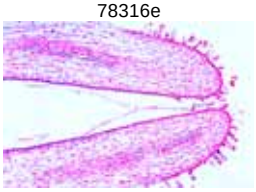
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78401d

78203c Calluna, ling, t.s. of rolled leaf showing sunken stomata
78204c Nerium oleander, t.s. of leaf showing thick three layered epidermis, several palisade layers and sunken stomatal pits lined with protective epidermal hairs
78213c Ficus elastica, rubber plant, t.s. of leaf showing cystoliths
78227c Elodea, t.s. of leaf showing the simple structure of an aquatic leaf
78207c Tulipa, tulip, epidermis w.m. showing many stomata, doubly stained
78208d Aesculus hippocastanum, t.s. of leaf bud showing bud squama and embedded folded leaves
78205d Drosera, sundew, w.m. of leaf to show glandular hairs
78215d Nepenthes, t.s. of pitcher with glands
78241d Utricularia, bladderwort, w.m. of bladder

No. 78300 Angiospermae, Flowers

15 Microscope Slides
With depictured accompanying brochure

78304e Zea and Ranunculus, t.s. of monocot and dicot flowers
78303d Bellis perennis, l.s. of flower bud showing composite flower
78307d Taraxacum, dandelion, t.s. of flower bud, composite flower
78306d Papaver, poppy, t.s. of flower bud showing parietal placentation
78319d Cheirantus, wallflower, t.s. of flower bud with marginal-parietal placentation
78330d Solanum, potato, t.s. of ovary showing marginal-central placentation
78341d Prunus avium, cherry, flower bud with perigynous ovary l.s.
78342d Pyrus malus, apple, flower bud with hypogynous ovary l.s.
78316e Arum maculatum, flower but, t.s. showing ovary
78329d Lilium, ovary t.s., showing arrangement of ovules and all structures for general study
78313d Lilium, anther t.s. for general study showing pollen chambers and pollen grains
78344e Lilium, anther t.s., early prophase for general study
78311e Stigma of Eschscholtzia or Lilium,, w.m. showing penetrating pollen
78326b Pollen of Corylus, hazelnut, w.m.
78310c Pollen types, w.m. of a great variety of mixed pollen

No. 78400 Angiospermae, Fruits and Seeds

15 Microscope Slides
With depictured accompanying brochure

78401d Triticum, wheat, t.s. of kernel (grain) with endosperm and starch grains
78402e Triticum, wheat, l.s. of kernel showing early origin of embryo
78425d Zea mays, corn, young cob t.s.
78404d Phaseolus, bean, t.s. of pod showing developing seeds
78416d Solanum, potato, t.s. of ovary with developing embryos
78419d Helleborus, l.s. of an atrope ovary
78417d Capsella bursa pastoris, l.s. of ovary showing developing embryos in different stages
78421d Papaver, poppy, t.s. of ovary showing developing embryos
78411d Phoenix, date-palm, t.s. of seed
78413d Prunus domestica, plum, t.s. of young stony fruit
78445d Juglans regia, walnut, young drupe (stone fruit) t.s.
78423d Ribes, gooseberry, l.s. of young fruit
78442d Helianthus, sunflower, t.s. of an achene fruit
78443d Pyrus malus, apple, young pome t.s., a fleshy, many seeded fruit
78444d Fragaria, strawberry, young aggregate fruit l.s.

No. 6070 The Pine (Pinus sp.)

12 Microscope Slides
With depictured accompanying brochure

6071c Pine, root t.s.
6072c Pine, older woody stem (twig) t.s., with annular rings and resin ducts
6073d Pine, wood, three sections: transverse, radial, tangential
6074b Pine, wood cells, macerated and w.m.
6075e Pine, stem apex l.s., for meristematic tissue and leaf origin
6076c Pine, leaves (needles) t.s.
6077d Pine, male cone with pollen l.s.
6078b Pine, mature pollen grains, w.m. showing wings
6079d Pine, young female cone, l.s. shows ovules
6080f Pine, ovule with growing female gametophyte l.s.
6081f Pine, ovule with archegonia l.s.
6082e Pine, mature embryo with endosperm, t.s. with cotyledons

No. 6050 The Tulip (Tulipa gesneriana)

8 Microscope Slides

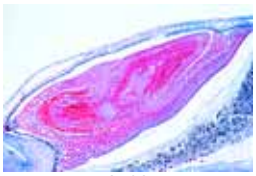
6051d Tulip, flower bud t.s., shows floral diagram
6052b Tulip, pollen grains w.m.
6053d Tulip, ovary t.s. shows arrangement of ovules
6054c Tulip, young bulb t.s.
6055c Tulip, young bulb l.s.
6056c Tulip, stem t.s. shows scattered bundles
6057c Tulip, root t.s. shows central vascular cylinder
6058c Tulip, leaf t.s.

No. 6100 Flowers and Fruits of Rosaceae

12 Microscope Slides
With depictured accompanying brochure

6101d Cherry (Prunus avium), flower bud t.s.
6102d Cherry, flower bud l.s. showing perigynous ovary
6103d Cherry, young stony fruit l.s.
6104d Apple (Pyrus malus), flower l.s. showing hypogynous ovary
6105d Apple, young pome t.s., a fleshy many seeded fruit
6106d Apple, young pome l.s.
6107d Gooseberry (Ribes uva-crispa), flower l.s.
6108d Gooseberry, many seeded berry l.s.
6109d Raspberry (Rubus idaeus), flower showing many carpels l.s.
6110d Raspberry, young aggregate fruit l.s.
6111d Strawberry (Fragaria), flower l.s.
6112d Strawberry, young aggregate fruit l.s.

NEW! **Microscope Slides on CD-ROM.** The new amazing **CD-Program** for interactive learning and teaching in school and education comprise all necessary **photomicrographs of microscopic slides**, which can be observed by using **a „Virtual Microscope**“. Beautiful **color drawings** matching the slides, with detailed **explanations** (please see pages 129 – 136).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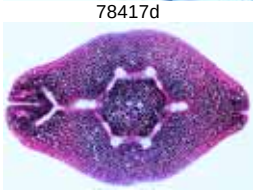
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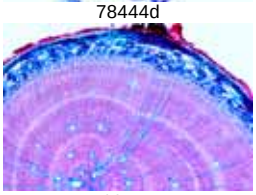
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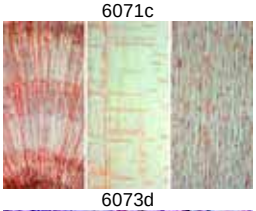
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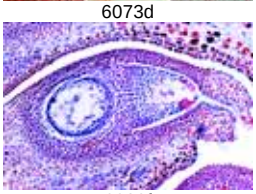
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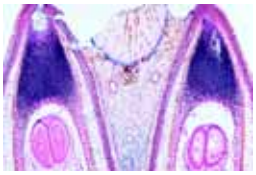
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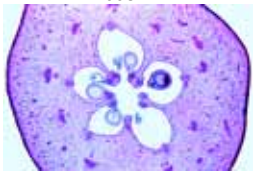
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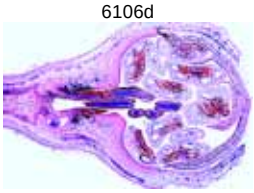
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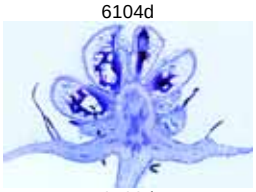
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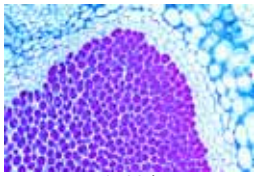
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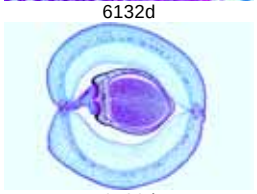
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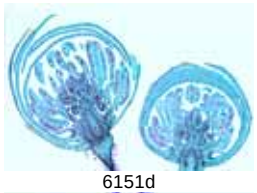
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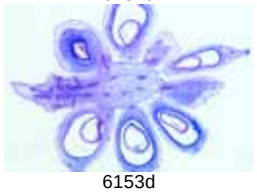
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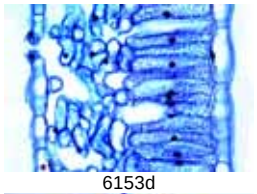
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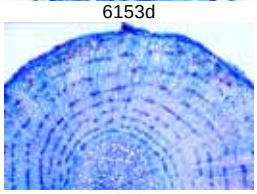
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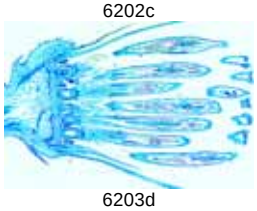
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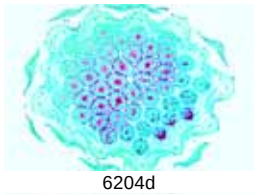
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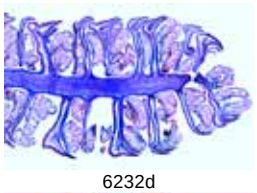
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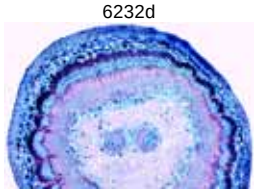
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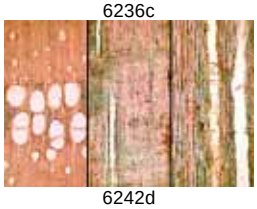

6242d

No. 6130 Fabaceae (Papilionaceae)

6 Microscope Slides
With depictured accompanying brochure

6131c Pea (Pisum sativum), stem and petiolar tendril t.s.
6132d Pea, root with root nodules and nitrogen fixing bacteria t.s.
6133d Bean (Phaseolus vulgaris), flower bud t.s.
6134d Bean, flower bud l.s.
6135d Bean, flower showing young fruit l.s.
6136d Bean, pod with pericarp and seed t.s.

No. 6150 Ranunculaceae

Microscope Slides
With depictured accompanying brochure

6151d Buttercup (Ranunculus sp.), flower l.s.
6152d Buttercup, fruit (achene) l.s.
6153d Buttercup, fruit (achene) t.s.
6154d Cowslip (Caltha sp.), fruit l.s.
6155c Buttercup (Ranunculus sp.), stem with open collateral bundles t.s.
6156c Buttercup, root with radial concentric vascular bundle t.s.
6157c Ranunculus ficaria, root nodules showing starch grains t.s.

No. 6170 Solanaceae

7 Microscope Slides
With depictured accompanying brochure

6171c Potato (Solanum tuberosum), tuber with starch grains t.s.
6172c Potato, stem t.s.
6173d Potato, young flower l.s.
6174d Potato, young flower t.s.
6175d Potato, fruit l.s.
6176d Tomato (Lycopersicum esculentum), young fruit t.s.
6177c Tobacco (Nicotiana tabacum), leaf t.s.

No. 6200 Compositae

8 Microscope Slides
With depictured accompanying brochure

6201c Dandelion (Taraxacum), taproot t.s.
6202c Dandelion, root with lactiferous vessels l.s.
6203d Dandelion, composite flower l.s.
6204d Dandelion, composite flower t.s.
6205d Dandelion, lingulate flower isolated and w.m.
6206d Dandelion, tubular flower isolated and w.m.
6207d Sunflower (Helianthus), seed (achene) t.s.
6208c Sunflower stem with open collateral bundles t.s.

No. 6230 Trees and Shrubs

12 Microscope Slides
With depictured accompanying brochure

6231d Hazel (Corylus avellana), female flower l.s.
6232d Hazel, male flower l.s.
6233b Hazel, mature pollen grains w.m.
6234d Hazel, young fruit (nut) l.s.
6235d Willow (Salix alba), young aggregate fruit l.s.
6236c Horse chestnut (Aesculus hippocastanum), petiole t.s.
6237c Horse chestnut, leaf bud t.s., shows leaf origin
6238d Horse chestnut, flower bud l.s.
6239d Horse chestnut, young fruit t.s.
6240d Beech (Fagus silvatica), sun and shadow leaves t.s.
6241d Beech, wood sections: transverse, tangential, radial
6242d Oak (Quercus robur), wood sections: transverse, tangential, radial

No. 6250 Arrangement and Types of Vascular Bundles

13 Microscope Slides
With depictured accompanying brochure

6251d Protostele. Psilotum, stem t.s.
6252d Actinostele. Lycopodium, stem t.s.
6253d Polystele. Pteridium, rhizome t.s. showing concentric vascular bundles with inner xylem
6254d Ectophloic siphonostele. Osmunda, rhizome t.s.
6255d Amphiphloic siphonostele. Adiantum, rhizome t.s.
6256d Dictyostele. Polypodium, rhizome t.s.
6257d Eustele. Ranunculus, stem t.s., open collateral bundles
6258d Eustele. Lamium, stem t.s.
6259d Eustele. Cucurbita pepo, stem t.s., bicollateral bundles
6260d Atactostele. Zea mays, stem t.s., closed collateral bundles
6261d Arrangement of bundles similar to atactostele in a dicot plant. Podophyllum, stem t.s.
6262d Concentric vascular bundles with outer xylem. Convallaria, rhizome t.s.
6263d Radial concentric vascular bundle. Ranunculus, root t.s.

CYTOLOGY EMBRYOLOGY GENETICS

No. 5000 The Animal Cell

12 selected Microscope Slides of animal cytology
With depictured accompanying brochure

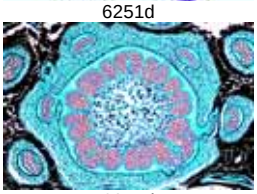
5001c Squamous epithelium, isolated cells from human mouth. Nuclei and cytoplasm are shown
5002d Striated muscle l.s. showing nuclei, striations, myofibrils
5003d Compact bone and hyaline cartilage t.s., two sections on one slide for comparison
5004e Nerve fibres isolated, fixed and stained by osmic acid to show myeline sheaths and Ranvier's nodes
5005d Liver of Salamandra t.s., showing simple animal cells with cellular membranes, nuclei, and cytoplasm
5006f Kidney of mouse, t.s. vital stained with trypanblue to demonstrate the storage of epithelial cells
5007d Ovary of cat, t.s. showing primary, secondary, and Graafian follicles
5008d Testis of frog, t.s. showing spermatogenesis. Spermatogonia, spermatocytes, spermatids, and mature spermatozoa
5009e Salamandra larva, t.s. of skin and other organs selected to show cell division (mitosis) in various stages
5010f Uteri of Ascaris megalocephala, t.s. iron hematoxyline stained to show details of meiosis with chromosomes and nuclear spindles
5011f Salivary gland of Chironomus larva. Giant chromosomes showing large chromomeres. Stained for DNA after Feulgen
5012e Ova from Psammechinus (sea urchin). Unfertilized ova, fertilized ova, early cleavage stages

No. 5100 The Plant Cell

12 selected Microscope Slides of plant cytology
With depictured accompanying brochure

5101c Epidermis of Allium cepa (onion), w.m. showing simple plant cells with cell walls, nuclei and cytoplasm
5102d Root tips of Allium cepa l.s. showing cell division (mitosis) in all stages, clearly stained


6251d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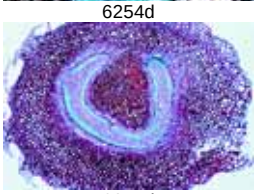
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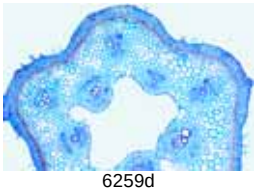
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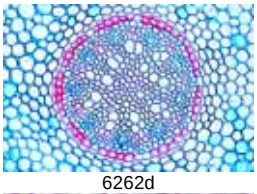
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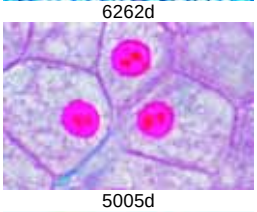
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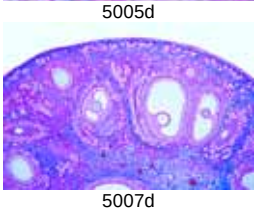
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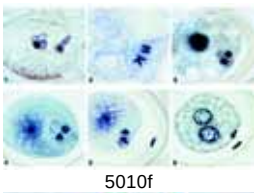
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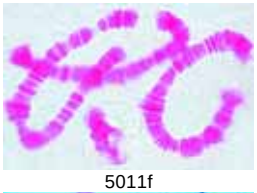
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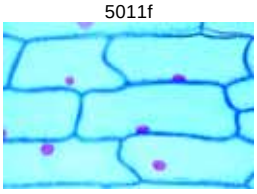
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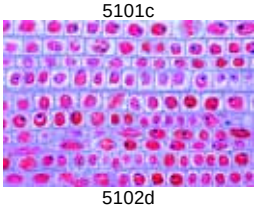
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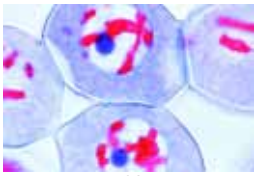

5103e

5103e Pollen mother cells of Lilium. Prophase of first maturation division (meiosis) showing chromosomes

5104f Pollen mother cells of Lilium. Metaphase and anaphase of first maturation division (meiosis) showing nuclear spindles and contracted chromosomes

5105c Wood of Tilia macerated and w.m. showing wood cells, vessels and fibres

5106d Fruit of Pyrus (pear) t.s. showing stone cells (sclerenchyma cells)

5107c Tuber of Solanum (potato) t.s. shows cork and starch grains

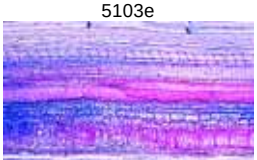
5108d Cucurbita pepo (pumpkin) l.s. of stem showing vascular bundles with sieve tubes, spiral and annular vessels, sclerenchyma fibres

5109c Ricinus endosperm t.s. showing aleurone grains

5110d Anthers of Lilium (lily), t.s. showing pollen sacs and pollen grains

5111d Ovary of Lilium (lily), t.s. showing arrangement of ovules and embryosac

5112e Spirogyra showing conjugation stages and formation of zygotes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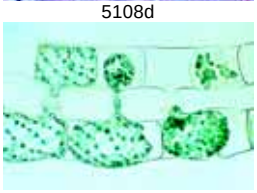
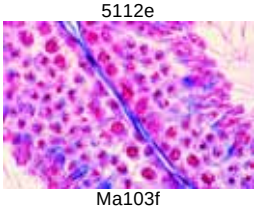

5112e

No. 79600 Animal, Human and Plant Cytology,

Special Set comprising 25 prepared microscope slides of best quality

With depictured accompanying brochure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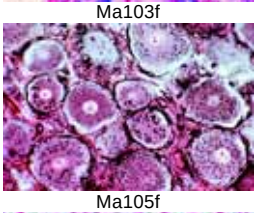
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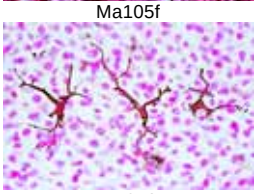
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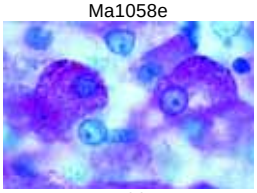
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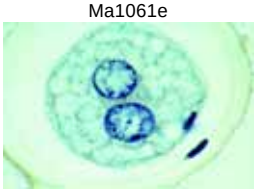
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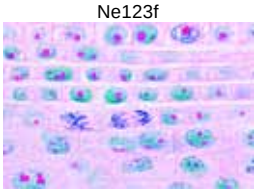
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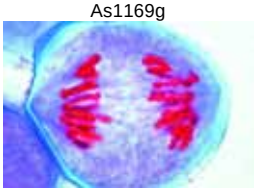
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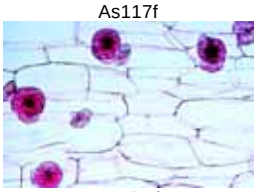

As135d

Ma101d Simple animal cells in sec. of salamander liver showing nuclei, cell membranes and cytoplasm. For general study of the animal cell

Ma1023f Mitotic stages in smear of red bone marrow of mammal *

Ma103f Meiotic (maturation) stages in testis of mouse, sec. iron hematoxyline stained after Heidenhain

Ma1033f Meiotic (maturation) stages in sec. through testis of salamander, selected material showing large structures *

Ma1045f Barr bodies (human sex chromatin) in smear from female squamous epithelium *

Ma105f Mitochondria in thin sec. of kidney or liver, specially prepared and stained

Ma1055g Golgi apparatus in sec. of spinal ganglion or other organ *

Ma1058e Pigment cells in skin

Ma1061e Storage of glycogen in liver cells, sec. stained with carmine after Best or PAS reaction

Ma1063e Storage of fat in cells of costal cartilage, sec. stained with Sudan

Ma1065f Secretion of fat in mammary gland, section stained with Osmic acid

Ma1067f Phagocytosis in Kupffer's star cells of the liver, sec. of mammalian liver injected with trypan blue

In245f Giant chromosomes in smear of the salivary gland of Chironomus larva, carefully fixed and stained

Ne121f Ascaris megalocephala embryology. Sec. of uteri showing entrance and modification of sperm in ova

Ne122f Ascaris megalocephala embryology. Sec. of uteri showing maturation stages (meiosis). Po1ar bodies can be seen.

Ne123f Ascaris megalocephala embryology. Sec. of uteri showing ova with male and female pronuclei

Ne124f Ascaris megalocephala embryology. Sec. of uteri showing early cleavage stages (mitosis)

Ne125f Ascaris megalocephala embryology. Sec. of uteri showing later cleavage stages (mitosis)

As114d Mitosis, l.s. from Allium root tips showing all stages of plant mitosis carefully stained with iron-hematoxyline after Heidenhain

As1169g DNA and RNA, thin l.s. from Allium root tips, specially fixed and stained with methylgreen and pyronine to show DNA and RNA in different colours *

As119g Mitochondria, thin l.s. of Allium root tips specially fixed and stained to show the mitochondria clearly

As117f Meiosis, t.s. of Lilium anthers showing different stages of meiotic divisions

As131c Aleurone grains, sec. of Ricinus endosperm

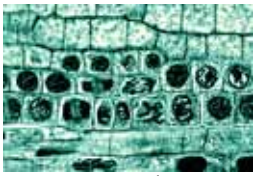
As135d Inulin crystals, t.s. of tuber of Dahlia

As148d Chloroplasts, w.m. of leaf of Elodea or Spinacea showing detail of large chloroplasts

No. 5150 Mitosis and Meiosis Set I,

6 selected Microscope Slides

With depictured accompanying brochure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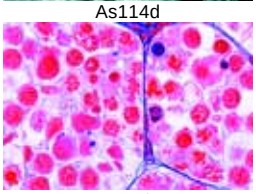
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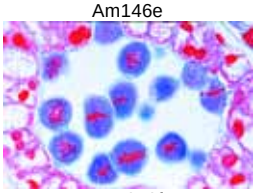
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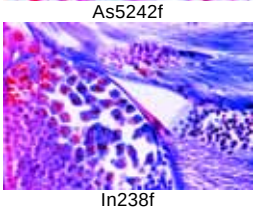
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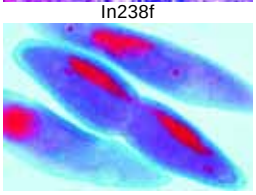
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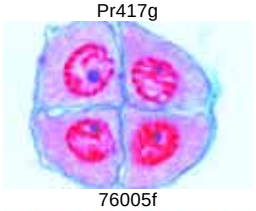
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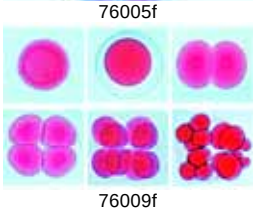
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76012f


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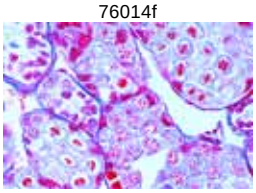

76016d


76019h

As114d Mitosis, l.s. from Allium root tips showing all stages of plant mitosis carefully stained with iron-hematoxyline after Heidenhain

Ma102f Mitotic stages in sec. through red bone marrow of mammal

Am146e Meiotic and mitotic stages in sec. of Salamandra testis. Many meiotic and mitotic stages can be observed

As5242f Lilium, anther t.s., microspore mother cells showing telophase of first and prophase of second (homeotypic) division

In245f Giant chromosomes, smear from salivary gland of Chironomus, carefully fixed and stained *

Ne122f Ascaris megalocephala embryology. Sec. of uteri showing maturation stages (meiosis). Polar bodies can be seen.

No. 5170 Mitosis and Meiosis Set II,

5 selected Microscope Slides

With depictured accompanying brochure

As116d Mitosis, l.s. from Vicia faba (bean) root tips showing all mitotic stages. Iron hematoxyline stained

As5242f Lilium, anther t.s., microspore mother cells showing telophase of first and prophase of second (homeotypic) division

Ma1021h Mitotic stages in sec. of whitefish blastula showing spindles *

In238f Spermatogenesis with meiotic and mitotic stages, sec. of testis of Carausius, grasshopper, carefully stained

Pr417g Paramecium, in fission, nuclei stained *

No. 76000 Set of Genetic Slides

25 Microscope Slides

With depictured accompanying brochure

76001d Allium, root tips, l.s. showing all stages of mitosis

76002e Eschscholtzia, stigma, w.m. showing penetrating pollen

76003e Lilium, microspore mother cells, first division, leptotene – zygotene stage

76004e Lilium, microspore mother cells, first division, diakinesis – telophase

76005f Lilium, microspore mother cells, second division, interkinesis – four cells stage

76006f Polytrichum, moss, archegonium, w.m.

76007e Polytrichum, moss, archegonium, l.s.

76008d Spirogyra scalariform conjugation showing zygotes following conjugation

76009f Sea urchin, developing of eggs, w.m. of most stages up to pluteus in the same slide

76010f Giant chromosomes from salivary gland of Chironomus, squash preparation special stained for chromomeres

76011e Giant chromosomes from salivary gland of Chironomus, section

76012f Ascaris, fertilisation of eggs, sec.

76013f Ascaris, male and female pronuclei, sec.

76014f Ascaris, meiosis and early cleavage, sec.

76015e Testis of crayfish, sec. showing meiosis and spermatogenesis

76016d Testis of mouse, t.s. showing spermatogenesis

76017d Ovary of rabbit, l.s. showing follicles in various stages of development

76018f Embryology of fish, l.s. of embryo showing animal mitosis

76019h Chromosomes, human, female, of culture of peripheral blood

76020i Chromosomes, human, male, of culture of peripheral blood

76021f Drosophila genetics, adult wild type, w.m.

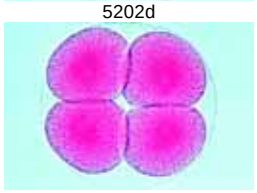
76022f Drosophila genetics, „barr eye" mutant, w.m.

76023f Drosophila genetics, „brown eye" mutant, w.m.

76024f Drosophila genetics, „vestigial wing" mutant, w.m.

76025f Drosophila genetics, „white eye" mutant, w.m.


5202d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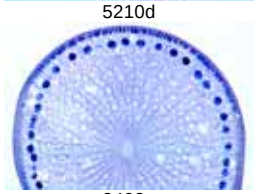
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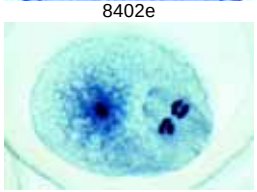
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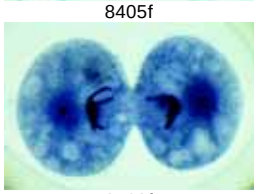
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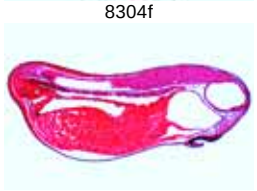
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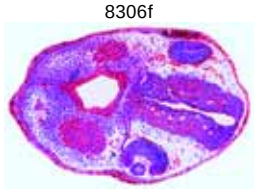
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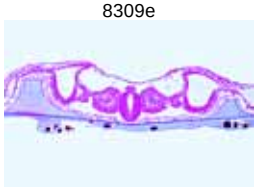
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No. 5200 The Sea Urchin Embryology (Psammechinus miliaris)

12 Microscope Slides
With depictured accompanying brochure

5201d Sea urchin, unfertilized eggs
5202d Sea urchin, fertilized eggs
5203d Sea urchin, two cells
5204d Sea urchin, four cells
5205d Sea urchin, eight cells
5206d Sea urchin, sixteen cells
5207d Sea urchin, thirty-two cells
5208d Sea urchin, morula
5209d Sea urchin, blastula
5210d Sea urchin, blastula, beginning gastrulation
5211d Sea urchin, blastula, progressive gastrulation
5212d Sea urchin, pluteus larva

No. 8400 The Ascaris megalocephala Embryology

10 Microscope Slides
With depictured accompanying brochure

8401d Cell division in l.s. of Allium root tips, each slide showing all mitotic stages, carefully stained. For general study of mitosis
8402e Ascaris, primary germ cells in the growing zone of oviduct
8403f Ascaris, entrance of sperm in the oocytes
8404f Ascaris, first and second maturation divisions in oocytes I
8405f Ascaris, first and second maturation divisions in oocytes II
8406f Ascaris, mature oocytes with male and female pronuclei
8407f Ascaris, early cleavage stages
8408f Ascaris, later cleavage stages
8409d Ascaris, adult female roundworm, t.s. in region of gonads
8410d Ascaris, adult male roundworm, t.s. in region of gonads

No. 8300 The Frog Embryology (Rana sp.)

10 Microscope Slides
With depictured accompanying brochure

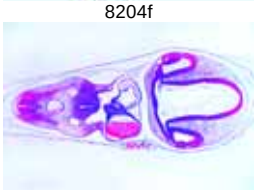
8301f Frog, morula, l.s. with macro- and micromeres
8302f Frog, blastula. l.s. shows blastocoel
8303f Frog, gastrula, sagittal l.s. shows germ layers, dorsal lip, yolk plug
8304f Frog, neurula, t.s. showing primordium of notochord, entoderm with primary intestinal cavity
8305f Frog, early tail bud stage, t.s. with neural tube, notochord
8306f Frog, early tail bud stage, sagittal l.s. with primordium of brain, intestine, segmentation of mesoderm
8307f Frog, hatching stage, t.s. through region of head or gills
8308f Frog, hatching stage, t.s. through region of midbody
8309e Frog, young tadpole, t.s. through head
8310e Frog, young tadpole, t.s. through thorax or abdomen

No. 8200 The Chicken Embryology (Gallus domesticus)

10 Microscope Slides
With depictured accompanying brochure

8201f Chicken, 24 hour, t.s. with neural groove, notochord, germ layers
8202f Chicken, 36 hour, t.s. with neural tube, differentiation of mesoderm
8203g Chicken, 48 hour, l.s. with differentiation of mesoderm and ectoderm
8204f Chicken, 3 day, t.s. through body showing amnion and serosa. myotom, primordium of kidney, aorta, extraembryonic vessels
8205f Chicken, 3 day, t.s. of head with primordium of brain, eyes and heart
8206g Chicken, 3-4 day, horizontal section of entire specimen shows primordia of various organs, gill slits
8207f Chicken, 4-5 day, t.s. through region of head with brain, gill arches
8208f Chicken, 4-5 day, t.s. through region of heart shows heart, lungs, vertebrae, spinal cord
8209g Chicken, 8 day, sagittal l.s. through entire specimen showing various embryonic organs
8210f Chicken, feather development, sec. through wings in different stages of the development


8204f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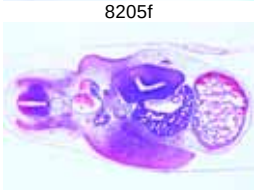
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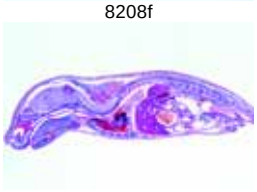
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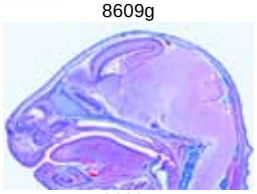
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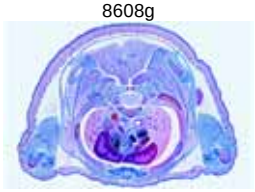
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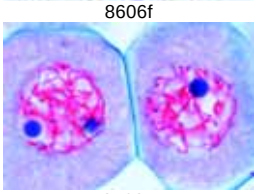
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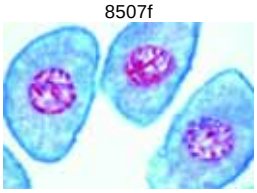
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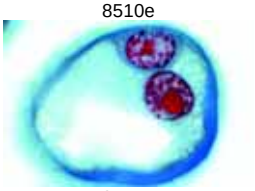
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No. 8600 The Pig Embryology (Sus scrofa)

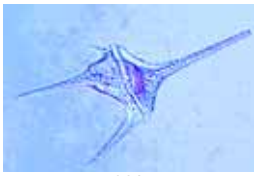
10 Microscope Slides
With depictured accompanying brochure

8601g Pig embryo, 4-6 mm, typical t.s.
8602g Pig embryo, 7-9 mm, sagittal l.s.
8603f Pig embryo, 11-12 mm, typical t.s. through region of head
8604f Pig embryo, 11-12 mm, typical t.s. region of abdomen
8605f Pig embryo, 15 mm, typical t.s. through region of head
8606f Pig embryo, 15 mm, typical t.s. through region of thorax
8607f Pig embryo, 15 mm, typical t.s. through region of abdomen
8608g Pig embryo, 15 mm, sagittal l.s.
8609g Pig embryo, 20-25 mm, sagittal l.s.
8610g Pig embryo, 20-25 mm, frontal l.s.

No. 8500 Development of the Microspore Mother Cells of Lilium candidum

12 Microscope Slides
With depictured accompanying brochure

8501e Leptotene, the chromosomes appear as fine threads
8502e Zygotene, the homologous chromosomes associate in pairs. The chromosomes appear as strings of beads
8503e Pachytene, complete pairing of the chromosomes
8504e Diplotene, shortening of the chromosomes by contraction. Interchange of chromatin between the maternal and paternal chromosomes (crossing over)
8505e Diakinesis, further contraction of the bivalents, the nuclear membrane disappears
8506f Metaphase and anaphase of the first (heterotypic) division, showing spindle threads. Two haploid sets of chromosomes are separated
8507f Telophase of the first and prophase of the second division
8508f Metaphase and anaphase of the second (homeotypic) division, two mitotic figures are present
8509f Pollen tetrads, four nuclei are formed after the second division, each bearing the haploid number of chromosomes. Formation of cell walls
8510e Uninucleate microspores after separation of daughter cells
8511e Mature two-nucleate pollen grains at the time of shedding. Each pollen grain possesses a tube cell and a generative cell
8512b Mature pollen grains, w.m. to show structure of the cell walls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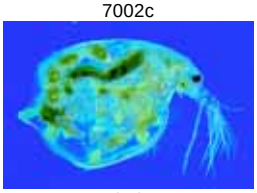
ECOLOGY AND ENVIRONMENT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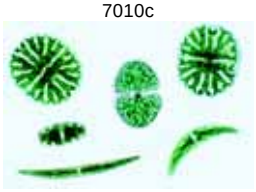
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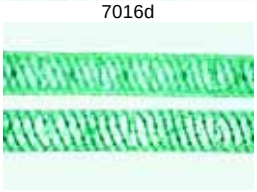
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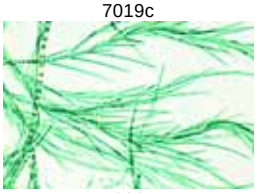
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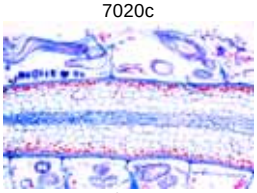
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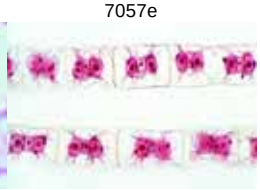
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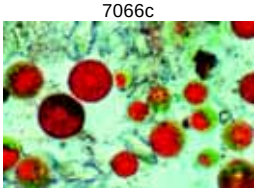
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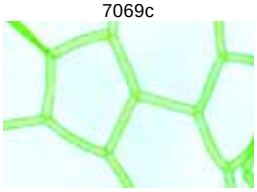

7070d


7073d

No. 7000 The Microscopic Life in the Water, Part I

25 Microscope Slides
With depictured accompanying brochure

7001e Amoeba proteus, ameba
7002c Ceratium hirundinella, dinoflagellates
7003c Euglena, green flagellate with eyespot
7004d Radiolaria, marine rhizopods
7005c Paramecium, nuclei stained
7006d Stylonychia, a common ciliate
7007b Spongilla, fresh water sponge, w.m. of isolated spicules
7008d Hydra, w.m. or section
7009d Rotatoria, rotifers, mixed species w.m.
7010c Daphnia, water flea, a phyllopod w.m.
7011c Cyclops, a fresh water copepod w.m.
7012d Chironomus, gnat, larva w.m.
7013d Putrefaction causing bacteria from hay infusions, smear
7014c Oscillatoria, a filamentous blue green alga
7015c Diatomeae, diatoms, strewn slide of mixed species
7016d Desmidiaceae, desmids, strewn slide of mixed species
7017c Spirogyra, green alga with spiral chloroplasts, large species w.m.
7018d Eudorina, small colonies within gelatinous sheaths
7019c Cladophora, green alga, branched filaments with multinucleate cells
7020c Draparnaldia, main filaments and branchings
7021c Microcystis, irregular colonies, causing "blooming" in stagnant water
7022c Ulothrix, filamentous green alga with girdle-shaped chloroplasts w.m.
7023d Oedogonium, vegetative filaments w.m.
7024e Volvox, spherical green alga with daughter colonies and sexual stages w.m.
7025d Mesothaenium, rod-shaped desmids w.m.

No. 7050 The Microscopic Life in the Water, Part II

Supplementary to Set No. 7000
25 Microscope Slides
With depictured accompanying brochure

7051d Arcella, shelled ameba w.m.
7052e Vorticella, a stalked ciliate w.m.
7053e Colpidium, a common holotrich ciliate w.m.
7054d Spongilla, fresh water sponge, t.s. showing channels
7055c Planaria, fresh water flat worm, t.s. of body showing the internal organs
7056d Tubifex, a fresh water oligochaete w.m.
7057e Plumatella, moss animal, section of colony
7058c Cyclops, nauplius larva w.m.
7059d Culex pipiens, common mosquito, larva w.m.
7060d Sphaerotilus natans, bacteria from putrid water forming chains, smear
7061c Nostoc, blue green alga with heterocysts w.m.
7062c Anabaena, filamentous blue green alga w.m.
7063c Gloeocapsa, small colonies within sheaths w.m.
7064c Rivularia, blue green alga with basal heterocysts w.m.
7065c Beggiatoa, a colourless alga showing lack of chlorophyll
7066c Zygnema, filamentous alga with stellate chloroplasts w.m.
7067d Cosmarium, desmid showing the typical isthmus w.m.
7068c Chlamydomonas, biflagellate alga w.m.
7069c Haematococcus, unicellular red algae w.m.
7070d Hydrodictyon, water-net w.m.
7071c Chlorella, unicellular green alga w.m.
7072d Dynobrion, a golden alga forming colonies w.m.
7073d Mixed plankton, strewn slide No. I
7074d Mixed plankton, strewn slide No. II
7075d Mixed plankton, strewn slide No. III

No. 4510 Our Environment Part I. The Wood. Consequences of Environmental Pollution

20 Microscope Slides
With depictured accompanying brochure

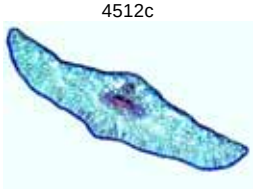
4511c Pine (Pinus), healthy leaves, t.s.
4512c Pine (Pinus) leaves damaged by acid rain, t.s.
4513c Fir (Abies), healthy leaves, t.s.
4514c Fir (Abies), stem tip damaged by acid rain t.s.
4515c Beech (Fagus), healthy leaves t.s.
4516c Beech (Fagus), t.s. of leaves with destroyed epidermis and chloroplasts
4517d Rhytisma acerinum, tar spot of maples, consequence of single-crop farming
4518d Early leaf fall, caused by thawing salt
4519d Healthy lichen, indicator of clean air, t.s. of thallus showing fungus and embedded algae
4520d Damaged lichen, caused by air pollution, t.s. showing destroyed structures
4521c Healthy wood of beech, t.s.
4522d Wood destroyed by fungus, t.s.
4523d Polyporus, wood rot fungus, fruiting body t.s.
4524d Root nodules of Alnus, t.s. with symbiotic bacteria (actinomyces)
4525d Spruce beetle (Cryphalus picea), larva t.s.
4526c Wood with normal annual rings, t.s.
4527c Wood with anomalous narrow annual rings caused by drought, t.s.
4528d Bark of spruce with larval galleries of spruce beetle, t.s.
4529d Pineapple-like gall on spruce caused by various plant lice, t.s.
4530d Gall nut on oak caused by insects, t.s.

No. 4540 Our Environment Part II. The Water Pollution. Problems and Results

20 Microscope Slides
With depictured accompanying brochure

4541d Intestinal bacteria (Escherichia coli) from putrid water
4542e Putrefactive bacteria (Spirillum) from sludge poor in oxygen
4543d Putrefactive bacteria (Sphaerotilus) bacteria, forming long chains with sheaths
4544d Sludge bacteria (Methanobacterium) causing sewer gas
4545d Sulphur bacteria (Thiocystis)
4546c Wasserbluthe (Microcystis), blue-green alga „blooming“ in stagnant water
4547c Anabaena, blue green algae, in eutrophic water
4548c Spirogyra, filamentous green alga in nutrient-rich water
4549d Spirulina, corkscrew-shaped algae occurring in bitter seas
4550c Chlamydomonas, one-celled green alga in eutrophic water
4551c Cladophora, green alga with branching filaments from moderately polluted water
4552c Diatoms, mixed algae from scarcely polluted water
4553c Euglena, common green flagellates occurring in stagnant eutrophic water
4554d Ciliates, different species from nutrient-rich water
4555d Rotifers (Rotatoria), small animals from putrid water
4556d Tubifex, fresh water oligochaete, living in the sludge
4557d Carchesium, bell-shaped stalked ciliate from moderately polluted water
4558d Water mold (Saprolegnia), harmful to plants and animals
4559d Skin of fish injured by chemicals, t.s.
4560d Skin ulcer of an amphibian, t.s.


4512c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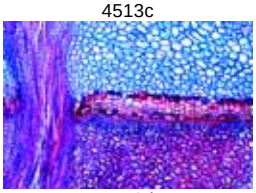
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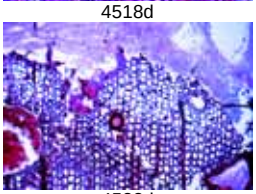
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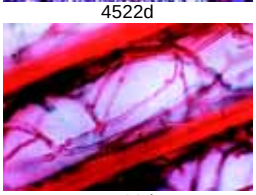
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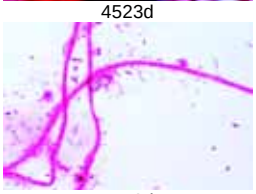
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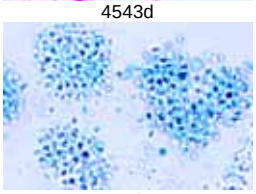
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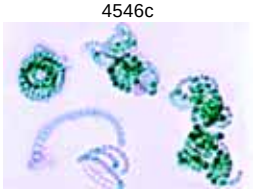
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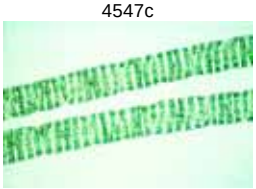
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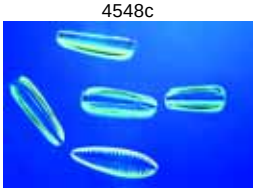
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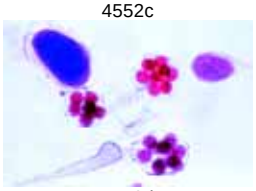
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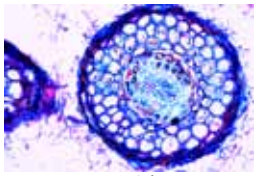
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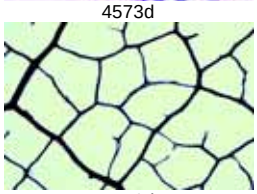
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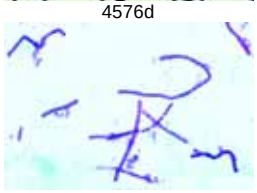
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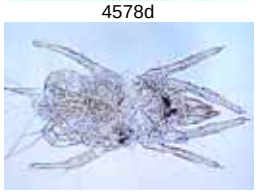
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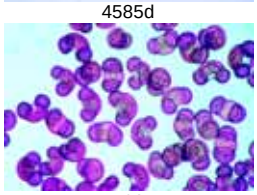
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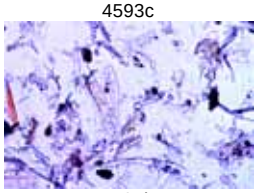
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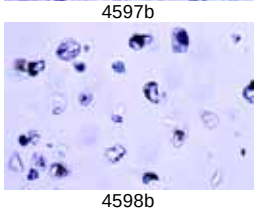
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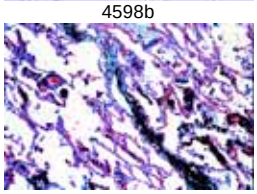
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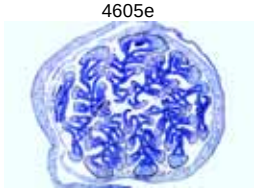
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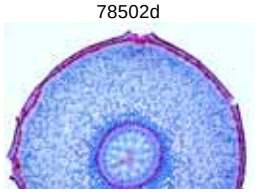
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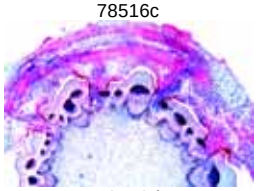

78518d

No. 4570 Our Environment Part III. Life in the Soil

17 Microscope Slides
With depictured accompanying brochure

4571d Acidophile soil bacteria, solution of heavy metals
4572d Nitrite bacteria, forming harmful nitrogenous substances
4573d Root of beech with ectotrophic mycorrhiza, t.s.
4574d Root of birch with partly endotrophic mycorrhiza, t.s.
4575d Root of lupin with symbiotic nitrogen fixing bacteria
4576d Netted venation, portion of rotted deciduous leaf
4577c Charlock (Sinapis), t.s. of stem. Green manure plant
4578d Soil bacteria (Bacillus megaterium), smear
4579d Hyphae of root fungi, t.s.
4580d Lichen, indicator of clean air
4581c Mushroom (Xerocomus), mycelium
4582c Root of willow (Salix), planting protecting against erosion
4583c Earthworm (Lumbricus) t.s., causing soil improvement
4584d Springtails (Collembola), w.m.
4585d Mite from forest soil, w.m.
4586c Constituents of humous soil
4587c Constituents of peaty soil

No. 4590 Our Environment Part IV. Air Pollution and Allergens

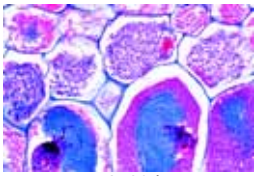
15 Microscope Slides
With depictured accompanying brochure

4591c Pollen grains of different kinds of grass
4592c Pollen grains of different deciduous trees
4593c Pollen grains of different conifers
4594b Mixed house dust
4595c Dust mite from a living room
4596b Spores of different fungi
4597b Wood powder
4598b Asbestos powder (cancerogenous)
4599b Talcum powder
4600b Crystals of washing-powder
4601b Polyamide fibres
4602b Nylon fibres
4603e Mucous membrane of human nose, t.s.
4604e Healthy human lung, t.s.
4605e Human lung injured with dust particles, t.s.

No. 78500 Adaptation of Plants to Manner of Life and Environment

50 Microscope Slides
With depictured accompanying brochure

Adaptation to temperature
78501c Ilex, t.s. of leaf showing thick cuticula
78502d Aesculus, t.s. of leaf bud showing bud squama
78503c Fern, t.s. of subterraneous rhizome
78504c Beta, beet, t.s. of a subterraneous storage root
78505c Solanum, potato, t.s. of subterraneous stem tuber storing starch
78506c Allium, l.s. of a subterraneous bulb
78507d Ranunculus ficaria, t.s. of subterraneous tuber
78508c Taraxacum, dandelion, t.s. of tap root
78509d Dentaria, l.s. of germinal bulb
Adaptation for gaining light
78510c Galium, w.m. of leaf showing climbing hairs
78511d Cucurbita, l.s. of stem showing sieve tubes and sieve plates
78512c Viscum album, t.s. of leaf
78513d Lemna, duckweed, root tip and cap (calyptra) w.m.
78514f Dischidia, pitcher plant, t.s. of pitcher leaf with root
Adaptation to unusual modes of nutrition
78515c Rhiziphora, mangrove, t.s. of adventitious root
78516c Philodendron (Araceae), t.s. of aerial root
78517c Liana, climbing plant, t.s. of root
78518d Cuscuta, dodder, t.s. of host showing haustorium
78519d Viscum album, mistletoe, l.s. showing parasitic root in host
78520d Orchid, t.s. of root showing endotrophic mycorrhiza
78521d Alnus, alder, t.s. of tuber showing actinomyces in symbiosis
78522d Drosera, sundew, w.m. of leaf showing glandular hairs
78523c Drosera, sundew, t.s. of leaf showing glandular hairs
78524c Pinguicula, t.s. of leaf showing gland cells
78525d Utricularia, bladderwort, w.m. of bladder
78526d Nepenthes, t.s. of pitcher showing digestive glands
78527c Dionaea, Venus flytrap, t.s. of leaf
Adaptation to water: Hydrophytic plants
78528d Elodea, w.m. of a submersed leaf without stomata
78529c Elodea, t.s. of a simple hydrophytic leaf
78530c Nymphaea, t.s. of aquatic stem showing air vascular system
78531c Hippuris, t.s. of stem showing regular placed air chambers
78532c Nymphaea, t.s. of leaf showing air chambers, a typical floating leaf
78533c Potamogeton, pondweed, t.s. of leaf
78534c Taxodium (Cypressacea), t.s. of root for respiration
78535c Potamogeton, t.s. of an aquatic stem showing air chambers
Adaptation to damp habitats: Hygrophytic plants
78536c Ruellia, t.s. of leaf showing raised stomata
78537c Polypodium (fern), t.s. of leaf showing modification of epidermis (water pit)
78538d Urtica, nettle, w.m. of stinging hairs (one cellular)
78539c Myosotis palustris, w.m. of leaf showing hairs for water reservoir
Adaptation to dry habitats: Xerophytic plants
78540c Hedera, t.s. of an evergreen leaf
78541c Nerium, oleander, t.s. of leaf showing sunken stomata
78542c Dune grass, t.s. of rolled leaf
78543c Verbascum, t.s. of leaf showing multicellular branched hairs
78544b Elaeagnus, scale-like stellate hairs of leaf or stem, w.m.
78545c Orchid, epiphytic, t.s. of aerial root
78546d Aloe, t.s. of succulent leaf
78547c Sedum, t.s. of succulent leaf
78548c Pelargonium, t.s. of succulent root
78549c Cactus, t.s. of succulent stem
78550c Cactus, t.s. of succulent leaf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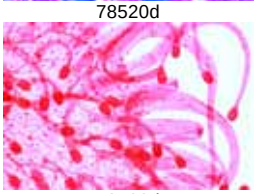
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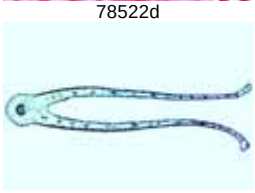
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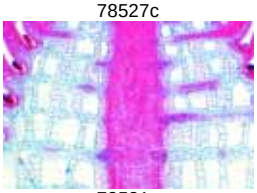
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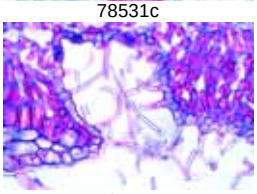
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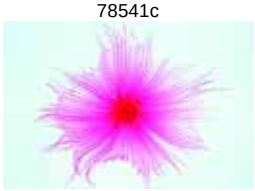
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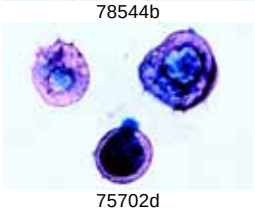
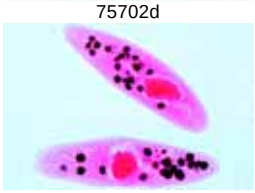

75702d

No. 75700 Micro Organisms of the Fresh Water

25 Microscope Slides
With depictured accompanying brochure

75701e Amoeba proteus, w.m.
75702d Arcella shells, w.m.
75703c Euglena viridis, w.m.
75704c Ceratium hirundinella, w.m.
75705d Paramecium, w.m.
75706e Vorticella, freshwater, w.m.
75707d Plankton showing Difflugia and Rotatoria
75708e Hydra, w.m. (Pelmatohydra)
75709d Freshwater sponge, w.m. of gemmulae
75710c Daphnia, w.m. of freshwater flea
75711c Cyclops, w.m.
75712d Pandorina morum, colonies of green algae, w.m.
75713e Volvox, w.m.
75714c Chlamydomonas, green algae, w.m.
75715d Hydrodiction, water net, w.m.
75716c Cladophora, branching filaments, w.m.
75717c Oedogonium, w.m.
75718d Planktonic algae, Eudorina, Pediastrum, Microcystis
75719d Vegetative filaments, Spirogyra, Zygnema, Mougeotia
75720e Desmids, various species
75721d Diatoms stained for protoplasmatic structure
75722d Batrachospermum, w.m. red alga
75723c Chroococcus, w.m.
75724c Anabaena, w.m.
75725d Bacteria from putrefaction smear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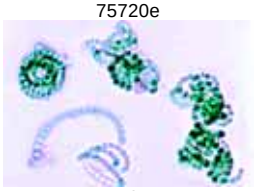
75717c


75720e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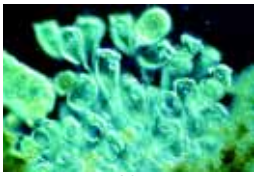
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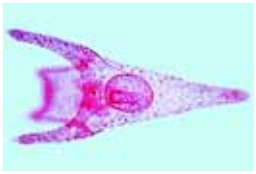
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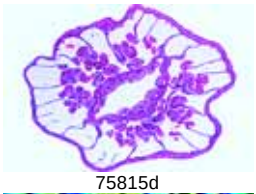
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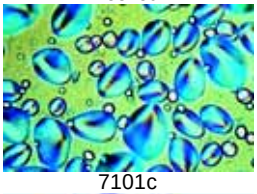
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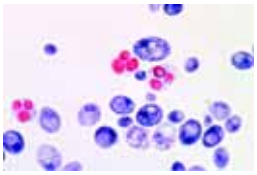
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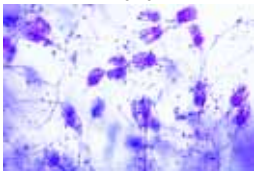
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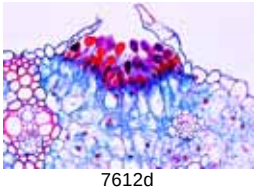

7612d

No. 75800 Micro Organisms of the Sea Water

15 Microscope Slides
With depictured accompanying brochure

75801d Silicoflagellatae
75802d Radiolaria, strewn slide of cleaned shells
75803d Foraminifera, strewn slide of cleaned shells
75804d Peridinium, marine dinoflagellates
75805e Vorticella, marine ciliates
75806d Noctiluca, a luminescent flagellate
75807d Marine plankton, mixed species
75808d Pluteus larvae of sea urchin
75809e Eggs of sea urchin, different phases of development
75810d Sagitta, transparent marine worm, w.m.
75811d Caprella, a marine amphipode, w.m.
75812e Zoea, development stage of a marine decapode crab, w.m.
75813e Obelia, w.m. of medusa
75814d Campanularia, w.m. of colony
75815d Hydractinia, w.m. or section

TECHNOLOGY VOCATIONAL TRAINING MISCELLANEOUS

No. 7100 Vegetable-based Staple Foods, Luxury, Foods and Spices

25 Microscope Slides
With depictured accompanying brochure

7101c Potato tuber t.s.
7102b Wheat flour
7103b Rye flour
7104b Rice starch
7105b Potato starch
7106d Bean, pod with pericarp and seed t.s.
7107b Yeast
7108d Fresh milk, stained for fat
7109d Sour milk, stained for bacteria
7110d Bacteria from cheese
7111c Mold in spoiled foodstuffs
7112c Coffee bean t.s.
7113b Silvery pellicle of coffee bean
7114c Ceylon tea, leaves t.s.
7115b Paprika, ground
7116b Black pepper, ground
7117b Cocoa powder
7118c Nutmeg t.s.
7119b Mustard
7120b Ginger, ground
7121c Carrot, storage root t.s.
7122b Soya meal
7123b Corn starch
7124c Tobacco, leaves t.s.
7125d Hazelnut, t.s. stained for fat

No. 7600 Flour and Starch, Spices and Ingredients,Impurities and Adulterations

25 Microscope Slides
With depictured accompanying brochure

7601b Wheat flour
7602b Rye flour
7603b Oat meal
7604b Potato starch
7605b Rice starch
7606b Wheat bran
7607b Wheat flour adulterated with chalk
7608b Rye flour spoiled with moths
7609b Corn flour spoiled with spores of corn smut (Ustilago)
7610b Spoiled wheat flour showing corroded starch grains
7611d Wheat grain, t.s. for general study showing embryo and endosperm
7612d Wheat rust (Puccinia graminis), uredinia on wheat leaf t.s.
7613d Rye grain, t.s. for general study showing embryo and endosperm
7614c Mites from meal (Tyroglyphus farinae)
7615c Ergot (Claviceps purpurea), t.s. of sclerotium
7616c Ingredients of rye bread
7617d Bacteria from bread, stained
7618b Yeast (Saccharomyces cerevisiae), budding cells
7619c Fruit rind of lemon, t.s. shows oil glands
7620d Milk, stained for fat
7621c Almond, t.s. of endosperm
7622c Coconut, t.s. of endosperm
7623b Cacao powder
7624b Cinnamon, ground
7625b Aniseed, ground

No. 7200 Wood Sections

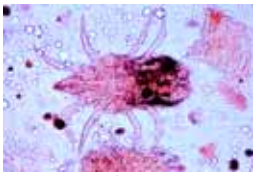
Each slide comprises three sections: transverse, radial and tangential section.
25 Microscope Slides
With depictured accompanying brochure

7201d Maple. Acer platanoides
7202d Apple. Pyrus malus
7203d Birch. Betula pendula
7204d Pear. Pyrus communis
7205d Mountain ash. Sorbus aucuparia
7206d Yew. Taxus baccata
7207d Oak. Quercus robur
7208d Alder. Alnus glutinosa
7209d Ash. Fraxinus excelsior
7210d Spruce. Picea excelsa
7211d White beech. Carpinus betulus
7212d Pine. Pinus silvestris
7213d Cherry. Prunus avium
7214d Larch. Larix decidua
7215d Lime. Tilia platyphylla
7216d Walnut. Juglans regia
7217d Poplar. Populus alba
7218d Plane. Platanus orientalis
7219d Plum. Prunus domestica
7220d Black locust. Robinia pseudacacia
7221d Chestnut. Aesculus hippocastanum
7222d Beech. Fagus silvatica
7223d Elm. Ulmus scabra
7224d Willow. Salix alba
7225d Fir. Abies alba

No. 7450 Textile Fibres and Fabric

25 Microscope Slides
With depictured accompanying brochure

7451b Angora wool
7452b Camel-hair
7453b Merino wool
7454b Mohair
7455b European wool
7456b Australian wool
7457b Cocoon silk, raw
7458b Organsin silk
7459b Tussah silk
7460b Egyptian cotton
7461b Mercerized cotton
7462b Linen (flax)
7463b Jute
7464b Italian hemp
7465b Ramie
7466b Cellulose
7467b Cuprama rayon
7468b Casein fibre
7469b PVC fibre
7470b Acetate rayon
7471b Viscose rayon
7472b Bemberg rayon
7473b Perlon
7474b Gauze
7475b Nylon fabric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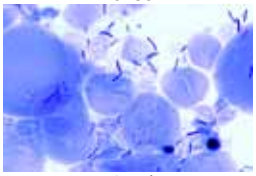
7615c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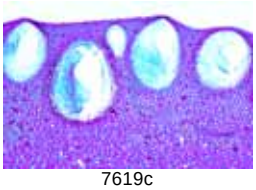
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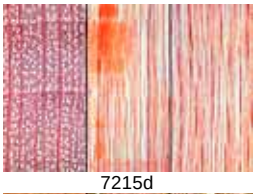
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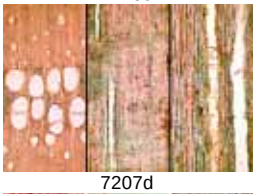
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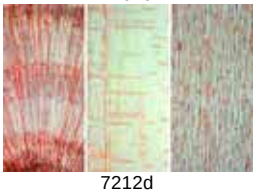
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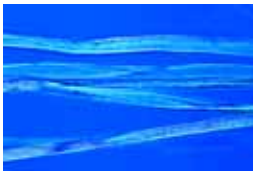
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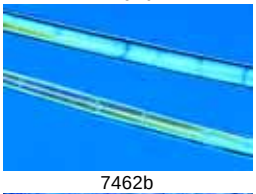
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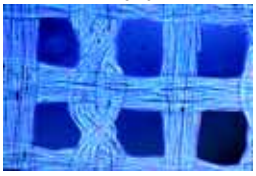
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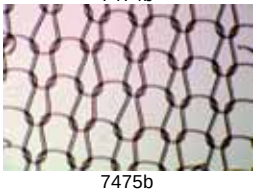
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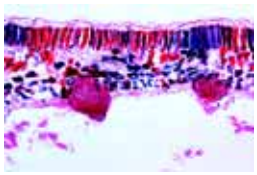
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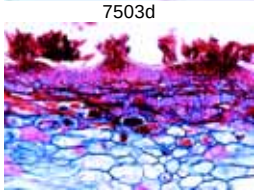
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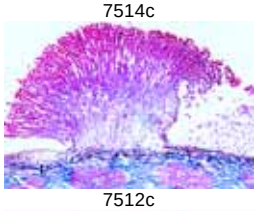
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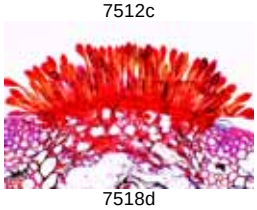
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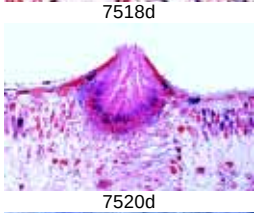
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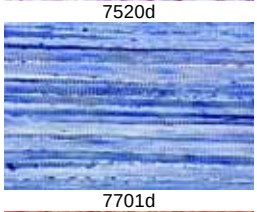
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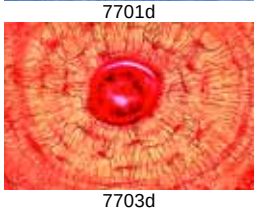
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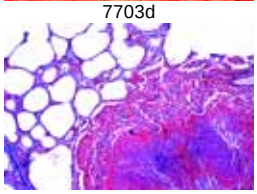
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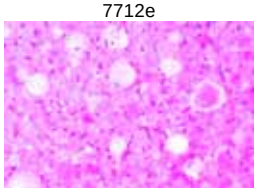
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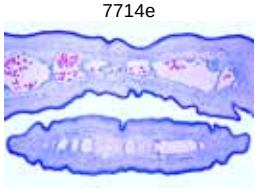
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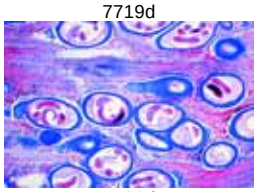
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No. 7500 Agriculture (Parasitic Fungi) Basic Set

20 Microscope Slides
With depictured accompanying brochure

7501c Plasmodiophora brassicae, clubroot, host cells with spores
7502d Synchytrium endobioticum, potato black scab, infected tissue
7503d Plasmopara viticola, downy mildew of grapes, infected leaf
7504d Peronospora parasitica, downy mildew of crucifers, conidia
7505d Albugo candida (Cystopus), white rust of crucifers, conidia and sexual stages on Capsella t.s.
7506c Rhizopus or Mucor, mold, mycelium and sporangia w.m.
7507d Exoascus pruni (Taphrina), plum pockets, sec. with asci
7508d Erysiphe pannosa, rose mildew, infected leaf with conidia t.s.
7509d Uncinula necator (Oidium Tuckeri), grape mildew, t.s.
7510d Sphaerotheca mors uvae, gooseberry mildew, perithecia t.s.
7511c Claviceps purpurea, ergot, sclerotium t.s.
7512c Sclerotinia fructigena (Monilia), diseased fruit with conidia t.s.
7513c Rhytisma acerinum, black spot of maple, t.s. with sclerotia
7514c Venturia pirinum (Fusicladium), pear scab, t.s. with conidia
7515d Ustilago zeae, corn smut, t.s. of pustule on host tissue
7516c Botrytis allii, grey mold of onions. t.s.
7517d Puccinia graminis, uredinia on wheat leaf cause red rust t.s.
7518d Puccinia graminis, telia on wheat causing black rust t.s.
7519d Puccinia graminis, aecia or pycnidia on barberry leaf t.s.
7520d Gymnosporangium sabinae, pear rust, pycnidia on leaf t.s.

No. 7700 Tissues and Organs of Domestic Animals, Parasites and Pathogenic Agents

25 Microscope Slides
With depictured accompanying brochure

7701d Striated (skeletal) muscle of cow l.s.
7702d Tendon of cow, l.s. showing dense connective tissue
7703d Compact bone of cow t.s. stained for cells and bone canaliculi
7704c Hyaline cartilage from rib of calf t.s.
7705d Adipose tissue from pig, stained for fat
7706d Liver of pig, t.s. showing liver cells and connective tissue
7707d Duodenum of pig t.s. showing the general construction of intestine
7708d Udder (mammary gland) of cow t.s.
7709c Lung of cow t.s.
7710b Bristles of pig w.m.
7711d Skin of pig, l.s. of hair follicles
7712e Tuberculous lung of cow t.s. showing the diseased tissue
7713e Bacillus anthracis, wool sorters disease, smear stained for bacteria
7714e Bacterium erysipelatos, causing red murrain, smear stained for bacteria
7715f Trypanosoma equiperdum, causing dourine in horses, blood smear showing parasites
7716d Eimeria stiedae, coccidiosis, sec. of infected rabbit liver
7717e Dicrocoelium lanceolatum, sheep liver fluke, adult stained and w.m.
7718c Fasciola hepatica, beef liver fluke, ova w.m.
7719d Taenia, tapeworm, proglottids t.s.
7720f Echinococcus granulosus, dog tapeworm, scolices from cyst
7721d Ascaris megalocephala, roundworm of horses, adult female t.s. through midbody
7722d Trichinella spiralis, encysted larvae in muscle l.s.
7723d Sausage t.s.
7724b Paprika, ground
7725b Black pepper, ground

No. 7550 Agriculture, Enlarged Basic Set

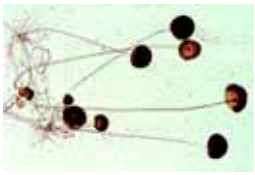
25 microscope slides
With depictured accompanying brochure

7501c Plasmodiophora brassicae, clubroot, host cells with spores
7502d Synchytrium endobioticum, potato black scab, infected tissue
7503d Plasmopara viticola, downy mildew of grapes, infected leaf
7505d Albugo candida (Cystopus), white rust of crucifers, conidia and sexual stages on Capsella t.s.
7506c Rhizopus or Mucor, mold, mycelium and sporangia w.m.
7511c Claviceps purpurea, ergot, sclerotium t.s.
7512c Sclerotinia fructigena (Monilia), diseased fruit with conidia t.s.
7513c Rhytisma acerinum, black spot of maple, t.s. with sclerotia
7514c Venturia pirinum (Fusicladium), pear scab, t.s. with conidia
7515d Ustilago zeae, corn smut, t.s. of pustule on host tissue
4575d Root of lupin with symbiotic nitrogen fixing bacteria
7517d Puccinia graminis, uredinia on wheat leaf cause red rust t.s.
7519d Puccinia graminis, aecia or pycnidia on barberry leaf t.s.
7712e Tuberculous lung of cow t.s.
4583c Earthworm (Lumbricus) t.s., causing soil improvement
7715f Trypanosoma equiperdum, causing dourine in horses, blood smear showing parasites
7716d Eimeria stiedae, coccidiosis, sec. of infected rabbit liver
7718c Fasciola hepatica, beef liver fluke, ova w.m.
7719d Taenia, tapeworm, proglottids t.s.
In339c Aphidae, plant lice w.m.
7712e Tuberculous lung of cow t.s.
7715f Trypanosoma equiperdum, causing dourine in horses, blood smear showing parasites
7716d Eimeria stiedae, coccidiosis, sec. of infected rabbit liver
7718c Fasciola hepatica, beef liver fluke, ova w.m.
7719d Taenia, tapeworm, proglottids t.s.

No. 7560 Agriculture, Large Comprehensive Set

66 Microscope slides
With depictured accompanying brochure

7501c Plasmodiophora brassicae, clubroot, host cells with spores
7502d Synchytrium endobioticum, potato black scab, infected tissue
7503d Plasmopara viticola, downy mildew of grapes, infected leaf
7504d Peronospora parasitica, downy mildew of crucifers, conidia
7505d Albugo candida (Cystopus), white rust of crucifers, conidia and sexual stages on Capsella t.s.
7506c Rhizopus or Mucor, mold, mycelium and sporangia w.m.
7507d Exoascus pruni (Taphrina), plum pockets, sec. with asci
7508d Erysiphe pannosa, rose mildew, t.s. of infected leaf with conidia or cleistothecia
7509d Uncinula necator (Oidium Tuckeri), grape mildew, t.s.
7510d Sphaerotheca mors uvae, gooseberry mildew, perithecia t.s.
7511c Claviceps purpurea, ergot, sclerotium t.s.
7512c Sclerotinia fructigena (Monilia), diseased fruit with conidia t.s.
7513c Rhytisma acerinum, black spot of maple, t.s. with sclerotia
7514c Venturia pirinum (Fusicladium), pear scab, t.s. with conidia
7515d Ustilago zeae, corn smut, t.s. of pustule on host tissue
7516c Botrytis allii, grey mold of onions. t.s. of infected tissue
7517d Puccinia graminis, uredinia on wheat leaf cause red rust t.s.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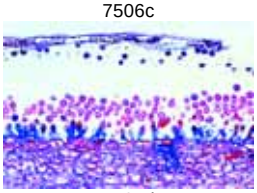
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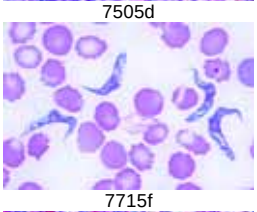
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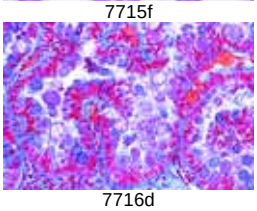
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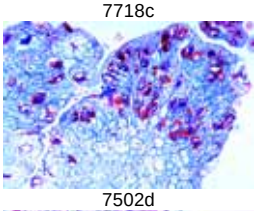
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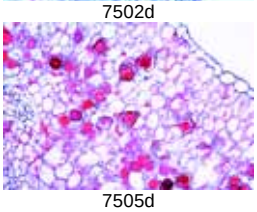
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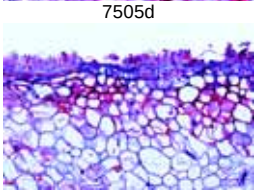
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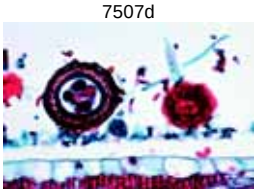
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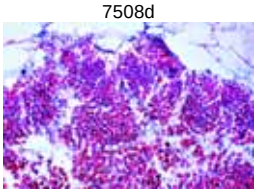
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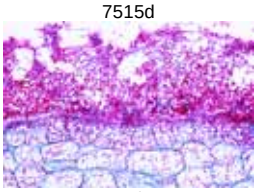
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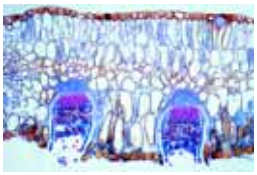
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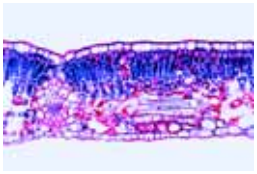
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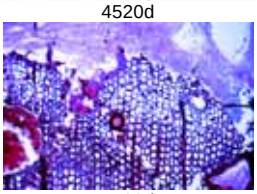
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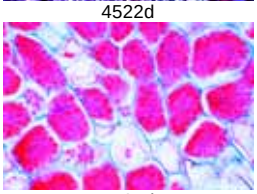
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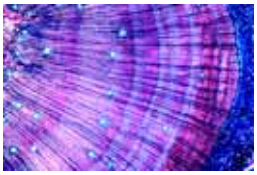
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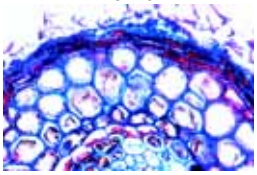
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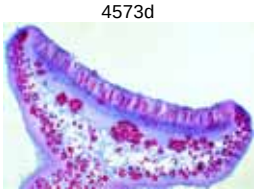
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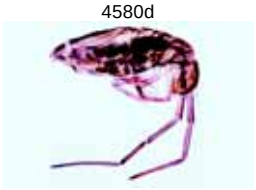
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7518d Puccinia graminis, telia on wheat causing black rust t.s.
7519d Puccinia graminis, aecia or pycnidia on barberry leaf t.s.
7520d Gymnosporangium sabinae, pear rust, pycnidia on leaf t.s.
7712e Tuberculous lung of cow, t.s. showing diseased tissue
7713e Bacillus anthracis, wool sorters disease, smear stained for bacteria
7714e Bacterium erysipelatos, causing red murrain, smear stained for bacteria
7715f Trypanosoma equiperdum, causing dourine in horses, blood smear showing parasites
7716d Eimeria stiedae, coccidiosis, sec. of infected rabbit liver
7718c Fasciola hepatica (Distomum) , beef liver fluke, ova w.m.
7719d Taenia spec., tapeworm, mature proglottids with eggs, t.s.
7721d Ascaris megalocephala, roundworm of horses, adult female t.s. through midbody
7722d Trichinella spiralis, encysted larvae in skeletal muscle tissue l.s.
4511c Pine (Pinus), healthy leaves, t.s.
4512c Pine (Pinus) leaves damaged by acid rain, t.s.
4513c Fir (Abies), healthy leaves, t.s.
4514c Fir (Abies), stem tip damaged t.s.
4515c Beech (Fagus), healthy leaves t.s.
4516c Beech (Fagus), t.s. of leaves with destroyed epidermis and chloroplasts
4517d Rhytisma acerinum, tar spot of maples, consequence of single-crop farming
4518d Early leaf fall, caused by thawing salt
4519d Healthy lichen, indicator of clean air, t.s. of thallus showing fungus and embedded algae
4520d Damaged lichen, caused by air pollution, t.s. showing destroyed structures
4521c Healthy wood of beech, t.s.
4522d Wood destroyed by fungus
4523d Polyporus, wood rot fungus, fruiting body t.s.
4524d Root nodules of Alnus, t.s. showing symbiotic bacteria (Actinomyces)
4525d Spruce beetle (Cryphalus picea), larva t.s.
4526c Wood with normal annual rings, t.s.
4527c Wood with anomalous narrow annual rings caused by drought, t.s.
4528d Bark with larval galleries of spruce beetle, t.s.
4529d Pineapple-like gall on spruce caused by lice, t.s.
4530d Gall nut on oak caused insects, t.s.
4571d Acidophile soil bacteria, solution of heavy metals
4572d Nitrite bacteria, formatting harmful nitrogenous substances
4573d Root of beech (Fagus) with ectotrophic mycorrhiza, t.s.
4574d Root of birch (Betula) with partly endotrophic mycorrhiza, t.s.
4575d Root of lupin with symbiotic nitrogen fixing bacteria
4576d Netted venation, portion of rotted deciduous leaf w.m.
4577c Charlock (Sinapis), t.s. of stem. Green manure plant
4578d Soil bacteria (Bacillus megatherium), smear Gram steined
4579d Hyphae of root fungi, t.s.
4580d Lichen growing on trees, indicator of clean air, t.s. of apothecium
4581c Mushroom (Xerocomus), mycelium
4582c Root of willow (Salix), planting protecting against erosion
4583c Earthworm (Lumbricus) t.s., causing soil improvement
4584d Springtails (Collembola), w.m.
4585d Mite from forest soil, w.m.
4586c Constituents of humus soil
4587c Constituents of peaty soil

NEW! **Microscope Slides on CD-ROM.** The new amazing **CD-Program** for interactive learning and teaching in school and education comprise all necessary **photomicrographs of microscopic slides**, which can be observed by using **a „Virtual Microscope**“. Beautiful **color drawings** matching the slides, with detailed **explanations** (please see pages 129 – 136).

No. 7800 Types of Paper

25 Microscope Slides
With depictured accompanying brochure

7801b Bank paper
7802b Book paper, wood-free
7803b Mold-made paper, 100 percent rag
7804b Chromo paper containing wood pulp
7805b Esparto paper
7806b Filter paper
7807b India paper
7808b Rough-surface paper containing sawdust
7809b Kraft paper, brown
7810b Art paper
7811b Copper plate printing paper
7812b Blotting paper
7813b Standard paper No. 3, rag/pulp
7814b Grease-proof paper
7815b Sulphate kraft paper
7816b Stencil raw silk, 100 percent manila
7817b Wrapping paper
7818b Counterfeit-proof check paper
7819b Sulphite wrapping paper
7820b Book printing paper, wood-free
7821b Newsprint
7822b Wood pulp paper
7823b Cigarette paper
7824b Straw board
7825b Wood pulp board

No. 7900 Human Scalp and Hair

12 Microscope Slides
With depictured accompanying brochure

7901d Human scalp, vertical sec. shows l.s. of hair follicles
7902d Human scalp, horizontal sec. shows t.s. of hair follicles
7903b Natural blond and black hair
7904b Grayed hair
7905b Eyelash
7906b Hair of beard
7907b Hair from infant
7908b Artificially bleached hair
7909b Split hair tips
7910b Singed hair
7911e Eggs of louse attached to the hair, w.m.
7912f Human head louse (Pediculus capitis), w.m.

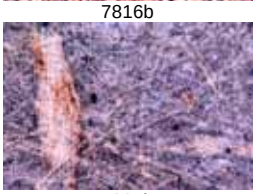
No. 7300 Drug Powders Part I

25 Microscope Slides
With depictured accompanying brochure

7301b Amylum Oryzae. Rice starch
7302b Amylum Solani. Potato starch
7303b Amylum Tritici. Wheat starch
7304b Cortex Chinae. Cinchona bark
7305b Cortex Cinnamomi. Cinnamon
7306b Crocus. Saffron
7307b Flores Caryophylli. Clove
7308b Flores Chamomillae. Camomile
7309b Folia Melissae. Melissa
7310b Folia Sennae. Senna leaves
7311b Fructus Anisi. Aniseed
7312b Fructus Capsici. Red pepper
7313b Fructus Cardamomi. Cardamom
7314b Fructus Carvi. Caraway
7315b Fructus Foeniculi. Fennel
7316b Fructus Piperis nigri. Black pepper
7317b Radix Angelicae. Angelica
7318b Radix Ipecacuanhae. Ipecac
7319b Radix Liquiritiae. Liquorice
7320b Radix Saponariae. Saponaria
7321b Radix Valerianae. Valerian
7322b Rhizoma Rhei. Rhubarb
7323b Rhizoma Zingiberis. Ginger
7324b Semen Lini. Linseed
7325b Semen Sinapis. Mustard

Further collections of Drugs Parts II, III and IV comprising additional drug powders as well as sections through drugs are available on special request.


7816b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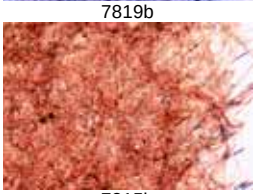
7819b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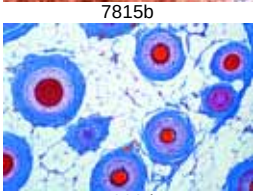
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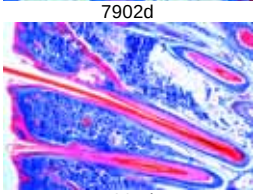
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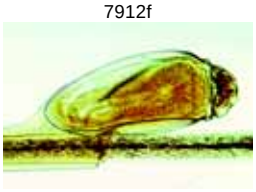
7903b


7910b


7912f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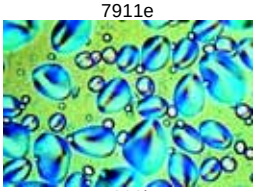
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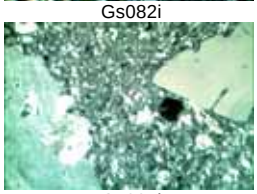
Gs082i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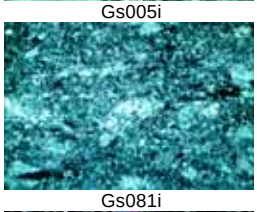
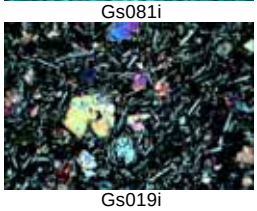

Gs081i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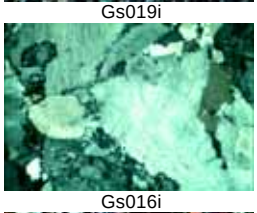
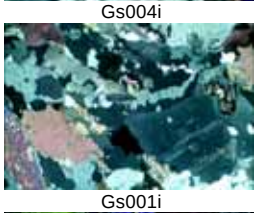
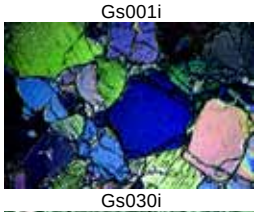

Gs016i


Gs011i


Gs004i


Gs001i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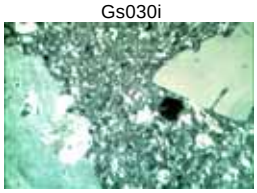
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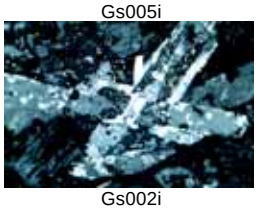

Gs002i

GEOLOGY: ROCKS AND MINERALS GROUND THIN

Selected rocks and minerals are ground and polished to a thickness of 20 – 30 µm. The preparations are mounted with Canada balsam on slides of the size 45 x 30 mm (32 x 24 cover glass). For the identification of forms, colours, refractions and fossil inclusions the slides can be observed with any normal microscope in transmitting light. Additional information is given by using microscopes with polarized-light equipment.

No. 7920 Rocks and Minerals, Basic Set no. I

10 Microscope Slides

7921i Granite
7922i Syenite
7923i Gabbro
7924i Basalt
7925i Gneiss
7926i Micaschist
7927i Quartzite
7928i Marble
7929i Sandstone
7930i Limestone fossilized

No. 7940 Rocks and Minerals, Basic Set no. II

10 Microscope Slides

7941i Andesite
7942i Trachyte
7943i Thyolite
7944i Diorite
7945i Microgranite
7946i Chalk
7947i Limestone oolithic
7948i Millstone
7949i Coal
7950i Schist

No. 7950 Rocks and Minerals, Igneous Rocks, Set no. III

NEW!

31 Microscope Slides

Gs098i Altered granite
Gs082i Andesite
Gs008i Basalt
Gs019i Basalt with olivin
Gs020i Basalt with phenocryst and white feldspat
Gs116i Picrit basalt
Gs114i Tholeiitic basalt
Gs016i Granodiorite
Gs014i Pillow lava
Gs090i Dacite
Gs003i Diorite
Gs015i Diorite quartzique
Gs011i Dolerite
Gs010i Doreite
Gs004i Gabbro
Gs001i Granite
Gs012i Two-micas granite
Gs013i Porphyry granite
Gs129i Kimberlite
Gs093i Laurvikite
Gs050i Microdiorite
Gs051i Microgranite
Gs030i Peridotite
Gs009i Phonolite
Gs005i Rhyolite
Gs017i Red rhyolite
Gs002i Syenite
Gs018i Tephrite
Gs007i Trachyandesite
Gs006i Trachyte
Gs127i Volcanic breccia

No. 7960 Rocks and Minerals, Metamorphic Rocks, Set no. IV

NEW!

29 Microscope Slides

Gs027i Amphibolite
Gs043i Anatexis granite
Gs024i Eclogite with garnets
Gs112i Eclogite with coronitisation haloes
Gs126i Glaucophanite
Gs021i Gneiss
Gs029i Augen gneiss
Gs097i Gneiss with sillimanite
Gs079i Garnetite
Gs025i Granulite
Gs106i Hornstone
Gs107i Green hornstone
Gs091i Marble
Gs122i Metagabbro with hornblende
Gs124i Metagabbro with glaucophane
Gs022i Micaschist
Gs104i Micaschist with cordierite
Gs023i Micaschist with two-micas
Gs105i Micaschist with kyanite
Gs121i Micaschist with garnets
Gs119i Micaschist with glaucophane
Gs120i Micaschist with chloritoid
Gs092i Migmatite
Gs033i Quartzite
Gs081i Schist
Gs103i Schiste with andalusite
Gs128i Serpentinsed peridotite
Gs083i Green schist
Gs026i Serpentinite

No. 7970 Rocks and Minerals, Sedimentary Rocks, Set no. V

NEW!

22 Microscope Slides

Gs032i Arkose
Gs036i Chalk
Gs085i Coal
Gs109i Gypsum
Gs039i Limestone with alveolina
Gs080i Limestone with asphalt
Gs035i Fossilized limestone
Gs040i Limestone with crinoid stem
Gs064i Glauconitic limestone
Gs095i Limestone with globotruncana (maestrichtien)
Gs096i Limestone with globigerinina (paleocene)
Gs041i Limestone with miliolidae
Gs038i Limestone with nummulitidae
Gs037i Limestone with ooids
Gs101i Limestone with polyp
Gs042i Limestone with iron ooids
Gs108i Limestone with intraclasts
Gs105i Oil shale
Gs031i Sandstone
Gs113i Calcareous sandstone
Gs034i Slate
Gs110i Travertine

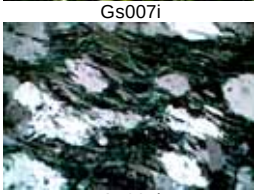
No. 7980 Rocks and Minerals, Fossils and Meteorites, Set no. VI

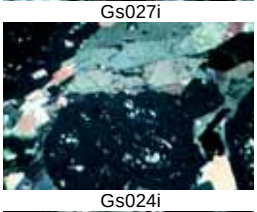
NEW!

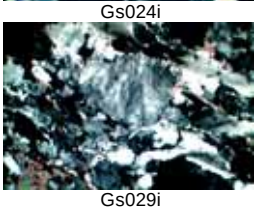
4 Microscope Slides

Gs117k Chondrite (Meteorite)
Gs118i Suévite (Impactite breccia)
Gs102i Petrified wood
Gs099i Stromatolite


Gs007i


Gs027i


Gs024i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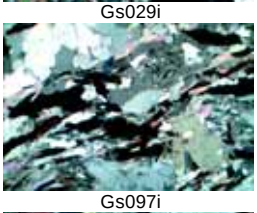
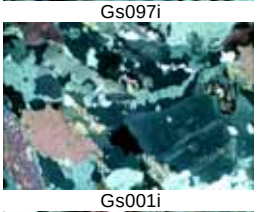

Gs097i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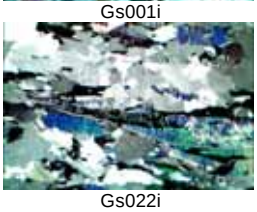
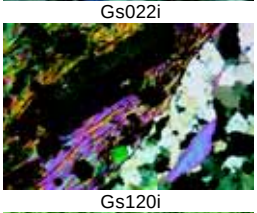

Gs022i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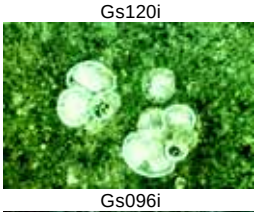
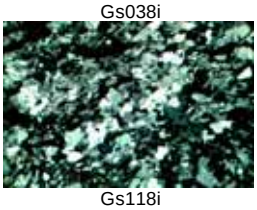

Gs096i


Gs038i


Gs118i

TEST SLIDES, TYPE PLATES, CIRCULAR PREPARATIONS, SINGLE PREPARATIONS *

Type Plates

Typical forms, individually selected and arranged in rows. With identification key.

DT25 **Diatomeae-Type Plate with 25 forms**
DT10SF **Diatomeae-Type Plate with 10 forms**, fresh water fossil
DT10MR **Diatomeae-Type Plate with 10 forms**, marine recent
RT05 **Radiolaria-Type Plate with 5 forms**
RT10 **Radiolaria-Type Plate with 10 forms**
RT25 **Radiolaria-Type Plate with 25 forms**
FT05 **Foraminifera-Type Plate with 5 forms**
FT10 **Foraminifera-Type Plate with 10 forms**
ST05 **Silicoflagellidae Type Plate with 5 forms**
ST10 **Silicoflagellidae Type Plate with 10 forms**

Circular Preparations

Beautiful forms, individually selected and arranged in a circle.

RK05 **Radiolaria Circular Preparation with 5 forms**
RK25 **Radiolaria Circular Preparation with 25 forms**
FK05 **Foraminifera Circular Preparation with 5 forms**
SK05 **Silicoflagellidae Circular Preparation with 5 forms**
SK25 **Silicoflagellidae Circular Preparation with 25 forms**

Test Diatomeae, Strewn Preparations

For testing the resolution of microscopes. Strewn slides of cleared material showing many forms per slide.
Please state with your order:
Version A: mounted dry n_D 1,00 *or* Version B: mounted in balsam n_D 1,65.

DTS05 **Nitzschia obtusa**
DTS06 **Frustulia rhomboides var. saxonia**

Other strewn slides, also assortes after locations, on request.

Test Diatomeae, Individual Preparations

For testing the resolution of microscopes. Each slide shows 2 – 3 carefully selected individuals of the named species.

DTE01 **Pinnularia opulenta**
DTE03 **Pinnularia nobilis**
DTE07 **Grammatophora serpentina**
DTE08 **Gyrosigma attenuatum**
DTE09 **Nitzschia sigmoidea**
DTE10 **Nitzschia linearis**

Diatomeae, Individual Preparations

Each slide shows 2 – 3 carefully selected individuals of the named species.

DE01 **Triceratium pentacrinus,** marin-recent
DE02 **Mastogloia splendida,** marin-fossil
DE03 **Actinoptychus heliopelta,** marin-fossil
DE04 **Surirella robusta,** fresh water-recent
DE05 **Stauroneis acuta,** fresh water-fossil

Diatomeae, Individual Preparations Three Views

Each slide shows three carefully selected individuals of the named species in the following views: front (principal) view, side (girdle) view and view of a dividing specimen.

DE301 **Surirella elegans**
DE302 **Triceratium arcticum**
DE303 **Isthmia nervosa**
DE304 **Terpsinoe musica**
DE305 **Biddulphia pulchella**
DE306 **Hydrosera triqueta**

Radiolaria, Individual Preparations

Each slide shows 2 – 3 carefully selected individuals of the named species.

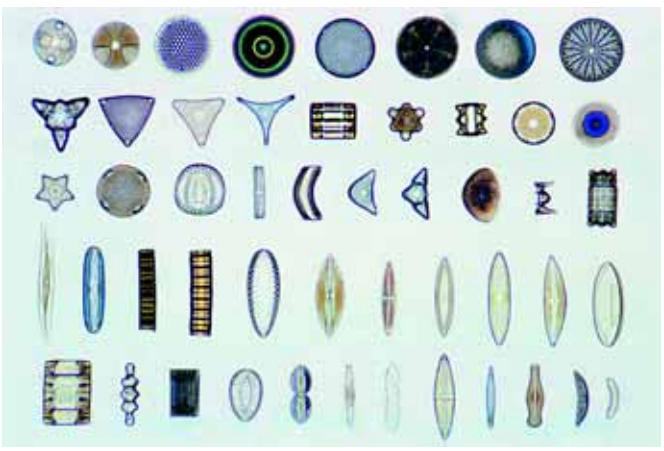
RE01 **Eusyringium sipho,** fossil
RE02 **Podocyrtis floribunda,** fossil
RE03 **Thyrsocyrtis rhizodon,** fossil
RE04 **Dictyastrum jeremiense,** recent
RE05 **Panartus hausmanni,** recent

Foraminifera, Individual Preparations

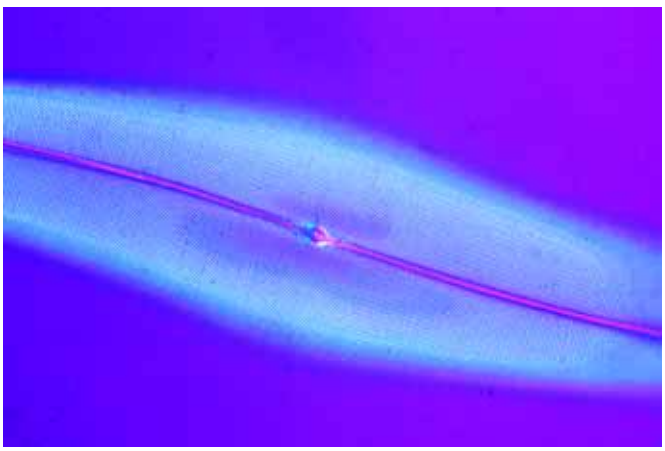
Each slide shows 2 – 3 carefully selected individuals of the named species.

FE01 **Uvigerina asperula,** recent
FE02 **Nonionina depressula,** recent
FE03 **Bolivina porrecta,** recent
FE05 **Bolivina gramen,** recent

Please note: For all test slides, type plates, circular and individual preparations the delivery is reserved



Diatomeae-Type Plate with 50 forms (upon request)



Pleurosigma angulatum, diatoms for testing the resolution of microscopes

BOXES AND CASES FOR MICROSCOPE SLIDES

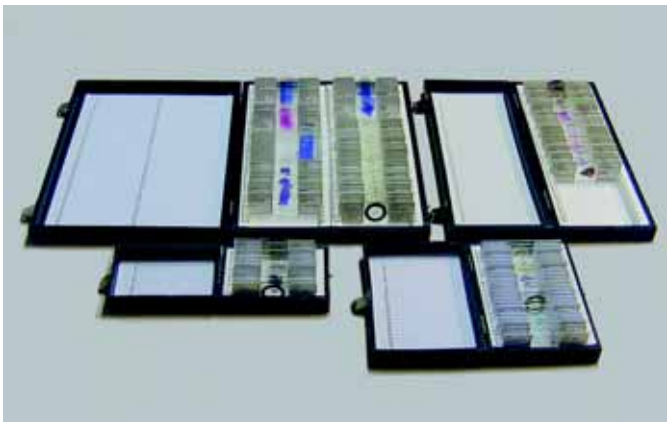
Prepared Microscope Slides can be shipped in special slide boxes only for technical reasons. These boxes are available in various types and price categories and should be ordered together with the slides.
Unless specified by the customer we supply standard type boxes of suitable size for our microscope slide sets (collections) and individual slides (K12, K25, K50, K100).

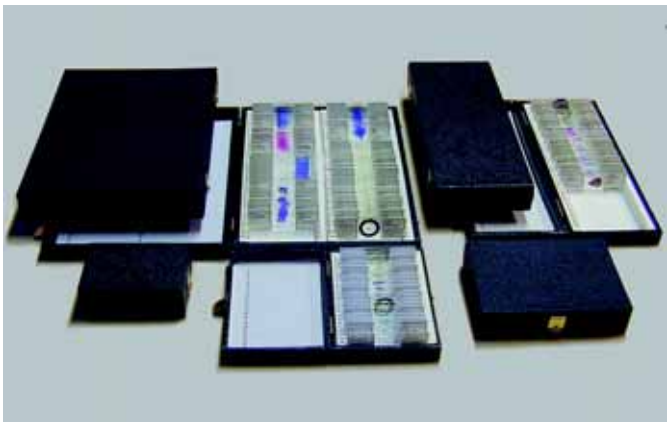
Standard boxes: Strong storage cases of best quality coated with leatherette paper and furnished with numbered serrated retainer strips.

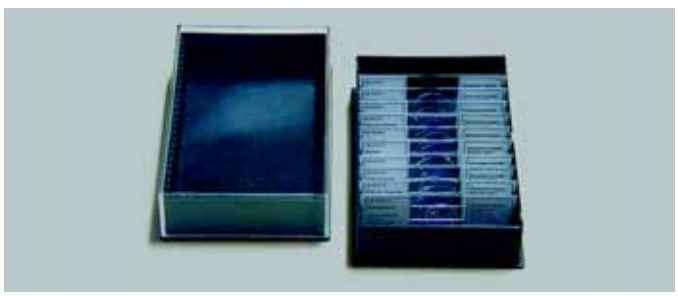
Order No.	**K12**	for 12 microscope slides
Order No.	**K25**	for 25 microscope slides
Order No.	**K50**	for 50 microscope slides
Order No.	**K100**	for 100 microscope slides

Special-type boxes: Very strong hardwood cases, first-class workmanship, colourless varnish-finish, with brass hinges and lock, with numbered retainers to hold the slides, lining of sponged material. Upon request.

Order No.	**KH25 ***	for 25 microscope slides
Order No.	**KH50 ***	for 50 microscope slides
Order No.	**KH75 ***	for 75 microscope slides
Order No.	**KH100 ***	for 100 microscope slides







Plastic boxes: Solid, pile up boxes with serrated retainer strips and transparent cover.

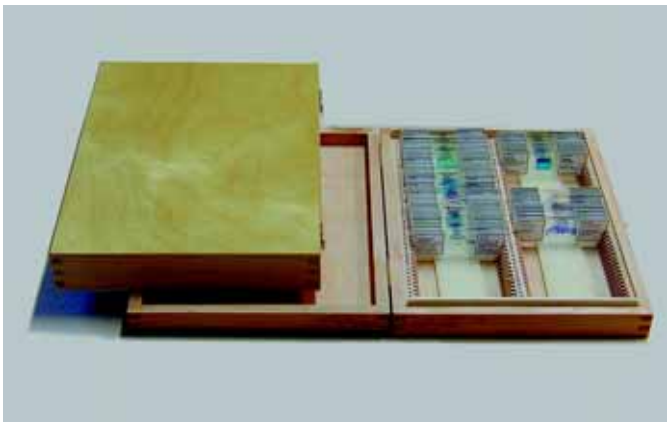
Order No.	**PK25**	for 25 microscope slides

Plain economic shipping and storage boxes, cardboard-made.

Order No.	**PS50**	for 50 microscope slides

Flat display cases for Microscope Slides, constructed from strong grey cardboard with individual cut outs and cover. Model PM20V has an additional fastening.

Order No.	**PM1**	for 1 microscope slide
Order No.	**PM5**	for 5 microscope slides
Order No.	**PM10**	for 10 microscope slides
Order No.	**PM20**	for 20 microscope slides
Order No.	**PM20V**	for 20 microscope slides



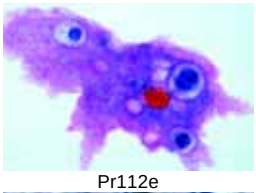
PREPARED MICROSCOPE SLIDES IN SYSTEMATIC ORDER

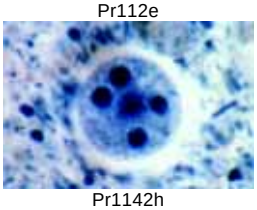
The list of the available microscopic specimens was also revised and further essentially completed. Their systematic arrangement facilitates the finding of slides necessary to compile series for special use. A detailed list of contents is found on page 76.

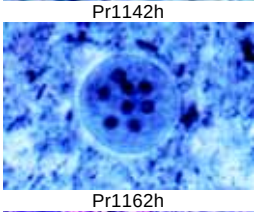
Helpful for orientation are the • marked slides of important specimens which are characteristic and representative of the taxonomic group or of the subject.

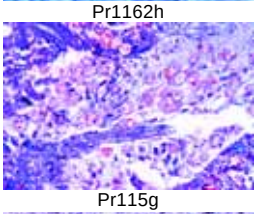
Various slides are available only in small number or have a long delivery period, as their material is either rare or causes unusual difficulties in processing. This applies particularly to the slides marked with an asterisk * in the catalogue, for which we cannot guarantee delivery.

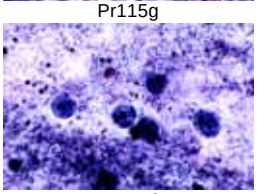
Abbreviations: t.s. transverse or cross section l.s. longitudinal section w.m. whole mount or entire specimen

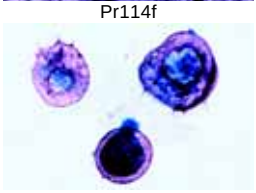

Pr112e

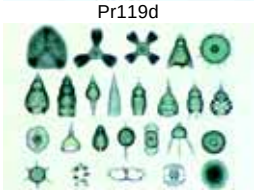

Pr1142h

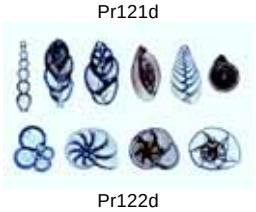

Pr1162h


Pr115g


Pr114f


Pr119d


Pr121d


Pr122d

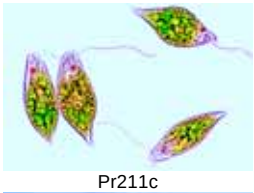
PROTOZOA

Rhizopoda (Sarcodina)

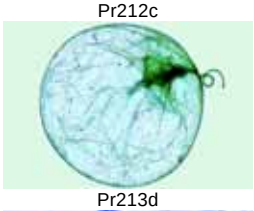
Pr112e • **Amoeba proteus,** showing nucleus, endoplasm, ectoplasm, food vacuoles, pseudopodia w.m.
Pr113f **Amoeba proteus,** section through specimens
Pr114f • **Entamoeba histolytica,** causes amebic dysentery, smear from feces
Pr1141h **Entamoeba histolytica,** causes amebic dysentery, smear showing trophozoites (asexual forms) *
Pr1142h **Entamoeba histolytica,** causes amebic dysentery, smear showing cysts *
Pr115g **Entamoeba histolytica,** section through diseased colon showing the parasites in situ
Pr116g • **Entamoeba coli,** nonpathogenic, smear from feces
Pr1161h **Entamoeba coli,** nonpathogenic, smear with trophozoites *
Pr1162h **Entamoeba coli,** smear showing cysts *
Pr1165h **Entamoeba hartmanni** trophozoites. Smear, intestinal amoeba; nonpathogenic to humans
Pr1166h **Entamoeba hartmanni** cysts. Smear
Pr1168h **Dientamoeba fragilis** trophozoites. Smear
Pr117f **Entamoeba invadens,** large specimens from culture, good for demonstration
Pr1173g **Entamoeba gingivalis,** smear with trophozoites
Pr1174h **Endolimax nana,** small human parasite, smear with trophozoites *
Pr1175h **Endolimax nana,** smear with cysts *
Pr1177h **Jodamoeba butschlii,** a commensal living in the human intestine, smear with trophozoites *
Pr1178h **Jodamoeba butschlii,** smear with uninucleate cysts *
Pr1181v **Pneumocystis carinii.** Smear from lung tissue stained to show cyst wall of parasites *
Pr1182v **Pneumocystis carinii.** Smear from lung tissue stained to show trophozoites and sporozoites *
Pr119d • **Arcella,** shelled amoeba w.m.
Pr1195s **Actinosphaerium,** a fresh water actinopode w.m. *
Pr121d • **Radiolaria,** mixed species showing different forms
Pr122d • **Foraminifera,** mixed species showing different forms
Pr1251d **Foraminifera** from Mediterranean sea, mixed recent
Pr1252d **Foraminifera,** mixed fossil, chalk
Pr124d **Foraminifera,** mixed forms from the Adriatic Sea
Pr123d • **Globigerina,** marine forms, mixed species

Flagellata (Mastigophora)

Pr211c • **Euglena viridis,** a common green flagellate with eyespot and flagellum, w.m.
Pr2112c **Euglena gracilis,** a smaller species, w.m.
Pr2113f **Euglena,** a large species specially fixed and stained to show the flagella, w.m.
Pr2114d **Phacus,** flat heart-shaped cells w.m.
Pr2115e **Trachelomonas,** a free swimming species of the Euglenophyta
Pr212c • **Ceratium hirundinella,** a fresh water dinoflagellate w.m.
Pr2121c **Ceratium,** slide showing different marine forms w.m.
Pr2123d **Peridinium,** a fresh water dinoflagellate w.m.
Pr213d • **Noctiluca miliaris,** a large marine flagellate causing the phosphorescence of the sea, w.m.
Pr225h **Chilomastix mesnili,** flagellate found in human intestine, nonpathogenic, smear with trophozoites *
Pr2252h **Chilomastix mesnili,** smear with cysts
Pr221h **Giardia lamblia intestinalis,** human parasite, smear with trophozoites *
Pr2212h **Giardia lamblia intestinalis,** smear showing cysts *
Pr223f • **Trichomonas sp.,** smear with trophozoites
Pr2232h **Trichomonas vaginalis,** smear *
Pr2233h **Trichomonas muris**, trophozoites
Pr230f • **Trypanosoma gambiense**, a blood flagellate, causing Central African sleeping disease, blood smear
Pr231f **Trypanosoma rhodesiense,** causes South African sleeping disease, blood smear with parasites
Pr232f • **Trypanosoma evansi,** causes surra in cattle, blood smear
Pr233f • **Trypanosoma brucei,** causes nagana, blood smear
Pr234f **Trypanosoma congolense,** pathogenic to domestic animals, blood smear
Pr235f • **Trypanosoma equiperdum,** dourine in horses, blood smear
Pr236f • **Trypanosoma cruzi (Schizotrypanum),** causes Chagas disease of man, blood smear showing trypanosomes
Pr237g • **Trypanosoma cruzi,** section through infected heart muscle shows Leishmania forms in tissue *
Pr2372h **Trypanosoma cruzi.** Smear from culture showing cultured forms *
Pr2373g **Trypanosoma cruzi.** Leishmania forms in sec. of mouse brain *
Pr2374g **Trypanosoma cruzi.** Leishmania forms in sec. of mouse liver *
Pr2375g **Trypanosoma cruzi.** Leishmania forms in sec. of mouse heart muscle fibres *
Pr2376g **Trypanosoma cruzi.** Leishmania forms in sec. of mouse spleen
Pr241f **Trypanosoma lewisi,** a large species living in rats and mice, blood smear with parasite, heavy infection
Pr2413g • **Trypanosoma lewisi,** blood smear, early stages of infection with division stages
Pr2414g **Trypanosoma lewisi,** blood smear, later stages of infection, large forms *
Pr238f • **Leishmania donovani,** causes Kala-Azar, smear from the infected spleen showing the typical Leishman-Donovan bodies
Pr239g • **Leishmania donovani,** section through infected spleen or liver showing the parasites within the cells


Pr211c


Pr212c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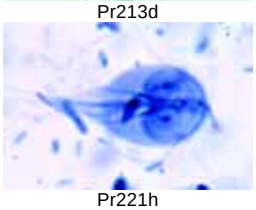
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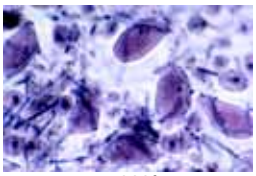
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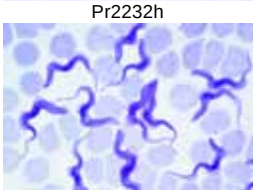
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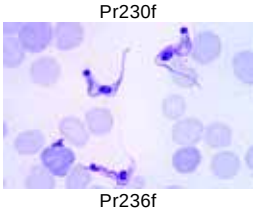
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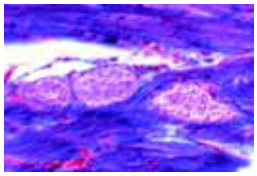
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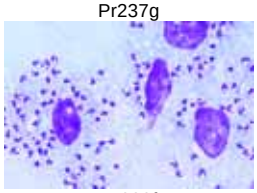
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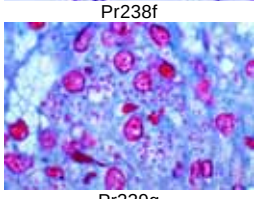
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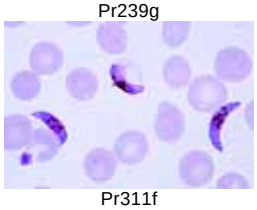
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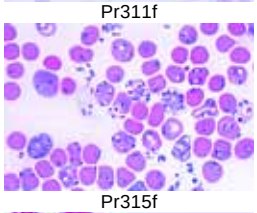
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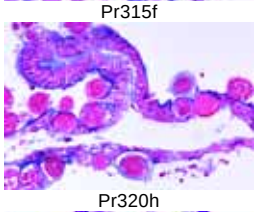
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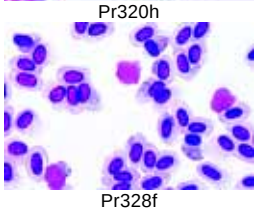
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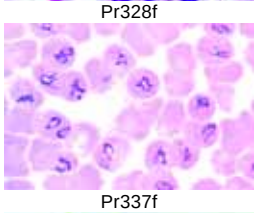
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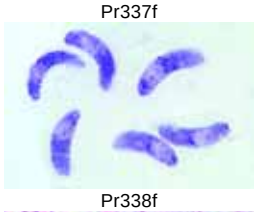
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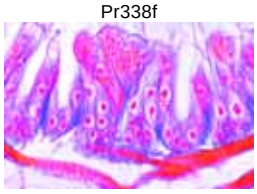

Pr330e


Pr333f

Pr2392t **Leishmania donovani,** smear from culture showing Leishman and leptomonad forms *
Pr2395h **Leishmania donovani,** promastigotes, smear from culture *
Pr2396h **Leishmania donovani,** amastigotes, smear from tissue *
Pr2397h **Leishmania mexicana,** promastigotes, smear from culture *
Pr240f **Leishmania enrietti,** section through nasal abscess from Guinea pig. Very heavy infection
Pr2405g **Crithidia fasciculata,** smear from intestine of Anopheles mosquito showing the typical crithidia forms *
Pr2378g **Termite flagellates.** w.m., showing large vegetative forms *
Pr251d • **Silicoflagellates**, various species

Sporozoa

Pr311f • **Plasmodium falciparum,** malignant tertian malaria of man, blood smear with typical ring stages
Pr3112g **Plasmodium falciparum,** blood smear with more gametocytes *
Pr312f **Plasmodium falciparum,** thick diagnostic smear *
Pr313h **Plasmodium vivax,** benign tertian malaria of man, blood smear *
Pr3132h **Plasmodium vivax,** thick diagnostic blood smear *
Pr3145h **Plasmodium malariae,** causing quartan malaria, blood smear *
Pr315f • **Plasmodium berghei,** blood smear from experimentally infected mouse. Very heavy infection shows abundant parasites in different stages of development
Pr320h **Plasmodium sp.,** section through infected mosquito stomach with oocysts containing sporozoites *
Pr321i **Plasmodium sp.,** section through the salivary gland of infected mosquito with sporozoites *
Pr322h **Plasmodium sp.,** exoerythrocytic stages in sec. of brain *
Pr323h **Plasmodium sp.,** exoerythrocytic stages in sec. of liver *
Pr3235g **Malaria melanemia in human spleen,** sec. showing pigment granules in endothelium and Kupffer's cells
Pr326f **Plasmodium praecox,** avian malaria, blood smear
Pr327f • **Plasmodium gallinaceum (Proteosoma),** fowl malaria, blood smear from chicken *
Pr328f **Plasmodium cathemerium,** avian malaria, blood smear *
Pr3285s **Plasmodium circumflexum,** smear from lung or brain of bird showing exoerythrocytic schizogony *
Pr3287s **Leukocytozoon,** smear from fowl blood with parasites *
Pr329s • **Haemoproteus columbae,** pigeon malaria, blood smear *
Pr3293t **Haemogregarina,** smear from frog blood with parasites *
Pr337f • **Babesia canis,** blood smear shows heavy infection
Pr338f • **Toxoplasma gondii,** causing toxoplasmosis, tissue smear with parasites
Pr3381f • **Toxoplasma gondii,** section of the brain showing cysts with parasites *
Pr330e • **Nosema apis,** honey bee dysentery, sec. of diseased intestine
Pr331d • **Monocystis lumbrici,** in smear from earthworm seminal vesicle
Pr332d **Monocystis lumbrici,** section with parasites in situ
Pr333f • **Gregarina,** in smear from mealworm (Tenebrio) intestine
Pr334d **Gregarina,** in section from mealworm intestine, parasites in situ
Pr335d • **Eimeria stiedae,** causing coccidiosis in rabbit, section of liver shows schizogony and all developing stages
Pr3352d **Eimeria stiedae,** coccidiosis, smear from faeces
Pr336d **Eimeria tenella,** section of diseased chicken intestine *
Pr339f • **Sarcocystis tenella,** section of muscle showing the parasites in Miescher's tubes

Pr3392f **Sarcocystis tenella** in heart muscle, sec.
Pr3365s **Myxosoma**, parasite on fish gill, sec. *

Ciliata (Infusoria)

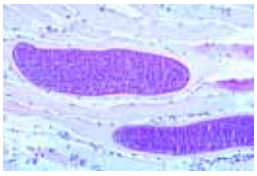
Pr411d • **Paramecium,** macro- and micronuclei stained. The typical slide for general study of this common ciliate
Pr412e **Paramecium,** food vacuoles and nuclei doubly stained
Pr413e **Paramecium,** pellicle stained after Bresslau
Pr414e **Paramecium,** silver stained to show the silver line or neuroformative system
Pr415e **Paramecium,** specially prepared and stained to show the trichocysts
Pr416f • **Paramecium,** in conjugation, nuclei stained *
Pr417g • **Paramecium,** in fission, nuclei stained *
Pr418e **Paramecium,** section through many individuals, triply stained
Pr419f **Paramecium,** stained with Feulgen reaction
Pr4194e **Paramecium multimicronucleatum,** w.m. nuclei stained. this species contains several micronuclei
Pr4195e **Paramecium aurelia,** w.m. nuclei stained. This species containing one macronucleus and two micronuclei
Pr4196e **Paramecium bursaria,** w.m. and nuclei stained, showing symbiotic zoochlorellae in endoplasm
Pr422e • **Vorticella,** a common stalked ciliate w.m.
Pr4222e **Vorticella,** a marine species, coloniate ciliate
Pr421d • **Stylonychia,** a common ciliate w.m.
Pr430e • **Colpidium,** a common holotrich ciliate
Pr427f **Spirostomum ambiguum,** a ciliate with very large nucleus
Pr428g **Stentor,** a trumpet-shaped large ciliate *
Pr429e • **Euplotes,** a common marine ciliate
Pr4306f **Bursaria truncatella,** a large fresh water ciliate *
Pr4309e **Blepharisma,** a large ciliate with pigment granules *
Pr4305e **Didinium nasutum,** a small ciliate parasite on Paramecium *
Pr423f **Dendrocometes paradoxus,** suctorial infusoria on the gills of Gammarus *
Pr424f **Trichodina domerguei,** parasite living on fish gills *
Pr4307e • **Ephelota,** a stalked marine suctorian *
Pr4311e **Suctoria,** marine species
Pr425f **Opalina ranarum,** smear from frog intestine
Pr426e • **Opalina ranarum,** in section through frog intestine
Pr4265t **Balantidium coli,** human parasite, smear with trophozoites *
Pr4266t **Balantidium coli,** smear with cysts *
Pr4267t **Balantidium coli,** in sec. of human intestine *
Pr433f **Ciliates from the rumen of cow,** different species
Pr435h **Ciliates,** specially prepared and stained to show the cilia
Pr440f • **Mixed protozoa,** many different forms are found on this slide

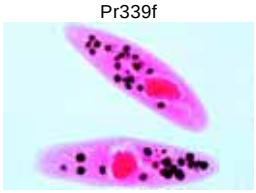
MESOZOA

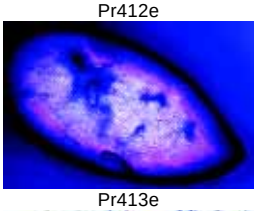
Me111f **Dicyema**, simple animal with body and sexual cells, from smear of Sepia *

PORIFERA – SPONGES

Po111d • **Sycon,** a small marine sponge of the sycon type, t.s. through the body
Po112f • **Sycon,** near med. long. sec. through body and osculum
Po113d **Sycon,** tangential long. sec.
Po114d **Sycon,** thick t.s. with calcareous spicules in situ
Po115b • **Sycon,** spicules isolated, w.m.
Po116f **Sycon,** sec. showing stages of development *
Po1165e **Sycon,** l.s. and t.s. on one slide
Po117d **Grantia,** a marine sponge of the sycon type, t.s. through the body
Po118f **Grantia,** near median long. sec. through body and osculum


Pr339f


Pr412e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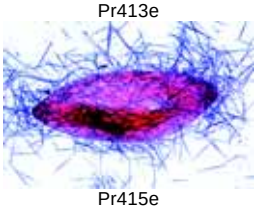
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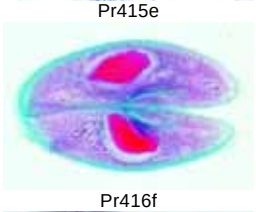
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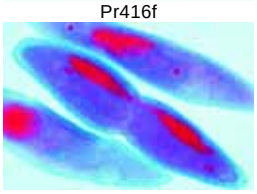
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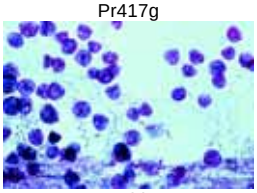
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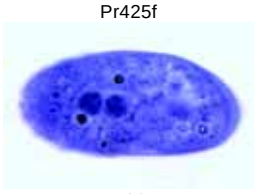
Pr425f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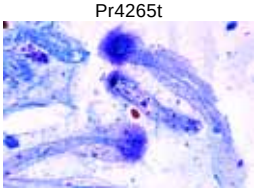
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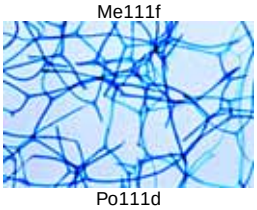
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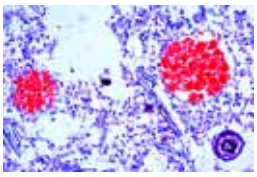
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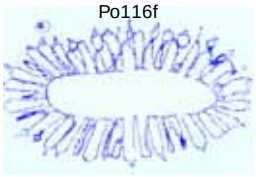
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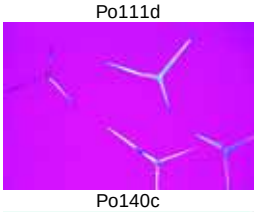
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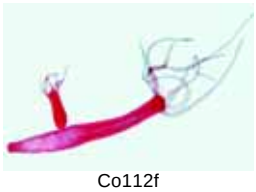
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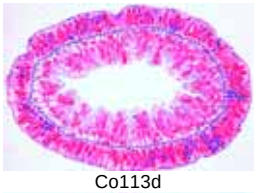
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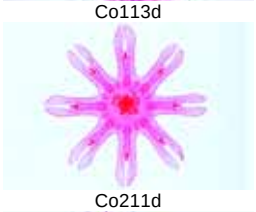
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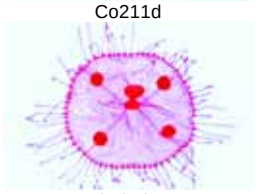
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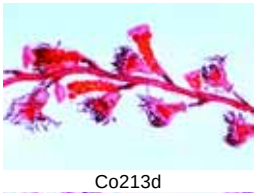
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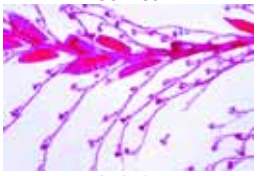
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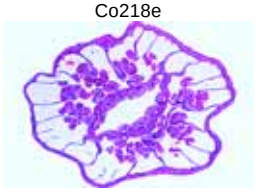
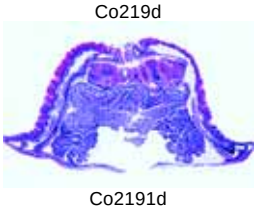

Co219d


Co2191d

Po119d **Grantia,** tangential long. sec.
Po1192e **Grantia**. t.s. and l.s. on one slide
Po1193d **Grantia**, calcareous spicules, isolated and w.m.
Po1194e **Grantia**, thick t.s. with calcareous spicules in situ
Po121d • **Spongilla,** fresh water sponge, t.s. showing choanocytes, incurrent and excurrent channels
Po122d • **Spongilla,** gemmulae (winter bodies) w.m.
Po123b **Spongilla,** siliceous spicules isolated and w.m.
Po125e • **Leucosolenia,** a simple marine sponge of the ascon type, stained and w.m.
Po126d **Leucosolenia,** t.s. through the body
Po128c • **Euspongia,** a commercial sponge, macerated skeleton shows horny fibres, w.m.
Po129d **Euspongia,** typical t.s. through the body
Po140c **Sponge spicules,** strewn slide of mixed species w.m.

COELENTERATA

Co111e • **Hydra**, extended specimen carefully stained for general body study, w.m. showing all details
Co112f • **Hydra** with bud, w.m. *
Co1121f **Hydra** with bud, l.s.
Co113d • **Hydra**, t.s. through the body in different levels showing ectoderm with nematocysts, supporting lamella and entoderm
Co114d • **Hydra**, l.s. through body and tentacles
Co1141g **Hydra**, median l.s. through basal disc, gastrovascular cavity, hypostome and tentacles *
Co1143e **Hydra**, t.s. and l.s. on one slide
Co115e **Hydra** with male gonad (testis), t.s.
Co1151f **Hydra** with male gonad (testis), w.m. *
Co116e **Hydra** with female gonad (ovary), t.s.
Co1161g **Hydra** with female gonad (ovary), w.m. *
Co1165s **Hydra**, t.s. of male and female gonads on one slide
Co117d **Hydra**, isolated cells w.m. showing the different cell types, nematocysts
Co118f **Hydra** with food in the digestive cavity, w.m. *
Co119d **Hydra** with food in the digestive cavity, t.s. through body
Co1195f **Hydra**, plain and budding, two specimens w.m.
Co211d • **Obelia hydroid,** colony of polyps with hydrants and gonothecae, w.m. for general study
Co212e • **Obelia medusa,** small jellyfish, w.m. for general study
Co230g **Obelia,** sec. through budding medusae in different stages *
Co213d **Plumularia setaceae,** colony of polyps w.m.
Co214d • **Tubularia larynx,** colony of polyps, w.m. or l.s.
Co233f **Tubularia larynx,** actinula larva w.m.
Co215d **Sertularia cupressina,** colony of polyps w.m.
Co216d • **Campanularia johnstoni,** colony of polyps w.m.
Co235d **Hydractinia,** colony of polyps w.m.
Co220d **Coryne sarsi,** colony of polyps showing budding and developing medusae, w.m. *
Co217e **Jellyfish,** section through the margin of umbrella shows statocysts
Co2175g **Aurelia,** jellyfish, planula larva w.m..
Co2176g **Aurelia,** scyphistoma w.m. *
Co2177g **Aurelia,** scyphistoma in strobilation, l.s.
Co218e • **Aurelia,** ephyra w.m. *
Co219d • **Actinia (Metridium),** sea anemone, t.s. through entire young specimen
Co2191d • **Actinia (Metridium),** sea anemone, l.s. through entire young specimen
Co2193e **Actinia,** t.s. and l.s. on one slide
Co222d **Anemonia,** sea anemone, sec. through the tentacles shows nematocysts and zoochlorellae
Co225e • **Alcyonium digitatum,** leathery coral, t.s. of colony
Co2252e **Alcyonium,** coral, w.m. of colony
Co226c • **Lime bodies of different corals,** w.m.

PLATYHELMINTHES FLATWORMS

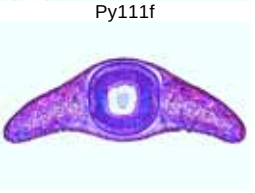
Turbellaria – Turbellarians

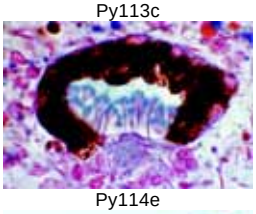
Py111f • **Planaria,** selected specimen stained for general study, of the body, flat w.m.
Py1115g **Planaria,** selected specimen specially stained to show the digestive tract and its branches and diverticula, w.m. *
Py112c **Planaria,** t.s. through the body for general study
Py113c • **Planaria,** t.s. through the body in region of pharynx
Py114e **Planaria,** section selected to show the ocelli
Py115f **Planaria,** t.s. through three regions: anterior end, region of pharynx and region of gonads
Py1162e **Planaria,** sagittal l.s. for general structures
Py117f **Planaria,** median l.s. through entire specimen

Trematodes – Flukes

Py211e • **Dicrocoelium lanceolatum** (D. dendriticum), sheep liver fluke, entire mount and stained for internal structures
Py212d **Dicrocoelium lanceolatum,** t.s. of the body
Py2121d **Dicrocoelium lanceolatum,** ova w.m.
Py213f • **Fasciola hepatica (Distomum hepaticum),** beef liver fluke, selected specimen flat mount and carefully stained
Py214c • **Fasciola hepatica,** t.s. through the body
Py2142d **Fasciola hepatica,** t.s. through two different body regions
Py215e **Fasciola hepatica,** near median l.s. through adult specimen
Py2152d **Fasciola hepatica,** l.s. through two different body regions
Py216d • **Fasciola hepatica,** ova w.m.
Py217h • **Fasciola hepatica,** miracidia (free living larvae) w.m. *
Py2172i **Fasciola hepatica,** redia w.m. *
Py2173i **Fasciola hepatica,** cercaria w.m. *
Py2174i **Fasciola hepatica,** metacercaria w.m. *
Py219f • **Fasciola hepatica,** redia and cercaria in sec. through infected snail liver
Py220e **Fasciola hepatica,** horizontal l.s. through entire specimen
Py2201e **Fasciola hepatica,** horizontal l.s. through entire specimen specially fixed and stained to show the excretory system
Py2202e **Fasciola hepatica in bile ducts of liver,** t.s.
Py2205u **Fasciolopsis buski,** large intestinal fluke, flat mount *
Py2206e **Fasciolopsis buski,** ova w.m.
Py2207u **Fasciolopsis buski,** miracidia w.m. *
Py2208u **Fasciolopsis buski,** redia w.m. *
Py2209u **Fasciolopsis buski,** cercaria w.m. *
Py221h • **Schistosoma mansoni,** causing bilharziosis, adult male w.m.
Py222h • **Schistosoma mansoni,** adult female w.m.
Py223i **Schistosoma mansoni,** adult male and female in copula, w.m. and carefully stained for general study
Py224e **Schistosoma mansoni,** t.s. of adult male and female
Py225h **Schistosoma mansoni,** miracidia w.m. *
Py226h **Schistosoma mansoni,** cercaria with bifurcate tail w.m. *
Py227g • **Schistosoma mansoni,** section through infected snail liver showing cercaria
Py228f **Schistosoma mansoni,** section through snail liver not infected, for comparison
Py229g • **Schistosoma mansoni,** ova in section of liver or intestine *
Py230e • **Schistosoma mansoni,** ova in faeces w.m.
Py231e • **Schistosoma haematobium,** ova from urine sediment w.m.
Py232e **Schistosoma japonicum,** ova from faeces, w.m. *
Py233h **Schistosoma japonicum,** adult male w.m. *
Py234h **Schistosoma japonicum,** adult female w.m. *
Py2345u **Schistosoma japonicum,** miracidia w.m. *
Py2347v **Schistosoma japonicum,** cercariae w.m. *
Py247h **Clonorchis sinensis,** Chinese liver fluke, w.m. of adult *
Py2472d **Clonorchis sinensis,** t.s. through the body
Py248s **Clonorchis sinensis,** sec. of human liver with parasitic worms in the bile ducts *


Py111f


Py113c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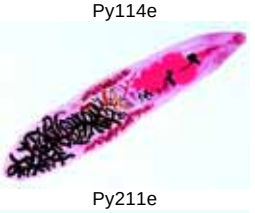
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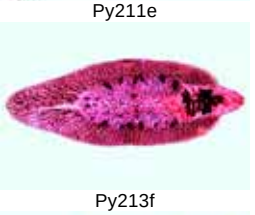
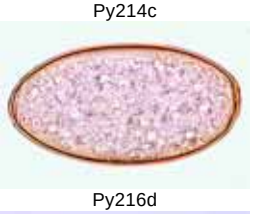
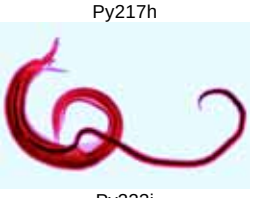

Py213f


Py214c


Py216d


Py217h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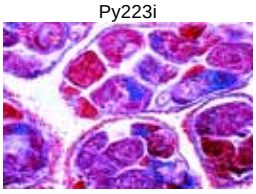
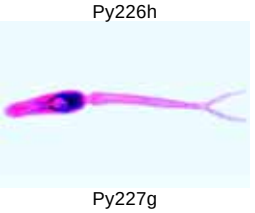
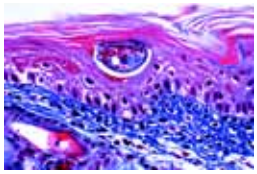
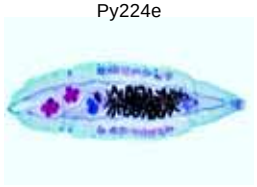
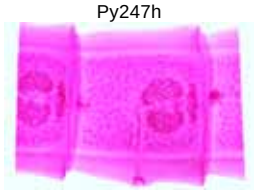

Py226h


Py227g


Py229g

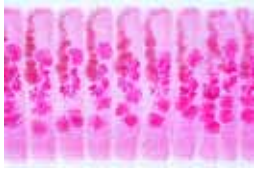

Py224e


Py247h

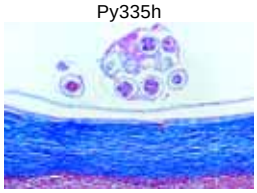

Py322f


Py312g

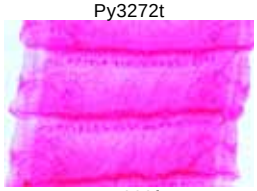

Py313d


Py330f


Py335h


Py337f


Py3272t


Py328f

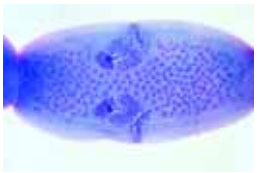
Py2483h **Clonorchis sinensis,** metacercaria w.m. *
Py249e **Clonorchis sinensis,** ova w.m.
Py245h **Opisthorchis felineus,** cat liver fluke, w.m. of adult *
Py251t **Heterophyes heterophyes,** fluke parasite in human intestine, w.m. of adult specimen *
Py253h **Echinostoma revolutum,** occuring in mammals, adult w.m. *
Py254e **Echinostoma revolutum,** ova w.m.
Py255h **Echinoparyphium recurvatum,** occuring in poultry, w.m. of adult specimen
Py261e **Paragonimus,** lung fluke, ova w.m. *
Py2614i **Paragonimus,** miracidia w.m. *
Py2615i **Paragonimus,** rediae w.m. *
Py2616i **Paragonimus,** metacercariae w.m. *
Py270t **Metagonimus,** w.m., a small intestinal fluke which infests man and animals.
Py271f **Prosthogonimus macrorchis,** eggs, w.m.
Py273t **Eurytrema pancreaticum** w.m., parasite of cattle and pig *
Py236g **Leucochloridium macrostomum**, parasite of birds, section through snail tentacle with sporocyts containing cercaria
Py2553h **Hypoderaeum conoideum**, an echinostome occuring in ducks, w.m.

Cestodes – Tapeworms

Py321f • **Taenia pisiformis (Taenia serrata),** tapeworm of dogs, immature proglottids w.m.
Py322f • **Taenia pisiformis,** mature proglottids w.m.
Py323f • **Taenia pisiformis,** gravid proglottids w.m.
Py3235d **Taenia pisiformis,** t.s. through proglottids
Py324i • **Taenia pisiformis,** scolex w.m. *
Py3243k **Taenia pisiformis,** composite slide with whole mounts of scolex, immature, mature and gravid proglottids *
Py3245d • **Taenia pisiformis,** ova from faeces w.m.
Py325f • **Cysticercus pisiformis,** bladderworm of Taenia pisiformis, section
Py3251t **Cysticercus pisiformis,** w.m. of complete bladderworm *
Py311f • **Taenia saginata,** tapeworm, proglottids w.m. *
Py312g **Taenia saginata,** selected mature proglottids w.m. *
Py313d • **Taenia saginata,** t.s. of proglottids in different stages, the standard slide for general study
Py314d • **Taenia saginata,** ova in faeces w.m.
Py3145f • **Cysticercus bovis,** bladderworm of Taenia saginata, sec. through beef muscle with parasites in situ
Py3146t **Cysticercus bovis,** w.m. of bladderworm *
Py315d **Taenia solium,** human tapeworm, proglottids t.s.
Py3153i **Taenia solium,** scolex w.m. *
Py3154d **Taenia solium,** ova in faeces w.m.
Py3156f **Cysticercus cellulosae,** bladderworm of Taenia solium, section through pork muscle with parasites in situ
Py3157t **Cysticercus cellulosae,** w.m. of complete bladderworm *
Py3268f **Dipylidium caninum,** tapeworm of dogs and cats, immature proglottids w.m.
Py327f • **Dipylidium caninum,** mature proglottids w.m.
Py3271f **Dipylidium caninum,** gravid proglottids w.m.
Py3272t • **Dipylidium caninum,** w.m. of scolex with immature proglottids
Py3273k **Dipylidium caninum,** composite slide with whole mounts of scolex, immature, mature and gravid proglottids *
Py3275e • **Dipylidium caninum,** egg balls with 5 to 20 ova, w.m.
Py328f • **Moniezia expansa,** tapeworm of sheep, proglottids w.m.
Py3282t • **Moniezia expansa,** scolex with immature proglottids w.m.
Py3283k **Moniezia expansa,** composite slide with whole mounts of scolex, immature, mature and gravid proglottids *
Py329e **Taenia hydatigena,** tapeworm of dogs and predaceous animals, proglottids t.s.
Py3293f **Cysticercus tenuicollis,** bladderworm of T. hydatigena, sec. of scolex
Py330f • **Hymenolepis nana,** dwarf tapeworm of rats, proglottids w.m.
Py331d • **Hymenolepis nana,** ova from faeces w.m.
Py3341g **Hymenolepis diminuta,** w.m. of mature and gravid proglottids
Py3342e **Hymenolepis diminuta,** ova w.m.
Py3343g **Hymenolepis diminuta,** cysticercoid. W.m., larval stage
Py332i **Hymenolepis fraterna,** w.m. of entire tapeworm with scolex, immature, mature and gravid proglottids *
Py335h • **Echinococcus granulosus,** tapeworm of dogs, w.m. of complete tapeworm with scolex and proglottids. Selected and carefully stained specimens *
Py336f • **Echinococcus granulosus,** scolices from cyst, w.m.
Py337f • **Echinococcus granulosus,** cyst wall and scolices t.s.
Py338e **Echinococcus granulosus,** sterile cyst t.s.
Py339e **Echinococcus granulosus,** ova in faeces of dog w.m.
Py3392f **Echinococcus multilocularis,** cyst with scolices t.s.
Py344i **Diphyllobothrium latum,** tapeworm of fishes, scolex and immature proglottids w.m. *
Py345s **Diphyllobothrium latum,** mature proglottids w.m. *
Py346e **Diphyllobothrium latum,** t.s. of mature proglottids
Py347e **Diphyllobothrium latum,** ova w.m.
Py348v **Diphyllobothrium erinacei (mansoni),** dog and cat tapeworm, w.m., scolex and proglottids
Py349g **Diphyllobothrium erinacei.** W.m., mature proglottids
Py350e **Diphyllobothrium erinacei,** ova w.m.
Py352e **Taenia multiceps (Multiceps serialis),** dog tapeworm, sec. of bladderworm stage (Coenurus cerebralis) shows several scolices *
Py354g **Cysticercus fasciolarias**. sec. of rat liver with cyst of Taenia taeniaeformis.

NEMATHELMINTHES ROUNDWORMS

Ne111d • **Ascaris megalocephala,** roundworm of horses, t.s. of adult female in region of sex organs
Ne112d • **Ascaris megalocephala,** t.s. of adult male in region of sex organs
Ne113d **Ascaris megalocephala,** t.s. in region of oesophagus showing the triradiate lumen
Ne121f • **Ascaris megalocephala embryology.** Sec. of uteri showing entrance and modification of sperm in ova
Ne122f • **Ascaris megalocephala embryology.** Sec. of uteri showing maturation stages (meiosis). Polar bodies can be seen.
Ne123f • **Ascaris megalocephala embryology.** Sec. of uteri showing ova with male and female pronuclei
Ne124f • **Ascaris megalocephala embryology.** Sec. of uteri showing early cleavage stages (mitosis)
Ne125f • **Ascaris megalocephala embryology.** Sec. of uteri showing later cleavage stages (mitosis)
Ne129d • **Ascaris lumbricoides,** roundworm of man, t.s. of adult female in region of gonads
Ne130d • **Ascaris lumbricoides,** t.s. of adult male in region of gonads
Ne1305e • **Ascaris lumbricoides,** t.s. of male and female in region of gonads
Ne1306d • **Ascaris lumbricoides,** t.s. in region of oesophagus
Ne131d • **Ascaris lumbricoides,** ova in faeces w.m.
Ne1312d **Ascaris lumbricoides,** infertile ova w.m.
Ne132e **Ascaris lumbricoides,** isolated muscle cells w.m.
Ne1323f **Ascaris lumbricoides,** larvae in sec. of pig lung
Ne235e **Toxocara,** roundworm of dogs, ova in faeces w.m.
Ne128f **Rhabditis,** a nematode living in earthworms, w.m. of ova showing cleavage stages
Ne135f • **Enterobius vermicularis (Oxyuris),** pin worm, w.m. of an adult specimen (male or female, our selection)
Ne1351g **Enterobius vermicularis,** w.m. of adult male *
Ne1352f **Enterobius vermicularis,** w.m. of adult female
Ne136c • **Enterobius vermicularis,** ova from faeces w.m.
Ne1362g **Enterobius vermicularis,** sec. through human appendix with parasites in situ
Ne137e **Strongyloides,** intestinal parasite worm, w.m.
Ne1373g • **Strongyloides,** filariform larvae w.m. (infective larvae) *


Py327f


Py345s


Py331d


Py3342

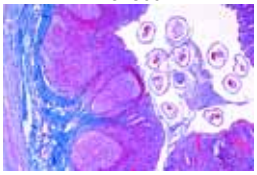

Ne113d


Ne1305e


Ne129d


Ne1352f


Ne136c


Ne1362g

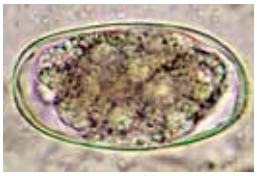

Ne144h


Ne1512v


Ne145e


Ne143h


Ne1445k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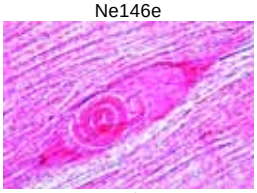
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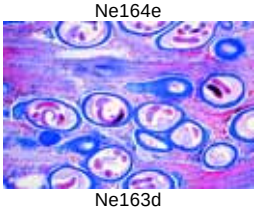
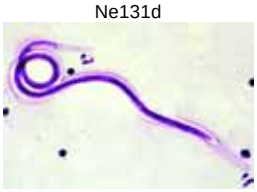
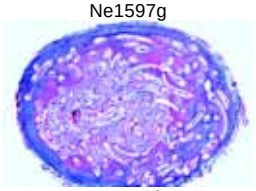

Ne163d


Ne155d


Ne131d


Ne1597g


Ne159f

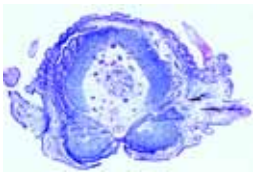
Ne1374g **Strongyloides,** sec. through host intestine with parasites
Ne1377g **Strongylus sp.,** lung worm, infected lung, sec.
Ne1378g **Strongylus sp.,** isolated larvae from faeces
Ne1392s • **Ancylostoma caninum,** dog hookworm, adult male w.m.
Ne1393s • **Ancylostoma caninum,** adult female w.m.
Ne1394u **Ancylostoma caninum,** adult male and female, two w.m. per slide *
Ne1395i **Ancylostoma caninum,** male and female in copula w.m. *
Ne1396e • **Ancylostoma caninum,** ova w.m.
Ne1397t **Ancylostoma caninum,** rhabditiform larvae w.m. *
Ne1398t **Ancylostoma caninum,** filariform larva w.m. *
Ne143h • **Ancylostoma duodenale,** hookworm of man, adult male w.m. *
Ne144h • **Ancylostoma duodenale,** adult female w.m. *
Ne1445k **Ancylostoma duodenale,** w.m. of adult male and female per slide *
Ne145e **Ancylostoma duodenale,** t.s. of male and female
Ne146e • **Ancylostoma duodenale,** ova w.m.
Ne147h **Ancylostoma duodenale,** rhabditiform larvae w.m. *
Ne1472h **Ancylostoma duodenale,** filariform larva w.m. *
Ne1491g **Ancylostoma braziliense,** South American hookworm, adult male w.m. *
Ne1492g **Ancylostoma braziliense,** adult female w.m. *
Ne1512v **Necator americanus,** adult male w.m. *
Ne1513v **Necator americanus,** adult female w.m. *
Ne1514f **Necator americanus,** eggs w.m.
Ne1515h **Necator americanus,** rhabditiform larva w.m. *
Ne1516h **Necator americanus,** filariform larvae. w.m. *
Ne152f **Heterakis spumosa,** intestinal parasite of rat, w.m. of male or female
Ne153f **Heterakis papillosa,** intestinal parasite of chicken, w.m. of male or female *
Ne163d • **Trichinella spiralis,** section of infected muscle with encysted larvae
Ne164e • **Trichinella spiralis,** w.m. of muscle piece with encysted larvae
Ne1642e **Trichinella spiralis,** calcified larva in muscles, w.m.
Ne1643f **Trichinella spiralis,** migrating in muscles, l.s.
Ne161t **Trichinella spiralis,** adult male from intestine, w.m. *
Ne162t **Trichinella spiralis,** adult female from intestine, w.m. *
Ne165g **Trichinella spiralis,** adults in section of infected intestine *
Ne154h **Trichuris trichiura,** whip worm, w.m. of adult male or female *
Ne155d • **Trichuris trichiura,** ova in faeces w.m.
Ne1551f **Trichuris trichiura,** sec. of infected colon showing the parasitic worms in situ
Ne156g **Trichostrongylus,** intestinal parasite, w.m. of adult male or female *
Ne231f **Oesophagostomum radiatum,** roundworm of cattle, w.m. of adult specimen *
Ne232f **Oesophagostomum columbianum,** roundworm of sheep, w.m. of adult specimen *
Ne234f **Haemonchus contortus,** stomach worm of cattle, w.m. of adult specimen
Ne158f • **Litomosoides carinii,** microfilaria, many specimen w.m.
Ne1585s **Dirofilaria immitis,** heartworm, smear of blood of dog with parasitic larvae
Ne1587k **Dipetalonema perstans,** smear of human blood with microfilariae
Ne1597g **Microfilaria,** smear from bird lung with parasites w.m. *
Ne159f • **Onchocerca volvulus,** sec. through host tissue with tumor containing larvae (filaria)
Ne1592h **Onchocerca volvulus,** w.m. of microfilaria from smear of tumor *
Ne138d • **Anguillula aceti,** vinegar eels, many stages of development in one slide, w.m.
Ne221d **Gordius,** a parasitic nematode living in insects, t.s. through the body
Ne222f **Gordius,** t.s. of infected insect showing the parasites in situ
Ne250d **Nemertinea,** non-parasitic marine species, t.s. in the region of proboscis
Ne170g • **Mixed ova** in faecal material. Slide containing eggs of parasitic worms of different species i.e. Ascaris, Ancylostoma, Trichuris, Taenia, Enterobius, Schistosoma etc. *

ACANTHOCEPHALA

At101e **Macracanthorhynchus hirudinaceus**, from pig, sec. of head embedded in intestine *
At103e **Macracanthorhynchus hirudinaceus**, ova w.m.

ANNELIDA
ANNELIDS and DIVERSE

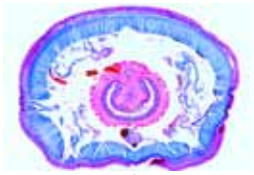
An118e • **Nereis,** marine polychaete worm, w.m. of parapodium
An119d **Nereis,** t.s. of head for general study
An120f **Nereis,** t.s. of head showing brain and eye
An121d • **Nereis,** typical t.s. through the body for general study
An127d **Arenicola,** lugworm, t.s. through the body
An128f **Sabella,** a sessile marine polychaete, t.s. through the body in different levels
An130f **Magelona,** marine polychaete, larva w.m.
An122d • **Tubifex,** a fresh water oligochaete, w.m. of adult worm
An1264f **Trochophora-Larva,** w.m.
An1265g **Trochophora-Larva in metamorphosis,** w.m.
An124d • **Hirudo medicinalis,** medicinal leech, t.s. through the body for demonstrating general structures of a leech
An1240d **Hirudo medicinalis,** oral sucker, t.s.
An1241d **Hirudo medicinalis,** anterior end with ventral sucker, l.s.
An1242f **Hirudo medicinalis,** anterior end l.s. showing eye
An1243d **Hirudo medicinalis,** posterior end with large suctorial disc, l.s.
An123d **Haemopis sanguisuga,** horse leech, t.s. of the body
An1244f • **Leech,** small entire specimen stained w.m. *
An131c • **Lumbricus terrestris,** earthworm, t.s. of body back of the clitellum. The Standard slide for general body structure, showing intestine, nephridia, typhlosole, etc. triply stained.
An132e **Lumbricus,** t.s. selected to show setae
An133c • **Lumbricus,** sagittal l.s. through three or more typical segments back of clitellum
An134c **Lumbricus,** region of mouth, t.s.
An135e **Lumbricus,** region of the cerebral ganglia, t.s.
An1352g **Lumbricus,** anterior end sagittal l.s. showing the cerebral and sub-pharyngeal ganglia
An136f **Lumbricus,** frontal l.s. through ventral nerve cord
An1365d **Lumbricus,** region of pharynx, t.s.
An137c **Lumbricus,** region of oesophagus t.s.
An1375d **Lumbricus,** region of hearts t.s.
An138c • **Lumbricus,** seminal vesicle t.s.
An1385d **Lumbricus,** seminal receptacle t.s.
An139e **Lumbricus,** sperm funnels t.s.
An140e **Lumbricus,** ovary with developing eggs t.s. *
An141f **Lumbricus,** testis t.s. *
An1415d • **Lumbricus,** crop t.s.
An142d **Lumbricus,** gizzard t.s.
An143c • **Lumbricus,** clitellum t.s.
An1435e **Lumbricus,** section selected to show nephridiopore
An1436h **Lumbricus,** nephridium dissected and w.m. *
An1437e **Lumbricus,** showing funnel of nephridia, t.s.
An144e • **Lumbricus,** anterior end including gonads, sagittal l.s.
An145g **Lumbricus,** anterior end, near median sagittal l.s. with ventral nerve cord, oesophagus etc. *
An147e **Lumbricus,** 1st – 9th segment, sagittal l.s., mouth and oesophagus
An148e **Lumbricus,** 9th – 16th segment, sagittal l.s., sex organs
An149e **Lumbricus,** 16th – 23rd segment, sagittal l.s., crop and gizzard
An150d **Lumbricus,** blood smear
An151d **Lumbricus,** sperm smear
An1261d **Lineus sp.,** nemertine, proboscis t.s.
An1262d **Lineus sp.,** of middle region of body t.s.
An125d • **Sagitta**, arrow worm, entire specimen w.m.
An1252e **Sagitta**, l.s. of specimen

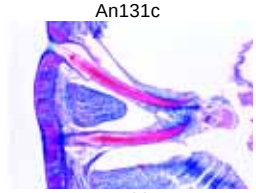

An121d

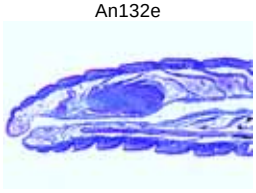

An118e


An124d


An1240d


An131c


An132e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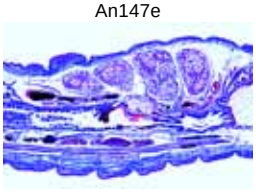
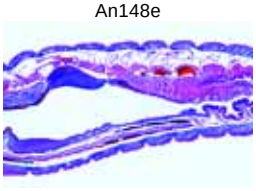
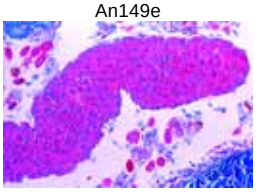
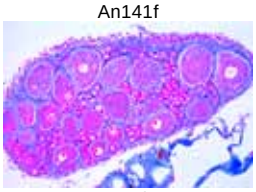
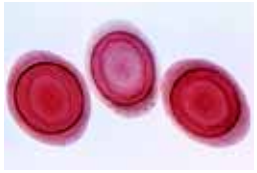

An148e

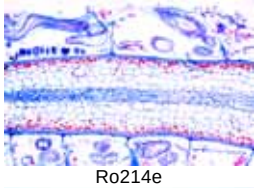

An149e


An141f

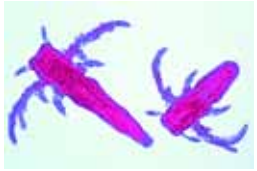

An140e


On111f


Ro212d

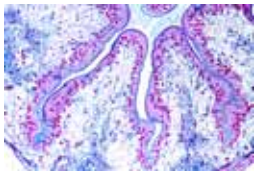

Ro214e

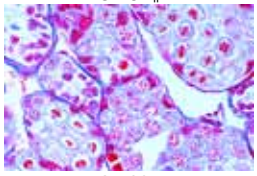

Cr113c

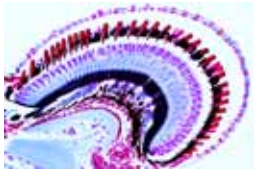

Cr115d


Cr128e


Cr116e


Cr134¶


Cr139e


Cr131e


Cr133d¶

ONYCHOPHORA

On111f **Peripatus**, connecting link between annelida and arthropoda, t.s. anterior region with leg *
On112f **Peripatus**, region of gonads t.s. *
On113f **Peripatus**, region of head t.s. *
On114g **Peripatus**, anterior end sagittal l.s. *
On115g **Peripatus**, middle part of the body, sagittal l.s. *

ROTATORIA and BRYOZOA ROTIFERS and MOSS ANIMALS

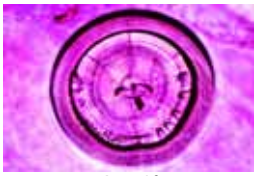
Ro111d • **Rotatoria,** rotifers, strewn slide of mixed species w.m.
Ro211e • **Plumatella,** moss animals, w.m. or section
Ro212d • **Plumatella,** isolated statoblasts w.m.
Ro213e • **Flustra foliacea,** a marine moss animal, section of colony
Ro215e **Flustrella hispida,** moss animal (sea-mat), section of colony
Ro214e • **Membraniphora,** marine moss animal (sea-mat), section of colony
Ro217e **Bugula,** moss animal, part of colony w.m.
Ro218e **Pectinatella,** moss animal, part of colony w.m.

CRUSTACEA CRUSTACEANS

Cr111c • **Daphnia,** water flea, w.m.
Cr112c **Daphnia,** ephippia, w.m.
Cr1123c **Daphnia,** w.m. showing winter and summer eggs
Cr113c • **Cyclops,** fresh water copepods, w.m.
Cr114c • **Cyclops,** nauplius larva w.m.
Cr120c • **Small crustaceans,** mixed species of fresh water plankton strewn slide w.m.
Cr119d **Artemia salina,** brine shrimp, various developing stages on each slide, w.m.
Cr115d • **Balanus balanoides,** common barnacle, nauplius larva w.m.
Cr122d **Bosmina,** small crustacean w.m.
Cr126d **Bythotrephes,** a cladoceran w.m.
Cr128e **Caprella,** an amphipod w.m.
Cr117e • **Carcinus maenas,** crab, zoea larva w.m. *
Cr118e • **Carcinus maenas,** megalopa larva w.m. *
Cr124d **Cypris of Cirrepedia,** cocoon stage, stained and w.m.
Cr116e **Gammarus,** fresh water amphipod, entire specimen w.m.
Cr160f **Shrimp,** entire small specimen w.m.
Cr161d • **Shrimp,** t.s. of small specimen for general body structures
Cr168d • **Lepas anatifera,** barnacle, w.m. of catching leg
Cr169e **Lepidurus apus,** branchipode, w.m.
Cr125d **Leptodora,** a large cladoceran w.m.
Cr167f **Lingula,** brachiopode, t.s.
Cr163e **Mysis,** shrimp from the Arctic ocean, w.m.
Cr123d **Podon and Evadne,** selected from marine plankton w.m.
Cr150f **Statocyst of prawn,** organ of equilibration with sensory hairs and statolith
Cr135d • **Astacus,** crayfish, striated muscle l.s., ideal for the demonstration of striation showing large structures
Cr132c • **Astacus,** gills t.s.
Cr142c **Astacus,** stomach t.s.
Cr134c • **Astacus,** intestine t.s.
Cr137c • **Astacus,** liver t.s.
Cr136c **Astacus,** green gland t.s.
Cr138d • **Astacus,** ovary t.s. showing developing eggs in various stages
Cr139e • **Astacus,** testis t.s. with spermatogenesis
Cr1391g **Astacus,** testis t.s. specially selected for demonstration of meiosis and mitosis, carefully stained *
Cr144c **Astacus,** sperm duct t.s.
Cr131e **Astacus,** eye sagittal l.s. *
Cr141f **Astacus,** cerebral ganglion t.s. *
Cr133d **Astacus,** antenna (decalcified) t.s.
Cr143e **Astacus,** pincers (decalcified) t.s.
Cr140d **Astacus,** blood smear
Cr1445e **Astacus,** t.s. of thoracic region of small specimen
Cr1446e **Astacus,** t.s. of abdominal region of small specimen
Cr1447f **Astacus,** near median sagittal l.s. of small specimen
Cr165s **Argulus foliaceus,** fish louse w.m. *

ARACHNIDA CHELICERATES

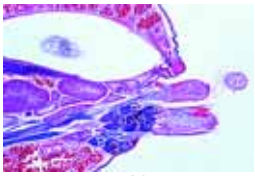
Ar111e • **Spider,** entire young specimen, w.m.
Ar112b • **Spider,** leg with comb, w.m.
Ar113d • **Spider,** spinneret w.m.
Ar114d **Araneus,** cross spider, spinneret w.m.
Ar123e **Spider,** mouth parts of male w.m.
Ar124e **Spider,** mouth parts of female w.m.
Ar120f **Spider,** epigyne of adult female w.m. *
Ar125d **Spider,** sagittal l.s. of abdomen for general study
Ar126e **Spider,** sagittal l.s. of abdomen showing spinneret and spinning glands
Ar127e • **Spider,** sagittal l.s. of abdomen showing the book or trachea lung
Ar1272f • **Spider,** sagittal l.s. of abdomen with epigyne and ovary
Ar1273g • **Spider,** sagittal l.s. of abdomen showing l.s. of the dorsal vessel
Ar128f **Spider,** t.s. of cephalothorax showing the central nervous system
Ar1281f **Spider,** cephalothorax with central nervous system l.s.
Ar129g **Salticus,** spider, sec. of cephalothorax showing the telescope eyes *
Ar130b **Spider,** portion of cobweb w.m.
Ar171d **Opilio sp.,** shepherd spider, sagittal l.s. of the body
Ar172e **Opilio sp.,** mouth parts w.m.
Ar131c • **Scorpion,** t.s. through young specimen
Ar132d **Scorpion,** sagittal l.s. through young specimen
Ar133e • **Scorpion,** section selected to show the poison gland
Ar134e **Scorpion,** section selected to show the book lung
Ar138g **Scorpion,** entire young specimen w.m. *
Ar1545g **Amblyomma americanum,** lone star tick, w.m. *
Ar141g **Argas persicus,** fowl tick, w.m. of adult specimen *
Ar142f **Argas,** six-legged larva w.m.
Ar154s **Boophilus annulatus,** cattle tick, the vector of Texas fever, w.m. *
Ar156g **Dermacentor andersoni,** Rocky Mountain wood tick, the vector of spotted fever, w.m. *
Ar157e **Dermacentor andersoni,** ova w.m. *
Ar158f **Dermacentor andersoni,** larva w.m. *
Ar155s **Dermacentor variabilis,** American dock tick, w.m. *
Ar146g • **Ixodes sp.,** tick, w.m. of adult specimen *
Ar147e **Ixodes sp.,** larva w.m.
Ar144g **Ornithodorus,** tick, carrier of relapsing fever, w.m. adult *
Ar1442g **Ornithodorus,** six-legged larva w.m. *
Ar159s • **Rhipicephalus sanguineus,** brown dog tick, w.m. *
Ar153e • **Demodex folliculorum,** section through the skin with the parasites in situ
Ar145d • **Dermanyssus gallinae,** chicken mite, w.m. *
Ar1513d **Hydrachna,** mite of fresh water, w.m.
Ar1512d **Photia,** beetle mite, w.m.
Ar148e • **Sarcoptes scabiei (Acarus siro),** in section of diseased skin
Ar149f **Sarcoptes scabiei,** w.m. of selected adult specimen *
Ar1517g **Syringophilus,** parasitic mite of poultry, w.m.
Ar150c • **Tyroglyphus farinae,** mite from meal, w.m.
Ar151c **Tyrolichus,** cheese mite w.m.
Ar1515e • **Acarapis woody,** Varroa, parasitic mite of bees w.m.
Ar161g **Pseudoscorpion,** w.m. of young entire specimen *
Ar180s **Limulus,** swordtail, trilobite larva w.m., the trilobite shaped larva is of interest for studies in phylogeny *

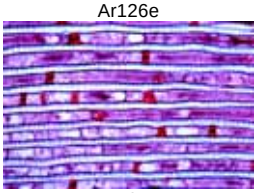

Cr150f


Cr115d


Ar111e


Ar124e


Ar126e

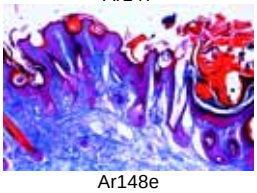

Ar127e


Ar129g

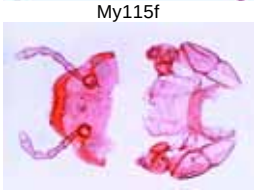

Ar133e

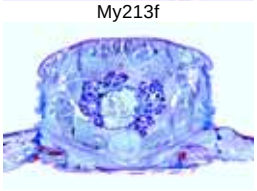

Ar141g


Ar147


Ar148e


My115f

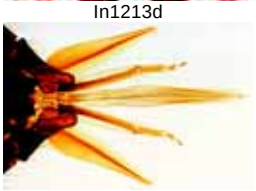

My213f


My111d


In111d


In1123d


In1213d


In122d


In118f


In115f


In120e


In127e

MYRIAPODA MYRIAPODS

My111d **Scolopendra,** large centipede, t.s. of body segment
My112e **Scolopendra,** head with poison glands t.s.
My115f **Lithobius,** head with poison fangs, w.m. *
My117e **Lithobius,** centipede, segment w.m.
My118e **Lithobius,** head, t.s.
My119d **Lithobius,** midbody, t.s.
My211d **Julus,** a millipede, t.s. through the body
My212e **Julus,** diplosegment with two pairs of legs, w.m.
My213f **Julus,** head with mouth parts (gnathochilarium) w.m. *
My218d **Glomeris,** sagittal l.s. of entire specimen *
My220g **Diplopode,** sagittal l.s. through young specimen showing the zone of proliferation (anamorphose) *
My230d **Symphyla,** entire specimen w.m. *

INSECTA – INSECTS

I. Microscopic anatomy and histology

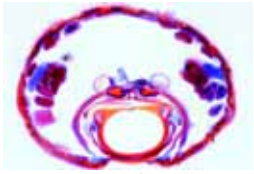
Head and mouth parts, whole mounts

In111d • **Musca domestica,** house fly, head and mouth parts with sucking tube, w.m.
In112e • **Pieris sp.,** butterfly, head and mouth parts with proboscis w.m.
In1123d **Pieris sp.,** mouth parts of caterpillar (larva) w.m.
In121d **Bombyx mori,** silk moth, chewing mouth parts of adult w.m.
In1213d • **Bombyx mori,** silkworm, mouth parts of caterpillar (larva) w.m.
In122d • **Apis mellifica,** honey bee, mouth parts of worker w.m.
In123e **Apis mellifica,** rudimentary mouth parts of drone w.m.
In114e **Vespa vulgaris,** wasp, biting mouth parts of a carnivore, w.m.
In118f • **Periplaneta or Blatta,** cockroach, biting mouth parts of a herbivore, dissected and w.m.
In115f • **Carabus,** beetle, mouth parts dissected and w.m. *
In116f **Melolontha,** cockchafer, mouth parts dissected and w.m.
In113e **Gomphocerus,** grasshopper, mouth parts w.m.
In1132g **Gomphocerus,** grasshopper, mouth parts dissected and w.m.
In119d • **Formica sp.,** ant, head and mouth parts w.m.
In1193e **Leptinotarsa,** Colorado beetle, w.m. of chewing mouth parts
In131e **Curculionidae sp.,** weevil, head and mouth parts w.m.
In117e • **Pyrrhocoris,** bug, piercing sucking mouth parts w.m.
In120e **Stomoxys calcitrans,** stable fly, piercing sucking mouth parts
In1201e **Tabanus bovinus,** gadfly, piercing sucking mouth parts w.m. *
In1234d **Volucella,** Diptera, piercing sucking mouth parts w.m.
In124f • **Anopheles,** malaria mosquito, head and mouth parts of male w.m.
In125f • **Anopheles,** head and mouth parts of female w.m.
In126e • **Culex pipiens,** mosquito, head and mouth parts of male w.m.
In127e • **Culex pipiens,** head and mouth parts of female w.m.
In128h **Culex pipiens,** mouth parts of female, dissected and w.m. *
In130f **Odonata sp.,** dragonfly, mouth parts of larva w.m. *
In132e **Lymantria**, gipsy, mouth parts of larva w.m.
In1322f **Diving beetle**, head of larva w.m. Extraintestinal digestion *
In1323e **Simulium**, head of larva w.m. shows filtering mouth parts

Head and mouth parts, sections

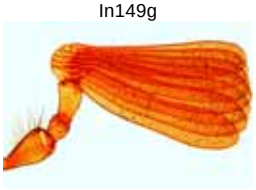
In273e **Carausius**, sagittal l.s. of head with brain and mouth parts
In274e **Apis mellifica,** honey bee, sagittal l.s. of head with brain and mouth parts
In141e **Musca domestica,** house fly, mouth parts, t.s. through sucking tube
In148e **Apis mellifica,** honey bee, mouth parts of worker t.s.
In143e **Pieris brassicae,** butterfly. mouth parts t.s.
In149g **Culex pipiens,** mosquito, mouth parts of female t.s. with mandibles, labrum, maxillae, labium, hypopharynx
In142e **Tabanus bovinus,** gadfly, mouth parts t.s.
In144e **Hemiptera spec.,** bug, mouth parts t.s.
In145g **Aphaniptera spec.,** flea, piercing mouth parts t.s. *


In274e


In149g

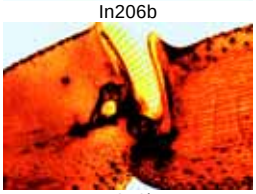
Antennae

In213b • **Pieris,** butterfly, clubbed antenna w.m.
In206b • **Carabus,** ground beetle, filiform antenna w.m.
In203b • **Periplaneta or Blatta,** cockroach, setaceous antenna w.m.
In204b **Tenebrio molitor,** meal beetle, moniliform antenna w.m.
In214b • **Bombyx mori,** silk moth, feathered antenna w.m.
In208b **Chironomus,** gnat, feathered antenna of male w.m.
In205b **Elateridae sp.,** click beetle, serrate antenna w.m. *
In207b **Curculionidae sp.,** weevil, geniculate antenna w.m. *
In209c **Brachycera sp.,** fly, antenna as speed indicator w.m. *
In211b • **Melolontha,** cockchafer, laminate antenna with sensory organs
In212b • **Apis mellifica,** honey bee, antenna with sensory organs w.m.
In2125b **Musca domestica,** house fly, antenna w.m.
In2142c **Antennae** of butterfly (clubbed) and of moth (feathered) w.m.
In2146u **Insect antenna types,** composite slide of five kinds of antennae for comparison w.m.


In211b

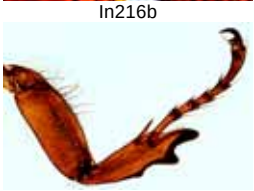

In214b


In206b


In216b

Legs

In217b • **Musca domestica,** house fly, leg with pulvilli w.m.
In219b • **Pieris brassicae,** butterfly, walking leg w.m.
In220c **Melolontha,** cockchafer or other species, digging leg w.m.
In215b • **Apis mellifica,** honey bee, anterior leg with eye brush w.m.
In2152b **Apis mellifica,** middle leg w.m.
In216b • **Apis mellifica,** posterior leg with pollen basket w.m.
In2161b **Apis mellifica,** posterior leg of drone w.m.
In2162f **Apis mellifica,** composite slide of anterior, middle and posterior leg of worker, w.m.
In218b • **Bombyx mori,** silkworm, abdominal foot of caterpillar
In223c **Gomphocerus,** grasshopper, stridulary organ w.m. of leg
In224d **Ensifera sp.**, locust or cricket, anterior leg with tympanal organ w.m. *
In225d **Mantis religiosa,** praying mantis, grasping leg of larva w.m. *
In226b **Diving beetle or water bug,** swimming leg w.m.


In220c

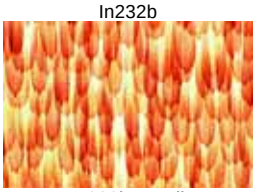

In215b

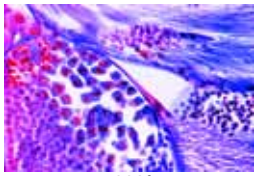

In235b

Wings

In235b • **Musca domestica,** house fly, wing w.m.
In2351d **Musca domestica,** house fly, wing and haltere w.m.
In231c • **Apis mellifica,** honey bee, anterior and posterior wings w.m.
In234b • **Culex pipiens,** common mosquito, wing w.m.
In2342b **Anopheles,** malaria mosquito, wing w.m.
In228c **Chrysopa perla,** wing of neuroptera w.m. *
In227c **Zygoptera sp.,** damselfly, wings w.m.
In229e **Periplaneta,** cockroach, upper chitinous and lower membranous wings w.m.
In2292d **Gomphocerus,** grasshopper, w.m. of upper and lower wing
In2352d **Forficula,** earwig, w.m. of upper and lower wing


In232b


In232b Detail


In238f¶

In230d **Ensifera sp.,** locust or cricket, wing with stridulary organ w.m. *

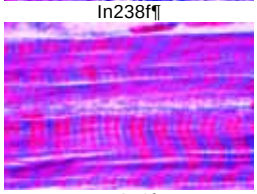
In232b • **Pieris brassicae,** butterfly**,** portion of wing showing arrangement of scales w.m.

In233b **Pieris brassicae,** butterfly, isolated scales w.m.

In2332e **Butterfly,** Brasilian species (Morpho sp.), w.m. of wing portion showing scales opaque

In2334d **Lepisma,** silverfish, w.m. of scales from body

Cytology

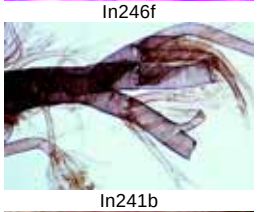

In246f

In238f • **Spermatogenesis with meiotic and mitotic stages**, sec. of testis of Carausius, grasshopper, carefully stained

In245f • **Giant chromosomes**, smear from salivary gland of Chironomus, carefully fixed and stained *

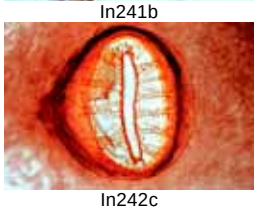
In2451e **Giant chromosomes** in section through the salivary glands of the Chironomus larva

In246f **Striated muscles** of insect, fibres isolated and stained to show the striations w.m.


In241b

In247e • **Striated muscles** of insect, sections through insect thorax with t.s. and l.s. of muscle showing the striations

Organs of metabolism

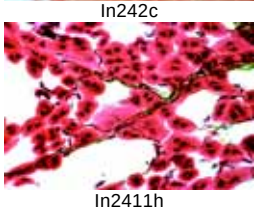

In242c

In241b • **Trachea** from insect, w.m. showing tracheal rings

In242c • **Spiracle** from insect (stigma), w.m.

In248d • **Tracheal gills,** w.m. of Cloeon sp., May fly nymph

In298c **Tracheal gills of larva,** w.m. of Odonata sp., dragonfly


In2411h

In285d **Rectum** of larva, respiratory organ, t.s. of Odonata sp., dragonfly

In2852d **Air tubes** of pupa of Culex, mosquito, w.m.

In2411h **Trachea in insect intestine**, specially prepared and stained with cupric sulphide to show the finest branchings *

In289e **Blood smear** with different kinds of blood cells, Carausius


In281d

In254d • **Abdomen of worker** with intestine, Apis mellifica, t.s.

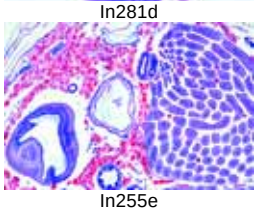
In270d • **Abdomen with internal organs**, t.s. of Carausius, walking stick

In263d **Abdomen**, t.s. Culex pipiens

In266d **Abdomen**, t.s. of Drosophila, fruit fly

In281d **Gizzard**, t.s. of Carabus, ground beetle

In2813e **Opened gizzard**, w.m. Locusta, grasshopper


In255e

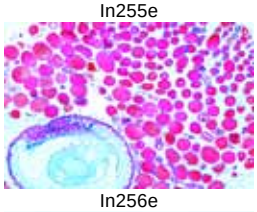
In239e • **Gizzard with chitinous teeth**, w.m. of Periplaneta, cockroach

In282d **Chyle** and middle intestine with Malpighian tubules, l.s. of Periplaneta (Blatta)

In284d • **Rectum with ampulli**, t.s. of Periplaneta

In287g **Fat body** stained with osmic acid, sec. of Periplaneta, cockroach

In288d **Fat body** with crystals of uric acid, sec. of Periplaneta, cockroach


In256e

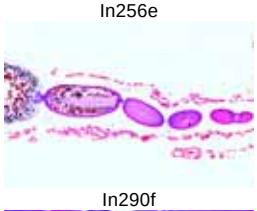
In283d **Appendages of chyle and Malpighian tubules,** thin t.s. for finer detail

Reproductive system

In255e • **Testis**, in t.s. of abdomen of drone, Apis mellifica

In256e • **Ovary**, in t.s. of abdomen of queen, Apis mellifica

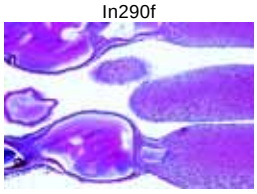
In236e **Ovary**, in t.s. of Melolontha, cockchafer


In290f

In2365e **Ovary**, in t.s. of abdomen of Carausius, walking stick

In2367g **Aedeagus** of beetle w.m., male copulating organ

In290f **Ovary** of insect showing panoistic egg tubules, l.s.


In291f

In291f **Ovary** of insect showing telotrophic egg tubules, l.s.

In292f **Ovary** of insect showing polytrophic egg tubules, l.s.

In299e **Ovipositor** of locust or cricket t.s.

In2912e **Incomplete metamorphosis** of insects: larva

In2913e **Incomplete metamorphosis** of insects: imago (adult)


In292f

In2914d **Complete metamorphosis** of insects: larva

In2915d **Complete metamorphosis** of insects: pupa

In2916d **Complete metamorphosis** of insects: imago (adult)

Sense organs and nervous system


In243c

In243c **Cornea,** isolated from eye of house fly, w.m. showing facets

In2434c • **Cornea,** isolated from eye of honey bee, w.m. showing facets

In251e • **Compound eye,** t.s. through head of worker (Apis mellifica), showing the structure of the typical insect eyes and brain. Ommatidia are seen.


In251e

In252f **Compound eye,** t.s. through head showing the large eyes of drone (Apis mellifica)

In253f **Compound eye,** t.s. through head of queen (Apis mellifica)

In249d **Ocelli** of Apis mellifica, honey bee, w.m.

In2492e **Ocelli** of an insect, l.s.


In2765f

In275e **Compound eye,** t.s. through head of Apis mellifica, tangential section showing t.s. of ommatidia

In261e **Head with eyes and brain,** t.s. of Culex pipiens, mosquito

In265e **Head with eyes and brain,** t.s. of Drosophila, fruit fly

In2675e **Compound eye ,** t.s. of Musca domestica, fly

In276f **Head and eyes,** t.s. of Cloeon or Baetis, May fly


In279k

In2765f **Head and eyes**, t.s. of Melolontha, cockchafer

In271e **Brain,** frontal l.s. of Carausius or Gryllus

In272e **Brain,** frontal l.s. of Vespa vulgaris, wasp

In277h **Pars intercerebralis** with neurosecretory cells specially stained, Carausius, walking stick, section of brain *

In278h **Corpora cardiaca,** organs for storing neurosecretes, Carausius, section through brain *


In2492e

In2781h **Corpora allata,** neuroendocrine glands, Carausius, section *

In2784f **Sensory organs** in the antenna of an insect, t.s. for finer detail

In279k **Johnston's organ,** l.s. through insect auditory organ *

In294f **Luminous organ,** sec. of Phausis, glowworm

In295e **Tympanal organ,** sec. of Cicada sp. *

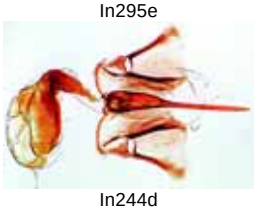

In295e

In2833f **Insect larva** with non-centralized nervous system, sagittal l.s. *

In2834f **Insect** with low centralized nervous system, sagittal l.s. *

In2835f **Insect** with high centralized nervous system, sagittal l.s. *

Miscellaneous


In244d

In244d • **Sting and poison sac** of honey bee, w.m.

In260c • **Wax plate** of worker of Apis mellifica, w.m.

In237d • **Silk spinning glands** and other organs, t.s. of caterpillar of Bombyx mori, silkworm

In2943d **Forceps of male** of Forficula, earwig, w.m.

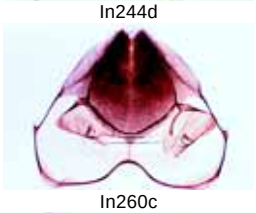
In258d • **Larva** of Apis mellifica, sagittal l.s.

In259e • **Pupa** of Apis mellifica, sagittal l.s.

In262d **Thorax** of Culex pipiens, t.s.

In267f • **Entire insect,** sagittal l.s. of Drosophila, fruit fly, showing all structures for general study

In2993e **Parasitical larvae of microgaster**, in t.s. of infested caterpillar


In260c

II. Whole mounts of entire insects

Apterygota and Ephemeroidea

In348d • **Collembola**, spring tail, adult w.m.

In3985d • **Podura,** spring tail, adult w.m.

In3986d **Thysanura sp.,** bristle tail, adult w.m.


In267f

In353e • **Caenis,** May fly, adult w.m.

In354e **Caenis,** subimago w.m.

In355d **Caenis,** larva w.m.

Diptera


In3986d

In321f • **Culex pipiens,** common mosquito, adult male w.m.

In322f • **Culex pipiens,** adult female w.m.

In323d • **Culex pipiens,** pupa w.m.

In324d • **Culex pipiens,** larva w.m.

In3242d • **Culex pipiens,** ova w.m.

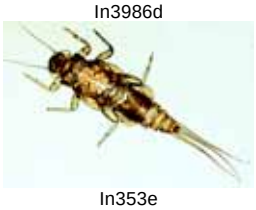
In316g • **Anopheles,** malaria mosquito, adult male w.m.

In317g • **Anopheles,** adult female w.m.

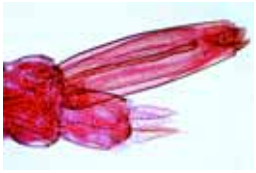
In318f • **Anopheles,** pupa w.m.

In319f • **Anopheles,** larva w.m.

In3192e • **Anopheles,** ova w.m.


In353e


In322f


In324d


In321f Detail


In318f


In343e

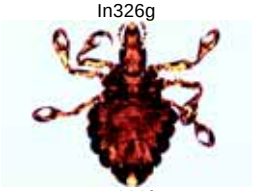

n334e


In315d


In3252f


In327e


In326g


In328f

In320g **Anopheles and Culex pipiens,** both the larvae on same slide for comparison, w.m.
In311d • **Drosophila,** fruit fly, adult male w.m.
In312d • **Drosophila,** adult female w.m.
In313d **Drosophila,** larva w.m.
In314d **Drosophila,** pupa w.m.
In387e **Chironomus,** gnat, w.m. of adult
In340d • **Chironomus,** gnat, larva w.m.
In341d **Corethra,** gnat, larva w.m.
In389f **Aedes,** mosquito, adult male w.m.
In390f **Aedes,** adult female w.m.
In391e **Aedes,** pupa w.m.
In392e **Aedes,** larva w.m.
In393e **Aedes,** ova w.m.
In397e **Musca domestica,** house fly, larva w.m.
In398d **Musca domestica,** ova w.m.
In394f **Phlebotomus,** carrier of Leishmaniosis, male mosquito w.m. *
In395f **Phlebotomus,** female mosquito w.m. *
In3956f **Culicoides,** w.m., a small vicious biter
In3957f **Gasterophilus intestinalis,** horse bot fly, eggs attached to hair
In3294f **Lipoptena,** deer ked, w.m. *

Aphaniptera

In3341e • **Ctenocephalus canis,** male or female specimen w.m.
In333e **Ctenocephalus canis,** dog flea, adult male w.m.
In334e **Ctenocephalus canis,** adult female w.m.
In3365g **Pulex irritans,** human flea, adult male w.m. *
In3366g **Pulex irritans,** adult female w.m. *
In335g **Xenopsylla cheopis,** rat flea, the carrier of bubonic plague, adult male w.m.
In336g **Xenopsylla cheopis,** adult female w.m.
In337e **Nosopsyllus fasciatus,** rat flea, adult w.m.
In343e **Ceratophyllus gallinulae,** chicken flea, w.m. of adult

Blattoidea and Hymenoptera

In365g **Mantis religiosa,** praying mantis, larva w.m. *
In367f **Isoptera sp.,** termite, w.m. of worker *
In368f **Isoptera sp.,** termite, w.m. of soldier
In315d • **Lasius,** ant, worker w.m.
In3151e **Lasius,** winged male w.m.
In3152d **Lasius,** winged female w.m.
In385e **Chalcididae,** w.m. of adult *

Anoplura and Mallophaga

In325f • **Pediculus humanus,** louse, adult male or female w.m.
In3252f **Pediculus humanus capitis,** human head louse, adult w.m.
In3254f **Pediculus humanus capitis,** nymph w.m.
In3255e **Pediculus humanus capitis,** ova w.m.
In3256f **Pediculus humanus corporis,** human body louse, adult w.m.
In3258f **Pediculus humanus corporis,** nymph w.m.
In3259e **Pediculus humanus corporis,** ova w.m.
In326g **Phthirus pubis,** human crab louse, adult w.m. *
In3262s **Phthirus pubis,** ova w.m.
In327e • **Louse eggs attached to the hair,** w.m. *
In328f • **Haematopinus suis,** pig louse, adult w.m. *
In3282e **Haematopinus suis,** ova w.m.
In3284f **Haematopinus eurysternus,** cattle louse, adult w.m. *
In329f **Haematopinus piliferus,** dog louse, adult w.m. *
In3271g **Bovicola,** cattle louse, w.m. *
In3275f **Trichodectes canis,** dog louse, w.m. *
In3272f • **Lipeurus variabilis,** wing feather louse, w.m. *
In3273f **Lipeurus caponis,** wing louse, w.m. *
In3274f • **Menopon gallinae,** bird parasite, w.m. *
In3276f **Melophagus ovinus,** wingless ectoparasite on sheep, w.m. *
In381e **Phthiraptera,** lice from rat, different species w.m. *

Heteroptera and Homoptera

In330f • **Cimex lectularius,** bed bug, adult w.m.
In374d **Naucoridae sp.,** water bug, w.m. of small adult
In375d **Capsidae sp.,** plant bug, w.m. of adult
In339c • **Aphidae sp.,** plant lice, w.m. of several per slide
In3394e **Phylloxera sp.,** vine louse, w.m.
In377d **Psylla,** plant flea, w.m. of adult

Diverse orders

In338d **Lepidoptera sp.,** butterfly, young caterpillar w.m.
In356d **Nemura sp.,** stone fly, adult w.m.
In357d **Nemura sp.,** larva w.m.
In361g **Embia sp.,** adult w.m. *
In362e **Forficula auricularia,** earwig, adult w.m.
In371d **Thysanoptera,** thrips, w.m. of adult

MOLLUSCA – MOLLUSKS

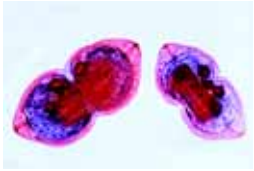
Mo111e • **Chiton,** a primitive mollusc, t.s. through the body
Mo112e **Chiton,** sagittal l.s. through the entire specimen
Mo116e • **Mya arenaria,** clam, t.s. of entire young specimen
Mo117d **Mya arenaria,** liver t.s.
Mo119d • **Mya arenaria,** t.s. and l.s. of gills showing well developed ciliated epithelium
Mo120d **Mya arenaria,** t.s. of intestine and gonads
Mo121d **Mya arenaria,** adductor muscle of shell, l.s.
Mo122d **Mya arenaria,** siphonal tube t.s.
Mo123f **Mya arenaria,** mussel, filtering stomach t.s. *
Mo191d **Anodonta,** mussel, small specimen, complete t.s.
Mo192d **Anodonta,** gills w.m.
Mo193d **Anodonta,** gills l.s.
Mo194d **Anodonta,** intestinal region t.s.
Mo195d **Anodonta,** liver t.s.
Mo196d **Anodonta,** glochidia (larvae) w.m.
Mo1131e **Mussel embryology (**Lamellibranchiata, Bivalvia or Pelecypoda). Unfertilized and fertilized ova w.m. *
Mo1133e **Mussel embryology.** Zygote, two- and four-cell embryos w.m. *
Mo1135s **Mussel embryology.** Early zygote through late cleavage. Polar bodies, polar lobes and spiral cleavage
Mo1137e **Mussel embryology.** Blastula w.m. *
Mo1138e **Mussel embryology.** Gastrula w.m. *
Mo1139f **Mussel embryology.** Trochophore larva w.m. *
Mo1141s **Mussel embryology.** Veliger larvae developing, early and later stages w.m. *
Mo1143e **Mussel embryology.** Adult veliger larva w.m. *
Mo115e • **Mussel embryology.** Glochidia larva w.m.
Mo123e **Pisidium,** a small fresh water mussel, section with embryos
Mo131e • **Pecten,** clam, lens eye in section of mantle margin
Mo185f **Haliotis,** marine snail, l.s. of a simple pinhole camera eye *
Mo187e **Patella,** cup-shell. simple eye, l.s.
Mo211f **Patella,** trochophora larva w.m. *
Mo212e **Crepidula,** marine snail, veliger larva w.m. *
Mo125f • **Alloteuthis,** cuttlefish, entire young specimen stained and w.m. *
Mo130e **Alloteuthis,** cuttlefish, abdomen of young specimen, t.s.
Mo1301f • **Alloteuthis,** cuttlefish, entire young specimen, l.s. for general study
Mo126e **Alloteuthis,** cuttlefish, eye l.s.
Mo127d **Alloteuthis,** cuttlefish, tentacles t.s.
Mo1275f **Alloteuthis,** cuttlefish, gill heart and ink sac, l.s.
Mo128d **Alloteuthis,** cuttlefish, fin t.s.
Mo129d **Alloteuthis,** cuttlefish, tail t.s.
Mo141c • **Sepia officinalis,** cuttlefish, skin with chromatophores, w.m. of piece
Mo142c **Sepia officinalis,** skin with chromatophores, horizontal section
Mo143f **Sepia officinalis,** sec. through the ganglion showing giant nerve fibres
Mo132d • **Octopus,** cuttlefish, section through sucking tube
Mo151d • **Snail,** typical t.s. of small specimen for general study
Mo1515e **Snail,** typical l.s. of small specimen for general study
Mo152d • **Snail,** sagittal l.s. through the head showing the radula in situ
Mo153e **Snail,** radula isolated and w.m.
Mo161c • **Helix pomatia,** snail, foot sagittal l.s.
Mo162c **Helix pomatia,** snail, mantle margin sagittal l.s.

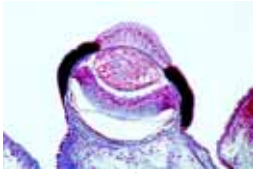

In330f

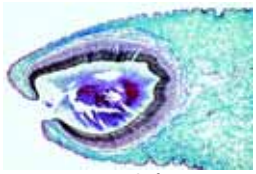

In356d


Mo111e


Mo119d


Mo115e

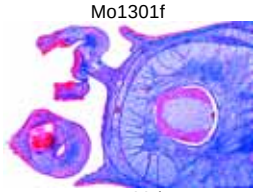

Mo131e


Mo185f

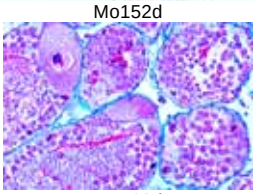

Mo187e

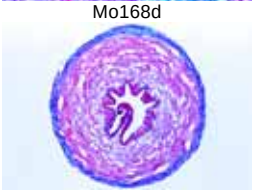

Mo125f

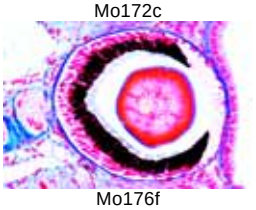

Mo1301f


Mo132d


Mo152d


Mo168d


Mo172c


Mo176f

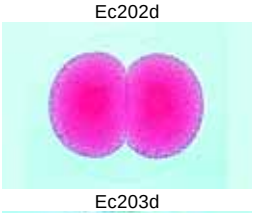

Ec111f

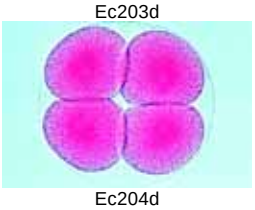

Ec114e


Ec113d


Ec117d


Ec202d


Ec203d


Ec204d

Mo163c **Helix pomatia,** snail, esophagus t.s.
Mo164c • **Helix pomatia,** stomach and digestive glands t.s.
Mo165c **Helix pomatia,** intestine t.s.
Mo166c • **Helix pomatia,** liver t.s.
Mo167d **Helix pomatia,** albumen gland t.s.
Mo168d • **Helix pomatia,** hermaphrodite gland (ovotestis), with ova and spermatozoa, t.s.
Mo169d **Helix pomatia,** spermoviduct t.s.
Mo170d **Helix pomatia,** crystalline style and glands, t.s.
Mo171c **Helix pomatia,** penis t.s.
Mo172c **Helix pomatia,** flagellum t.s.
Mo173d • **Helix pomatia,** kidney and heart during the summer, t.s.
Mo174d **Helix pomatia,** kidney and heart during the winter, t.s.
Mo175c • **Helix pomatia,** lung t.s.
Mo176f • **Helix pomatia,** antenna with highly developed lens eye l.s.

ECHINODERMATA ECHINODERMS

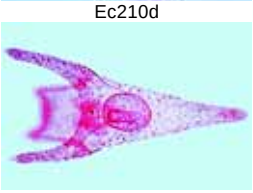
Ec111f • **Asterias,** starfish, young entire specimen, stained and w.m. *
Ec113d • **Asterias,** arm t.s., digestive gland and tube feet are shown for general study of all details
Ec114e **Asterias,** horizontal l.s. of entire young specimen
Ec115e **Asterias,** sagittal l.s. of entire young specimen
Ec117d • **Asterias,** pedicellaria w.m.
Ec251d **Starfish embryology** (Asterias), ovary t.s. showing large ova in different developing stages
Ec252d **Starfish embryology,** testis t.s. with developing sperm
Ec254e **Starfish embryology,** sperm smear w.m.
Ec116e • **Asterias,** bipinnaria larva w.m. *
Ec1162f **Asterias,** brachiolaria larva w.m. *
Ec101h **Asterina gibbosa,** small starfish, entire specimen carefully stained and w.m. for general study
Ec102e **Asterina gibbosa,** stages of development w.m.
Ec103e **Asterina gibbosa,** horizontal l.s. of small specimen showing gonads
Ec131d **Ophiura,** serpent star, arm t.s.
Ec132d **Ophiura,** base of arm showing bursa and gonads, t.s.
Ec133d **Ophiura,** horizontal l.s. of disc
Ec137f **Ophiura,** ophiopluteus larva w.m. *
Ec118d • **Echinus,** sea urchin, sagittal l.s. of entire young specimen
Ec1183d **Echinus,** sea urchin, radial sec. of entire young specimen
Ec1184d **Echinus,** pedicellaria, w.m.
Ec1186f **Echinus,** sea urchin, t.s. of spine, ground thin or section *
Ec121e **Asterioidea sp.,** larva in the stage of metamorphosis w.m. *
Ec141d **Cucumaria,** sea cucumber, t.s. of small specimen showing the typical structures
Ec145e **Holothurioidea sp.,** microsclerites w.m.
Ec147f **Holothurioidea sp.,** larva w.m. *
Ec201d • **Sea urchin embryology** (Psammechinus miliaris), unfertilized ova w.m.
Ec202d • **Sea urchin embryology,** fertilized ova w.m.
Ec203d • **Sea urchin embryology,** two cell stage w.m.
Ec204d • **Sea urchin embryology,** four cell stage w.m.
Ec205d • **Sea urchin embryology,** eight cell stage w.m.
Ec206d • **Sea urchin embryology,** sixteen cell stage w.m.
Ec207d • **Sea urchin embryology,** thirty two cell stage w.m.
Ec208d • **Sea urchin embryology,** morula w.m.
Ec209d • **Sea urchin embryology,** blastula w.m.
Ec210d • **Sea urchin embryology,** beginning gastrulation w.m.
Ec211d • **Sea urchin embryology,** progressive gastrulation w.m.
Ec212d • **Sea urchin embryology,** pluteus larva w.m.
Ec213e **Sea urchin embryology,** strewn slide of various stages w.m.
Ec255e **Starfish embryology,** germinal vesicle stage w.m.
Ec256e **Starfish embryology,** unfertilized ova w.m.
Ec257e **Starfish embryology,** fertilized ova w.m., zygote with polar bodies
Ec258e **Starfish embryology,** two cell stage w.m.
Ec259e **Starfish embryology,** four cell stage w.m.
Ec260e **Starfish embryology,** eight cell stage w.m.
Ec261e **Starfish embryology,** sixteen cell stage w.m.
Ec263e **Starfish embryology,** thirty-two cell stage w.m.
Ec264e **Starfish embryology,** sixty-four cell stage or morula, w.m.
Ec267e **Starfish embryology,** early and late blastula w.m.
Ec268e **Starfish embryology,** early and late gastrula w.m.
Ec271f **Starfish embryology,** early bipinnaria larva w.m.
Ec272f **Starfish embryology,** late bipinnaria larva w.m.
Ec276s **Starfish embryology,** brachiolaria larva w.m.
Ec278s **Starfish embryology,** young starfish w.m.

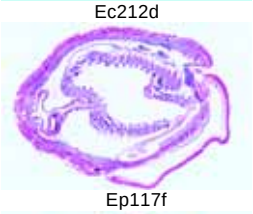

Ec208d


Ec210d

ENTEROPNEUSTA

Ep111g **Balanoglossus,** acorn worm, sagittal section of proto- and mesosoma *
Ep114f **Balanoglossus,** region of gills, t.s. *
Ep115f **Balanoglossus,** region of gonads, t.s. *
Ep116f **Balanoglossus,** region of liver, t.s. *
Ep117f **Balanoglossus,** abdominal region, t.s. *
Ep130f **Balanoglossus,** tornaria larva w.m. *

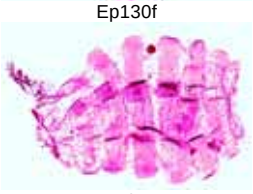

Ec212d

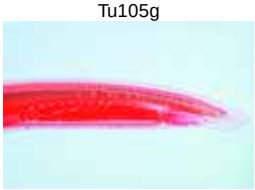

Ep117f


Ep130f

TUNICATA – ASCIDIANS

Tu105g **Ascidia,** sea squirt, swimming tadpole w.m. *
Tu106g **Ascidia,** sea squirt, stage of early metamorphosis w.m. *
Tu107g **Ascidia,** sea squirt, stage of late metamorphosis w.m. *
Tu111d **Ascidia,** sea squirt, adult specimen, t.s. in region of gills
Tu112d **Ascidia,** sea squirt, adult specimen, t.s. in region of stomach
Tu121e **Ascidia,** t.s. of mantle to show animal cellulose
Tu114e **Clavellina,** tunicate, l.s. of a small specimen
Tu1142d **Clavellina,** t.s. of gill – intestine region
Tu1143d **Clavellina,** t.s. of stomach – intestine region
Tu116f **Botryllus schlosseri,** tunicate colony, w.m.
Tu117d **Botryllus,** a synascidian, t.s. of colony
Tu118e **Botryllus,** thin l.s. for fine detail
Tu119e **Botryllus,** thick l.s. for general structures
Tu211f **Salpa,** asexual form w.m. *
Tu212f **Salpa,** sexual form w.m. *
Tu131e **Kowalewskaia** or Oikopleura (class Appendicularia), w.m.
Tu214f **Phoronis,** Actinotrocha-larva, w.m.

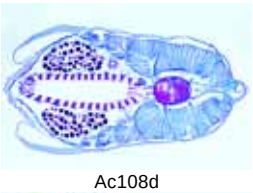

Tu105g

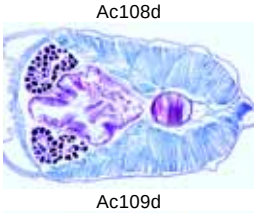

Ac101f

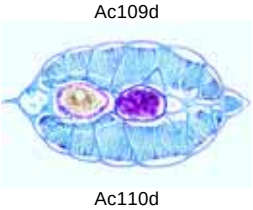
ACRANIA CEPHALACORDATES

Ac101f • **Branchiostoma** lanceolatum (Amphioxus), w.m. of entire specimen for general body structure, carefully stained
Ac103d • **Branchiostoma,** typical t.s. for general study, shows gills, liver and gonads, the standard slide
Ac105d • **Branchiostoma,** t.s. selected to show male gonads
Ac106d • **Branchiostoma,** t.s. selected to show female gonads
Ac107d **Branchiostoma,** mouth region t.s.
Ac108d **Branchiostoma,** anterior pharynx showing gills and notochord t.s.
Ac109d **Branchiostoma,** posterior pharynx showing liver t.s.
Ac110d • **Branchiostoma,** region of intestine t.s.
Ac111d **Branchiostoma,** region of tail t.s.
Ac113d **Branchiostoma,** sagittal l.s. of the body
Ac1135e **Branchiostoma,** frontal section through the spinal cord
Ac1142d **Branchiostoma,** t.s. showing light-sensitive pigment cells
Ac1143f **Branchiostoma,** head region, median l.s.
Ac115f **Branchiostoma,** young larva w.m. *
Ac117s **Branchiostoma** composite slide, showing t.s. through the regions of mouth, pharynx, intestine, and tail
Ac151g **Branchiostoma embryology,** unfertilized ova w.m. *

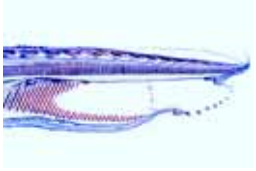

Ac103d


Ac108d


Ac109d

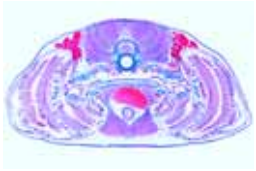

Ac110d

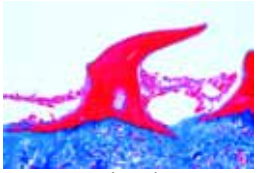

Ac1142d

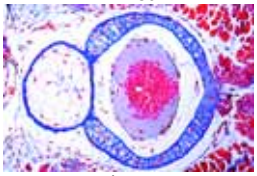

Ac1143f


Pi121d

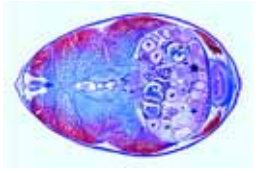

Pi122d

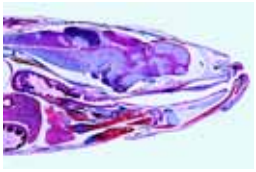

Pi111f

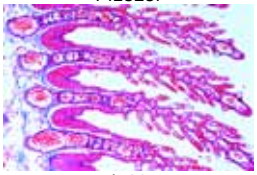

Pi115d


Pi117e


Pi132e


Pi135d


Pi1325f


Pi160c

Ac156k **Branchiostoma embryology,** two to sixteen cell stages, w.m. *
Ac159g **Branchiostoma embryology,** thirty-two and sixty-four cells w.m. *
Ac162g **Branchiostoma embryology,** blastula stage w.m. *
Ac164g **Branchiostoma embryology,** gastrula stage w.m. *
Ac166g **Branchiostoma embryology,** early larva w.m.*
Ac168g **Branchiostoma embryology,** late larva w.m. *

PISCES – FISHES

Cyclostomata – Yawless fishes

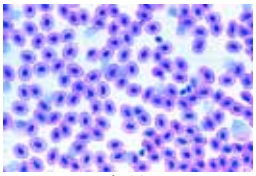
Pi1271h **Ammocoetes,** lamprey, larva small specimen w.m. *
Pi1273f **Ammocoetes,** region of head t.s.
Pi1274f **Ammocoetes,** region of pharynx t.s.
Pi1275f **Ammocoetes,** region of abdomen t.s.
Pi1276f **Ammocoetes,** region of tail t.s.
Pi120d **Petromyzon,** lamprey, head t.s.
Pi121d • **Petromyzon,** region of gills t.s.
Pi122d • **Petromyzon,** region of abdomen t.s.
Pi123c **Petromyzon,** region of tail t.s.
Pi124g **Petromyzon,** region of head and gills, horizontal l.s. *
Pi1252f **Petromyzon,** chorda l.s.
Pi1253f **Petromyzon,** chorda t.s.
Pi1254c **Petromyzon,** intestine, t.s.
Pi1255d **Petromyzon,** region of mouth t.s.
Pi1256c **Petromyzon,** kidney t.s.
Pi1257d **Petromyzon,** ovary t.s.
Pi1258f **Petromyzon,** brain t.s.
Pi1259d **Petromyzon,** chorda and spinal cord, t.s.

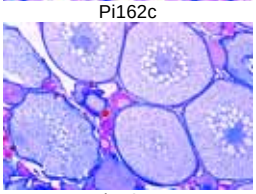
Selachii – Cartilaginous fishes

Pi109g **Scyllium,** dogfish, horizontal l.s. through region of head and gills of entire young specimen *
Pi1095f • **Scyllium,** region of head, t.s.
Pi110f **Scyllium,** gill arch t.s.
Pi111f • **Scyllium,** dogfish, t.s. in region of thorax and gills of entire young specimen
Pi112f • **Scyllium,** dogfish, t.s. in region of abdomen, with spiral intestine and liver
Pi113d **Scyllium,** t.s. of fin
Pi114d **Scyllium,** t.s. in region of tail
Pi115d • **Scyllium,** skin with placoid scales, vertical l.s.
Pi1152f **Scyllium,** skin with placoid scales, w.m.
Pi1153f **Scyllium,** yaw with developing tooth t.s.
Pi1154f **Scyllium,** brain l.s.
Pi1155f **Scyllium,** olfactory epithelium, t.s.
Pi1156f **Scyllium,** lateral line organ t.s.
Pi116d **Scyllium,** cartilage t.s.
Pi117e • **Scyllium,** vertebral column with spinal cord and notochord, t.s.
Pi118g **Scyllium,** heart sagittal l.s. *
Pi119g **Scyllium,** brain sagittal l.s. *
Pi169e **Torpedo marmorata,** electric ray, t.s. of electric organ

Teleostei – Bony fishes

Pi130g **Fresh water fish (**small specimen), entire sagittal l.s.
Pi131d **Fresh water fish,** mouth region t.s.
Pi132e • **Fresh water fish,** head and eyes t.s.
Pi1325f • **Fresh water fish,** head with brain sagittal l.s
Pi133d • **Fresh water fish,** region of gills t.s.
Pi134d • **Fresh water fish,** region of heart t.s.
Pi135d **Fresh water fish,** abdominal region showing kidney, liver and intestine t.s.
Pi136d • **Fresh water fish,** region of gonads t.s.
Pi137c **Fresh water fish,** region of tail t.s.
Pi138f **Fresh water fish,** horizontal l.s. through head and gills
Pi139f **Fresh water fish,** retina adapted to darkness, t.s. of head
Pi1392f **Fresh water fish,** retina adapted to brightness, t.s. of head
Pi140e **Fresh water fish,** sec. of eye showing horizontal section of the retina
Pi141f **Fresh water fish,** heart sagittal l.s.
Pi160c • **Cyprinus,** gills t.s.
Pi157d **Cyprinus,** heart l.s.
Pi162c • **Cyprinus,** blood smear
Pi164d **Cyprinus,** pronephros (head kidney) t.s.
Pi155c • **Cyprinus,** stomach t.s.
Pi154c • **Cyprinus,** small intestine t.s.
Pi151c **Cyprinus,** carp, liver t.s.
Pi156c **Cyprinus,** pancreas t.s.
Pi158c **Cyprinus,** air bladder t.s.
Pi159c **Cyprinus,** kidney t.s.
Pi153c • **Cyprinus,** ovary t.s.
Pi152c • **Cyprinus,** testis t.s.
Pi161d **Cyprinus,** brain t.s.
Pi163c • **Cyprinus,** skin vertical l.s.
Pi165d • **Cyprinus,** barb (tactile organ) t.s.
Pi1652f **Cyprinus,** t.s. of lateral line organ. The organ of balance *
Pi1661d **Trutta (Salmo),** trout, heart l.s.
Pi1662c **Trutta,** gills t.s.
Pi1663c **Trutta,** kidney t.s.
Pi1664d **Trutta,** testis t.s.
Pi1665e **Trutta,** brain l.s., routine stained
Pi1666f **Trutta,** brain l.s., silvered
Pi1667f **Trutta,** brain, t.s. of 3 regions (Bulbi olfactorii, Tectum opticum, Cerebellum)
Pi1668d **Trutta,** vertebral column and spinal cord, t.s.
Pi1671c **Gasterosteus,** stickleback, gills w.m.
Pi1672e **Gasterosteus,** eye, radial l.s.
Pi1674c **Gadus,** codfish, brain t.s.
Pi180d **Pleuronectes,** flounder, skin with chromatophores w.m.
Pi181e **Syngnathus or Hippocampus,** sea horse, t.s. showing the aglomerulous kidney
Pi182d **Fish,** t.s. of jaw showing teeth
Pi183f **Poecilia**, fish, organ of equilibration with macula t.s.
Pi1265d **Anguilla,** eel, young specimen t.s.
Pi171b • **Cycloid scales** w.m.
Pi172b • **Ctenoid scales** w.m.
Pi173b • **Placoid scales** w.m.
Pi174e **Ganoid (rhomboid) scales** w.m. *
Pi175f **Fish scales** composite slide, shows cycloid, ctenoid and placoid scales on one slide, w.m.


Pi162c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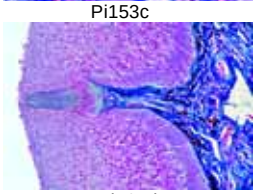
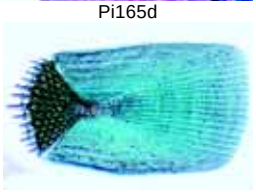
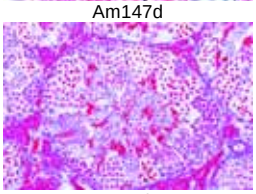

Pi165d


Pi172b


Am111e


Am147d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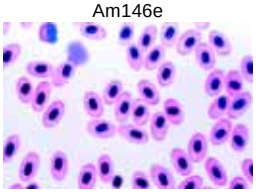
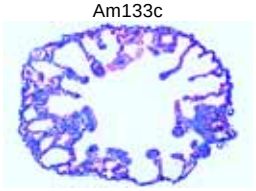
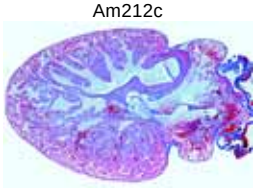
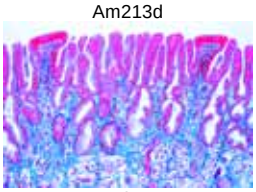

Am133c

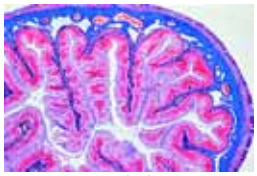

Am212c

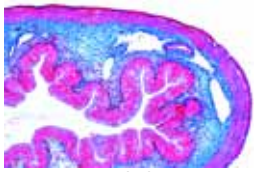

Am213d

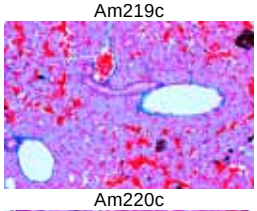

Am215c

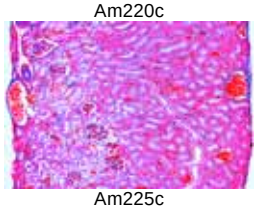
AMPHIBIA – AMPHIBIANS

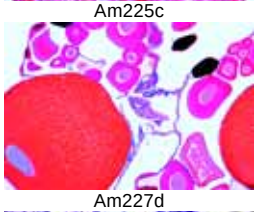
Am1021d **Amphiuma,** Congo eel, blood smear
Am1022d **Amphiuma,** heart t.s.
Am1023d **Amphiuma,** artery t.s.
Am1025d **Amphiuma,** lung t.s.
Am1027d **Amphiuma,** oesophagus t.s.
Am1028d **Amphiuma.** stomach t.s.
Am1029d **Amphiuma,** small intestine t.s.
Am1031d **Amphiuma,** large intestine t.s.
Am1033d **Amphiuma,** liver t.s.
Am1034d **Amphiuma,** spleen t.s.
Am1036d **Amphiuma,** ovary t.s.
Am1037d **Amphiuma,** oviduct t.s.
Am1039d **Amphiuma,** testis t.s.
Am1041d **Amphiuma,** urinary bladder t.s.
Am1043d **Amphiuma,** skin vertical l.s.
Am121e • **Salamandra** larva, serial sections from selected material to show mitotic stages in the skin and in other organs
Am111e **Salamandra** larva, head with eyes t.s.
Am112d • **Salamandra** larva, region of external gills t.s.
Am113d **Salamandra** larva, region of thorax and legs t.s.
Am114d **Salamandra** larva, region of abdomen t.s.
Am115c **Salamandra** larva, region of tail t.s.
Am141d • **Salamandra,** t.s. of liver for demonstration of typical animal cells with nuclei, cytoplasm and cell membranes
Am146e • **Salamandra,** testis t.s., usually many meiotic and mitotic stages can be observed
Am131d • **Salamandra,** skin with poison glands, vertical l.s.
Am132c **Salamandra,** lung t.s.
Am133c **Salamandra,** blood smear
Am142c **Salamandra,** kidney t.s.
Am143c **Salamandra,** stomach t.s.
Am144c **Salamandra,** small intestine t.s.
Am145d **Salamandra,** thyroid gland t.s. *
Am147d **Salamandra,** ovary t.s.
Am148d **Salamandra,** tail t.s.
Am151e **Triturus,** molge, eye of adult, radial l.s.
Am152e **Triturus,** eye of larva, radial l.s.
Am153e **Necturus**, axolotl, gills t.s.
Am201d • **Rana,** frog, epidermis flat mount for squamous epithelium w.m.


Am218c

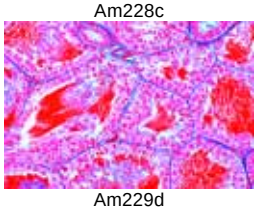

Am219c


Am220c

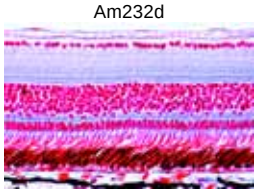

Am225c

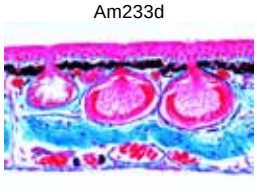

Am227d


Am228c


Am229d


Am232d


Am233d


Am234c


Re213c

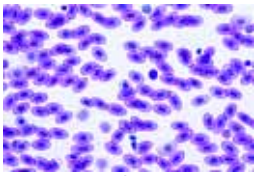
Am2012c **Rana,** squamous epithelium, w.m. of isolated cells
Am2013c **Rana,** columnar epithelium, w.m. of isolated cells
Am202d • **Rana,** roof of mouth with ciliated epithelium, t.s.
Am2021c **Rana,** ciliated epithelium, w.m. of isolated cells
Am203d **Rana,** compact bone decalcified, t.s.
Am204d **Rana,** head of femur t.s. showing bone and hyaline cartilage
Am205d • **Rana,** hyaline cartilage of sternum t.s.
Am206d • **Rana,** striated (skeletal) muscle, l.s.
Am207d **Rana,** striated muscle t.s.
Am208d **Rana,** striated muscle, isolated fibres w.m.
Am2083c **Rana,** heart muscle, isolated fibres w.m.
Am209e • **Rana,** nerve fibres isolated, fixed and stained with osmic acid to show Ranvier's nodes w.m.
Am210d **Rana,** adipose tissue t.s.
Am211d **Rana,** leg t.s. shows artery, vein, bone, nerve
Am212c • **Rana,** lung t.s., simple baglike lung with large central cavity
Am2123e • **Rana,** contracted and expanded lung, two t.s. on same slide
Am213d • **Rana,** heart l.s., showing l.s. and t.s. of heart muscle
Am214c • **Rana,** blood smear
Am215c • **Rana,** tongue t.s., with papillae, glands, muscles
Am2155f **Rana,** head with mouth cavity and tongue l.s.
Am216c **Rana,** oesophagus t.s., showing ciliated epithelium
Am217c • **Rana,** stomach t.s., mucous membrane with gastric glands
Am218c • **Rana,** small intestine t.s., showing villi
Am219c **Rana,** large intestine (colon), t.s. with goblet cells
Am220c • **Rana,** liver t.s., liver parenchyme and bile ducts
Am221c **Rana,** pancreas t.s. with islets of Langerhans
Am222c **Rana,** gall bladder t.s.
Am223c • **Rana,** spleen t.s., lymphatic tissue
Am224e **Rana,** thyroid gland with colloid t.s.
Am225c • **Rana,** kidney t.s. showing Malpighian corpuscles and tubules
Am2252c **Rana,** kidney l.s.
Am226c **Rana,** urinary bladder t.s., smooth muscles
Am235d **Rana,** ureter t.s.
Am227d • **Rana,** ovary with developing eggs t.s.
Am228c **Rana,** fallopian tube t.s.
Am229d • **Rana,** testis showing spermatogenesis t.s.
Am2292d **Rana,** sperm smear
Am2295d • **Rana,** peripheral nerve t.s.
Am230c • **Rana,** anterior part of brain t.s.
Am2305e **Rana,** t.s. of brain in three different regions
Am231f **Rana,** complete brain sagittal l.s.
Am2312f **Rana,** complete brain sagittal l.s., silver stained
Am232d • **Rana.** spinal cord t.s., of white and grey matter
Am233d • **Rana,** posterior part of eyeball with retina, sagittal l.s.
Am2331g **Rana,** entire eyeball sagittal l.s. for general structures *
Am234c • **Rana,** skin with skin glands, vertical l.s.
Am2343f **Rana,** skin, w.m. showing injected vessels and chromatophores
Am251f **Rana,** small specimen, t.s. region of mouth
Am252f **Rana,** small specimen, t.s. through head
Am253f **Rana,** small specimen, t.s. region of thorax
Am254f **Rana,** small specimen. t.s. region of abdomen
Am261e • **Rana larva,** tadpole, head and eyes t.s.
Am262d • **Rana larva,** tadpole, thorax with gills t.s.
Am2622d • **Rana larva,** tadpole, region of lungs t.s.
Am263d • **Rana larva,** tadpole, abdomen t.s.
Am265d • **Rana larva,** tadpole, skin with pigment cells, w.m.
Am270g **Rana larva,** l.s. of 5 tadpoles of different age
Am291f **Rana embryology:** frog, early cleavage t.s.
Am292f **Rana embryology:** frog, blastula t.s.
Am293f **Rana embryology:** frog, gastrula t.s.
Am294f **Rana embryology:** frog, neurula t.s.
Am295f **Rana embryology:** frog, young larva t.s.

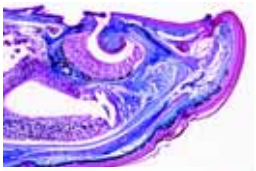
REPTILIA – REPTILES

Re121d **Ophidia sp.,** snake, skin with scales flat mount w.m.
Re122d **Ophidia sp.,** snake, skin with scales vertical l.s.
Re151c **Tropidonotus,** snake, striated muscles l.s.
Re153c **Tropidonotus,** trachea t.s.
Re154c **Tropidonotus,** lung t.s.
Re152c **Tropidonotus,** intestine and testis, t.s.
Re158c **Tropidonotus,** uterus t.s.
Re155d **Tropidonotus,** brain t.s.
Re157h **Tropidonotus,** motor nerve endings (end plates) in striated muscle of snake, w.m.
Re156h **Tropidonotus,** Jacobson's organ (vomeronasal organ), head of snake, t.s. *
Re161d **Anguis,** slow-worm, t.s. of embryo and placenta
Re240f **Tarentola,** gecko, l.s. of toe adapted for climbing
Re211c • **Lacerta,** lizard, blood smear
Re212d **Lacerta,** trachea t.s.
Re213c • **Lacerta,** lung t.s.
Re214c **Lacerta,** kidney t.s.
Re215c **Lacerta,** testis t.s. showing spermatogenesis
Re216c • **Lacerta,** intestine t.s.
Re217c **Lacerta,** liver t.s.
Re2173d **Lacerta,** heart l.s.
Re218d **Lacerta,** ovary t.s.
Re219d **Lacerta,** adrenal gland t.s.
Re220d **Lacerta,** t.s. of jaw showing changing of teeth
Re221d **Lacerta,** brain t.s.
Re231d • **Lacerta,** skin with scales vertical l.s.
Re235f **Lacerta,** small specimen, sagittal l.s. of the head
Re237h **Lacerta,** small specimen, sagittal l.s. of the head showing the parietal or pineal eye *
Re236e **Lacerta,** small specimen, t.s. of the head
Re251c **Testudo,** turtle, blood smear
Re252c **Testudo,** heart t.s.
Re254c **Testudo,** lung t.s.
Re256c **Testudo,** oesophagus t.s.
Re258c **Testudo,** stomach t.s.
Re259c **Testudo,** small intestine t.s.
Re260c **Testudo,** large intestine t.s.
Re262c **Testudo,** liver t.s.
Re264d **Testudo,** thyroid gland t.s.
Re266d **Testudo,** ovary t.s.
Re267d **Testudo,** oviduct t.s.
Re268d **Testudo,** testis t.s.
Re270c **Testudo,** urinary bladder t.s.
Re272c **Testudo,** striated (skeletal) muscle l.s.
Re273c **Testudo,** striated (skeletal) muscle t.s.

AVES – BIRDS

Av132b • **Gallus,** wing or vane feather w.m.
Av131b • **Gallus,** down feather w.m.
Av165b **Humming bird,** down feather w.m.
Av133b • **Gallus,** plume feather (filoplume) w.m.
Av134c **Gallus,** wing and down feather on one slide w.m.
Av1345d **Bird feather composite** slide: wing feather, down feather and filoplume on same slide w.m.
Av103c **Squamous epithelium,** mucous membrane of duck, t.s.
Av161e • **Herbst corpuscles,** t.s. of beak of duck
Av162e **Woodpecker,** tongue, t.s. showing touch corpuscles
Av150e **Singing bird,** syrinx l.s.
Av152c **Crop** of pigeon (Columba), t.s.
Av156e **Falco,** falcon, horizontal sec. of the retina
Av101g **Head of newly hatched bird,** sagittal l.s.
Av102f **Head of newly hatched bird,** t.s. through region of eyes
Av111c • **Gallus domesticus,** chicken, blood smear
Av118c **Gallus,** heart muscle l.s.
Av112c • **Gallus,** lung t.s. showing parabronchii
Av1123c **Gallus,** trachea t.s.
Av128c **Gallus,** spleen t.s.
Av129d **Gallus,** thymus gland t.s.
Av138d **Gallus,** adrenal gland t.s.
Av130d **Gallus,** bursa fabricii t.s.
Av121d • **Gallus,** tongue with thick cornified layer t.s.
Av113c **Gallus,** oesophagus t.s.
Av114c • **Gallus,** glandular stomach t.s.
Av127d • **Gallus,** gizzard t.s. showing thick cornified layer
Av115c • **Gallus,** small intestine t.s.
Av136c **Gallus,** blind gut t.s.
Av116c • **Gallus,** liver t.s.
Av122d **Gallus,** pancreas t.s.
Av117c • **Gallus,** kidney t.s.
Av137c **Gallus,** mesonephric duct t.s.
Av119d • **Gallus,** ovary with developing eggs t.s.
Av120d • **Gallus,** testis showing spermatogenesis t.s.
Av123d • **Gallus,** brain t.s.


Re211c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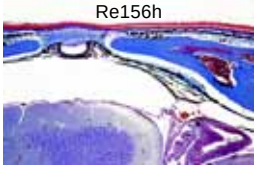
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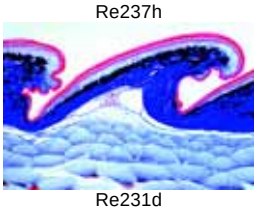
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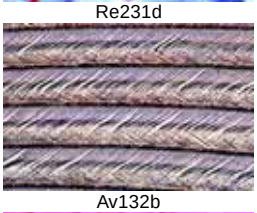
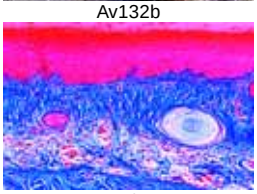
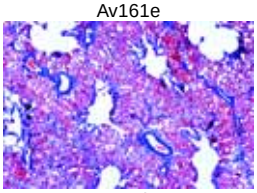
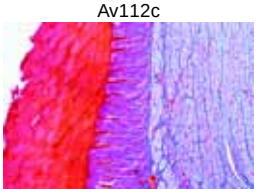
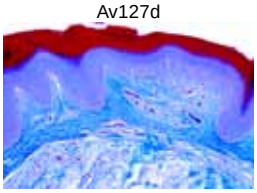

Av132b

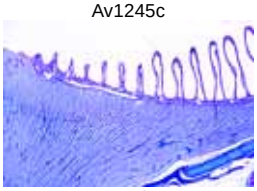

Av161e


Av112c


Av127d


Av126d


Av1245c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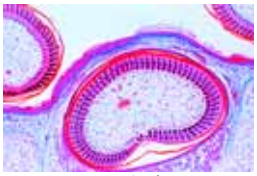
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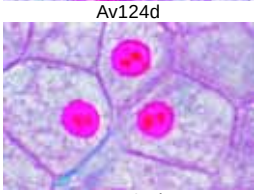
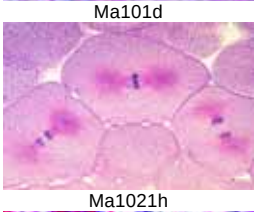

Ma101d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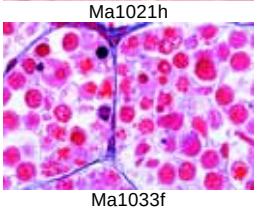
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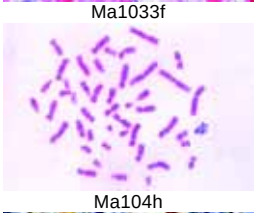
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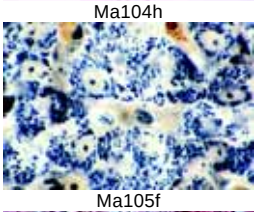
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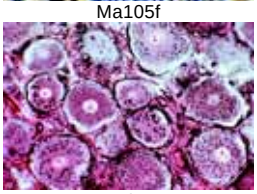
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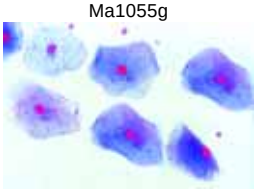
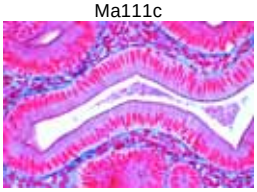
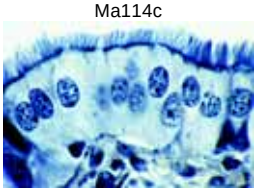
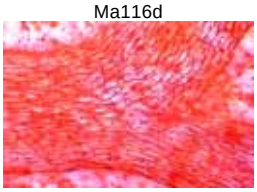

Ma111c


Ma114c


Ma116d


Ma117e

Av1245c • **Gallus,** cerebellum, t.s. routine stained
Av1247f **Gallus,** cerebellum, t.s. silvered
Av139d **Gallus,** anterior part of eye with eyelid and nictitating membrane sagittal l.s.
Av140e • **Gallus,** posterior part of eye with retina and pecten, sagittal l.s.
Av155e **Gallus,** chicken, horizontal sec. of the retina
Av135c **Gallus,** cockscomb t.s.
Av124d • **Gallus,** skin with developing feathers, horizontal l.s.
Av125d • **Gallus,** skin with developing feathers, vertical l.s.
Av126d • **Gallus,** unfeathered skin of foot, vertical l.s.
Av211f **Gallus embryology:** chicken embryo, 36 hour t.s.
Av212f **Gallus embryology:** chicken embryo, 48 hour t.s.
Av213f **Gallus embryology:** chicken embryo, 72 hour t.s.

The combination of prepared microscope slides and colour photomicrographs has decisive advantages for teaching. We have a large selection of colour photomicrographs (p. 75 – 100 in this Catalogue), for use in conjunction with our prepared microscope slides

We will gladly make special offers for any slides or sets which are not listed in our catalogue. Please ask for further information.

HISTOLOGY OF MAMMALIA

Cytology

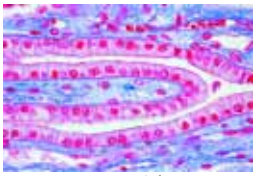
Ma101d • **Simple animal cells** in sec. of salamander liver showing nuclei, cell membranes and cytoplasm. For general study of the animal cell
Ma102f **Mitotic stages** in sec. through red bone marrow of mammal
Ma1023f **Mitotic stages** in smear of red bone marrow of mammal
Ma1021h **Mitotic stages** in sec. of whitefish blastula showing spindles *
Ma1033f • **Meiotic (maturation) stages** in sec. through testis of salamander, selected material showing large structures *
Ma103f • **Meiotic (maturation) stages** in testis of mouse, sec. iron hematoxyline stained after Heidenhain
Ma1031f **Meiotic (maturation) stages** in smear from testis of mouse, specially stained after Feulgen *
Ma104h • **Human chromosomes** in smear from culture of blood, male *
Ma1041i • **Human chromosomes** in smear from culture of blood, female *
Ma1045f • **Barr bodies** (human sex chromatin) in smear from female squamous epithelium *
Ma105f • **Mitochondria** in thin sec. of kidney or liver, specially prepared and stained
Ma1055g • **Golgi apparatus** in sec. of spinal ganglion or other organ *
Ma1058e • **Pigment cells** in skin
Ma1061e • **Storage of glycogen** in liver cells, sec. stained with carmine after Best or PAS reaction
Ma1063e **Storage of fat** in cells of costal cartilage, sec. stained with Sudan
Ma1065f **Secretion of fat** in mammary gland, section Osmic acid stained
Ma1067f • **Phagocytosis** in Kupffer's star cells of the liver, sec. of mammalian liver injected with trypan blue

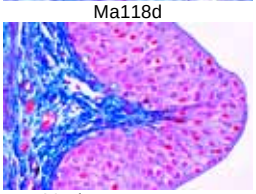
Epithelial tissues

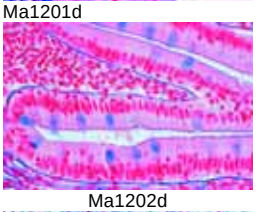
Ma111c • **Squamous epithelium,** isolated cells from human mouth, smear
Ma1113d **Simple squamous epithelium,** in sec. through the cornea from the eye
Ma112c • **Stratified, non-cornified squamous epithelium,** in section through buccal gum
Ma1121c **Stratified, non-cornified squamous epithelium,** in section through vagina of rabbit
Ma1124d • **Stratified, non-cornified squamous epithelium,** in section of oesophagus
Ma1125d **Stratified, non-cornified squamous epithelium,** t.s. pig vagina
Ma1127d **Stratified, cornified squamous epithelium,** in vertical l.s. of human body skin
Ma113d • **Columnar epithelium,** isolated cells from intestine w.m.
Ma114c • **Simple columnar epithelium,** in t.s. of small intestine
Ma1142e **Simple columnar epithelium,** in t.s. of human gall bladder
Ma1145d • **Pseudostratified columnar epithelium**, in sec. through epididymis
Ma115d • **Ciliated epithelium,** isolated cells from trachea w.m.
Ma116d **Simple ciliated columnar epithelium,** in t.s. of oviduct
Ma1162d • **Pseudostratified ciliated columnar epithelium,** in t.s. of trachea
Ma117e **Endothelium,** endothelial cells of small blood vessels in mesenterium, silver stained and w.m.
Ma118d • **Cuboidal epithelium,** in sec. of kidney papilla
Ma1182e **Cuboidal epithelium,** in sec. of human thyroid gland
Ma120e **Transitional epithelium,** two section of urinary bladders showing contracted and extended epithelia
Ma1201d • **Transitional epithelium,** in sec. of urinary bladder of sheep
Ma1202d **Goblet cells** in sec. of colon, stained with mucicarmine
Ma1203e **Mucous glands** from human intestine, colouring of goblet cells, PAS-HE
Ma1204d **Holocrine glands**, sebaceous glands from human skin, l.s.
Ma1205c **Apocrine glands**, lacteal glands of sheep, sec.
Ma1206e **Eccrine glands**, salivary gland, human, sec.
Ma1207d **Sweat glands** in human skin, t.s.

Connective and supporting tissues

Ma121e • **Areolar connective tissue,** w.m. and stained for fibres and cells
Ma122d **White fibrous tissue,** isolated fibres from tendon
Ma123d • **White fibrous tissue,** l.s. of tendon
Ma1231d **White fibrous tissue,** t.s. of tendon
Ma1234f **Mast cells** in the Omentum majus of rat, specially stained with toluidine blue and paracarmine
Ma124d **Yellow elastic fibrous tissue,** l.s. of Ligamentum nuchae
Ma1242e • **Yellow elastic fibrous tissue,** t.s. of Ligamentum nuchae
Ma1244d **Elastic tissue,** fibres teased and w.m.
Ma125d **Reticular tissue** t.s.
Ma1252f **Reticular fibres,** human spleen, t.s. silvered
Ma126d • **Embryonic connective tissue** t.s.
Ma127d • **Mucous tissue,** t.s. of navel string (umbilical cord)
Ma1275f **Mucous tissue,** t.s. of navel string specially stained for Wharton's jelly
Ma1278d **Vesicular tissue,** cellular connective tissue with no intercellular substance, sec. through notochord of dogfish
Ma128c • **Adipose tissue,** section fat removed to show the cells
Ma129e • **Adipose tissue,** section showing fat in situ stained by sudan
Ma1292e **Adipose tissue,** section or w.m. with fat in situ stained by osmic acid
Ma1294c **Brown adipose tissue** of monkey, sec.
Ma130c • **Hyaline cartilage,** t.s.
Ma1302c **Hyaline cartilage** of cat, t.s.
Ma1305d **Fetal hyaline cartilage**, t.s.
Ma131d • **Yellow elastic cartilage,** section specially stained for elastic fibres
Ma1312d **Yellow elastic cartilage,** ear of rabbit or pig, t.s.
Ma132d • **White fibrous cartilage,** section
Ma1323f **Fibrous cartilage,** human intervertebral disc, sec.
Ma135d • **Compact bone,** t.s. specially prepared to show the cells and canaliculi
Ma136d • **Compact bone,** l.s. specially prepared to show the cells and canaliculi
Ma1365d • **Cancellous (spongy) bone,** t.s.
Ma1367g **Compact bone,** non-decalcified, t.s. ground thin and mounted *
Ma137e **Compact bone and hyaline cartilage** t.s., two sections on one slide


Ma118d


Ma1201d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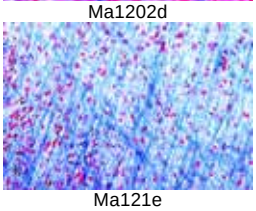
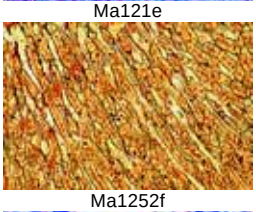

Ma121e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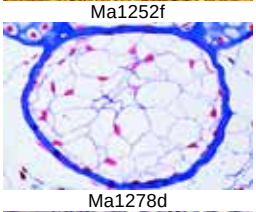
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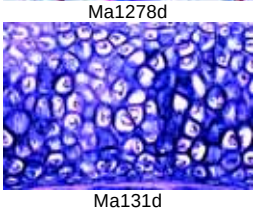
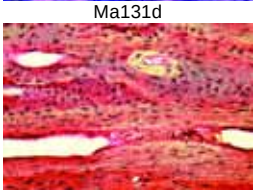
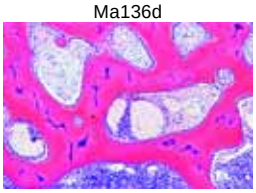
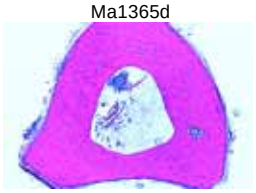
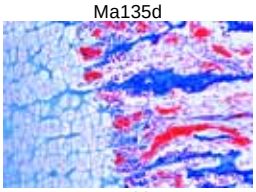
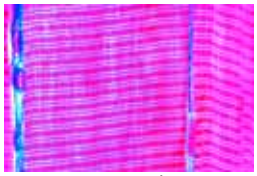

Ma131d


Ma136d


Ma1365d


Ma135d


Ma138e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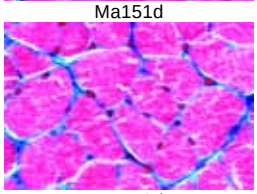
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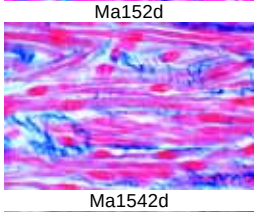
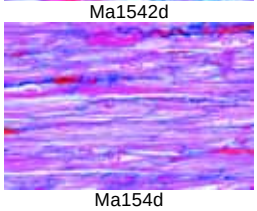

Ma1542d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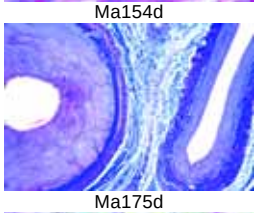
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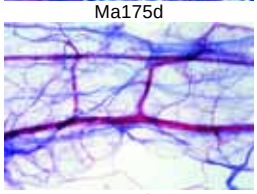
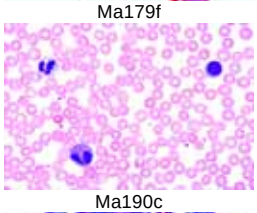

Ma178e


Ma179f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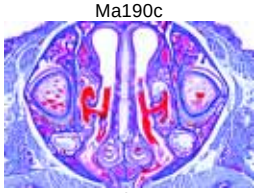
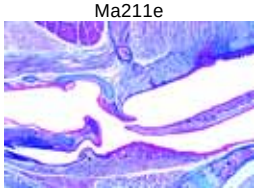
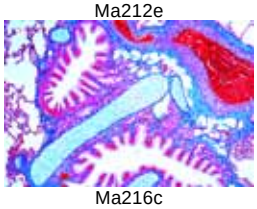

Ma211e


Ma212e


Ma216c

Ma138e • **Bone development,** intracartilaginous ossification in foetal finger or toe, l.s.
Ma139e • **Bone development,** intermembranous ossification in foetal head (cranial bone), vertical l.s.
Ma140d • **Yellow bone marrow t**.s.
Ma141e **Joint of finger** or toe, sagittal l.s.
Ma142e **Foetal knee joint**, l.s. showing ossification of tendons *

Muscle tissues

Ma151d • **Striated (skeletal) muscle** l.s.
Ma152d **Striated (skeletal) muscle** t.s.
Ma153d • **Striated (skeletal) muscle,** teased preparation showing isolated fibres w.m.
Ma1535f **Striated (skeletal) muscle,** l.s. specially stained for myofibrils *
Ma1537f **Striated (skeletal) muscle,** thin l.s. specially stained to show details of the striations
Ma154d • **Smooth (involuntary) muscle,** l.s. and t.s.
Ma1542d **Smooth (involuntary) muscle,** l.s. only
Ma155d • **Smooth (involuntary) muscle,** teased preparation showing isolated fibres w.m.
Ma1555f **Smooth (involuntary) muscle,** sec. specially stained for myofibrils *
Ma156d • **Heart muscle,** l.s. and t.s.
Ma158e • **Heart muscle,** teased preparation shows isolated fibres w.m.
Ma157e **Heart muscle,** l.s. and t.s. specially stained for intercalated discs
Ma159e **Heart muscle,** specially stained to show the Purkinje fibres *
Ma160d **Muscle-tendon junction,** l.s.
Ma165f **Muscle types,** composite slide with l.s. of striated, smooth and heart muscles

Circulatory system

Ma171d **Artery** of rabbit, t.s. routine stained
Ma172d • **Artery** of rabbit, t.s. stained for elastic fibres
Ma1725f **Artery** of rabbit, t.s. specially stained for myofibrils *
Ma173d **Vein** of rabbit, t.s. routine stained
Ma174d • **Vein** of rabbit, t.s. stained for elastic fibres
Ma182e **Valve of the vein** of rabbit, l.s. or w.m. *
Ma175d **Artery and vein** of smaller size in one slide, guinea pig, t.s.
Ma1752d **Artery, vein and capillary,** guinea pig, t.s.
Ma1753e **Artery, vein and nerve,** guinea pig, t.s.
Ma176d • **Aorta** of rabbit, t.s. routine stained
Ma1762d **Aorta** of rabbit, t.s. stained for elastic fibres
Ma178e • **Small blood vessels** in mesenterium of rabbit, w.m.
Ma179f • **Heart** of mouse, entire sagittal l.s.
Ma180d **Heart** of mouse, t.s.
Ma181f **Pinna of the ear** of rabbit, sec. injected to show anastomosis of blood vessels
Ma190c • **Human blood smear**, Giemsa stain
Ma1902c **Human blood smear,** Wright's stain
Ma195c **Rabbit blood smear,** Giemsa stain
Ma196c **Cat blood smear,** Giemsa stain
Ma1963c **Camel blood smear,** elliptical erythrocytes
Ma1965c **Rat blood smear,** Giemsa stain
Ma197c • **Frog blood smear,** nucleated erythrocytes
Ma1973c **Amphiuma blood smear,** very large erythrocytes

Respiratory system

Ma211e • **Nasal region** of small mammal (mouse or rat), t.s. showing respiratory and olfactory epithelium, bone etc.
Ma212e **Larynx** of mouse, sagittal l.s.
Ma213e **Larynx** of mouse, frontal l.s.
Ma214d **Trachea** of cat or rabbit, t.s. with ciliated epithelium, cartilage etc.
Ma215d • **Trachea** of cat or rabbit, l.s.
Ma2155e **Bronchus** of cat or dog, t.s.
Ma216c • **Lung** of cat, t.s. routine stained for all details
Ma217d **Lung** of cat, t.s. stained for elastic fibres
Ma218e **Lung** of cat, t.s. silver stained
Ma2183f **Lung** of cat, sec. showing injected blood vessels
Ma220d **Lung** of cat, thick section showing arrangement of alveoli
Ma2185c **Lung** of rat, t.s.
Ma219d **Lung** from human fetus, t.s. shows developing tissues
Ma222d **Trachea and oesophagus** of rabbit, t.s.
Ma225e • **Lung cancer**, human, carcinoma, sec.

Ma226h **Lung pathology**, composite slide: normal human lung, lung with carbon particles, emphysema, and lung cancer, four sections

Lymphatic system

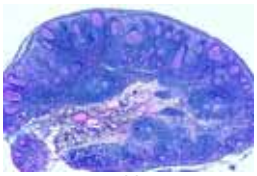
Ma231c • **Lymph node** of pig, t.s. routine stained
Ma232f **Lymph node** of pig, t.s. shows reticular tissue only (cells removed) *
Ma2323c **Lymph node** of cat, t.s. routine stained
Ma2325g **Lymphatic vessel**, w.m. from mesentery, with valve *
Ma233e • **Tonsil**, human, t.s.
Ma234c • **Spleen** of rabbit, t.s. showing capsula, pulp etc.
Ma235f **Spleen** of rabbit, t.s. injected to show the blood vessels
Ma2353c **Spleen** of guinea pig, t.s.
Ma236d • **Red bone marrow** of cow, thin sec. quadruple stained
Ma237d **Red bone marrow** of cow, smear specially stained
Ma2375f **Red bone marrow**, smear showing normoblasts *
Ma238f **Thymus** from human child, t.s. with Hassall bodies
Ma239d • **Thymus** of young cat, t.s. with Hassall bodies
Ma240d **Thymus** gland of cow, sec.

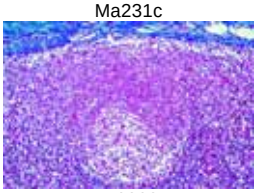
Endocrine glands

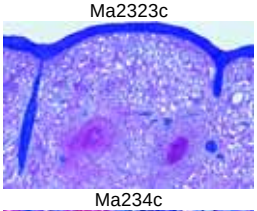
Ma252d • **Thyroid gland** of cow, sec. showing colloid
Ma2523d **Thyroid gland** of cat, sec.
Ma2525e **Trachea with thyroid gland** of rat, t.s.
Ma270f **Thyroid gland**, sec. showing insufficiency of the gland *
Ma271f **Thyroid gland**, sec. showing over-activity of the gland *
Ma262f **Parathyroid gland** of pig or cat, t.s.
Ma263f **Parathyroid and thyroid** gland of mammal, t.s.
Ma274f **Carotid body** of pig, sec.
Ma253d • **Adrenal gland (Gl. suprarenalis)** of rabbit, t.s. through cortex and medulla
Ma2534f **Adrenal gland** of rabbit, t.s. silver stained to show nerve fibres in the medulla
Ma2535d **Adrenal gland** of cat, t.s.
Ma254f • **Islets of Langerhans** in t.s. of pancreas from cat, specially stained for cellular detail
Ma2543d **Pancreas** with islets of Langerhans of cat, t.s. routine stained
Ma255e • **Pituitary gland (hypophysis),** sag. l.s. of complete organ from cow or pig showing adeno- and neurohypophysis
Ma259h **Pituitary gland,** t.s. of infundibulum specially stained to show neurosecretes *
Ma258g **Pituitary gland**, thin t.s. of glandular portion stained for fine cellular detail
Ma257e • **Pineal body (Epiphysis)** of cow or pig, t.s. routione stained
Ma2572d **Pineal body (Epiphysis)** of sheep, t.s.
Ma2574d **Leydig's cells** in testis of mouse, t.s. special stained

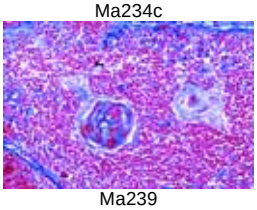
Digestive system

Ma310c • **Lip** of mouse, sagittal l.s.
Ma311d • **Tooth** human, t.s. of crown
Ma312d **Tooth** human, t.s. of root
Ma313f **Tooth** human, entire l.s.
Ma314e **Gum with root of tooth** from guinea pig, sagittal l.s.
Ma3142e **Gum with root of tooth** from guinea pig, t.s.
Ma315e • **Tooth development** of mammal**,** early stage l.s.
Ma316e • **Tooth development** of mammal**,** medium stage l.s.
Ma317e • **Tooth development** of mammal**, ,** later stage l.s.
Ma321c **Tongue** of mouse, entire sagittal l.s.
Ma322c **Tongue** of mouse, t.s.
Ma323d • **Tongue** of cat, papilla with thick cornified layer, l.s.
Ma326c • **Soft palate** of rabbit, t.s.
Ma327c **Hard palate** of rabbit, t.s.
Ma331c • **Esophagus** of cat or dog, t.s.
Ma3315c **Esophagus** of cat or dog, l.s.
Ma3316c **Esophagus** of sheep, l.s.
Ma3318e **Esophagus – stomach** junction of cat, l.s.
Ma333d • **Stomach** of cat, cardiac region t.s. quadruple stained


Ma231c


Ma2323c


Ma234c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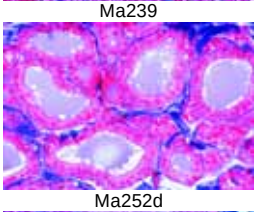
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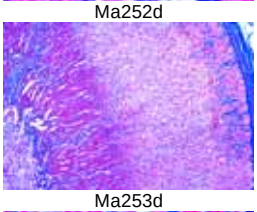
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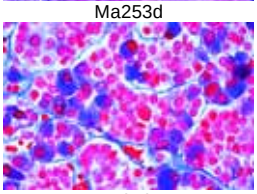
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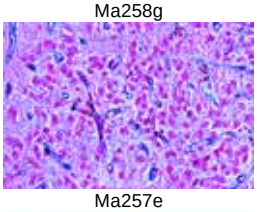
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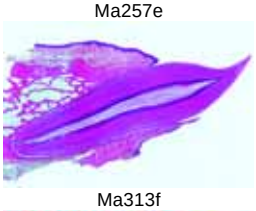
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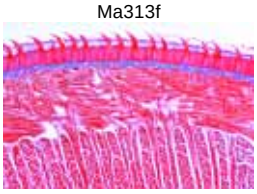
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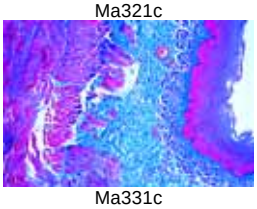
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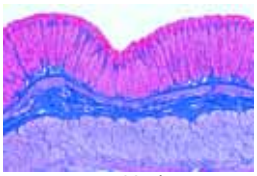
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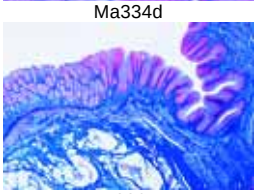
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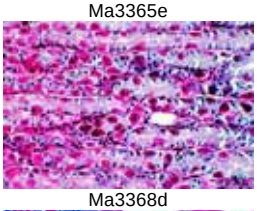
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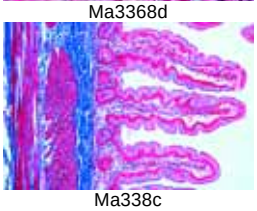
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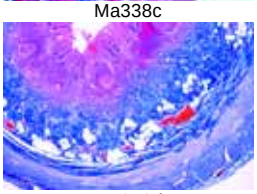
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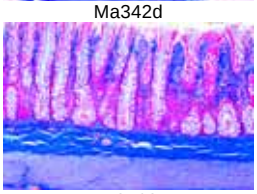
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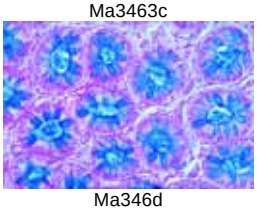
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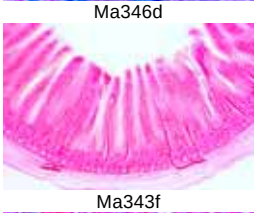
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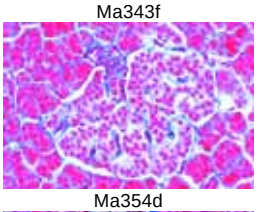
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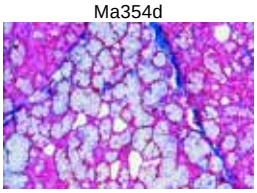
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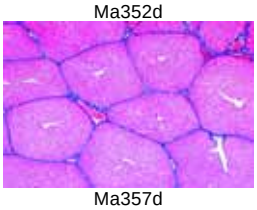

Ma357d

Ma334d • **Stomach** of cat, fundic region t.s. quadruple stained
Ma335d • **Stomach** of cat, pyloric region t.s. quadruple stained
Ma3352s **Stomach**, composite slide of three regions: cardiac, fundic and pyloric t.s.
Ma3361f **Stomach**, sec. through gastric glands specially stained for different cell types
Ma332f **Stomach** of cat, injected to show the blood vessels, t.s.
Ma336f **Stomach** of rat, sagittal l.s. through the complete organ
Ma3368d **Stomach** of pig, cardia t.s.
Ma3365e **Stomach – duodenum** junction of cat, l.s.
Ma337c • **Duodenum** of cat or dog, t.s. showing Brunner's glands
Ma3371d **Duodenum** of monkey, sec. showing glands of Lieberkühn
Ma3373e **Duodenum**, mucous glands, section special stained with PAS-HE
Ma338c • **Jejunum** of cat or dog, t.s.
Ma3383e **Jejunum**, mucous glands, section special stained with PAS-HE
Ma339c **Ileum** of cat or dog, t.s. showing Peyer's patches
Ma3393e **Ileum**, mucous glands, sec. special stained with PAS-HE
Ma3395s **Small intestine**, composite slide of three regions: duodenum, ileum and jejunum t.s.
Ma343f • **Small intestine** of dog, injected to show the blood vessels and capillary network t.s.
Ma340d **Small intestine** of rat, t.s.
Ma3403c **Small intestine** of cat, t.s.
Ma3405d **Small intestine** of horse, t.s.
Ma341d • **Vermiform appendix**, human t.s.
Ma342d **Vermiform appendix**, rabbit t.s.
Ma344c • **Caecum (blind gut)** of rabbit, t.s.
Ma345c **Colon (large intestine)** of pig, t.s.
Ma346d • **Colon**, t.s. stained with muci-carmine or PAS for demonstration of mucous cells
Ma3463c **Colon** of cat, t.s.
Ma3465e **Ileocecal junction** of cat, l.s.
Ma347c **Rectum** of cat or rabbit, t.s.
Ma3472e **Anal canal** and rectum of cat, l.s.
Ma3474d **Anal gland** of dog t.s.
Ma351d • **Parotid gland** of cat, t.s. of a pure serous gland
Ma352d • **Submaxillary gland** of cat, t.s. of a mixed serous and mucous gland
Ma353d • **Sublingual gland** of cat, t.s. of a pure mucous gland
Ma3535f **Salivary glands**, composite slide: parotid, sublingual and submaxillary gland, t.s.
Ma354d • **Pancreas** of pig, t.s. showing islets of Langerhans
Ma3542d **Pancreas** of cat, sec. stained with Heidenhain's iron-hematoxline
Ma3543f **Pancreas** of cat, sec. showing injected vessels
Ma357d • **Liver** of pig, t.s. showing well developed connective tissue
Ma356d **Liver** of cat, t.s.
Ma3562f **Liver** of cat, thick section showing injected vessels
Ma3564f **Liver** of dog, thick section showing injected vessels
Ma358d **Liver** from mouse embryo, t.s. showing origin of blood cells
Ma359f • **Liver**, t.s. specially stained for Kupffer's stellate cells
Ma360e • **Liver**, t.s. stained for glycogen
Ma361f **Liver**, thin sec. stained for mitochondria
Ma3613f **Liver**, t.s. special preparation to show the bile ducts *
Ma3614f **Liver**, sec. silver stained to show the reticular fibres
Ma362c **Bile duct (Ductus choledochus)** of rabbit, t.s.
Ma363d • **Gall bladder** of rabbit, t.s.
Ma3634c **Gall bladder** of sheep, t.s.
Ma371d **Rumen** of cow, t.s.
Ma372d **Reticulum** of cow, t.s.
Ma373d **Omasum** of cow, t.s.
Ma374d **Abomasum** of cow, t.s.

Excretory system

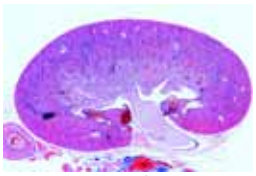
Ma411d • **Kidney** of cat, t.s. showing cortex with Malpighian corpuscles and medulla with tubules, Mallory's stain
Ma413e • **Kidney** of mouse, sagittal l.s. through complete organ with cortex, medulla and pelvis
Ma414c **Kidney** of mouse, t.s. through the complete organ
Ma415f • **Kidney** of mouse, t.s. vital stained with trypan-blue to demonstrate storage
Ma4156d **Kidney** of dog, t.s.
Ma4157d **Kidney** of rabbit, t.s.
Ma416f **Kidney,** sec. fixed and stained to show mitochondria
Ma417f **Kidney,** sec. injected showing the blood vessels
Ma418c **Renal papilla** of rabbit, t.s.
Ma4183d **Renal pelvis** of cat, t.s.
Ma419e **Cancer** of human kidney, t.s.
Ma421c • **Ureter** of rabbit, t.s.
Ma4214d • **Ureter** of pig, t.s.
Ma422c • **Urinary bladder** of rabbit, t.s.
Ma423c **Urethra** of rabbit, t.s.

Reproductive system

Ma431d • **Ovary** of cat, t.s. for general study, shows primary, secondary and Graafian follicles
Ma433g **Ovary**, sec. selected to show Cumulus oophorus with egg cell *
Ma4332f **Ovary**, sec. selected to show Graafian follicle with detatched egg cell
Ma434d • **Ovary**, sec. selected to show the Corpus luteum
Ma4341d **Ovary** of rabbit, t.s.
Ma4342e **Ovary**, sec. of juvenile organ showing developing tissue
Ma435c • **Fallopian tube** of pig, t.s.
Ma4353c **Fallopian tube** of cat, t.s.
Ma4354c **Fallopian tube** of rabbit, t.s.
Ma4355d **Fallopian tube** with Infundibulum of sheep, l.s.
Ma437d • **Uterus** of pig or rabbit, resting stage, t.s.
Ma438d **Uterus** of pig or rabbit, pregnant stage, t.s.
Ma439d • **Uterus** of rat with embryo in situ, t.s.
Ma4393d **Uterus** of sheep, t.s.
Ma4394c **Uterus**, juvenil, of cat, t.s.
Ma440e • **Placenta**, human , t.s.
Ma4405c **Placenta** of cat, t.s.
Ma445f • **Embryo of mouse**, sagittal l.s. of entire specimen
Ma446d **Embryo of mouse**, t.s. of head
Ma447d • **Embryo of mouse**, t.s. of thoracal region
Ma448d **Embryo of mouse**, t.s. of abdominal region
Ma449e **Embryo of pig**, t.s.
Ma451d • **Vagina** of pig, t.s.
Ma4513c **Vagina** of rabbit, t.s.
Ma452d **Vagina** and urethra of rabbit or cat, t.s.
Ma453d • **Umbilical cord (navel string)** of cow, t.s.
Ma454d **Umbilical cord** of pig, t.s.
Ma461d • **Testis** of mouse, t.s. showing spermatogenesis. The slide for general study of spermatogenesis
Ma4613d **Testis** of rat, t.s. showing spermatogenesis
Ma4614d **Testis** of rabbit, t.s. showing spermatogenesis
Ma462d • **Testis** of bull, t.s. showing spermatogenesis
Ma4623f **Testis** of monkey, showing insufficiency, t.s.
Ma4624f **Testis** of monkey, showing over-activity, t.s.
Ma463d • **Epididymis** of bull, t.s.
Ma4631d **Epididymis** of rat, t.s.
Ma4632e **Testis and epididymis** of rat, t.s.
Ma4634e **Testis and epididymis** of cat, t.s.
Ma464d • **Sperm smear** of bull
Ma4642d **Sperm smear** of rat
Ma466d • **Spermatic cord (Ductus deferens)** of pig or rabbit, t.s.
Ma467d • **Seminal vesicle (Gl. vesiculosa)** of pig, t.s.
Ma4672d **Seminal vesicle (Gl. vesiculosa)** of rat, t.s.
Ma468d • **Prostate gland** of monkey, t.s.
Ma4683c **Prostate gland** of rat, t.s.
Ma469d • **Penis** of guinea pig, t.s.
Ma470d **Penis** of rabbit, t.s.

Nervous system

Ma511d • **Cerebral cortex** of cat or dog, t.s. routine stained
Ma512f • **Cerebral cortex**, t.s. Golgi's silver method to show the pyramid cells
Ma518f **Cerebral cortex,** t.s. stained after Held to show neuroglia cells
Ma562f **Cerebrum** of cat, sec. stained for medullated sheaths (Weigert) *
Ma514d • **Cerebellum** of cat or dog, t.s. routine stained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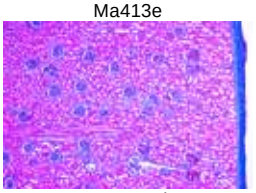
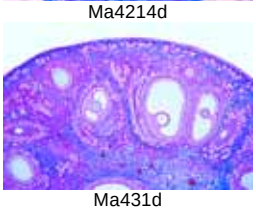
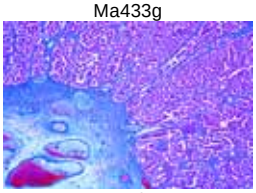

Ma4157d


Ma4214d


Ma431d


Ma433g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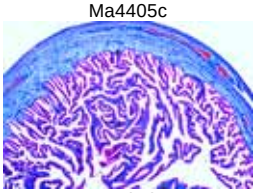
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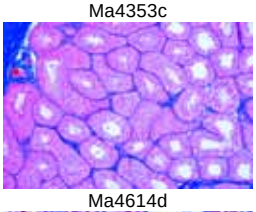
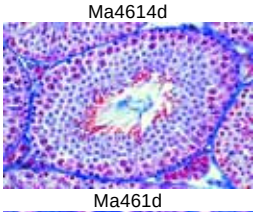
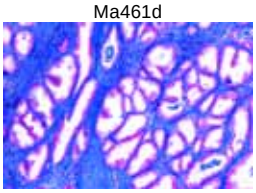
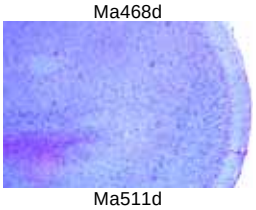
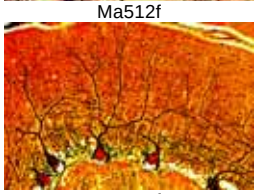

Ma4614d


Ma461d

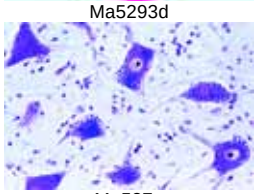

Ma468d


Ma511d


Ma512f


Ma515f


Ma5293d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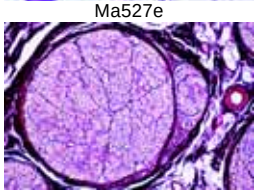
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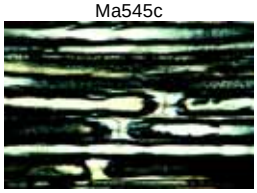
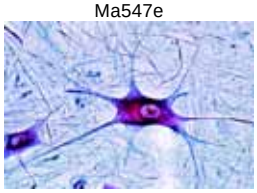
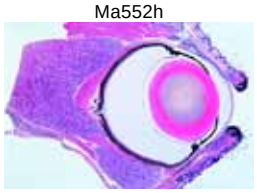

Ma547e


Ma551e


Ma552h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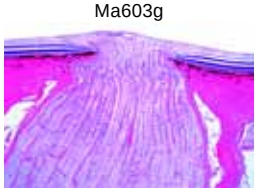
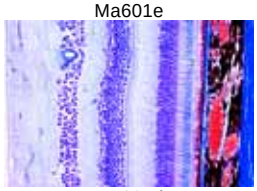

Ma601e


Ma605d

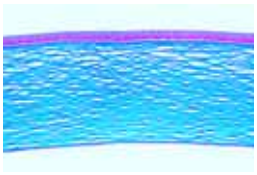
Ma515f • **Cerebellum**, t.s. Golgi's silver method to show the Purkinje cells
Ma5152f **Cerebellum**, t.s. stained by Cajal's method
Ma563f **Cerebellum** of cat, sec. stained for medullated sheaths (Weigert) *
Ma521e **Brain** of mouse, horizontal l.s. of the complete organ
Ma522e **Brain** of mouse, sagittal l.s. of the complete organ
Ma523f **Brain** of mouse, t.s. of brain in three different regions
Ma525d • **Medulla oblongata**, of rabbit, t.s.
Ma526d • **Spinal cord** of cat, t.s. routine stained
Ma527e **Spinal cord** of cat, section special stained for Nissl bodies
Ma528f **Spinal cord** of cat, t.s. silvered for nerve cells and fibres
Ma5285f **Spinal cord** of cat, t.s. stained after Klüver-Barrera
Ma529d **Spinal cord** of cat, l.s. routine stained
Ma5293d **Spinal cord** of pig, t.s.
Ma5294e • **Spinal cord** of cow, t.s. stained for Nissl bodies
Ma5295c **Spinal cord** of rabbit, t.s.
Ma5296d **Vertebra with spinal cord** of rat, t.s.
Ma531e **Spinal cord,** human, t.s. of cervical region
Ma532e **Spinal cord,** human, t.s. of thoracal region
Ma533e **Spinal cord,** human, t.s. of lumbar region
Ma564f **Spinal cord** of cat, sec. stained for medullated sheaths (Weigert) *
Ma534e **Spinal cord,** t.s. with dorsal root ganglion and portions of ventral and dorsal nerve roots
Ma542e • **Sympathetic ganglion** of cow or pig, t.s. with multipolar nerve cells
Ma543d **Spinal ganglion** of cow, t.s.
Ma541e **Ganglion semilunare** (G. Gasseri), t.s. shows unipolar nerve cells *
Ma540f **Ganglion** of cat, t.s. fixed and stained with osmic acid
Ma544c • **Peripheral nerve** of cow or pig, l.s. routine stained
Ma545c • **Peripheral nerve** of cow or pig, t.s. routine stained
Ma5453d **Peripheral nerve** of cat, l.s.
Ma547e • **Peripheral nerve**, teased material of osmic acid fixed material showing Ranvier's nodes and medullary sheaths
Ma546e **Peripheral nerve**, t.s. fixed and stained with osmic acid for medullary sheaths
Ma548e **Peripheral nerve**, l.s. of osmic acid fixed material shows Ranvier's nodes and medullary sheaths in section
Ma549c • **Optic nerve (Nervus opticus)** of calf or pig, t.s.
Ma550f **Entrance of optic nerve** into the retina, sag.sec.
Ma551e • **Motor nerve cells**, smear preparation from spinal cord of ox shows nerve cells and their appendages
Ma5513f **Motor nerve cells**, smear preparation from spinal cord of ox stained for Nissl bodies
Ma552h • **Motor nerve endings,** muscle stained with gold chloride showing the motor end plates *
Ma554e • **Pacinian corpuscles** in mesentery or pancreas of rabbit
Ma555e • **Grandry corpuscles** in t.s. through beak of duck
Ma556e **Merkel corpuscles** in section through snout of pig
Ma557f • **Meissner's corpuscles** of monkey, sec. showing tactile corpuscles

Organs of sense

Ma601e • **Eye** of cat, posterior part with retina, sagittal l.s.
Ma602e • **Eye** of cat, anterior part with iris, ciliary body, cornea, sagittal l.s.
Ma603g • **Eye** of rat or guinea pig, entire organ sagittal l.s. for general study
Ma6031h **Eye** of rat or guinea pig, entire organ, near median sagittal l.s. passing the entrance of optic nerve *
Ma608e • **Developing eyes** in t.s. of head from guinea pig embryo
Ma6034d • **Retina** of cat, t.s. for general study
Ma6035f **Retina** of cat, section passing through the entrance of optic nerve
Ma605d **Retina** of pig, thin sec. special stain for details of rods and cones
Ma606f **Retina** of pig, section passing through the entrance of optic nerve
Ma6062e **Retina** of pig, horizontal sec. for fine detail, t.s. of rods and cones
Ma6064e **Retina**, w.m. showing pigment cells
Ma607d • **Cornea** of eye from pig, sagittal l.s.
Ma6066e • **Lacrimal gland** of cat, t.s.
Ma609e • **Cochlea (internal ear)** from guinea pig, l.s. showing organ of Corti
Ma610e **Cochlea** from guinea pig, t.s.
Ma6103g **External and internal ear** with eardrum and cochlea, l.s.
Ma6105t **Crista ampullaris**, sec. through ear of guinea pig *
Ma612d • **Olfactory region** from nose of rabbit, t.s.
Ma6123d **Olfactory epithelium**, dog, t.s.
Ma6124d **Olfactory epithelium**, cat, t.s.
Ma614e • **Taste buds**, t.s. of papilla foliata in tongue of rabbit shows abundant taste buds, carefully stained
Ma6142e **Taste buds**, t.s. of papilla foliata in tongue of rabbit, sec. unstained special mounted for phase contrast observation
Ma615d **Taste buds**, t.s. of tongue of rat
Ma617e • **Tactile hairs** with blood sinus, l.s. or t.s.

Integument (Skin)

Ma632d • **Human skin from palm**, vertical sec. showing cornified layers, sweat glands, etc.
Ma633d **Human skin from palm**, horizontal sec.
Ma6334d • **Human body skin**, white, vertical sec.
Ma6335d **Human body skin**, negro, vertical sec.
Ma6336f **Human body skin**, white and negro, two vertical sec.
Ma6337f **Human skin**, sec. showing Pacinian corpuscles *
Ma6338f **Human skin**, sec. showing Meissner's corpuscles *
Ma635d • **Human scalp**, sagittal l.s. showing l.s. of hair follicles, sebaceous glands, etc.
Ma636d • **Human scalp**, horizontal sec. shows t.s. of hair follicles
Ma637d • **Human skin** from foetus, vertical sec. showing hair development
Ma638e • **Finger tip** from human foetus, sagittal l.s. of nail development
Ma6382e **Finger tip** from human foetus, t.s. of nail development
Ma639f **Foot of calf** embryo, sagittal l.s. showing hoof development
Ma6404c • **Skin with hairs**, cat, vertical sec.
Ma6405c **Skin of foot**, cat, vertical sec. showing stratum corneum and stratum germinativum
Ma641d **Skin** of pig, vertical sec.
Ma642d **Skin** of pig, horizontal sec.
Ma6427e **Corium** of pig, horizontal sec. stained for elastic fibres
Ma6422f **Skin** of pig embryo, t.s. showing injected vessels
Ma644d **Skin** of dog, vertical sec. routine stained for comparison
Ma643f **Skin** of dog, vertical sec. injected to show the blood vessels
Ma6443d **Skin** of guinea pig, vertical sec.
Ma6425d **Skin** from snout of calf, horizontal sec. for fine detail of the different layers of skin
Ma640c • **Eyelid** of rabbit, t.s.
Ma6402c **Eyelid** of cat, t.s. showing Meibomian gland
Ma647b • **Human hair**, w.m.
Ma649b **Hair (bristle) of pig,** w.m.
Ma6493b **Hair of ren**, w.m.
Ma652b **Hair of cat**, w.m.
Ma653b **Hair of camel**, w.m.
Ma651d **Mammalian hair**, composite slide of five types, w.m.: rabbit, muskrat, mink, seal, Persian lamb
Ma645c • **Mammary gland** of rabbit or mouse, active stage t.s.
Ma646c **Mammary gland** of rabbit or mouse, resting stage t.s.
Ma6461e **Mammary gland**, active and resting, two t.s. in one slide
Ma6465f **Mammary gland**, active, t.s. fixed and stained with osmic acid to show the milk fat
Ma6468d **Mammary gland** of cow, active t.s.
Ma6469d **Mammary gland** of cow, juvenile t.s.
Ma6467e **Nipple** of mammary gland, l.s.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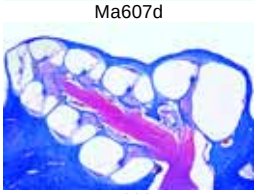
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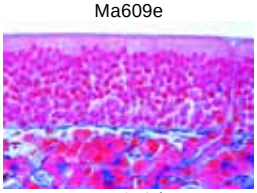
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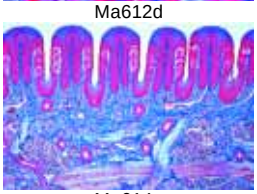
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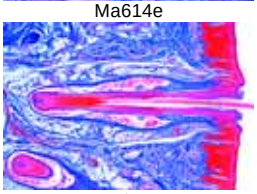
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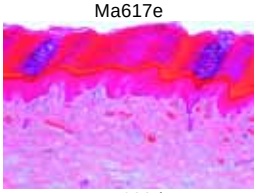
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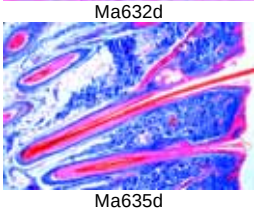
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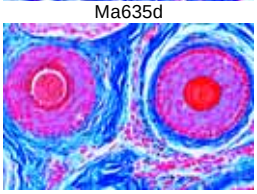
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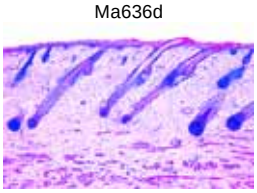
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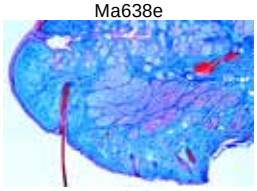
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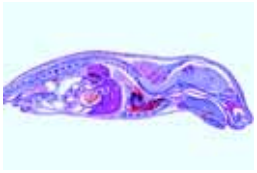
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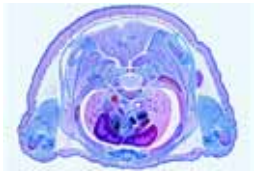
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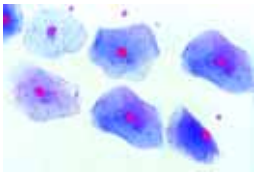
Ma713e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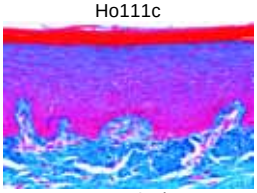
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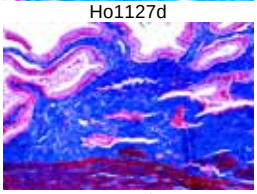
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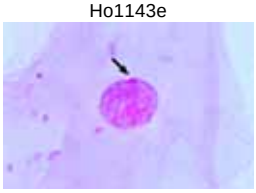
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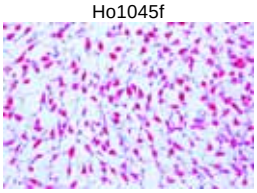
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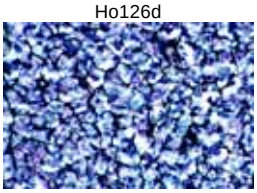
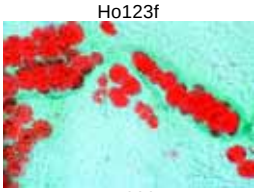

Ho123f


Ho1282e

General view of mammalian histology

Ma703g • **Young mouse**, sagittal l.s. through entire specimen passing the vertebral column
Ma704i **Young mouse**, median sagittal l.s. through entire specimen
Ma705g **Young mouse**, parasagittal l.s. through entire specimen
Ma706g • **Young mouse**, horizontal (frontal) l.s. through entire specimen
Ma708f **Young mouse**, t.s. of head in region before the eyes, with nasal region, tooth development, sinus hairs etc.
Ma709f • **Young mouse**, t.s. of head passing the eyes
Ma710f **Young mouse**, t.s. of head in region back to the eyes with brain
Ma712e • **Young mouse**, t.s. of thorax with heart, lungs, etc.
Ma713e • **Young mouse**, t.s. of abdomen with intestinal organs
Ma714d **Young mouse**, t.s. of leg

HUMAN HISTOLOGY

Epithelia and Cytology

Ho111c • **Squamous epithelium**, isolated cells from human mouth, smear
Ho1124e • **Stratified, non-cornified squamous epithelium**, section of oesophagus
Ho1127d **Stratified, cornified squamous epithelium**, in vertical sec. of human body skin
Ho114e • **Simple columnar epithelium**, in sec. of secreting tubules of human kidney
Ho1143e • **Columnar epithelium,** in t.s. of human gall bladder
Ho116e • **Simple ciliated columnar epithelium**, in t.s. of oviduct
Ho1163e • **Pseudostratified ciliated columnar epithelium**, trachea, t.s.
Ho118e **Simple cuboidal epithelium**, in sec. of human thyroid gland
Ho120e • **Transitional epithelium**, in sec. of human bladder
Ho1202e **Glandular epithelium**, in sec. of human colon with unicellular mucous glands
Ho1213d **Holocrine glands**, sebaceous glands from human skin, l.s.
Ho1214e **Eccrine glands**, in section of human salivary gland
Ho1215e **Mucous glands** from human intestine, colouring of goblet cells, PAS-HE
Ho1204e **Mesothelium**, sec. of human mesentery
Ho1205g • **Golgi apparatus**, section of jenunum silver stained *
Ho104h • **Human chromosomes** in smear from culture of blood, male
Ho1041i • **Human chromosomes** in smear from culture of blood, female
Ho1045f • **Barr bodies** (human sex chromatin) in smear from female squamous epithelium *

Connective and supporting tissues

Ho121e • **Areolar connective tissue**, human, streched and w.m.
Ho123f **Reticular fibres** in human spleen, t.s. silver steined
Ho126d • **Embryonic connective tissue** from human foetus, sec.
Ho127e • **Mucous tissue**, t.s. of umbilical cord (navel string) from foetus
Ho128e • **Adipose tissue,** human, sec. fat removed to show the cells
Ho1282e **Adipose tissue,** human, section stained for fat with Sudan III
Ho1292e • **White fibrous tissue,** tendon, human, l.s.
Ho1293e **White fibrous tissue,** tendon, human, t.s.
Ho1295e **Peritoneum,** human, t.s.
Ho130e • **Hyaline cartilage,** human t.s.
Ho1305e **Hyaline cartilage,** from human foetus, sec.
Ho133e **Sternal cartilage,** human sec.
Ho131e • **Yellow elastic cartilage,** human, sec. stained for elastic fibres
Ho1312e **Yellow elastic cartilage,** from human foetus sec.
Ho132f • **White fibrous cartilage,** human sec.
Ho1322f **White fibrous cartilage,** human intervertebral disc, sec.
Ho135e • **Compact bone,** human t.s. special stained for cells and canaliculi
Ho136e **Compact bone,** human l.s. special stained for cells and canaliculi
Ho1365e • **Spongy (cancellous) bone,** human t.s.
Ho1368h **Bone human,** ground thin, non-decalcified, t.s. and l.s. mounted in balsam *
Ho138e • **Bone development** (intracartilaginous), l.s. of foetal finger
Ho139e • **Bone development** (intermembranous), vertical l.s. of foetal skull-cap (cranial bone)
Ho141e **Joint** of human foetus, l.s.

Muscle tissues

Ho151e • **Striated (skeletal) muscle,** human l.s.
Ho1512f **Striated (skeletal) muscle,** human l.s., special stain of striations
Ho152e • **Striated (skeletal) muscle,** human t.s.
Ho1522g **Striated (skeletal) muscle,** isolated fibres, gold impregnation
Ho1524e **Striated (skeletal) muscle** from human foetus, l.s.
Ho154e • **Smooth (involuntary) muscle**, human l.s. and t.s.
Ho156e • **Heart (cardiac) muscle**, human l.s. and t.s.
Ho160f **Muscle-tendon junction**, human l.s.
Ho165g **Muscle types**, composite slides with l.s. of striated, smooth and heart muscles

Circulatory system

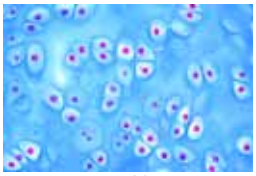
Ho171e **Artery,** human, t.s. routine stained
Ho172e • **Artery,** human, t.s. stained for elastic fibres
Ho1726e **Coronary artery,** human t.s.
Ho170e **Artery with valve,** human l.s. *
Ho173e **Vein,** human, t.s. routine stained
Ho174e • **Vein,** human, t.s. stained for elastic fibres
Ho1743e **Vena cava,** human t.s.
Ho175e **Artery and vein of smaller size,** human t.s. routine stained
Ho1751e **Artery and vein of smaller size,** human t.s. elastic fibres stained
Ho176e **Aorta,** human, t.s. routine stained
Ho1762e • **Aorta,** human, t.s. stained for elastic fibras
Ho1765e **Aortic valve,** human or sheep, t.s. *
Ho180c • **Blood smear,** human, Giemsa stain
Ho1802c **Blood smear,** human, Wright's stain

Respiratory system

Ho214f • **Trachea,** human t.s.
Ho215f **Trachea,** human l.s.
Ho2152e **Trachea** from human fetus t.s.
Ho2153f **Larynx**, human foetus, t.s.
Ho213f **Epiglottis,** human sec.
Ho2134f **Vocal cord,** human t.s.
Ho220e **Bronchus of lung,** human, t.s.
Ho216e • **Lung,** human, sec. routine stained
Ho217e **Lung,** human, sec. special stained for elastic fibres
Ho2183f **Lung,** human, thick section showing injected vessels
Ho219e **Lung from human foetus,** sec.

Lymphatic system

Ho231e • **Lymph node,** human t.s.
Ho232e **Lymph node,** of human foetus, t.s.
Ho233e • **Tonsil (Tonsilla palatina),** human t.s.
Ho234e • **Spleen,** human t.s.
Ho2352e **Spleen** from human foetus t.s.
Ho236e • **Red bone marrow**, human rib t.s.
Ho2363e **Red bone marrow,** human fetus, t.s., Giemsa stained
Ho237f **Red bone marrow**, human, smear, Giemsa stained
Ho2372e **Developing blood cells** in sec. of liver of human foetus
Ho2376e **Thymus** from human foetus, sec.
Ho238f • **Thymus** from human child, t.s.
Ho239f **Thymus** from human adult, t.s.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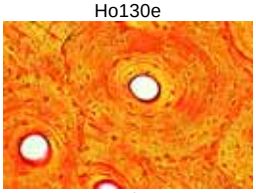
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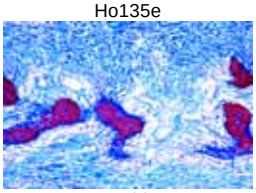
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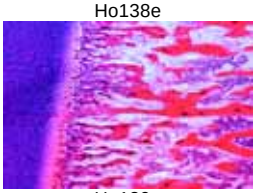
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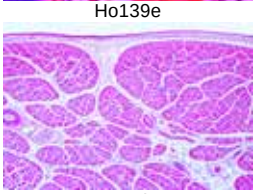
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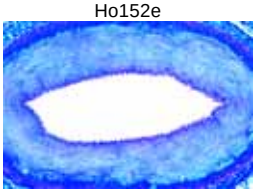
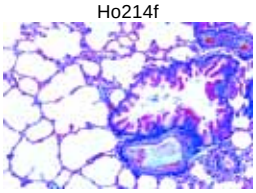

Ho171e


Ho173e


Ho214f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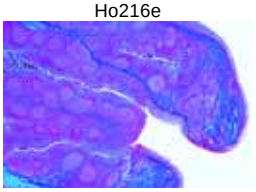
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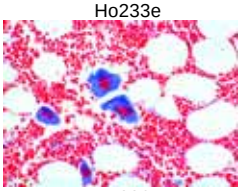
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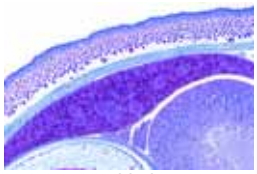
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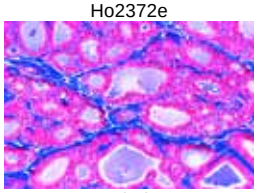
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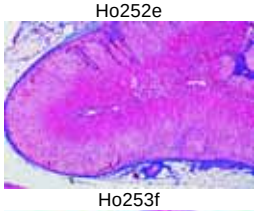
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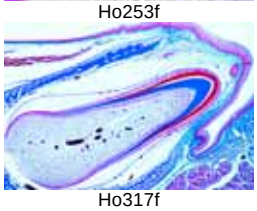
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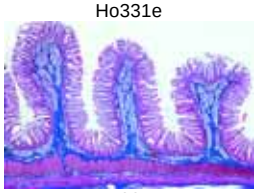
Tooth


Ho331e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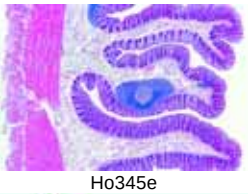
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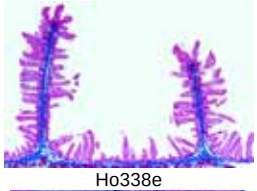
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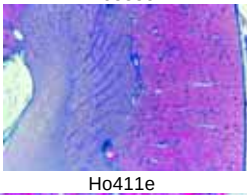
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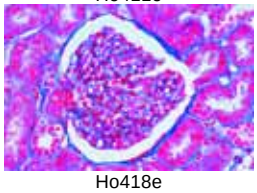

Ho418e

Endocrine glands

Ho252e • **Thyroid gland (Gl. thyreoidea),** human t.s. showing colloid
Ho2523f **Parathyroid gland (Gl. parathyreoidea),** human t.s. *
Ho253f • **Adrenal gland (Gl. suprarenalis),** human t.s.
Ho255f • **Pituitary gland (Hypophysis),** human t.s. *
Ho257f • **Pineal body (Epiphysis),** human t.s. *
Ho254f • **Pancreas** with islets of Langerhans, human, sec.

Digestive system

Ho310f • **Lip,** human t.s.
Ho3102e **Lip,** human foetus, t.s.
Ho311e • **Tooth,** human, t.s. of crown
Ho312e **Tooth,** human, t.s. of root
Ho313f **Tooth,** human, complete l.s.
Ho3137g **Tooth,** human, ground thin, t.s. *
Ho3138k **Tooth,** human, ground thin, l.s. *
Ho315f **Tooth development** from human foetus, early stage l.s.
Ho316f • **Tooth development** from human foetus, medium stage l.s.
Ho317f **Tooth development** from human foetus, later stage l.s.
Ho322e • **Tongue,** human, t.s.
Ho3234f **Tongue,** human, sec. with filiform papillae
Ho3235f **Tongue,** human, sec. with fungiform papillae
Ho324e **Tongue** from human foetus, t.s.
Ho326e • **Soft palate,** human t.s.
Ho327e **Hard palate,** human t.s.
Ho331e • **Oesophagus,** human t.s.
Ho333e **Stomach,** cardiac region, human t.s.
Ho334e • **Stomach,** fundic region, human t.s.
Ho335e **Stomach,** pyloric region, human t.s.
Ho3361e **Stomach** from human foetus, t.s.
Ho3365f **Stomach – duodenum** junction, human, l.s.
Ho337e • **Duodenum**, human t.s.
Ho3373f **Duodenum**, human t.s. mucous glands stained PAS-HE
Ho338e **Jejunum,** human t.s.
Ho339e **Ileum,** human t.s.
Ho340e **Small intestine** from human foetus, t.s.
Ho341e • **Vermiform appendix,** human t.s.
Ho345e • **Colon,** human t.s.
Ho347e **Rectum,** human t.s.
Ho3472f **Rectum-anus** junction, human l.s.
Ho351e • **Parotid gland (Gl. parotis),** human t.s.
Ho352e • **Submaxillary gland (Gl. submandibularis),** human t.s.
Ho353e • **Sublingual gland (Gl. sublingualis),** human t.s.
Ho354e • **Pancreas**, human t.s.
Ho3543e **Pancreas** from human foetus, t.s.
Ho357e • **Liver,** human t.s.
Ho359e **Liver,** human foetus, sec.
Ho3592f **Liver,** human foetus, sec. showing injected vessels
Ho360f **Liver,** human, sec. staining of glycogen
Ho362e • **Gall bladder,** human t.s.

Excretory system

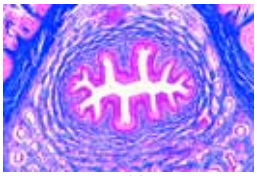
Ho411e • **Kidney,** human t.s.
Ho418e **Renal papilla,** human t.s.
Ho419e **Kidney,** human foetus, t.s.
Ho4195f **Kidney,** human, t.s. showing injected vessels
Ho421e • **Ureter,** human t.s.
Ho422e • **Urinary bladder,** human t.s.
Ho4225e • **Urethra,** human, t.s.
Ho423e **Urethra,** prostatic part, human t.s.

Reproductive system

Ho428f **Ovary**, human foetus, t.s. *
Ho429f • **Ovary**, mature (active phase), human t.s.
Ho430f **Ovary**, senile (inactive phase), human t.s.
Ho434f • **Ovary** with corpus luteum, human t.s.
Ho4343f **Ovary** with corpus albicans, human t.s.
Ho435e • **Oviduct (fallopian tube),** t.s. in region of ampulla
Ho4352e **Oviduct (fallopian tube),** t.s. in region of fimbria
Ho4365f **Uterus,** human foetus, t.s.
Ho4368e • **Uterus,** human, t.s. for general structure
Ho437f **Uterus,** human, proliferative stage t.s.
Ho438f **Uterus,** human, secretory stage t.s.
Ho439f **Uterus,** human, desquamative stage t.s.
Ho4395f **Uterus,** human, pregnant (gravid), t.s.
Ho4397f **Cervix uteri,** human l.s.
Ho440e • **Placenta,** human t.s.
Ho4402f **Placenta,** implantation site, human t.s.
Ho4404e • **Umbilical cord (navel string),** human t.s.
Ho445h **Human foetus,** l.s.
Ho450e • **Vagina**, human t.s.
Ho460f **Testis** from human child, t.s.
Ho461f • **Testis** from human adult, mature stage t.s. with spermatogenesis
Ho4628e **Efferent tubules** of testis, human t.s.
Ho463e **Epididymis**, human t.s.
Ho464e • **Sperm smear**, human
Ho466e • **Spermatic cord (Ductus deferens) of** human t.s.
Ho4663e **Spermatic cord (Ampulla ductus deferens),** human t.s.
Ho467e • **Seminal vesicle (Glandula vesiculosa),** human t.s.
Ho4678e **Prostate** of young man, t.s.
Ho468e • **Prostate** of old man, t.s.
Ho469g **Penis** from human foetus, t.s. *

Nervous system

Ho511e • **Cerebral cortex,** human, t.s. routine stained with hematoxylin-eosin
Ho512g **Cerebral cortex,** human, t.s. silvered
Ho518g **Cerebral cortex**, human, t.s. stained after Held for neuroglia cells
Ho5125e **Cerebral cortex** from human foetus, t.s. routine stained
Ho5126g **Cerebral cortex** from human foetus, t.s. silvered
Ho514e • **Cerebellum,** human, t.s. routine stained with hematoxylin-eosin
Ho515g **Cerebellum,** human, t.s. silvered
Ho5155e **Cerebellum** from human foetus, t.s. routine stained with hematoxylin-eosin
Ho5156g **Cerebellum** from human foetus, t.s. silvered
Ho5158f **Cerebellum,** human, t.s., Weigert stained for myeline sheaths
Ho516g **Cerebrum and cerebellum** composite slide, human, t.s. routine stained
Ho5163g **Developing brain** of human foetus, sagittal sec.
Ho517g **Brain stem,** human t.s.
Ho5368f **Chiasma opticum,** human t.s. routine stained with hematoxylin-eosin
Ho5232f **Chiasma opticum,** human, stained after Klüver - Barrera
Ho5233f **Corpus callosum,** human, stained after Klüver - Barrera
Ho5235f **Pons,** human, t.s. routine stained with hematoxylin-eosin
Ho5236g **Pons,** human, t.s. silvered
Ho5238f **Thalamus,** human, stained after Klüver - Barrera
Ho5239f **Pendunculus cerebri,** human, Klüver - Barrera
Ho525f • **Medulla oblongata,** human, t.s. routine stained with hematoxylin-eosin
Ho5251f **Medulla oblongata,** human, t.s. Klüver - Barrera
Ho5252t **Medulla oblongata,** human, t.s. silvered
Ho5254f **Medulla oblongata** from human foetus, t.s.
Ho530e • **Spinal cord,** human, t.s. for general structure, routine stained with hematoxylin-eosin
Ho534g **Spinal cord,** human, t.s. silvered
Ho535e **Spinal cord,** human, l.s. routine stained with hematoxylin-eosin
Ho531e **Spinal cord,** human, t.s. cervical region, routine stained
Ho5315f **Spinal cord,** human, t.s. cervical, Klüver - Barrera
Ho532e **Spinal cord,** human, t.s. thoracic region, routine stained
Ho5325f **Spinal cord,** human, t.s. thoracic, Klüver - Barrera
Ho533e **Spinal cord,** human, t.s. lumbar region, routine stained
Ho5335f **Spinal cord,** human, t.s. lumbar, Klüver - Barrera
Ho5365f **Dorsal root ganglion,** human t.s. routine stained
Ho5366g **Dorsal root ganglion,** human t.s. silvered
Ho542f • **Sympathetic ganglion,** human t.s. routine stained
Ho5423g **Sympathetic ganglion,** human t.s. silvered
Ho543f **Spinal ganglion,** human t.s. routine stained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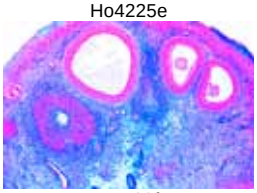
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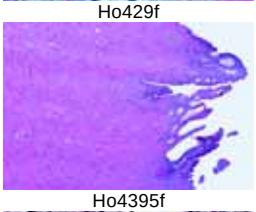
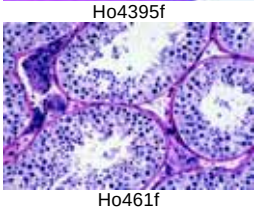

Ho4395f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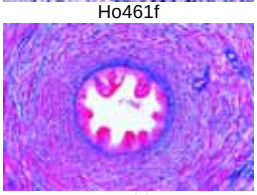
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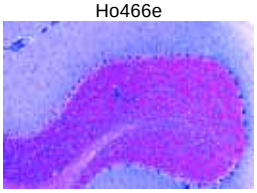
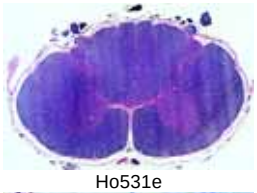

Ho514e


Ho5155e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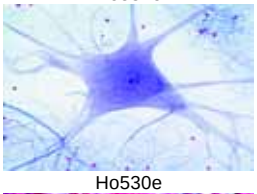
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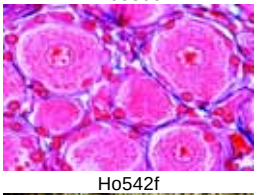
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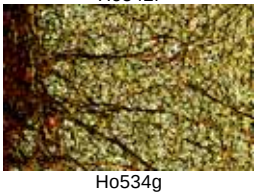
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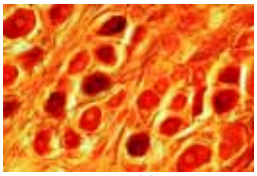
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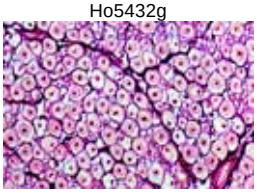
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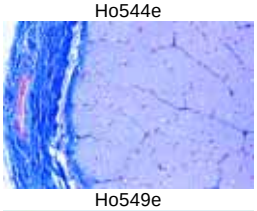
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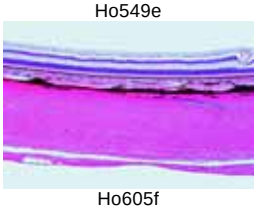
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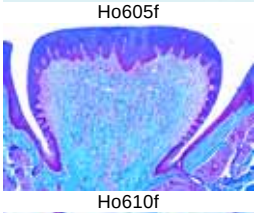
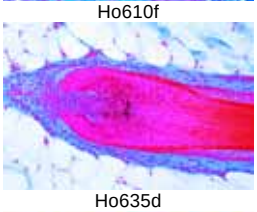

Ho610f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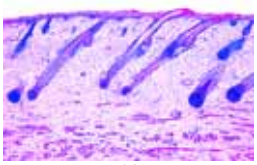
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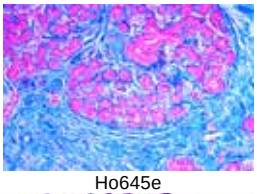
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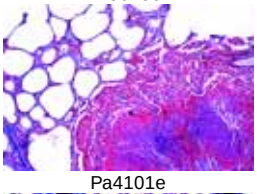
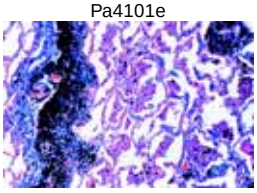
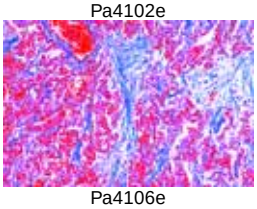

Pa4101e


Pa4102e


Pa4106e

Ho5432g **Spinal ganglion,** human t.s. silvered
Ho544e • **Peripheral nerve,** human t.s. routine stained with hematoxylin-eosin
Ho545e **Peripheral nerve,** human l.s. routine stained with hematoxylin-eosin
Ho5453f **Peripheral nerve,** human t.s. and l.s. routine stained with hematoxylin-eosin
Ho549e • **Optic nerve,** human t.s. routine stained with hematoxylin-eosin

Organs of sense

Ho605f • **Retina** from eye, human t.s. *
Ho607e • **Cornea** from eye, human t.s.
Ho610f **Wallate papillae** with taste buds, human t.s. *
Ho612f • **Olfactory epithelium**, human t.s.
Ho6103g **Internal ear**, human foetus, t.s. *
Ho5572t **Nerves and nerve endings** in sec. of skin from palm, silvered *
Ho5573f • **Touch corpuscles** in human skin, t.s. routine stained
Ho5574t **Touch corpuscles** in human skin, t.s. silver stained *

Integument (Skin)

Ho632e • **Skin from finger tip**, human, vertical l.s. quadruple stained
Ho633e **Skin from palm,** human, vertical l.s.
Ho6334d • **Body skin,** white, vertical l.s.
Ho6335d **Body skin,** negro, vertical l.s.
Ho6336f **Body skin,** white and negro, two vertical l.s.
Ho634e **Skin from armpit** with apocrine glands, vertical l.s.
Ho635d • **Scalp**, vertical l.s. shows l.s. of hair follicles, human, quadruple stained
Ho636d • **Scalp**, horizontal l.s. shows t.s. of hair follicles, human, quadruple stained
Ho637e **Scalp** of human foetus, vertical l.s. shows l.s. of hairs
Ho638e • **Finger tip** of human foetus, sagittal l.s. showing nail development
Ho639f **Finger nail** l.s.
Ho640e **Eyelid**, human, t.s.
Ho645e • **Mammary gland**, active, human t.s.
Ho646e **Mammary gland**, resting, human t.s.
Ho648e **Mammary gland**, senile, human t.s.

HUMAN PATHOLOGY *

Lung and trachea

Pa4101e **Miliary tuberculosis of lung**
Pa4102e **Anthracosis of lung**
Pa4152e **Tuberculous coal lung**
Pa4103e **Croupous pneumonia**
Pa4104e **Chronic tuberculous pulmonary cavity with bacteria** *
Pa4105e **Cyanotic induration of lung**
Pa4106e **Chronic pneumonia**
Pa4107e **Chronic pulmonary emphysema**
Pa4108e **Hemorrhagic infarct of lung**
Pa4109e **Necrotic (cheesy) pneumonia**
Pa4110e **Influenzal pneumonia**
Pa4180e **Pneumonia, sec. of lung**
Pa4250e **Abscessus lumbalis**
Pa4153e **Carcinoma of lung**
Pa4182f **Diphtheria, sec. of trachea** *

Blood, spleen and lymph system

Pa4112e **Infarct of spleen**
Pa4115e **Amyloid degeneration of spleen**
Pa4123e **Erysipelas of spleen**
Pa4113g **Malaria melanemia of spleen**
Pa4111e **Myeloid sarcoma of spleen**
Pa4117e **Chronic myeloid leukemia of spleen**
Pa4124e **Tuberculosis of lymph glands**
Pa4121e **Lymphangio-endothelioma of neck**
Pa4126e **Myeloid sarcoma of lymph node**
Pa4120e **Lymphosarcoma mediastini**
Pa4167e **Tonsillitis, sec. of palatine tonsil**
Pa4122e **Myxoma mandibulae**
Pa4162g **Leukaemia, blood smear** *
Pa4163g **Anaemia, blood smear** *

Heart and vessels

Pa4114e **Myocarditis chronica acute recidivans**
Pa4116e **Adiposis of heart**
Pa4118e **Cardiac callosity**
Pa4119e **Cor villosum**
Pa4160e **Arteriosclerosis**

Glands

Pa4129e **Goiter of thyroid gland, Struma colloides**
Pa4165e **Struma nodosa, thyroid gland**
Pa4164e **Adenoma of thyroid gland, sec.**
Pa4125e **Scirrhous carcinoma of thyroid gland**
Pa4127e **Fibroepithelial mixed tumor of parotid gland**
Pa4128e **Carcinoma medullare glandulae**
Pa4232e **Fibroadenoma of breast**
Pa4237e **Fibroadenoma intracanaliculare of mamma**
Pa4234e **Scirrhous carcinoma of breast**
Pa4247e **Carcinoma solidum simplex of breast**
Pa4159e **Adenoma of adrenal gland**

Intestinal tract

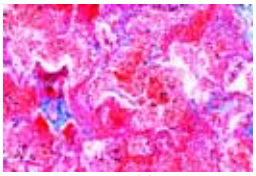
Pa4147e **Necrotic oesophagitis**
Pa4155e **Carcinoma of stomach**
Pa4154e **Carcinoma of large intestine**
Pa4137e **Adenocarcinoma of colon**
Pa4184e **Thickening of intestine**
Pa4185f **Bleeding of intestine by sublimate poisoning**
Pa4166e **Inflammation of appendix**
Pa4132e **Gelatinous carcinoma of rectum**
Pa4138e **Colitis dysenterica Shiga-Kruse**

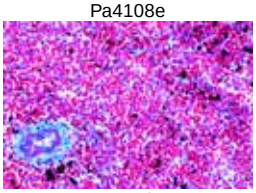
Liver

Pa4130e **Miliary tuberculosis of liver**
Pa4172e **Fatty degeneration of liver**
Pa4133e **Parenchymatous and fatty degeneration of liver**
Pa4148e **Parenchymatous degeneration of liver**
Pa4143e **Amyloid degeneration of liver**
Pa4203e **Liver cirrhosis**
Pa4134e **Pigmentary cirrhosis of liver**
Pa4141e **Cyanotic atrophy of liver (nutmeg liver)**
Pa4144e **Brown atrophy of liver**
Pa4142e **Hemorrhagic necrosis of liver (eclampsia)**
Pa4135e **Hemosiderosis of liver**
Pa4146e **Icterus hepatis**
Pa4149e **Cavernous hemangioma of liver**
Pa4173e **Liver carcinoma**
Pa4140e **Carcinoma of liver, primary**
Pa4136e **Metastasis of liver**
Pa4174e **Peritoneal metastasis of hepatoma**
Pa4201e **Liver metastasis from a melanosarcoma recti**
Pa4145e **Lymphatic leukemia of liver**
Pa4191e **Inflammation of gall bladder,**
Pa4202e **Malignant tumor of gall bladder**
Pa4150f **Congenital syphilis of liver (feuerstein liver)** *
Pa4131g **Congenital syphilis of liver, silvered for spirochaetes** *
Pa4139f **Cirrhosis hepatis luetica** *

Kidney and urinary organs

Pa4213e **Tuberculosis of kidney**
Pa4215e **Parenchymatous degeneration of kidney**
Pa4207e **Amyloid degeneration of kidney**
Pa4218e **Glycogenosis of kidney**
Pa4216e **Acute nephritis**
Pa4217e **Acute hemorrhagic nephritis (bleeding of kidney)**
Pa4206e **Chronic glomerulonephritis**
Pa4210e **Septic embolic nephritis**
Pa4205e **Cardiac kidney (icterus, jaundice)**
Pa4219e **Glomerularatrophy of kidney (cirrhosis)**


Pa4108e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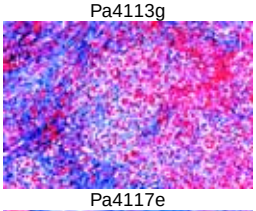
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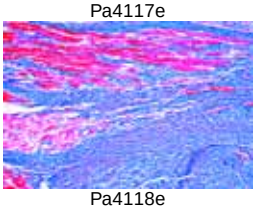
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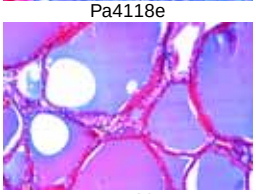
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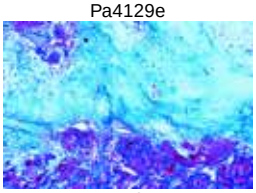
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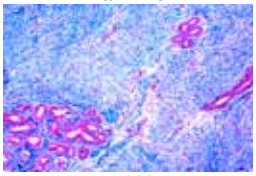
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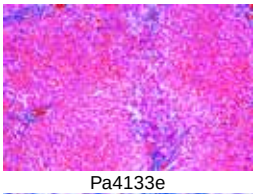
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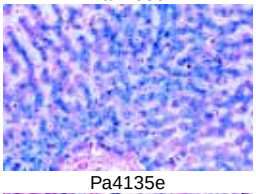
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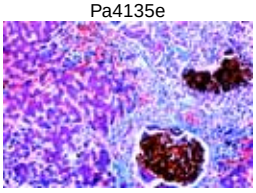
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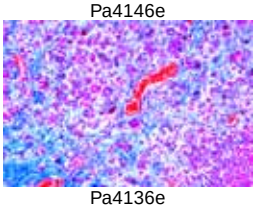
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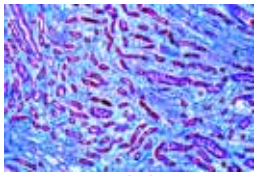
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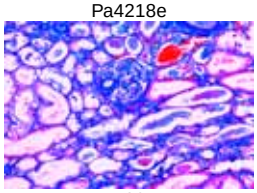
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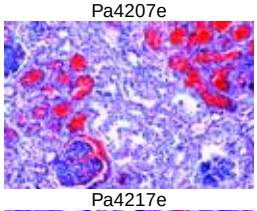
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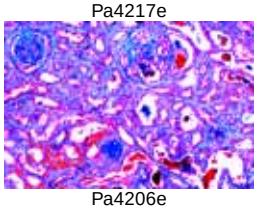
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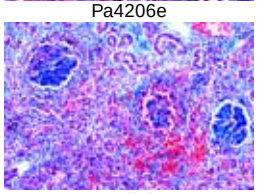
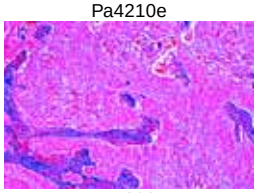
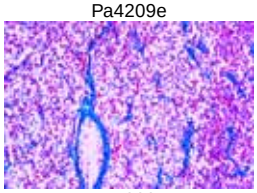

Pa4210e


Pa4209e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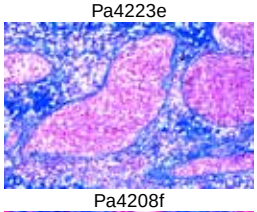
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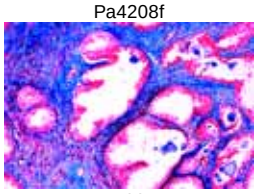
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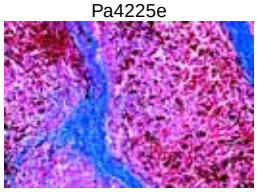
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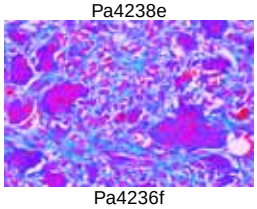

Pa4236f

Pa4221e **Hypernephroma of kidney**
Pa4175g **Syphilis of kidney**
Pa4181e **Papilloma of urinary bladder**

Reproductive organs

Pa4224e **Cyst of ovary**
Pa4211e **Cystadenoma papilliferum of ovary**
Pa4220e **Adenoma of ovary**
Pa4222e **Malignant ovarian tumor**
Pa4169e **Teratoma of ovary**
Pa4204e **Myoma of uterus**
Pa4226e **Fibromyoma uteri**
Pa4209e **Carcinoma cervicis uteri**
Pa4212e **Papilloma of uterine fundus**
Pa4188e **Atrophy of testis**
Pa4214f **Undescended testicle with hyperplasia of Leydig's cells**
Pa4187e **Testis, icterus (jaundice)**
Pa4223e **Sarcoma of testicle**
Pa4208f **Gumma of testicle**
Pa4189f **Inhibition of spermatogenesis, testis** (subject to hormone disorder) *
Pa4225e **Hypertrophy of the prostate**
Pa4190e **Carcinoma of praeputium**

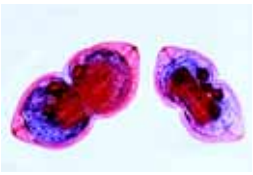
Nervous system

Pa4227e **Glioma cerebri**
Pa4228e **Ganglioneuroma myelinicum (neuroma)**
Pa4161f **Meningitis**

Skin, locomotor system

Pa4231e **Hemangioma simplex hypertrophicum subcutaneum**
Pa4230e **Foreign body granuloma with hemosiderin and giant cells**
Pa4229e **Organized venous thrombosis of muscle**
Pa4248e **Fat embolism after fracture of the leg**
Pa4244e **Zenker's degeneration of M. rectus abdominis (influenza)**
Pa4242e **Myxofibroma of abdominal wall**
Pa4241e **Myxoma of thigh**
Pa4239e **Sarcoma of thigh**
Pa4240e **Fibroma of skin**
Pa4245e **Basaloma**
Pa4235e **Chondroma of pubic bone**
Pa4238e **Melanosarcoma of skin**
Pa4156e **Carcinoma of squamous epithelium of skin**
Pa4233e **Spindle cell sarcoma**
Pa4236f **Giant cell sarcoma of maxilla** *
Pa4243e **Atheroma of head** *
Pa4249g **Pustule of variola vera** *
Pa4246e **Cicatricial tissue**

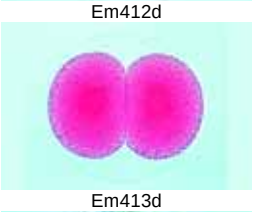
EMBRYOLOGY


Em225e

Embryology of the mussel (Bivalvia, Pelecypoda) *

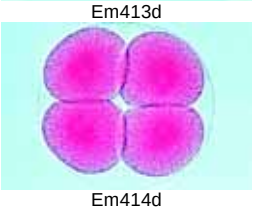
Em211e **Mussel embryology** (Lamellibranchiata, Bivalvia or Pelecypoda). Unfertilized and fertilized ova w.m. *
Em213e **Mussel embryology.** Zygote, two-cell and four-cell embryos w.m.
Em215s **Mussel embryology.** Early zygote through late cleavage. Polar bodies, polar lobes and spiral cleavage *
Em217e **Mussel embryology.** Blastula w.m. *
Em218e **Mussel embryology.** Gastrula w.m. *
Em219f **Mussel embryology.** Trochophore larva w.m. *
Em221s **Mussel embryology.** Veliger larvae, early and later stages *
Em223e **Mussel embryology.** Veliger larva w.m. *
Em225e **Mussel embryology.** Glochidia larva w.m.


Em412d


Em413d

Embryology of insecta *

Em301g **Acheta,** cricket, egg showing maturation division w.m. *
Em302g **Acheta,** superficial cleavage *
Em3021g **Acheta.** first cleavage w.m. *
Em303g **Acheta,** superficial cleavage, nuclei migrating to surface *
Em304g **Acheta,** w.m. of egg showing formation of germ layer *
Em305g **Acheta,** w.m. of egg with young germ *
Em306g **Acheta,** w.m. of egg shows early blastokinesis, germ starts to roll in *
Em307g **Acheta,** w.m. of egg shows late blastokinesis, germ with limb buds *
Em308g **Acheta,** w.m. of egg showing rolling out of the germ *
Em309f **Insect,** t.s. of egg showing nuclei migrating to surface, cleavage
Em310f **Insect,** t.s. of egg showing superficial cleavage in the blastoderm
Em311f **Insect,** t.s. of egg showing young germ with primitive streak
Em312f **Insect,** t.s. of egg showing formation of amnion and serosa
Em313f **Insect,** t.s. of egg showing fusion of the embryonic envelopes
Em314f **Insect,** t.s. of older germ showing process of differentiation in ectoderm and mesoderm
Em315f **Insect,** t.s. of older germ in region of head
Em316g **Carausius,** walking stick, w.m. of germ with primordium of head, limb buds, neural groove, coelom *
Em317f **Carausius,** sagittal l.s. of egg with early germ
Em318f **Carausius,** sagittal l.s. of egg with medium germ
Em319f **Carausius,** sagittal l.s. of egg with later germ
Em320f **Carausius,** sagittal l.s. of egg with germ ready for hatching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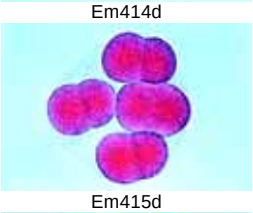
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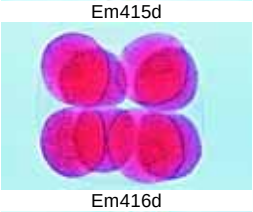
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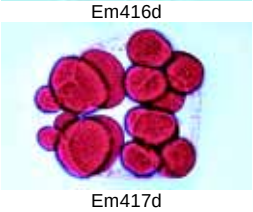
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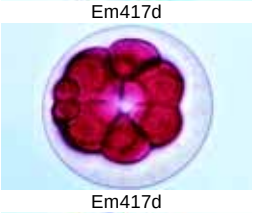
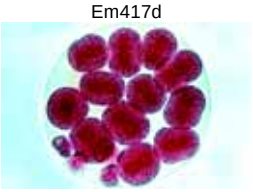

Em417d

Embryology of the sea-urchin (Psammechinus miliaris)

Em411d **Sea-urchin** embryology (Psammechinus miliaris), unfertilized eggs w.m.
Em412d **Sea-urchin** embryology. Fertilized eggs w.m.
Em413d **Sea-urchin** embryology. Two cells w.m.
Em414d **Sea-urchin** embryology. Four cells w.m.
Em415d **Sea-urchin** embryology. Eight cells w.m.
Em416d **Sea-urchin** embryology. Sixteen cells w.m.
Em417d **Sea-urchin** embryology. Thirty two cells w.m.
Em418d **Sea-urchin** embryology. Morula w.m.
Em419d **Sea-urchin** embryology. Blastula w.m.
Em420d **Sea-urchin** embryology. Beginning gastrulation w.m.
Em421d **Sea-urchin** embryology. Progressive gastrulation w.m.
Em422d **Sea-urchin** embryology. Pluteus larva w.m.


Em417d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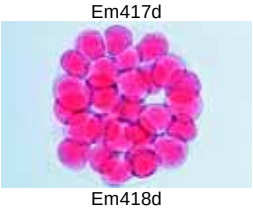
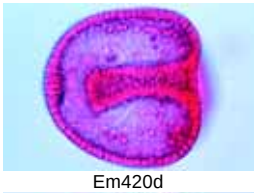
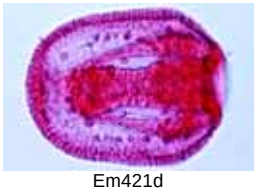
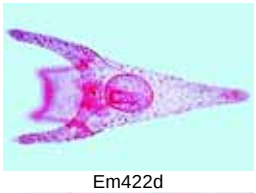

Em418d

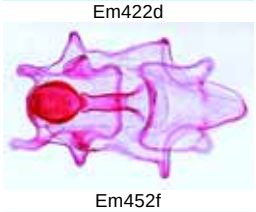

Em418d


Em419d

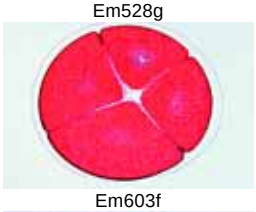

Em420d


Em421d


Em422d

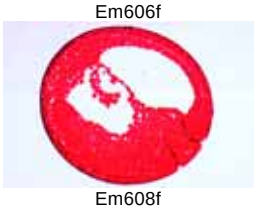

Em452f


Em528g


Em603f


Em604f


Em606f


Em608f

Embryology of the starfish (Asterias rubens) *

Em431d **Starfish** embryology (Asterias rubens). Ovary t.s. showing ova of large size
Em432d **Starfish** embryology. Testis t.s. with developing sperm
Em434e **Starfish** embryology. Sperm smear
Em435e **Starfish** embryology. Germinal vesicle stage w.m.
Em436e **Starfish** embryology. Unfertilized ova w.m.
Em437e **Starfish** embryology. Fertilized ova w.m. Zygote with polar bodies
Em438e **Starfish** embryology. Two cell stage w.m.
Em439e **Starfish** embryology. Four cell stage w.m.
Em440e **Starfish** embryology. Eight cell stage w.m.
Em441e **Starfish** embryology. Sixteen cell stage w.m.
Em443e **Starfish** embryology. Thirty-two cell stage w.m.
Em444e **Starfish** embryology. Sixty-four cell stage w.m.
Em447e **Starfish** embryology. Early and late blastula w.m.
Em448e **Starfish** embryology. Early and late gastrula w.m.
Em451f **Starfish** embryology. Early bipinnaria larva w.m.
Em452f **Starfish** embryology. Late bipinnaria larva w.m.
Em456s **Starfish** embryology. Brachiolaria larva w.m.
Em458s **Starfish** embryology. Young starfish w.m.

Embryology of the Amphioxus (Branchiostoma lanceolatum)

Em511g **Branchiostoma** embryology. Unfertilized ova w.m. *
Em516k **Branchiostoma** embryology. Two to sixteen cells stage w.m. *
Em519g **Branchiostoma** embryology. Thirty-two and sixty-four cells stage w.m. *
Em522g **Branchiostoma** embryology. Blastula stage w.m. *
Em524g **Branchiostoma** embryology. Gastrula stage w.m. *
Em526g **Branchiostoma** embryology. Early larva w.m. *
Em528g **Branchiostoma** embryology. Late larva w.m. *

Embryology of the frog (Rana sp.)

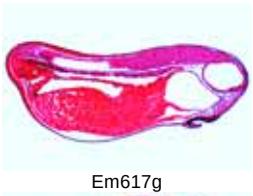
Em601f **Frog,** uncleaved egg, t.s.
Em602f **Frog,** egg, two cell stage (first cleavage) l.s.
Em603f **Frog,** egg, four cell stage (second cleavage) t.s.
Em604f **Frog,** egg, eight cell stage (third cleavage) l.s.
Em6045f **Frog,** egg, sixteen cells l.s.
Em605f **Frog,** morula l.s. with micro- and macromeres
Em606f **Frog,** blastula l.s. showing blastocoel
Em607f **Frog,** early gastrula, sagittal l.s. shows formation of germ layers and dorsal lip
Em608f **Frog,** later gastrula (yolk plug stage), sagittal l.s. with germ layers, yolk plug, blastocoel, primary intestinal cavity
Em609f **Frog,** early neurula, t.s. showing the neural plate
Em610f **Frog,** medium neurula, t.s. showing the neural groove
Em611f **Frog,** late neurula with neural tube, t.s. through the intestinal region
Em612f **Frog,** late neurula with neural tube, t.s. through the frontal region
Em613f **Frog,** late neurula stage with neural tube, sagittal l.s.
Em614f **Frog,** early tail bud stage, t.s. through the head region
Em615f **Frog,** early tail bud stage, t.s. through the body region
Em616f **Frog,** early tail bud stage, sagittal l.s.
Em617g **Frog,** early tail bud stage, near median sagittal l.s. with forebrain, neural tube, notochord, digestive tract *
Em618f **Frog,** late tail bud stage, t.s. through the head region
Em619f **Frog,** late tail bud stage, t.s. of body region with processes of differentiation in mesoderm
Em6195f **Frog,** late tail bud stage, t.s. in region of pronephros
Em620f **Frog,** late tail bud stage, frontal l.s. with differentiation of coelom sacs
Em621f **Frog,** hatching stage, t.s. of head with developing eyes
Em622f **Frog,** hatching stage, t.s. through region of heart, gills
Em623f **Frog,** hatching stage, t.s. through the mid-body
Em624f **Frog,** hatching stage, sagittal l.s.
Em625e **Frog,** young tadpole, t.s. through the region of the head
Em626e **Frog,** young tadpole, t.s. through the region of gills
Em627e **Frog,** young tadpole, t.s. through the region ofabdomen
Em628f **Frog,** young tadpole, sagittal section of entire specimen
Em629f **Frog,** young tadpole, frontal (horizontal) section of entire specimen
Em630e **Frog,** older tadpole, t.s. through the region of head
Em631e **Frog,** older tadpole, t.s. through the region of gills
Em632e **Frog,** older tadpole, t.s. in region of heart and lungs
Em633e **Frog,** older tadpole, t.s. through the region of abdomen
Em6333f **Frog,** older tadpole, sagittal sec. through the entire specimen
Em634f **Frog,** older tadpole, section through the limb bud

Embryology of the chicken (Gallus domesticus)

Em701f **Chicken,** 12 hour, t.s. through the primitive streak
Em702g **Chicken,** 12 – 24 hour, l.s. through the primitive streak *
Em703f **Chicken,** 12 – 24 hour, t.s. with neural plate
Em704f **Chicken,** 24 hour, t.s. with neural groove, notochord, germinal layers, somites
Em7042f **Chicken,** 24 hour, t.s. through the head fold region
Em7043f **Chicken,** 24 hour, t.s. through the intestinal region
Em7044f **Chicken,** 24 hour, t.s. through the pericardial region t.s.
Em7047f **Chicken,** 24 hour, l.s. through the entire specimen
Em705f **Chicken,** 36 hour, t.s. with neural tube, notochord, differentiation of mesoderm (myotom, nephrotom and splanchnotom)
Em706f **Chicken,** 36 hour, t.s. of anterior region with developing heart (pericardial region)
Em708g **Chicken,** 36 – 48 hour, sagittal l.s., formation of the somites *
Em709f **Chicken,** 48 hour, t.s. through the region of the head
Em710f **Chicken,** 48 hour, t.s. through the region of heart
Em711f **Chicken,** 48 hour, t.s. showing neural tube, mesoderm
Em712g **Chicken,** 48 hour, sagittal l.s. through primitive node, formation of coelom, Vena terminalis *
Em713g **Chicken,** 48 – 60 hour, horizontal l.s. with brain, heart, and somites *
Em714f **Chicken,** 60 hour, t.s. through the region of head
Em715f **Chicken,** 60 hour, t.s. through the region of heart
Em716f **Chicken,** 60 hour, t.s. through the region of abdomen
Em717f **Chicken,** 72 hour, t.s. through the region of brain
Em718f **Chicken,** 72 hour, t.s. through the region of heart and eyes
Em719f **Chicken,** 72 hour, t.s. through the caudal region of heart
Em720f **Chicken,** 72 hour, t.s. through the abdominal region
Em722g **Chicken,** 72 hour, horizontal l.s. of entire specimen
Em723f **Chicken,** 4 – 5 days, t.s. through the region of head


Em609f


Em615f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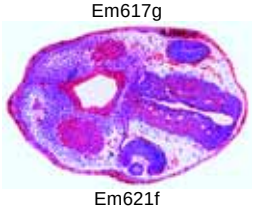
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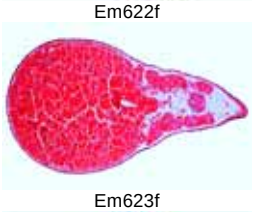
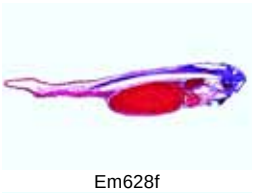
Em622f


Em623f


Em625e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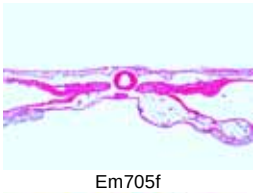
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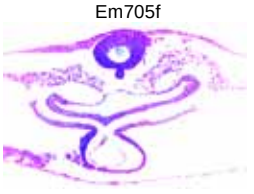
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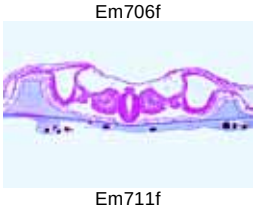
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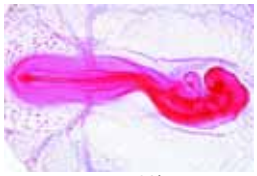
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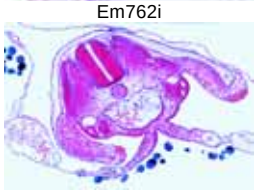
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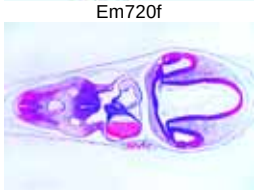
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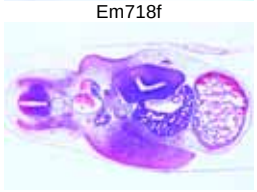
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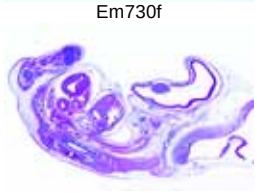
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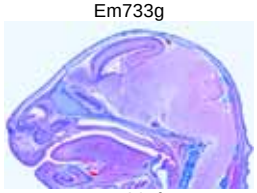
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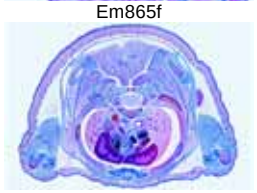
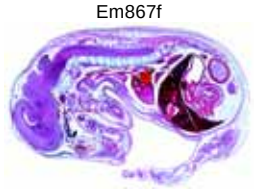

Em865f


Em867f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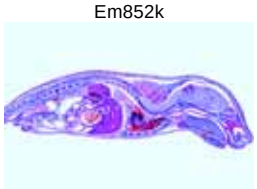
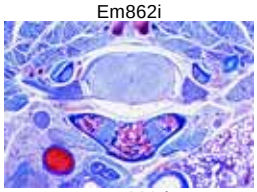

Em862i


Ma5296d

Em724f **Chicken,** 4 – 5 days, t.s. through region of heart and eyes
Em725f **Chicken,** 4 – 5 days, t.s. through the abdominal region
Em726g **Chicken,** 4 – 5 days, sagittal l.s. of entire specimen*
Em727f **Chicken,** 8 days, t.s. through the region of brain
Em728f **Chicken,** 8 days, t.s. through the region of eyes
Em729f **Chicken,** 8 days, t.s. through the region of gill slits
Em730f **Chicken,** 8 days, t.s. in region of heart and lungs
Em731f **Chicken,** 8 days, t.s. in region of intestine and liver
Em732f **Chicken,** 8 days, t.s. in region of intestine and kidney
Em733g **Chicken,** 8 days, sagittal l.s. of the entire specimen *
Em751h **Chicken,** 16 hour, w.m. showing primitive streak *
Em752h **Chicken,** 18 hour, w.m. of the entire specimen *
Em753i **Chicken,** 21 hour, w.m. of the entire specimen *
Em754i **Chicken,** 24 hour, w.m. showing neural groove *
Em756g **Chicken,** 28 hour, w.m. showing heart and blood vessels *
Em758i **Chicken,** 33 hour, w.m. showing the formation of the somites *
Em760g **Chicken,** 40 hour, w.m. flexion of the anterior end *
Em761i **Chicken,** 43 hour, w.m. *
Em762i **Chicken,** 48 hour, w.m. showing the formation of the coelom *
Em764h **Chicken,** 56 hour, w.m. the gill arches can be seen *
Em766t **Chicken,** 66 hour, w.m. progression of gill arches and other structures *
Em768k **Chicken,** 72 hour, w.m. with well developed limb buds *
Em770t **Chicken,** 80 hour. w.m. more advanced stage of organ development *
Em772k **Chicken,** 96 hour, w.m. allantois outside the body *

Embryology of the pig (Sus scrofa)

Em811h **Pig** embryo, 4 mm, sagittal l.s. *
Em813g **Pig** embryo, 4 mm, typical t.s. *
Em821h **Pig** embryo, 6 mm, sagittal l.s. *
Em823g **Pig** embryo, 6 mm, typical t.s. *
Em831h **Pig** embryo, 8 mm, sagittal l.s.
Em833g **Pig** embryo, 8 mm, typical t.s.
Em841g **Pig** embryo, 11 – 12 mm, sagittal l.s.
Em843k **Pig** embryo, 11 – 12 mm, near median sagittal l.s. *
Em845g **Pig** embryo, 11 – 12 mm, frontal l.s.
Em846f **Pig** embryo, 11 – 12 mm, typical t.s.
Em847h **Pig** embryo, 11 – 12 mm, three typical t.s. through head, thorax and abdomen
Em848k **Pig** embryos, 6, 8, and 11 mm, three typical t.s. *
Em849k **Pig** embryos, 6, 8, and 11 mm, three typical sagittal l.s. *
Em851g **Pig** embryo, 15 mm, sagittal l.s.
Em852k **Pig** embryo, 15 mm, near median l.s. *
Em853g **Pig** embryo, 15 mm, frontal l.s.
Em854f **Pig** embryo, 15 mm, head t.s.
Em855f **Pig** embryo, 15 mm, thorax t.s.
Em856f **Pig** embryo, 15 mm, abdomen t.s.
Em858i **Pig** embryo, 15 mm, three typical t.s. through head, thorax, and abdomen
Em861g **Pig** embryo, 20 – 25 mm, sagittal l.s.
Em862i **Pig** embryo, 20 – 25 mm, near median sagittal l.s.
Em863g **Pig** embryo, 20 – 25 mm, frontal l.s.
Em865f **Pig** embryo, 20 – 25 mm, head t.s.
Em866f **Pig** embryo, 20 – 25 mm, thorax t.s.
Em867f **Pig** embryo, 20 – 25 mm, abdomen t.s.
Em869i **Pig** embryo, 20 – 25 mm, three typical t.s. through head, thorax, and abdomen

BACTERIA

Spherical bacteria, cocci

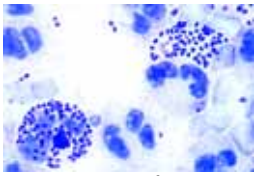
Ba117e • **Diplococcus pneumoniae,** causing croupous pneumonia, smear
Ba118d **Gaffkya tetragena,** occuring as tetrads, smear
Ba113d **Micrococcus roseus,** smear from culture
Ba110e **Neisseria catarrhalis,** smear from culture
Ba111f • **Neisseria gonorrhoeae,** causing gonorrhoea, smear *
Ba1113e • **Neisseria meningitidis (intracellularis),** causing epidemic meningitis, smear from culture *
Ba114d • **Sarcina lutea,** chromogenic rods occuring in packets
Ba112d • **Staphylococcus aureus,** pus organism, smear from culture
Ba1123d **Staphylococcus epidermidis,** smear from culture
Ba1163d **Streptococcus faecalis,** smear from culture
Ba116d • **Streptococcus lactis,** milk souring organism, smear from culture showing short chains
Ba115e • **Streptococcus pyogenes,** smear from pus showing long chains
Ba1151d **Streptococcus pyogenes,** smear from culture showing short chains
Ba1165f **Hemolytic streptococci,** blood poisoning, blood smear

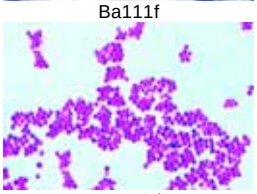
Rod-shaped bacteria, non spore-forming, gram-positive

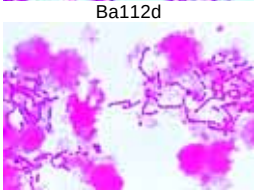
Ba136d • **Corynebacterium diphtheriae,** smear from culture
Ba137f **Corynebacterium diphtheriae,** stained to show the polar bodies
Ba127d • **Lactobacillus bulgaricus (Thermobacterium),** Yoghurt bacteria (Bulgarian soured milk), from culture
Ba1272e **Lactobacillus casei,** cheese and other milk products
Ba135h **Mycobacterium leprae,** causing leprosy, smear or tissue section *
Ba131d **Mycobacterium tuberculosis,** smear from culture
Ba132e • **Mycobacterium tuberculosis,** smear from positive sputum stained after Ziehl-Neelsen
Ba133g **Mycobacterium tuberculosis,** section of infected tissue, bacteria stained *

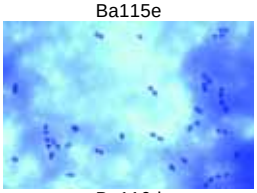
Rod-shaped bacteria, non spore-forming, gram-negative

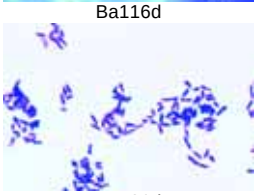
Ba153d • **Acetobacter aceti,** manufacture of vinegar, smear
Ba1385d **Aerobacter aerogenes,** smear from culture
Ba155d • **Azotobacter,** rods from soil, smear
Ba139e **Bacterium erysipelatos** (Erysipelothrix rhusiopathiae), smear *
Ba151d **Bacterium prodigiosum** (Serratia marcescens), formation of red pigment, smear
Ba1502d • **Brucella abortus,** causing abortation in cattle (Bang disease), smear
Ba144d • **Eberthella typhi,** causing typhoid fever, smear
Ba1416e **Erwinia amylovora,** occuring in short chains, causing pear blight, smear
Ba1417e **Erwinia caratovora,** causing soft root in vegetables, smear
Ba1418e **Erwinia caratovora,** section showing bacterial infection of tissue
Ba143d • **Escherichia coli,** colon bacteria, smear
Ba150d • **Hemophilus influenzae (Pfeiffer),** smear
Ba138e • **Klebsiella pneumoniae (Friedlander),** causing pneumonia smear
Ba158f **Pasteurella (Yersinia) pestis,** bubonic plague, smear
Ba1505d **Pasteurella pseudotuberculosis,** smear from culture
Ba142d • **Proteus vulgaris,** putrefaction, smear
Ba1425d **Pseudomonas aeruginosa,** smear from culture
Ba1426e **Pseudomonas solonacearum,** causes tobacco bacterial wilt, smear
Ba1427e **Pseudomonas solonacearum,** t.s. stem with bacteria in tissue *
Ba141d • **Rhizobium radicicola,** smear from culture

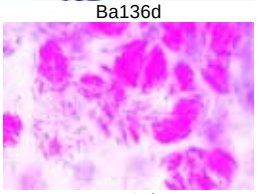

Ba111f

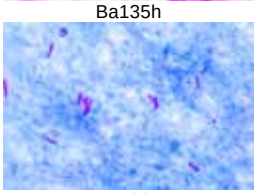

Ba112d

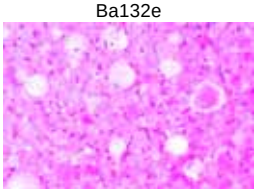

Ba115e

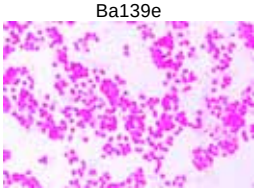

Ba116d

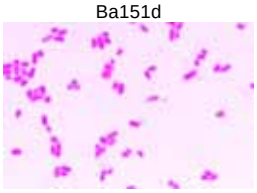

Ba136d

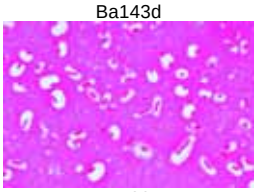

Ba135h

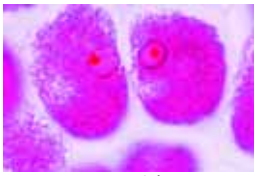

Ba132e


Ba139e

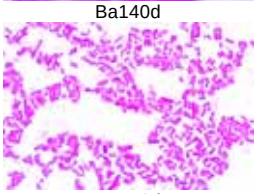

Ba151d


Ba143d

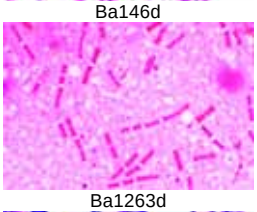

Ba138e


Ba140d

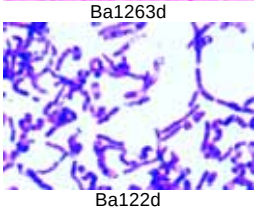
Ba140d **Rhizobium radicicola,** nitrogen fixing organisms, section through root nodule of lupin showing bacteria in situ
Ba146d • **Salmonella enteritidis,** causes meat poisoning, smear
Ba145d • **Salmonella paratyphi,** paratyphoid fever, smear
Ba147d **Salmonella pullorum,** chicken disease, smear
Ba149d • **Shigella dysenteriae,** causes bacillary dysentery, smear
Ba1493d **Shigella sonnei,** smear from culture
Ba1428e **Xanthomonas phaseoli,** causing bacterial bean blight, sec. through the infected tissue


Ba146d

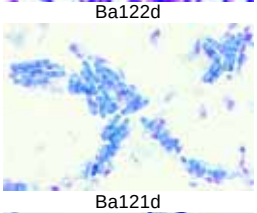
Rod-shaped bacteria, spore-forming (bacilli)


Ba1263d

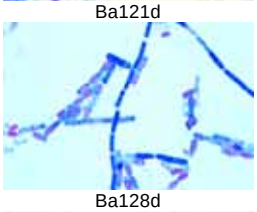
Ba1263d • **Bacillus anthracis,** smear from culture
Ba125f **Bacillus anthracis,** causes wool sorter's disease, smear from infected spleen. Olt's capsule stain
Ba1265f **Bacillus anthracis,** spores stained *
Ba126g **Bacillus anthracis,** in section through infected tissue *
Ba120d **Bacillus cereus,** bacteria from soil, smear from culture
Ba1202f **Bacillus cereus,** spores stained
Ba134d **Bacillus larvae,** bee disease, smear
Ba124d **Bacillus megaterium,** from soil, smear from culture
Ba123d • **Bacillus mesentericus,** smear from culture
Ba122d • **Bacillus mycoides,** large soil organisms growing in chains


Ba122d

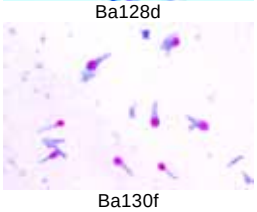
Ba121d • **Bacillus subtilis,** hay bacillus, smear showing bacilli and spores doubly stained
Ba1303e • **Clostridium botulinum,** causing food poisoning, smear
Ba1285d **Clostridium perfringens,** causing gas gangrene, smear
Ba1287f **Clostridium perfringens,** smear stained to show spores
Ba128d **Clostridium septicum,** smear from culture
Ba130f • **Clostridium tetani,** special stained to show the terminal spores by the Ziehl-Neelsen method
Ba129e **Clostridium tetani,** causing lockjaw, smear


Ba121d

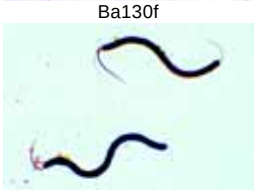
Spiral bacteria and spirochaetes


Ba128d

Ba164f • **Vibrio comma,** causing Asiatic cholera, smear
Ba161e • **Spirillum volutans,** a very large spirillum, smear *
Ba162d **Spirillum serpens,** from putrid water, smear
Ba163d **Spirillum undula,** in stagnant water, smear
Ba165d • **Rhodospirillum rubrum,** chromogenic rods, smear
Ba167g • **Borrelia duttoni (Spirochaeta recurrentis),** causes Central african relapsing fever, blood smear with organisms *
Ba170h • **Treponema pallidum (Spirochaeta pallida),** section through syphilitic lesion stained by Levaditi's silver method *


Ba130f

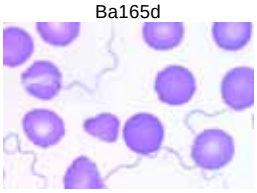
Miscellaneous groups


Ba161e

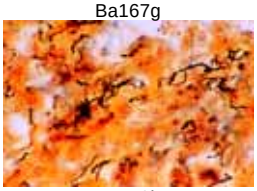
Ba1528d **Actinomyces alni,** sec. of root nodule showing mycorrhiza of alder
Ba1526f **Actinomyces bovis,** causing lumpy jaw, section through infected tissue
Ba1525e **Actinomyces,** causing lumpy jaw, smear
Ba157e **Caulobacter,** stalk bacterium, smear
Ba193d **Galionella,** iron bacteria, smear
Ba191d **Methanobacterium,** forming methane, smear
Ba190d • **Sphaerotilus natans,** from putrid water, long chains with sheaths
Ba152d • **Streptomyces griseus,** streptomycin antibiotic, smear
Ba192d **Thiocystis or Lamprocystis,** sulphur bacteria, smear
Ba250e **Tobacco mosaic,** a virus disease, sec. of infected leaf *


Ba165d

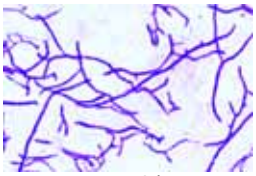
Typical bacteria, composite slides


Ba167g

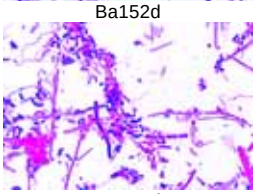
Ba171d • **Bacteria from mouth,** Gram positive and negative bacteria can be observed in this slide, ideal for demonstration
Ba201e • **Typical bacteria:** three smears on one slide, cocci, bacteria and spirilli are shown, carefully stained


Ba170h

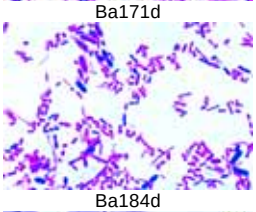
Ba203e • **Mixed bacteria:** slide showing mixed species from a number of different pure cultures
Ba2061d **Typical coccus,** round-shaped, Gram-negative, smear
Ba2062d **Typical coccus,** round-shaped, Gram-positive, smear
Ba2071d **Typical cocci in chains** (streptococci), smear
Ba2072d **Typical cocci in clumps** (staphylococci), smear
Ba2051d **Typical bacillus,** rod-shaped, Gram negative, smear
Ba2052d **Typical bacillus,** rod-shaped, Gram-positive, smear
Ba2065d **Typical bacilli in chains** (streptobacilli), smear
Ba209d **Typical spirilli,** spiral- or comma-shaped, smear
Ba181d **Bacteria from bread,** direct smear
Ba182d **Bacteria from cheese,** smear or section
Ba183d **Bacteria from sour milk,** smear
Ba184d **Bacteria from human intestine,** smear
Ba185d **Bacteria from yoghurt,** smear
Ba186d **Bacteria from sauerkraut,** smear
Ba187d **Bacteria from hay infusion** causing decomposition, smear

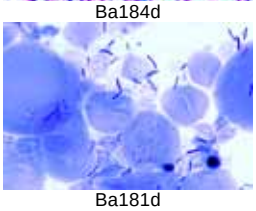

Ba152d

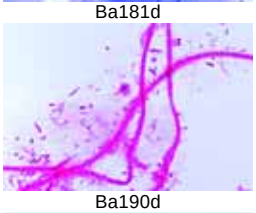
Cytological slides, special staining techniques

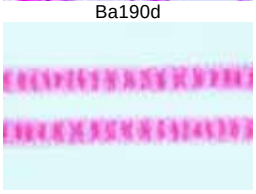

Ba171d

Ba2081d **Typical mixed bacteria**, including Gram-positive and Gram-negative rods, smear
Ba210g **Lophotrichous flagella** on Spirillum, specially stained *
Ba212g **Monotrichous flagella** on Vibrio or Pseudomonas, spec. stained *
Ba211g **Peritrichous flagella** on Salmonella or Proteus, spec. stained *
Ba221f **Capsule stain** (Klebsiella pneumoniae), smear specially stained
Ba224g **Nuclear stain** (Bacillus cereus), smear specially stained for nuclear material (DNA) *
Ba225t **Cell division** (Bacillus cereus), smar with Feulgen stain *
Ba229f **Metachromatic granules** or polar bodies (Corynebacterium diphtheriae), smear specially stained
Ba226f **Spore stain** (Bacillus subtilis), smear doubly stained with central spores
Ba228f **Spore stain** (Clostridium botulinum), smear doubly stained with subterminal spores


Ba184d


Ba181d

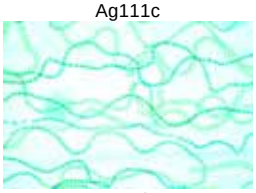

Ba190d

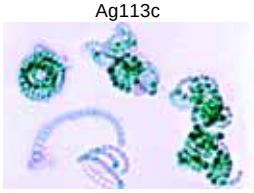

Ag111c

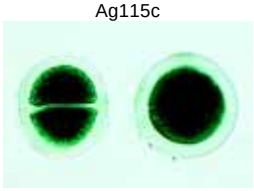
ALGAE

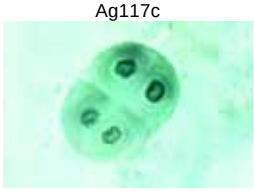
Cyanophyceae – Blue-Green Algae

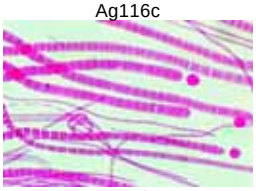
Ag111c • **Oscillatoria,** a blue-green filamentous alga w.m.
Ag112d **Oscillatoria,** thin sections specially stained to show the nuclear material
Ag1123c **Oscillatoria,** mucous sheath stained, w.m.
Ag113c • **Nostoc,** w.m. shows filaments and heterocysts
Ag114d **Nostoc,** section for finer details of filaments and sheaths
Ag1146f **Nostoc** or other blue-green alga, special preparation for nuclear material, Feulgen stain *
Ag1145d **Nostoc gunnerae,** symbiotic algae living in the stem of Gunnera, section
Ag1147c **Nostoc zetterstettii,** a gelatinous alga, unbranched filaments, w.m.
Ag1148c **Nostoc caeruleum,** unbranched filaments,
Ag1151f **Anabaena or Oscillatoria,** nuclear stain
Ag115c • **Anabaena,** thread shaped blue-green algae with heterocysts w.m.
Ag1156d **Aphanizomenon,** single filaments of various length w.m.
Ag1157d **Aphanothece,** small single cells in colonies
Ag1153d **Arthrospira,** filaments in regular spirals w.m.
Ag1205c **Beggiatoa,** a colourless alga showing lack of chlorophyll
Ag117c • **Chroococcus,** large single celled blue-green algae w.m.
Ag1162d **Cylindrospermum,** with heterocysts and spores w.m.
Ag1152d **Fischerella (Hapalosiphon),** branched filaments w.m.
Ag116c • **Gloeocapsa,** small colonies within sheaths
Ag119c • **Gloeotrichia,** forming akinetes w.m.
Ag1166d **Lyngbya,** filamentous algae within sheaths
Ag1164d **Merismopedia,** flat colonies w.m.


Ag113c

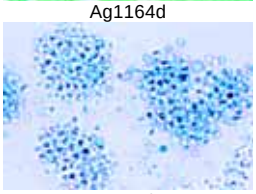

Ag115c

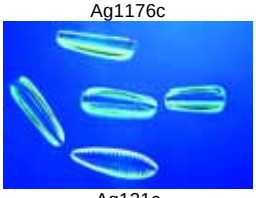

Ag117c

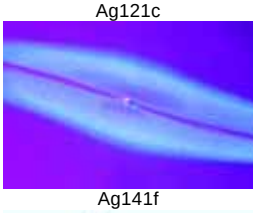

Ag116c

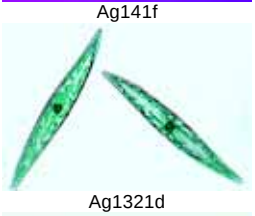

Ag118c

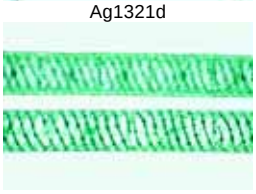

Ag1164d

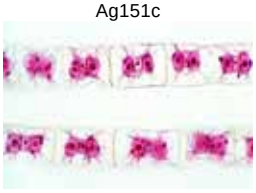

Ag1176c

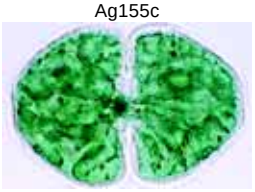

Ag121c

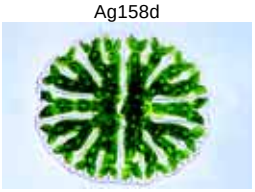

Ag141f

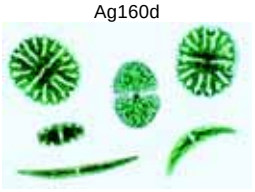

Ag1321d

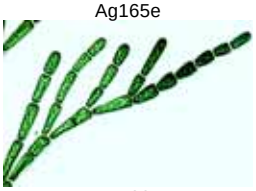

Ag151c


Ag155c


Ag158d


Ag160d


Ag165e


Ag182c

Ag1176c • **Microcystis,** irregular colonies w.m.
Ag1207d **Ophridium versatile,** a gelationous alga, filaments with heterocysts
Ag118c **Rivularia,** with basal heterocysts w.m.
Ag120c **Scytonema,** trichomes with false branchings
Ag1172d **Spirulina,** unicellular spirals w.m.
Ag1174d **Stigonema,** branched thallus w.m.
Ag1155c **Tolypothrix,** a blue-green alga with false branchings w.m.
Ag1201d **Mixed blue-green algae,** many different species in one slide for comparison w.m.

Diatomeae

Ag121c • **Diatoms,** recent from fresh water, mixed species
Ag122c • **Diatoms,** fossil from fresh water, mixed species
Ag123c • **Diatoms,** recent marine, mixed species
Ag124c • **Diatoms,** fossil marine, mixed species
Ag131d • **Diatoms,** fixed and stained to show the chromatophores
Ag1321d **Diatoms** from fresh water, fixed and stained to show the chromatophores
Ag1322d **Diatoms** marine, fixed and stained to show the chromatophores
Ag133c **Diatomeous earth,** a mixture of various fossil diatoms
Ag141f **Pleurosigma angulatum,** for testing microscope resolution, n_D 1,0
Ag142f **Surirella gemma,** for testing microscope resolution, n_D 1,0
Ag143d **Synedra ulna,** species from fresh water
Ag144e **Arachnoidiscus,** central marine diatoms
Ag1441e **Coscinodiscus,** central marine diatoms, mixed species
Ag1442e **Triceratium and Tricnaria,** triangular marine diatoms
Ag149d **Silicoflagellates,** Distephanus and others,

Conjugatae

Ag151c • **Spirogyra,** a common alga with spiral chloroplasts, w.m. of vegetative filaments, carefully stained. The standard slide for general study.
Ag1512d **Spirogyra,** vegetative w.m., a large species with several chloroplasts in each cell
Ag1513d **Spirogyra,** vegetative w.m., a small species with single chloroplast in each cell
Ag152e • **Spirogyra,** in scalariform conjugation and after the stage of conjugation, w.m.
Ag153e **Spirogyra,** showing formation of zygotes w.m.
Ag154e **Spirogyra,** in lateral conjugation w.m. *
Ag1542e **Spirogyra,** in scalariform conjugation showing zygotes w.m., a large species with several chloroplasts in each cell
Ag155c • **Zygnema,** vegetative filaments with stellate chloroplasts w.m.
Ag156e **Zygnema,** in conjugation and after conjugation with zygotes w.m.
Ag1565c **Mougeotia,** a filamentous alga with flat chloroplasts w.m.
Ag158d **Cosmarium,** a common desmid with isthmus
Ag157d • **Closterium,** a crescent-shaped desmid w.m.
Ag159d **Mesothaenium,** a small rod-shaped desmid
Ag160d • **Micrasterias,** large plate-shaped desmids w.m.
Ag161d **Staurastrum,** double cells with spines w.m.
Ag162d **Hyalotheca,** a filamentous desmid w.m.
Ag165e • **Mixed desmids** of various forms, strewn slide w.m.

Chlorophyceae – Green Algae

Ag1923e **Acetabularia,** a marine species with an umbrella-shaped thallus w.m.
Ag1925d **Bryopsis,** marine green algae w.m.
Ag1722d **Bulbochaete,** sessile filaments w.m.
Ag1725d **Carteria,** unicellular algae with four flagella w.m.
Ag1907d **Chaetophora,** thallus with many branches w.m.
Ag171c • **Chlamydomonas,** small biflagellate algae w.m.
Ag1711f **Chlamydomonas,** specially stained to show the flagella *
Ag191c • **Chlorella,** small unicellular green algae, w.m.
Ag1902d **Chlorococcus,** living on ground, hollowsphere-shaped chloroplasts
Ag182c • **Cladophora,** branching filaments with multinucleate cells w.m.
Ag1904d **Coelastrum,** cell colonies w.m.
Ag1908d **Coleochaete,** a soil species w.m.

Ag183c • **Draparnaldia,** main filaments and clusters of branches w.m.
Ag1723d **Dysmorphococcus,** flagellate algae with shells
Ag192d • **Enteromorpha,** seaweed, inflated narrow frond
Ag1757d **Eremosphaera,** large unicellular green algae
Ag174d • **Eudorina,** spherical colonies of thirty-two cells w.m.
Ag172d • **Gonium pectorale,** plate-like colonial forms w.m.
Ag1721f **Gonium sp.,** specially stained to show the flagella *
Ag1715c • **Haematococcus,** unicellular red biflagellate algae w.m.
Ag180d • **Hydrodictyon,** water net alga, w.m.
Ag184c • **Oedogonium,** a common filamentous green alga without branches, vegetative filaments
Ag188d **Oedogonium,** macrandrous with oogonia w.m.
Ag189d **Oedogonium,** nannandrous with dwarf males w.m.
Ag173d • **Pandorina,** spherical colonies of sixteen cells or smaller w.m.
Ag177d • **Pediastrum,** star-shaped flat colonies w.m.
Ag1724d **Pithophora,** branched tropic green algae w.m.
Ag1743d **Platydorina,** horseshoe-shaped coenobium showing the flagella w.m.
Ag1742d **Pleodorina,** colonies with cells of different size
Ag179c • **Pleurococcus (Protococcus),** small colonies growing on bark, w.m.
Ag1905d **Protosiphon,** living on ground, with rhizoids w.m.
Ag178d • **Scenedesmus,** colonies of four cells w.m.
Ag1832d **Stigeoclonium,** main filaments and simple branches w.m.
Ag1756d **Tetracystis,** earth algae, groups of four cells
Ag1755d **Tetraspora,** cells in a gelatinous layer w.m.
Ag181c • **Ulothrix,** simple filaments with girdle-shaped chloroplasts w.m.
Ag185d • **Ulva,** sea lettuce, a marine green alga, w.m. of thallus
Ag1852d **Ulva,** w.m. of thallus with developing gametes
Ag1862e • **Vaucheria geminata,** sexual stages on lateral branches w.m.
Ag186d **Vaucheria sessilis,** showing sexual stages
Ag175e • **Volvox,** spherical colonies with daughter colonies and sexual stages w.m.
Ag1752f **Volvox,** flattened and specially stained to show flagella
Ag1916d **Mixed flagellates,** many different species for comparison w.m.
Ag1915d **Mixed green algae,** many different species for comparison w.m.

Chrysophyceae – Golden Algae

Ag195d • **Dinobryon,** a golden alga forming colonies
Ag197d **Hydrurus,** golden alga in a gelatinous matrix
Ag199d **Ochromonas,** a flagellate golden alga w.m.
Ag198d **Tribonema,** a filamentous golden alga w.m.

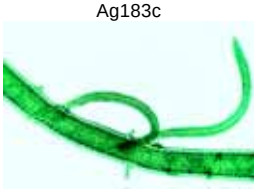
Charophyceae – Stoneworts

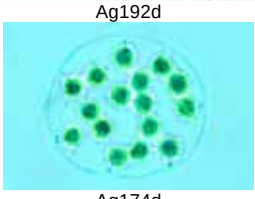
Ag211d • **Chara,** stonewort, thallus with reproductive organs w.m.
Ag212c **Chara,** thallus t.s.
Ag2121e **Chara,** thallus and reproductive organs l.s.
Ag2122e **Chara,** w.m. of mature antheridia showing spermatogenous filaments
Ag2125f **Chara,** thallus with apex l.s. *
Ag213d **Nitella,** thallus with reproductive organs w.m.

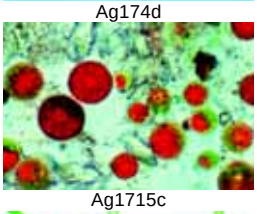
Phaeophyceae – Brown Algae

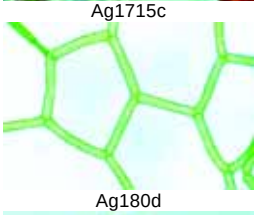
Ag221d • **Fucus vesiculosus,** seaweed, male conceptacle with antheridia, t.s.
Ag222d • **Fucus vesiculosus,** female conceptacle with oogonia t.s.
Ag2224e **Fucus vesiculosus** composite slide, t.s. of male and female conceptacles of a dioecious species on same slide
Ag223d **Fucus platycarpus,** hermaphrodite conceptacle with antheridia and oogonia, t.s.
Ag2234d **Fucus serratus,** male branch with antheridia, t.s.
Ag2235d **Fucus serratus,** female branch with oogonia t.s.
Ag2236e **Fucus serratus,** male and female branches, two t.s.
Ag237g **Fucus,** l.s. through apical region with apical cell *
Ag239d **Ascophyllum nodosum,** c.s. of male conceptacle

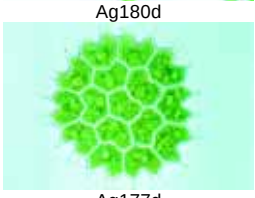

Ag183c

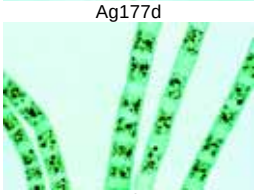

Ag192d

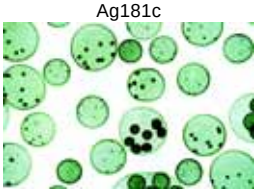

Ag174d

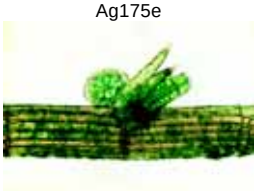

Ag1715c

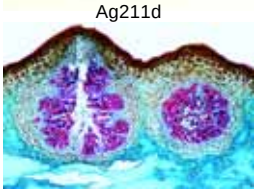

Ag180d

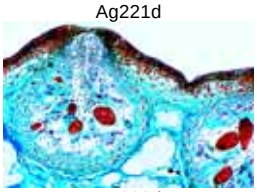

Ag177d

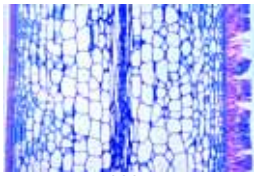

Ag181c

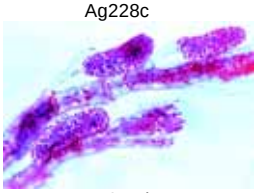

Ag175e


Ag211d

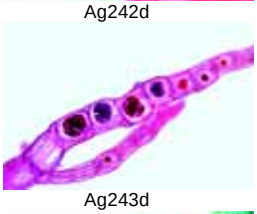

Ag221d


Ag222d


Ag228c


Ag241d


Ag242d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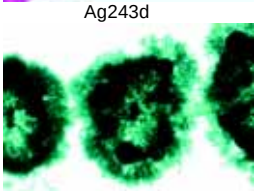
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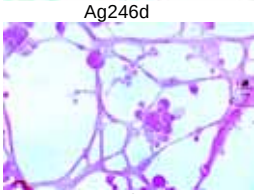
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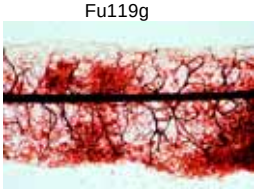
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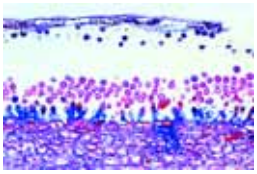
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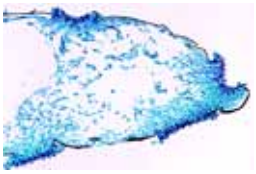
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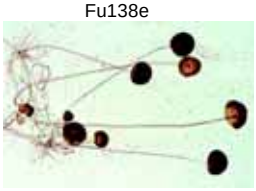
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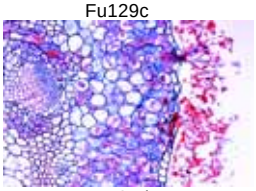

Fu124d

Ag233e **Dictyota,** thallus with tetraspores t.s. *
Ag234e **Dictyota,** thallus with oogonia t.s. *
Ag235e **Dictyota,** thallus with antheridia t.s. *
Ag238g **Dictyopteris,** apical region showing more apical cells *
Ag225d • **Ectocarpus,** plurilocular gametangia or sporangia w.m.
Ag2252d • **Ectocarpus,** unilocular sporangia w.m. *
Ag2393d **Elachista fucicola,** epiphytic living, w.m. of unilocular sporangia
Ag231d **Himanthalia lorea,** male conceptacle with antheridia t.s.
Ag232d **Himanthalia lorea,** female conceptacle with oogonia t.s.
Ag228c • **Laminaria saccharina,** thallus with sporangia t.s.
Ag230d **Pylaiella litoralis,** uni- and plurilocular sporangia w.m.
Ag2302d **Pylaiella litoralis,** w.m. showing formation of swarms-cells
Ag229d **Sargassum,** gulfweed, thallus with conceptacles t.s.
Ag2395d **Sphacelaria sp.,** thallus with bulbs, w.m.

Rhodophyceae – Red Algae

Ag241d • **Polysiphonia** (or Rhodomela), marine red alga, male plant with antheridia w.m.
Ag242d • **Polysiphonia** (or Rhodomela), female plant with cystocarps w.m.
Ag243d • **Polysiphonia** (or Rhodomela), tetraspores w.m.
Ag250d **Audouinella,** a mat-forming fresh water red alga, w.m.
Ag251d **Bangia,** a ligamentous fresh water red alga,
Ag246d • **Batrachospermum,** a fresh water red alga,
Ag244d **Ceramium,** thallus with tetraspores w.m.
Ag2445d **Corallina,** a marine calcareous red alga w.m.
Ag254d **Dasya,** a marine red alga with irregular branchings w.m.
Ag255d **Furcellaria,** marine species w.m.
Ag253d **Lemanea,** a fresh water red alga with tubular cortical layer w.m.
Ag245d • **Nemalion,** thallus with reproductive organs
Ag252d **Porphyridium,** gelatinous layer with algal cells, t.s.
Ag256c **Porphyra,** marine red alga, w.m. of one cell layer thallus

FUNGI

Myxomycetes – Slime Fungi

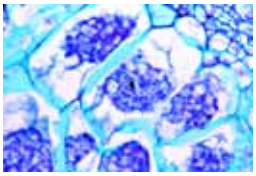
Fu112d **Arcyria,** slime mold with cylindrical fruiting bodies w.m.
Fu1182e **Ceratiomyxa,** primitive slime mold with external spores, w.m. *
Fu118e **Dictydium,** fruiting body w.m.
Fu115e • **Fuligo,** slime mold, section through the fruiting body *
Fu113d **Hemitrichia,** slime mold with bell-shaped fruiting bodies w.m. *
Fu114d **Lycogola,** slime mold with bean-shaped fruting bodies w.m.
Fu119g **Myxoflagellatae,** myxamoebae and young plasmodia w.m. *
Fu117e **Physarum,** fruiting body w.m.
Fu116e • **Spongospora subterranea,** potato powdery scab, section with spore balls
Fu111d • **Stemonitis,** slime mold, entire capillitium with spores w.m.

Phycomycetes – Algalike Fungi

Fu1253e **Achlya,** water mold, with oogonia, antheridia, and zoosporangia
Fu127d • **Albugo candida (Cystopus candidus),** white rust of cruzifers, t.s. of Capsella tissue showing conidia
Fu128d **Albugo candida,** t.s. of Capsella tissue showing oogonia and zygotes
Fu140d **Candida albicans,** thrush fungus infective to man, from culture w.m.
Fu138e • **Empusa muscae,** parasite of insects, sec. through insect showing mycelium and conidia
Fu129c • **Mucor mucedo,** black mold, sporangia and mycelium w.m.
Fu1291e • **Mucor mucedo,** formation of zygospores w.m.
Fu124d • **Peronospora parasitica,** downy mildew of cruzifers, host tissue with conidia t.s.
Fu1242e **Peronospora tabacina,** blue mold of tobacco, leaf pieces with sporangia w.m.
Fu135d • **Phytophthora infestans,** late blight of potato, t.s. of infected tissue
Fu133e **Pilobolus,** mycelium, spongiophore and sporangia w.m. *
Fu121c • **Plasmodiophora brassicae,** clubroot, host cells with spores t.s.
Fu123d • **Plasmopara viticola,** downy mildew of grapes, leaf with conidia t.s.
Fu130c • **Rhizopus,** bread mold, sporangia and mycelium w.m.
Fu131d • **Rhizopus,** formation of zygospores w.m.
Fu132f **Rhizopus,** sporangia and zygospores on same slide w.m.
Fu136e **Rhizophydium pollinis,** living on pollen grains of pine, w.m. *
Fu125d • **Saprolegnia,** water mold, showing sexual stages w.m.
Fu122d • **Synchytrium endobioticum,** potato black scab, t.s. of infected tissue

Ascomycetes – Sac Fungi

Fu163c • **Aspergillus,** brown mold, conidiophores and conidia w.m.
Fu1631d **Aspergillus,** perithecia (cleistothecia)
Fu172c **Botrytis allii,** grey mold of onions, t.s. of infected tissue
Fu180d **Cladosporium,** deuteromycet, destruction of textile goods, w.m.
Fu149c • **Claviceps purpurea,** ergot, mature sclerotium t.s.
Fu150e • **Claviceps purpurea,** stroma with perithecia and asci l.s.
Fu142e • **Erysiphe pannosa,** rose mildew, t.s. of rose leaf or stem with conidia
Fu144e **Erysiphe sp.,** w.m. of perithecia
Fu1441d **Erysiphe sp.,** t.s. of infected leaf showing perithecia *
Fu154c **Lachnea,** a small cup fungus, l.s. of apothecium with asci
Fu158c • **Morchella edulis,** morel, fruiting body with asci and spores, t.s.
Fu177c **Morchella,** teased preparation of mature hymenium with w.m. of asci with the typical eight ascospores
Fu161c • **Penicillium,** blue mold, mycelium and conidiophores, w.m.
Fu162d **Penicillium,** t.s. of host tissue showing mycelium and conidiophores
Fu153c • **Peziza,** cup fungus, l.s. of apothecium showing typical asci very clearly
Fu143d **Podosphaera leucotricha,** apple mildew, t.s. with conidia
Fu171c • **Rhytisma acerinum,** tar-spot of maple, t.s. of leaf with sclerotia
Fu164b • **Saccharomyces cerevisiae,** yeast, with budding cells w.m.
Fu1643d **Saccharomyces octosporus,** yeast showing asci and ascospores w.m. *
Fu1644d **Saccharomyces sp.,** yeast, sexual phase, meiosis and meiospores w.m. *
Fu179e **Molds,** composite slide of three types: Aspergillus, Rhizopus and Penicillium, w.m.
Fu155c • **Sclerotinia fructigena (Monilia albicans),** plum rot, sec. through yeast-like conidia on surface of host tissue
Fu178e **Sordaria fimicola,** showing the wild type. Perithecia and spores
Fu1781e **Sordaria fimicola,** showing the mutant tan. Perithecia and spores
Fu1782e **Sordaria fimicola,** showing the mutant gray after crossing wild type with mutant tan, hybrid asci with 4 dark and 4 light ascospores
Fu148d **Sphaerotheca mors uvae,** gooseberry mildew, t.s. with perithecia
Fu141d • **Taphrina pruni (Exoascus pruni),** plum pockets, t.s. of host tissue with haustoria and asci
Fu1413e **Taphrina deformans,** peach leaf curl, infected leaf with asci and ascospores t.s.
Fu1415d **Taphrina sp.,** infected leaf c.s.
Fu152c • **Tuber rufum,** truffle, fruiting body with hymenium and asci, t.s.
Fu146d • **Uncinula necator (Oidium Tuckeri),** grape mildew, t.s. of leaf
Fu145d **Uncinula salicis,** willow mildew, t.s. of infected leaf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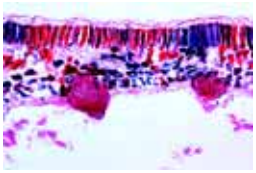
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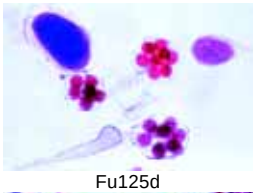
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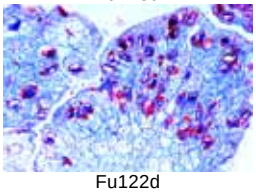
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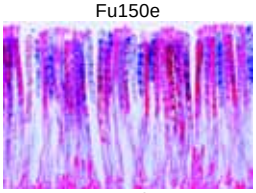
Fu150e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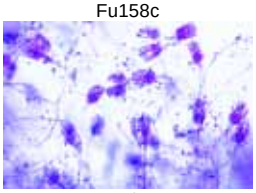
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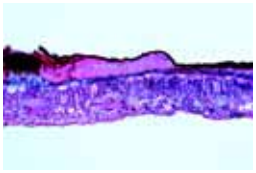
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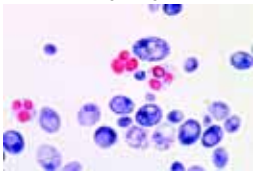
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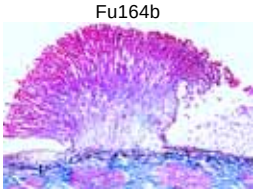
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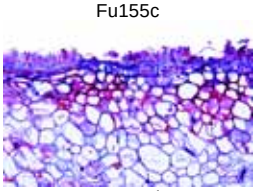
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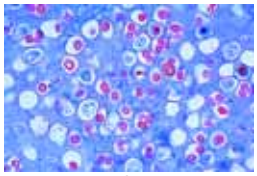
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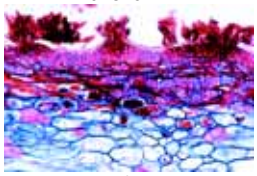
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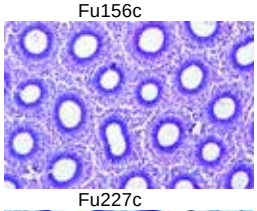
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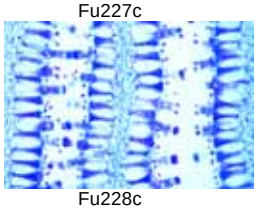
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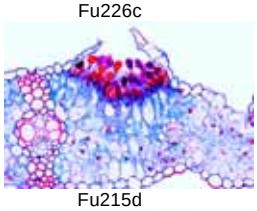
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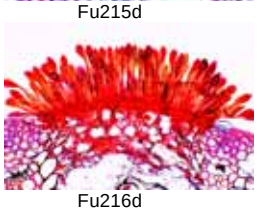
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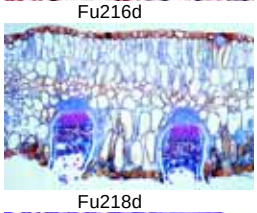
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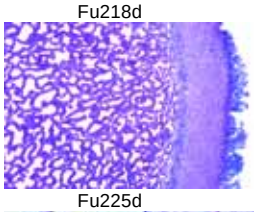
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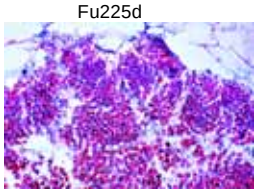
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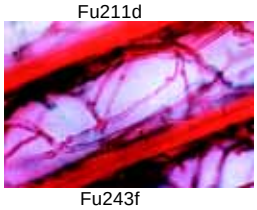

Fu243f

Fu156c • **Venturia pirinum (Fusicladium),** pear scab, sec. conidia
Fu157d **Venturia sp.,** leaf with perithecia *

Basidiomycetes – Club Fungi

Fu227c • **Boletus edulis,** pore fungus, horizontal sec. of pileus showing c.s. of pores
Fu2271c **Boletus edulis,** vertical sec. of pileus showing l.s. of pores
Fu233d **Coleosporium tussilaginis,** aecia on coltsfoot leaf t.s.
Fu228c • **Coprinus,** ink cap, t.s. of pileus showing typical basidia and spores
Fu229d **Coprinus,** l.s. of entire specimen
Fu2461e **Cronartium ribicola,** pine blister rust, sec. of pine bark with pycnidia
Fu2462e **Cronartium ribicola,** sec. of Ribes leaf with telia
Fu2463e **Cronartium ribicola,** sec. of Pinus stem with aecia
Fu236d **Cryptomyces pteridis,** infecting ferns, sec. of infected tissue
Fu240d **Geaster,** earth star, sec. of fruiting body
Fu222d **Gymnosporangium sabinae,** sec. of teleutospores on Juniperus
Fu223d **Gymnosporangium sabinae,** pear rust, section of pycnidia on pear leaf
Fu224d **Gymnosporangium sabinae,** section of aecidia on pear leaf
Fu2242f **Gymnosporangium sabinae,** section of aecidia and pycnidia on same slide
Fu245d **Hydnum,** prickly fungus, sec. of basidiocarp showing spores
Fu230c • **Lycoperdon bovista,** bovist, t.s. of fruiting body
Fu231c **Lycoperdon gemmatum,** puff-ball, t.s. of fruiting body
Fu2452d **Phragmidium,** sec. with teleutospores
Fu244d • **Polyporus,** pore fungus, sec. of fruiting body
Fu226c • **Psalliota campestris (Agaricus),** mushroom, gill fungus, t.s. of pileus
Fu2263d **Psalliota ,** l.s. of complete young fruiting body
Fu215d • **Puccinia graminis,** wheat rust, sec. of uredinia on wheat causing red rust
Fu216d • **Puccinia graminis,** sec. of telia on wheat causing black rust
Fu217e **Puccinia graminis,** sec. of uredinia and telia on same slide
Fu218d • **Puccinia graminis,** sec. of aecidia and pycnidia on barberry leaf
Fu2195s **Puccinia graminis,** composite slide of four stages, sections of uredinia, telia, aecia and pycnidia
Fu221d **Puccinia coronifera,** crown rust of oats, sec. with telia
Fu225d • **Scleroderma vulgare,** sec. of young fruiting body
Fu250d **Scleroderma sp.,** sporogenous mycelium isolated to show formation of basidia clearly *
Fu235d **Uromyces pisi,** pea rust, sec. of host tissue with parasitic fungus
Fu211d • **Ustilago zeae,** cornsmut, t.s. of pustule with spores
Fu212b **Ustilago zeae,** spores w.m.
Fu213b **Ustilago tritici,** spores w.m.
Fu214b **Ustilago avenae,** loose smut of oats section showing spores
Fu2141d **Ustilago avenae,** infected stem, c.s.
Fu243f **Wood rot fungus,** sec. through rotted wood showing detail of hyphae and mycelium specially stained
Fu219f **Germinating teleutospores** show basidia and basidiospores w.m. *

LICHENES – LICHENS

Li103d • **Physcia,** sec. through thallus of a typical lichen showing the fungus and the embedded algae, doubly stained
Li104d • **Physcia,** sec. through apothecium showing asci and spores
Li105d • **Xanthoria,** sec. of thallus showing hyphae with symbiontic algae
Li106d • **Xanthoria,** sec. of apothecium showing asci and spores
Li124d **Cladonia,** reindeer moss, sec. of thallus showing hyphae with symbiontic algae
Li125d **Cladonia,** sec. of apothecium
Li115d **Usnea barbata,** a shrubby lichen, t.s. of stem-like thallus
Li117d **Usnea barbata,** sec. of apothecium with asci
Li112d **Lobaria pulmonaria,** a foliose lichen, sec. of thallus with algae
Li114d **Peltigera,** sec. of thallus or apothecium
Li120c **Lichen sp.,** w.m. of soredia
Li121e **Lichen sp.,** sec. through soredia
Li130d **Lichen sp.,** teased preparation of thallus showing detail of hyphae and spherical algae *
Li131d **Lichen sp.,** teased preparation of thallus showing detail of hyphae and filamentous algae *

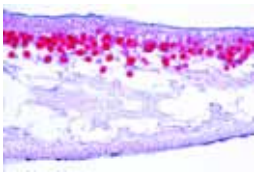
BRYOPHYTA

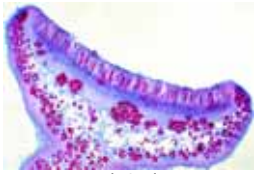
Hepaticae – Liverworts

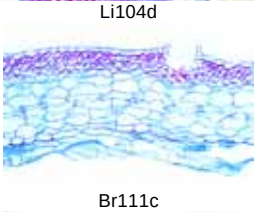
Br101f • **Anthoceros,** l.s. of sporophyte
Br102e **Anthoceros,** l.s. of thallus with antheridia *
Br1025c **Anthoceros,** t.s. of thallus
Br108d **Conocephalum,** t.s. of thallus
Br1085e **Conocephalum,** l.s. of antheridia *
Br109e **Conocephalum,** l.s. of sporophyte showing spores with elaters
Br120c **Jungermanniales sp.,** stem with leaves w.m.
Br1193g **Pellia epiphylla,** liverwort, antheridia l.s. *
Br1194h **Pellia epiphylla,** archegonia l.s. *
Br1195f **Pellia epiphylla,** sporogon l.s.
Br1093f **Porella,** antheridial branch l.s.
Br1094f **Porella,** archegonial branch l.s.
Br1095e **Porella,** young sporophyte l.s. *
Br1096e **Porella,** mature sporophyte l.s. *
Br104d **Riccia natans,** w.m. of thallus
Br105e **Riccia natans,** thallus with antheridia *
Br106g **Riccia natans,** thallus with archegonia *
Br107e **Riccia natans,** l.s. of sporophyte *
Br1075e **Ricciocarpus,** c.s. of thallus showing sexual organs
Br1076e **Ricciocarpus,** c.s. of thallus showing sporophytes
Br111c • **Marchantia,** liverwort, thallus with air chambers, t.s.
Br118c **Marchantia,** rhizoids w.m.
Br112d • **Marchantia,** cupule with gemmae, l.s.
Br113d **Marchantia,** isolated gemmae w.m.
Br114d • **Marchantia,** l.s. of archegonial branch showing archegonia
Br1141h **Marchantia,** median l.s. of a young archegonium showing egg cell, neck canal cells and ventral canal cells *
Br1142g **Marchantia,** median l.s. of an archegonium after fertilization *
Br115d • **Marchantia,** l.s. of antheridial branch showing antheridia
Br1151g **Marchantia,** median l.s. of antheridium through opening *
Br1152d **Marchantia,** horizontal sec. of antheridial branch
Br1153f **Marchantia,** l.s. of antheridial and archegonial branches
Br1154e **Marchantia,** sperm w.m., stained for flagella *
Br116d • **Marchantia,** young sporophyte with developing spores l.s.
Br117d • **Marchantia,** older sporophyte with mature spores l.s.
Br1171f **Marchantia,** median l.s. of older sporophyte *
Br1185g **Marchantia,** liverwort. composite slide of four stages: cupule with gemmae l.s., antheridial branch l.s., archegonial branch l.s., and sporophyte l.s.

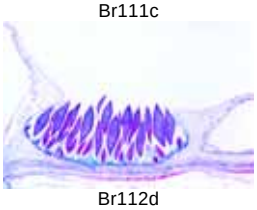
Musci – Mosses

Br129d **Mnium,** t.s. of stem with primitive central stele and peripheral tissue
Br130d • **Mnium,** l.s. of stem through central stele
Br131d • **Mnium,** t.s. of leaves showing large chloroplasts
Br132d • **Mnium,** w.m. of leaf stained to show large chloroplasts
Br125e • **Mnium,** moss, l.s. of antheridia
Br1251g **Mnium,** median l.s. of antheridium *
Br1252e **Mnium,** teased preparation of antheridia w.m.
Br1254e **Mnium** or other moss, sperm w.m. stained for flagella *
Br126e • **Mnium,** l.s. of archegonia
Br1261g **Mnium,** median l.s. of archegonium *
Br1262e **Mnium,** teased preparation of archegonia w.m.
Br1265d • **Mnium,** l.s. of sporophyte with spores


Li103d


Li104d


Br111c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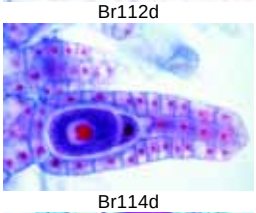
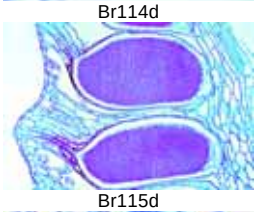
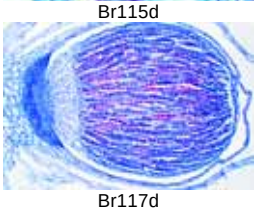
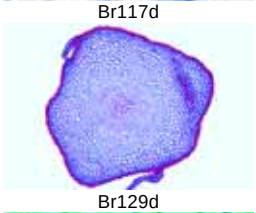
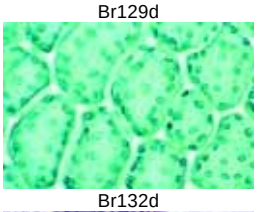
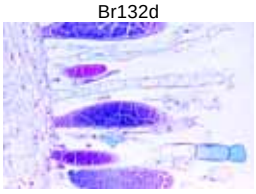

Br114d


Br115d

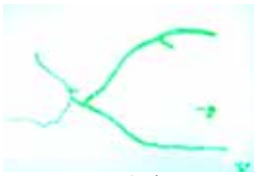

Br117d


Br129d

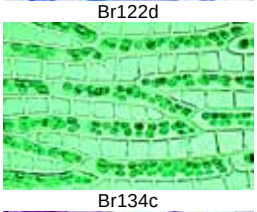

Br132d

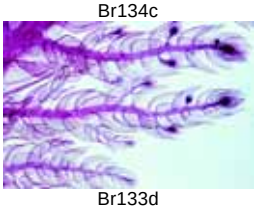

Br125e

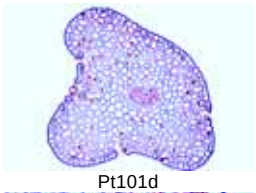

Br126e

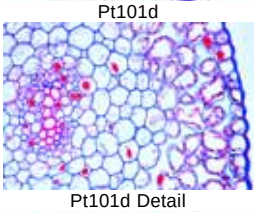

Br127d


Br122d

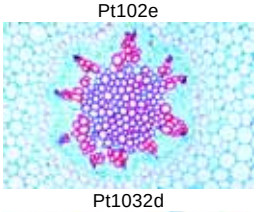

Br134c

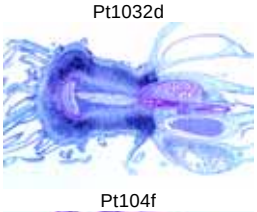

Br133d


Pt101d

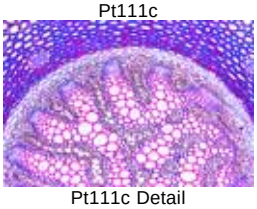

Pt101d Detail


Pt102e


Pt1032d


Pt104f


Pt111c


Pt111c Detail

Br1266d • **Mnium,** t.s. of sporophyte with spores
Br127d • **Mnium,** protonema w.m.
Br1275e **Mnium,** young gametophyte w.m. young leafy shoot with protonema *
Br1325t **Mnium,** moss, composite slide of four stages: antheridial branch l.s., archegonial branch l.s., sporogon with spores l.s., and protonema w.m.
Br121c • **Polytrichum,** moss, t.s. of stem
Br1212d **Polytrichum,** l.s. of stem with leaves
Br1214c **Polytrichum,** t.s. of seta
Br122d • **Polytrichum,** t.s. of leaves showing photosynthetic lamellae on the upper side
Br1223e **Polytrichum,** l.s. of antheridial branch
Br1226e **Polytrichum,** l.s. of archegonial branch
Br123d **Polytrichum,** l.s. of sporophyte with spores
Br124d **Polytrichum,** t.s. of sporophyte with spores
Br1242d **Polytrichum,** l.s. of young sporophyte with developing spores
Br1244c • **Polytrichum,** w.m. of peristome
Br1246d **Polytrichum,** w.m. of protonema
Br134c • **Sphagnum,** peat moss, w.m. of leaf showing chlorophyll bearing and hyaline cells
Br135d **Sphagnum,** t.s. of stem and leaves
Br136e **Sphagnum,** l.s. of antheridia *
Br137f **Sphagnum,** l.s. of archegonia *
Br138d **Sphagnum,** l.s. of young sporophyte
Br133d **Tortula,** moss, w.m. of gametophyte and young sporophyte
Br1331d **Tortula,** gametophyte and older sporophyte with peristome w.m.

PTERIDOPHYTA

Psilotales – Psilopsids

Pt101d • **Psilotum,** t.s. of stem showing exarch protostele and leaflets
Pt102e • **Psilotum,** t.s. of three-lobed sporangium
Pt103e **Psilotum,** l.s. of stem and sporangium
Pt1032d **Psilotum,** t.s. of rhizome
Pt1034d **Tmesipteris,** aerial stem t.s.
Pt1035d **Tmesipteris,** leaves t.s.
Pt1036e **Tmesipteris,** sporangium t.s.

Lycopodiatae – Clubmosses

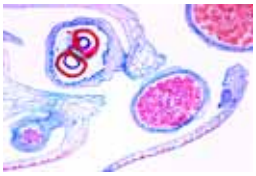
Pt104f • **Isoetes,** quillwort, l.s. of entire plant with corm, leaves, sporangia and rhizophores
Pt105e **Isoetes,** l.s. of microsporophyll *
Pt106e **Isoetes,** l.s. of macrosporophyll *
Pt107d **Isoetes,** t.s. of stem
Pt110d **Lycopodium,** club moss, l.s. of stem showing stele
Pt111c • **Lycopodium,** t.s. of stem showing typical actinostele
Pt1115d • **Lycopodium,** t.s. of rhizome
Pt112e • **Lycopodium,** t.s. of mature sporophyll showing isospores
Pt113e **Lycopodium,** l.s. of young sporophyll showing developing spores
Pt114b • **Lycopodium,** spores w.m.
Pt1145d **Lycopodium,** young sporophyll w.m.
Pt115f **Lycopodium,** stem with apical region l.s.
Pt116c • **Selaginella,** t.s. of stem
Pt1163c **Selaginella,** t.s. of rhizophore
Pt117e • **Selaginella,** l.s. of strobilus with micro- and megasporangia
Pt118f **Selaginella,** w.m. of strobilus *
Pt119d **Selaginella,** l.s. of stem and leaves
Pt1193c **Selaginella,** c.s. of leaves

Equisetatae – Horse-tails

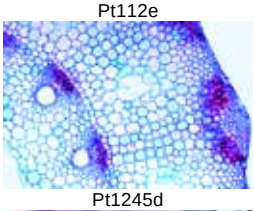
Pt125d **Equisetum,** root t.s.
Pt1245d • **Equisetum,** rhizome t.s.
Pt124c • **Equisetum,** stem t.s.
Pt126d • **Equisetum,** l.s. of stem tip showing apical region and developing leaves
Pt120d **Equisetum,** horse tail, young strobilus showing developing spores l.s.
Pt121d • **Equisetum,** mature strobilus t.s.
Pt122d • **Equisetum,** mature strobilus l.s.
Pt1223e **Equisetum,** l.s. and t.s. of mature strobilus on one slide
Pt123b • **Equisetum,** spores and elaters w.m.
Pt127e **Equisetum,** prothallium w.m. *

Filicatae – Ferns

Pt1835d **Adiantum,** maiden-hair fern, leaf with sori and sporangia w.m.
Pt1836d **Adiantum,** leaf with sori and sporangia t.s.
Pt1837d **Adiantum,** rhizome t.s., amphiphloic siphonostele
Pt1831d **Angiopteris,** root t.s.
Pt1832d **Angiopteris,** rhizome with dictyostele t.s.
Pt130c • **Aspidium (Dryopteris),** male fern, root t.s.
Pt132c • **Aspidium,** rhizome t.s.
Pt131c • **Aspidium,** stem with bundles t.s.
Pt133d • **Aspidium,** leaves with sori showing indusia, sporangia and spores, section showing l.s. of sori
Pt134d **Aspidium,** leaflet with kidney-shaped indusia w.m.
Pt136d **Aspidium,** sec. of leaves with young sori showing spore development
Pt135b • **Aspidium,** isolated sporangia and spores w.m.
Pt1841d **Athyrium,** leaf with sori and sporangia w.m.
Pt1776c **Blechnum,** macerated xylem elements w.m.
Pt1851d **Botrychium,** fern, stem t.s.
Pt1852d **Botrychium,** sporangium t.s.
Pt1861d **Dennstaedtia,** rhizome with amphiphloic siphonostele t.s.
Pt1863d **Dennstaedtia,** leaf with sori and sporangia t.s.
Pt151d • **Fern prothallium,** young filamentous stage w.m.
Pt152e **Fern prothallium,** with antheridia w.m.
Pt153e **Fern prothallium,** with archegonia w.m.
Pt154f • **Fern prothallium,** selected to show antheridia and archegonia w.m. *
Pt155d • **Fern prothallium,** section with antheridia
Pt156e • **Fern prothallium,** section with archegonia *
Pt157g **Fern prothallium,** older stage with young sporophyte and root w.m. *
Pt1353d **Fern,** germinating spores of Aspidium or Pteridium, w.m.
Pt1575e **Fern,** sperm w.m. and stained for flagella *
Pt159t **Fern,** composite slide of four stages: leaflet with sori and sporangia t.s., rhizome t.s., prothallium with sex organs w.m., prothallium with young sporophyte w.m.
Pt1871d **Gleichenia,** tropical fern, rhizome t.s.
Pt191f **Huperzia,** l.s. of sporangia on leaf bases
Pt1875d **Lygodium,** leaf with sori and sporangia w.m.
Pt175c **Marattia,** tropical fern, root t.s.
Pt176c **Marattia,** rhizome t.s.
Pt177e **Marattia,** synangium t.s.
Pt1881d **Marsilea,** nardoo, rhizome with amphiphloic siphonostele, t.s.
Pt1882c **Marsilea,** petiole t.s.
Pt1883d **Marsilea,** leaflet t.s.
Pt1884e **Marsilea,** sporocarp t.s.
Pt1672d **Ophioglossum,** root t.s.
Pt167c **Ophioglossum,** rhizome t.s.
Pt165c **Ophioglossum,** adders tongue fern, stem t.s.
Pt1675c **Ophioglossum,** leaf t.s.
Pt1676e **Ophioglossum,** sporocarp with spores t.s.
Pt166e **Ophioglossum,** sporocarp with spores l.s.
Pt1673c **Ophioglossum,** macerated xylem elements w.m.
Pt181c **Osmunda,** root t.s.
Pt180c **Osmunda,** royal fern, rhizome with ectophloic siphonostele t.s.
Pt1803c **Osmunda,** stem, l.s.
Pt1824c **Osmunda,** stem t.s.
Pt1825c **Osmunda,** leaf t.s.
Pt182d **Osmunda,** sporangia and spores t.s.
Pt1821d **Osmunda,** leaf with sori and sporangia w.m.
Pt1822c **Osmunda,** macerated xylem elements w.m.
Pt161d **Phyllitis scolopendrium,** hart's tongue fern, leaf with sori and sporangia t.s.
Pt1612d **Phyllitis scolopendrium,** rhizome t.s.
Pt147c **Platycerium,** epiphytic fern, sterile and fertile leaves t.s.
Pt1891d **Polypodium,** rhizome with dictyostele t.s.
Pt1893d • **Polypodium,** leaf with sori and sporangia w.m. shows lack of indusia
Pt1894c **Polypodium,** t.s. of leaf showing modification of epidermis (water pit)
Pt1895d **Polystichum,** Christmas fern, leaf with sori and sporangia w.m. showing shield-shaped indusia
Pt144d **Pteridium,** root t.s.
Pt140d • **Pteridium,** l.s. of rhizome showing scalariform vessels
Pt141d • **Pteridium,** t.s. of rhizome with dictyostele
Pt139d **Pteridium (Pteris),** bracken fern, macerated rhizome with scalariform vessels w.m.


Pt117e


Pt112e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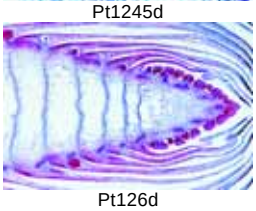
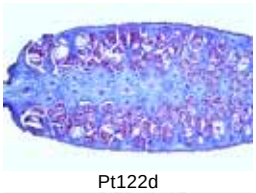
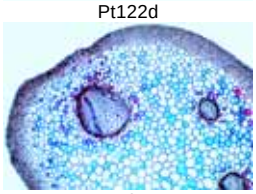
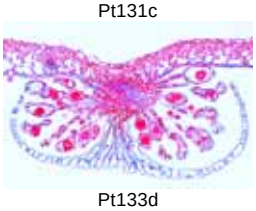
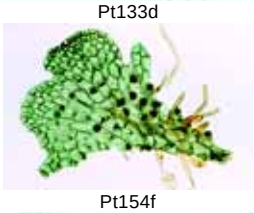
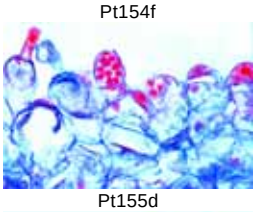

Pt126d

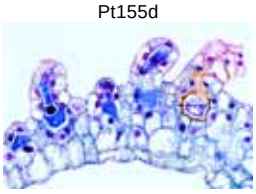

Pt122d

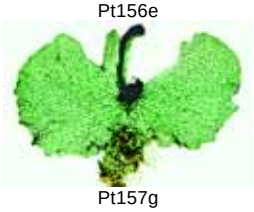

Pt131c

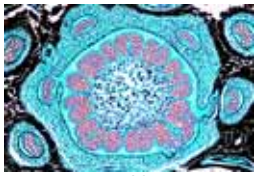

Pt133d

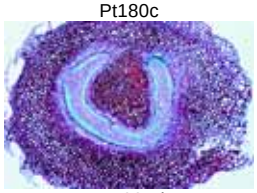

Pt154f


Pt155d

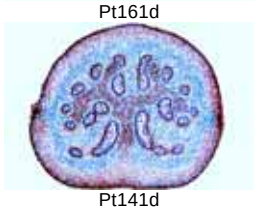

Pt156e

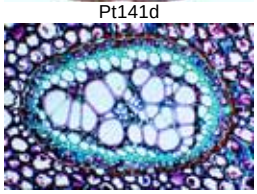

Pt157g

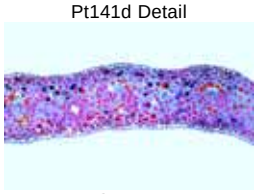

Pt180c

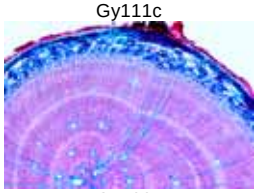

Pt1837d


Pt161d


Pt141d

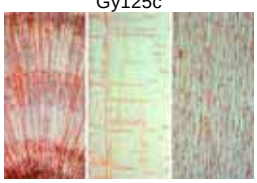

Pt141d Detail

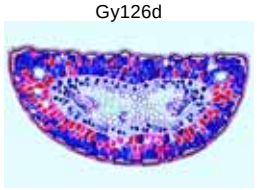

Gy111c


Gy122c


Gy123e


Gy125c

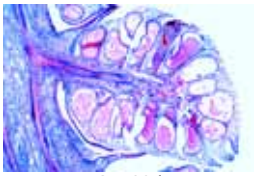

Gy126d


Gy127c

Pt142c **Pteridium,** stem t.s.
Pt143c **Pteridium,** leaves with sori and sporangia, section shows l.s. of sori within inrolled margins of the leaves
Pt1433d • **Pteridium,** w.m. of leaf with sori and sporangia
Pt1422c **Pteridium,** macerated xylem elements w.m.
Pt145c • **Salvinia natans,** waterfern, leaf t.s.
Pt146d • **Salvinia natans,** sporocarp t.s.

GYMNOSPERMAE

Gy1041e **Cycas,** three sections of wood, t.s., r.l.s., t.l.s.
Gy1042d **Cycas,** leaf t.s.
Gy1048f **Cycas,** seed, t.s.
Gy101d **Zamia (cycad),** root t.s.
Gy102e **Zamia,** stem t.s.
Gy1021d **Zamia,** leaf t.s.
Gy1022e **Zamia,** male cone t.s. showing microsporophyll with spores *
Gy103f **Zamia,** young female cone showing ovules l.s. *
Gy1031g **Zamia,** ovule with archegonia l.s. *
Gy112c **Ginkgo biloba,** stem t.s.
Gy1116c **Ginkgo biloba,** young sprout, t.s.
Gy1114d **Ginkgo biloba,** shoot apex, l.s.
Gy1124e **Ginkgo biloba,** three sections of wood, t.s., r.l.s., t.l.s.
Gy1123c **Ginkgo biloba,** macerated xylem elements w.m.
Gy111c **Ginkgo biloba,** leaf t.s.
Gy105d **Ginkgo biloba,** male cone t.s. showing microsporophyll
Gy1051d **Ginkgo biloba,** male cone l.s. showing microsporophyll
Gy1055e **Ginkgo biloba,** young female cone showing growing ovules l.s.
Gy106f **Ginkgo biloba,** archegonium before fertilization, l.s. *
Gy107f **Ginkgo biloba,** archegonium after fertilization l.s. *
Gy108e **Ginkgo biloba,** ovule l.s. for general study, free nuclear stage
Gy109g **Ginkgo biloba,** archegonium showing proembryo l.s. *
Gy110f **Ginkgo biloba,** later stage of embryo l.s. *
Gy113c **Taxus baccata,** yew, young stem t.s.
Gy114c **Taxus baccata,** root t.s.
Gy115c **Taxus baccata,** leaves t.s.
Gy121c • **Pinus,** pine, young root from seedling t.s.
Gy122c • **Pinus,** older woody root t.s.
Gy123e **Pinus,** stem apex shows meristematic tissue and leaf origin l.s.
Gy1234c **Pinus,** young sprout with needles, t.s.
Gy124c • **Pinus,** one year stem t.s.
Gy125c • **Pinus,** older stem with annual rings, resin ducts t.s.
Gy1255d **Pinus,** one and two year stem, t.s.
Gy126d • **Pinus,** three sections of wood: cross, radial and tangential sections
Gy1265c **Pinus,** wood, tangential sec. stained for tracheids with pits
Gy127c • **Pinus,** leaves (needles), t.s. for general study of gymnosperm leaves
Gy1271c **Pinus monophylla,** single-leaf pine, leaves t.s.
Gy1272c **Pinus nigra,** Austrian pine, the two-needle type, leaves t.s.
Gy1273c **Pinus australis,** long-leaf pine, the three-needle type, leaves t.s.
Gy1274c **Pinus strobus,** white pine, the five-needle type, leaves t.s.
Gy128d **Pinus,** male cone with pollen t.s. (staminate cone)
Gy129d • **Pinus,** male cone with pollen l.s.
Gy1291d **Pinus,** young male cone with developing pollen l.s.
Gy1295e **Pinus,** l.s. and t.s. of male (staminate) cone on one slide
Gy130b • **Pinus,** mature pollen grains w.m.
Gy1301d **Pinus,** germinating pollen grains with pollen tubes w.m.
Gy131d • **Pinus,** young female (ovulate) cone, entire l.s. for general study
Gy132e **Pinus,** young female cone at time of pollination, l.s. with pollen grains and micropyle
Gy1322g **Pinus,** ovule l.s. showing megaspore mother cell *
Gy1324k **Pinus,** ovule l.s. showing meiosis of megaspore mother cell, 2 to 4 haploid daughter cells *
Gy133f • **Pinus,** ovule l.s. showing growing female gametophyte at the free nuclear stage
Gy134h **Pinus,** young archegonium before separation of egg nucleus and ventral canal nucleus l.s. *
Gy135f • **Pinus,** ovule l.s. showing archegonia, the standard slide for general study
Gy1351h **Pinus,** archegonium median l.s. with egg nucleus and neck cells *
Gy1355k **Pinus,** archegonium l.s. with zygote cell in division. As available *
Gy1357i **Pinus,** archegonium l.s. showing free proembryonic nuclei in the center of the archegonium *
Gy136g **Pinus,** archegonium l.s. with early stage of proembryo
Gy1361h **Pinus,** young proembryo median l.s. showing four-cell stage *
Gy1362h **Pinus,** young proembryo median l.s. showing eight-cell or sixteen-cell stage.
Gy137g **Pinus,** archegonium l.s. with later stage of proembryo
Gy138e **Pinus,** young embryo l.s.
Gy139e • **Pinus,** mature embryo with endosperm l.s.
Gy1391f **Pinus,** mature embryo with endosperm, near median l.s.
Gy140e • **Pinus,** mature embryo with endosperm t.s.
Gy141f **Pinus,** germinating seed l.s.
Gy145d **Pinus,** older stem, t.s. and l.s. on one slide showing annual rings, resin ducts, bark
Gy146b **Pinus,** wood cells macerated and w.m.
Gy147c **Pinus,** leaf bud t.s.
Gy1478e **Pinus,** composite slide of three kinds: stem t.s., leaves t.s. and young ovulate cone on one slide
Gy151c • **Abies,** fir, leaves t.s.
Gy1514d **Abies,** shoot apex, l.s.
Gy1515d **Abies,** three sections of wood, t.s., r.l.s., t.l.s.
Gy1512c **Abies grandis,** leaves t.s.
Gy152c • **Picea,** spruce, leaves t.s.
Gy153c **Picea,** shoot apex with leaves t.s.
Gy1520e **Picea,** endosperm with embryo t.s.
Gy1536c **Picea asperata,** leaves t.s.
Gy1533c **Picea breweriana,** leaves t.s.
Gy1535c **Picea glauca,** leaves t.s.
Gy1537c **Picea orientalis,** leaves t.s.
Gy1532c **Picea polita,** leaves t.s.
Gy1534c **Picea pungens,** leaves t.s.
Gy251c • **Larix,** larch, leaves t.s.
Gy253d **Larix,** l.s. of male cone
Gy255e **Larix,** l.s. of female cone with ovules
Gy211c **Ephedra,** stem t.s.
Gy215e **Ephedra,** male flower t.s.
Gy216e **Ephedra,** female flower t.s.
Gy2165f **Ephedra,** mature female cone l.s.
Gy217c **Ephedra,** macerated xylem elements w.m.
Gy221c **Gnetum,** leaf t.s.
Gy2213c **Gnetum,** macerated xylem elements w.m.
Gy1549c **Arbor-vitae,** leaves l.s.
Gy1565c **Cedrus deodora,** cedar, leaves t.s.
Gy156c **Cephalotaxus fortunei,** leaves t.s.
Gy157c **Chamaecyparis nootkatensis,** leaves t.s.
Gy155c **Cryptomeria japonica,** leaves t.s.
Gy1582c **Juniperus communis,** juniper, leaves t.s.
Gy158c **Juniperus virginiana,** leaves t.s.
Gy159c **Librocedrus decurrens,** leaves t.s.
Gy1595c **Metasequoia,** leaves t.s.
Gy160c **Pseudotsuga menziesii,** leaves t.s.
Gy1575c **Taxodium distichum,** cypress, leaves t.s.
Gy162c **Thuja plicata,** leaves t.s.
Gy161c **Tsuga canadensis,** leaves t.s.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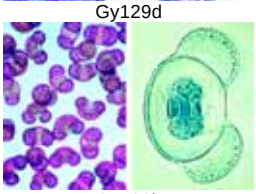
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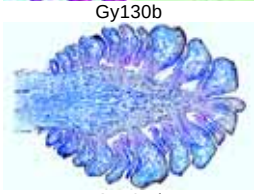
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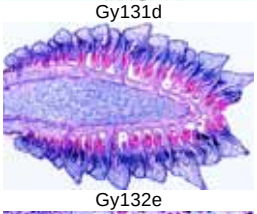
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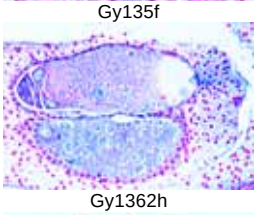
Gy133f


Gy135f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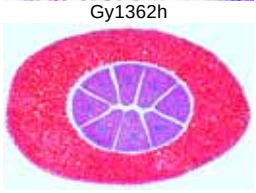
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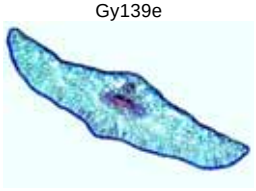
Gy139e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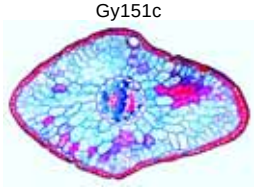
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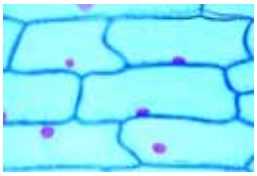
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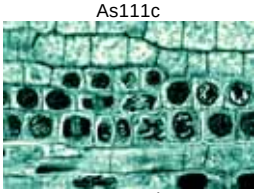
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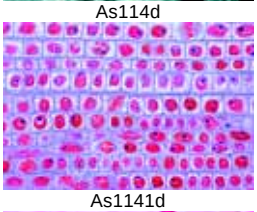
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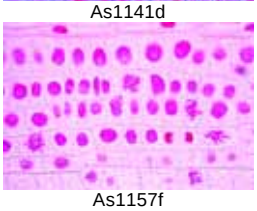
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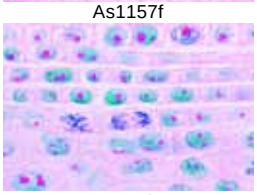
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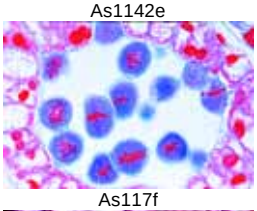
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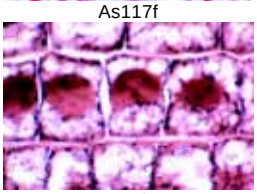
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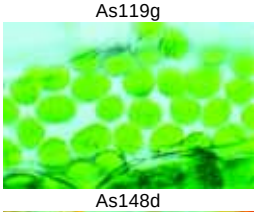
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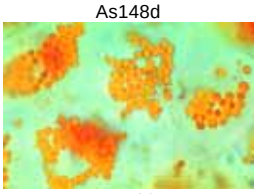
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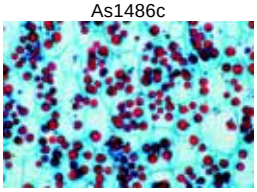
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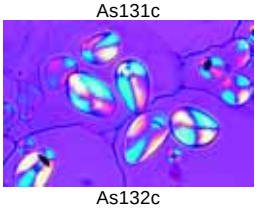

As132c

ANGIOSPERMAE

I. CYTOLOGY AND TISSUES

Cell nucleus, cell division, chromosomes

As111c • **Epidermal cells** of Allium cepa (onion), flat mount shows typical plant cells with nuclei, cytoplasm and cell walls

As1125d **Epidermal cells** of Allium cepa, w.m. of bulb scale epidermis, unstained preparation special mounted for phase contrast observation

As1127s **Epidermal cells** of Allium cepa, plasmolysis, w.m. turgid piece and plasmolized piece of onion epidermis for comparison

As114d • **Mitosis,** l.s. from Allium root tips showing all stages of plant mitosis carefully stained with iron-hematoxyline after Heidenhain

As1141d **Mitosis,** l.s. from Allium root tips showing all stages of plant mitosis carefully stained with a quadruple stain

As1142e **Mitosis,** l.s. from Allium root tips showing all stages of plant mitosis, specially stained with fuchsin and fast green

As115d • **Mitosis,** t.s. from Allium root tips showing all stages of plant mitosis in polar view

As1155g **Mitosis,** squash preparation from Allium root tip, shows intact mitotic stages, Feulgen stain *

As1157f **Mitosis,** l.s. from Allium root tips showing all stages of plant mitosis stained by the Feulgen stain *

As1158g **Mitosis,** squash preparation from Allium root tip, shows intact mitotic stages, orceine stained

As1159h **Mitosis,** squash preparation from Allium root tip, treated with colchicine for metaphase stages, orceine stained *

As116d **Mitosis,** l.s. from Vicia faba (bean) root tips showing all mitotic stages

As1165g **Mitosis,** squash preparation from Vicia faba root tips, showing intact mitotic stages, Feulgen stain *

As1166e • **Mitosis,** l.s. from Hyacinthus root tips showing all stages of plant mitosis carefully stained with a quadruple stain. Specially large chromosomes, for demonstration of plant mitosis

As1169g • **DNA and RNA,** thin l.s. from Allium root tips, specially fixed and stained with methylgreen and pyronine to show DNA and RNA in different colours *

As117f • **Meiosis,** t.s. of Lilium anthers showing different stages of meiotic divisions

Cell organelles

As112g **Epidermal cells** of Allium cepa, specially fixed and stained to show the mitochondria *

As119g • **Mitochondria,** thin l.s. of Allium root tips specially fixed and stained to show the mitochondria clearly

As148d • **Chloroplasts,** w.m. of leaf of Elodea or Spinacea showing detail of large chloroplasts

As1481d **Chloroplasts,** in sec. of Tradescantia shoot

As1485c **Chromoplasts,** w.m. of petal of Viola (violet)

As1486c **Chromoplasts,** t.s. of root of Daucus carota (carrot)

As1487c **Chromoplasts,** in w.m. of piece of petal from Tropaeolum

As1488e **Plasmodesmata**, in t.s. of palm seed (Phytelephas)

Inclusions: Reserve and storage substances

As131c • **Aleurone grains,** sec. of Ricinus endosperm

As6611d **Aleurone grains,** t.s. of seed and cotyledons of Evonymus

As132c • **Starch grains,** sec. of tuber of Solanum tuberosum (potato)

As1321c **Starch grains,** t.s. cotyledons of Vicia faba (bean)

As1322c **Starch grains,** t.s. of semen (grain) of Avena (oat)

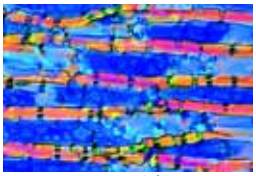
As1323b **Starch grains,** smear from Euphorbia (spurge)

As1324b **Starch grains,** different kinds of mixed species w.m.

As1325b **Corroded starch grains,** w.m. from potato

As133d • **Fat,** t.s. of endosperm of Corylus (hazel) stained for fat

As146d • **Reserve cellulose,** t.s. seed of Phoenix (date)


As146d

Inclusions: Crystals and metabolic products

As135d • **Inulin crystals,** t.s. of tuber of Dahlia

As136d • **Acid tannic,** t.s. bark of Rosa

As137b • **Calcium oxalate crystals** in w.m. of dry Allium scale

As138c • **Raphides,** t.s. of Impatiens leaf

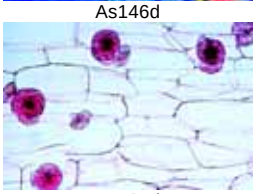
As1381c **Raphides,** t.s. of Oxalis leaf

As1382d **Raphid cells** with growing raphids, l.s. root tips of Hyacinthus

As1383c • **Crystal sand,** t.s. of Solanum tuberosum (potato) leaf

As1384d **Clustered crystals,** t.s. stem of Opuntia

As459c • **Cystoliths,** t.s. leaf of Ficus elastica, India rubber plant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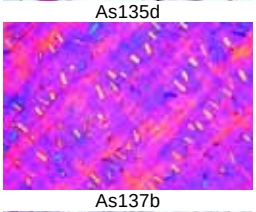

As137b

Meristematic tissues

As121e • **Stem apex** and meristematic tissue of Elodea, l.s. showing growing zone and leaf origin

As1215f **Stem apex** and meristematic tissue of Elodea, median l.s. showing growing point *

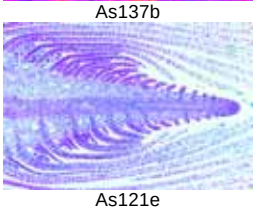
As122d • **Stem apex** and meristematic tissue of Asparagus l.s.

As123e **Stem apex** and meristematic tissue of Hippuris l.s.

As124e **Stem apex** and meristematic tissue of Coleus l.s.

As1145e **Allium cepa,** median l.s. of root tip to show the meristematic tissue *

As1146f **Hyacinthus,** median l.s. of root tip showing meristematic tissue and growing point *


As121e


As122d

Supporting tissues

As140c • **Wood cells,** macerated and w.m.

As141e • **Thylosis,** t.s. and l.s. of Robinia (black locust) wood

As1431c **Sclerids,** t.s. of semen, (seed) of Phaseolus (bean) with palisade sclerids

As145c • **Angular collenchyma,** t.s. stem of Lamium or Salvia

As1451c • **Lamellar collenchyma,** t.s. stem of Sambucus

As1452c • **Lacunar collenchyme,** t.s. stem of Petasites or Lactuca

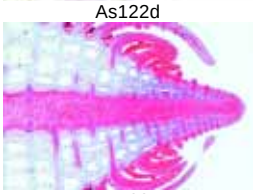
As147b • **Sclerenchyma fibres,** isolated and w.m.

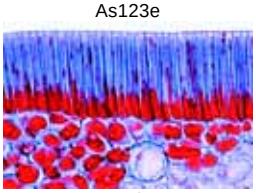
As1471d **Sclerenchyma fibres of phloem,** t.s. and l.s. of stem of Linum (flax)

As1472d **Sclerenchyma fibres of xylem,** t.s. and l.s. of stem of Hypericum

As150b • **Bast cells** from coconut, isolated and w.m.

As1505b **Bast cells** from Cinchona, isolated and w.m.


As123e


As1431c

Conducting tissues

As151d • **Annular and spiral vessels,** l.s.

As1525d **Annular and spiral vessels,** isolated and w.m.

As153d • **Scalariform vessels,** l.s.

As1535d **Scalariform vessels,** isolated and w.m.

As154d • **Pitted vessels,** l.s.

As1545d **Pitted vessels,** isolated and w.m.

As1547d **Tracheids with bordered pits,** wood of Pinus l.s. stained with thionine

As155d • **Reticulate vessels,** l.s.

As1554d **Reticulate, annular, and spiral vessels,** isolated and w.m.

As160d • **Sieve tubes, sieve plates and vessels,** l.s. of stem of Cucurbita pepo

As161c • **Sieve plates** in top view, t.s. of Cucurbita stem showing large structures

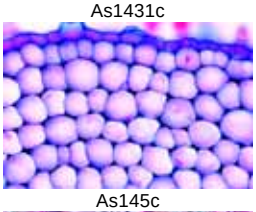
As162d **Callose** on sieve plates of Vitis vinifera (grape) during the winter

As142c • **Lactiferous vessels,** l.s. stem of Euphorbia (spurge)

As1423c • **Lactiferous vessels,** tangential l.s. of Taraxacum root

As489c **Lactiferous vessels,** t.s. of Asclepias, milkweed

As493d **Netted venation,** portion of dicot leaf w.m. showing venation only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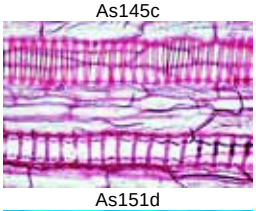
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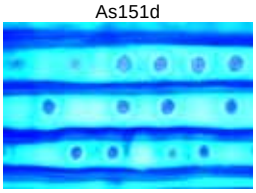
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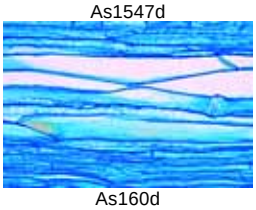
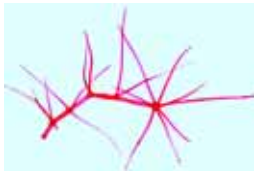

As160d


As139b


As360c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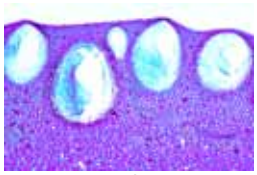
As1491b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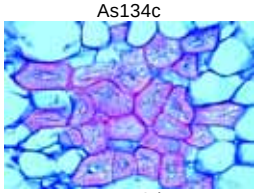
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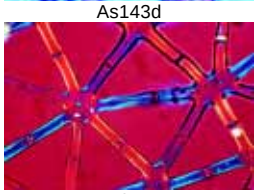
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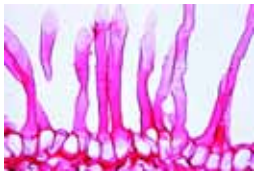
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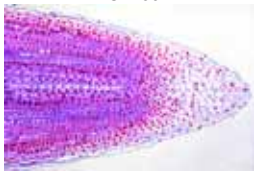
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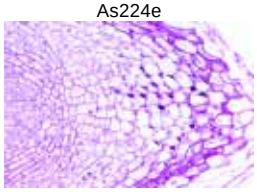
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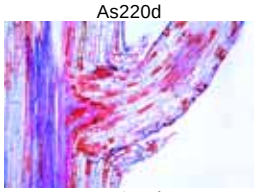

As254d

Epidermal tissues

As139b • **Cork cells,** t.s. bark of Quercus suber (oak)
As1392c **Cork cambium development,** t.s. young stem of Sambucus (elderberry)
As360c • **Lenticells,** t.s. stem of Sambucus (elderberry)
As1344c • **Glandular hairs,** t.s. petiole of Primula
As149b • **Branched leaf hairs,** isolated and w.m. from Verbascum (mullein)
As1491b • **Scale-like stellate hairs,** isolated and w.m. from Elaeagnus (olive tree)
As1492c **Scale-like stellate hairs,** in t.s. of Elaeagnus leaf
As1493c **Hooked hairs,** t.s. of leaf of Humulus (hop)
As1494c **Absorbent hairs,** w.m. of epidermis from Tillandsia
As1495d **Absorbent hairs,** t.s. of leaf from Tillandsia
As1496b **Seed hairs,** w.m. from Gossypium (cotton)
As621d **Viola,** violet, t.s. of petal with hairs

Special cells and tissues

As134c • **Lysigenous oil glands,** t.s. rind of Citrus fruit
As1341c • **Schizogenous oil glands,** t.s. leaf of Hypericum
As4566c **Leaf with oil sacs**, t.s. Lavandula, lavender
As1343c **Glandular cells,** t.s. leaf of Thymus
As143d • **Stone cells,** t.s. fruit of Pyrus communis (pear)
As1432d **Sclerids,** t.s. of leaf of Camellia with stellate sclerids
As144b • **Parenchyme cells,** t.s. of marrow of Sambucus niger (elderberry)
As1435d **Aerial tissue,** t.s. leaf of Canna indica
As314c • **Juncus,** bulrush, stem with internal stellate cells t.s.
As583d • **Nectary with glands**, Fritillaria, t.s.

II. ROOTS

Typical roots in comparison

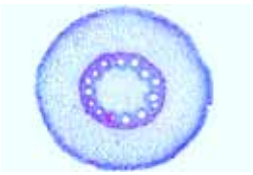
As201e **Monocot and dicot roots,** two t.s. on one slide for comparison
As202e **Herbaceous and woody roots,** two t.s. on one slide
As203e **Young (primary) and older (secondary) roots,** two t.s. on one slide
As204e **Fleshy and woody roots,** two t.s. on one slide

Root tips, root development

As210d • **Root tip and root hairs,** t.s. to show epidermal origin of root hairs
As211d • **Root tip and root hairs,** w.m.
As2113c **Hydrocharis,** root tip with central pith and root hairs, t.s.
As2133c **Vicia faba,** bean, t.s. of root tip
As2134d **Monstera,** philodendron, l.s. through root tip
As2175d **Asparagus,** root t.s. to show epidermal origin of root hairs
As2132c **Sinapis,** cross sections through young roots
As220d • **Zea mays,** l.s. of root tip specially stained for statolith starch
As224e **Hyacinthus,** l.s. of root tips showing all stages of mitosis
As254d • **Salix,** willow, l.s. of root showing origin of lateral roots
As2541d **Salix,** t.s. of root showing origin of lateral roots
As2545d **Vicia faba,** bean, l.s. of root showing origin and early development of lateral roots
As272c **Phaseolus,** bean, young root t.s. showing beginning secondary growth
As278e **Phaseolus,** l.s. showing transition root-stem

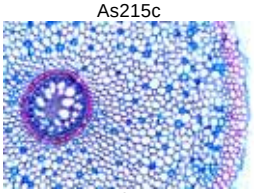
Typical monocot roots

As215c • **Zea mays,** corn, root t.s., a polyarch root
As214c • **Iris,** typical monocot root t.s. showing all structures
As217c • **Convallaria,** lily of the valley, t.s. of root shows endodermis, pericycle, phloem, xylem very clearly
As2135c **Allium cepa,** onion, t.s. of root tip showing epidermis, exodermis, endodermis and central pith
As222c **Lilium,** lily, t.s. of monocot root
As227c **Hordeum,** barley, young root t.s. shows development of vascular bundles
As228c **Triticum,** wheat, young root t.s., primary xylem and central vessel
As229c **Bromus,** brome-grass, t.s. of a grass root


As215c

Typical dicot roots

As241c • **Ranunculus,** buttercup, t.s. of a typical dicot root for general study showing all structures very clearly
As2411d **Ranunculus,** young and older roots on one slide, t.s.
As2419d **Helianthus,** sunflower, young root t.s.
As242d **Helianthus,** sunflower, older woody root t.s.
As245c • **Raphanus,** radish, t.s. of root showing secondary growth and several cambium rings
As247c **Medicago,** alfalfa, root t.s. showing secondary growth
As266c **Beta vulgaris,** beet, root showing anomalous secondary growth t.s.
As244c • **Tilia,** lime, older woody root t.s.
As258c **Rheum,** rhubarb, root with crystals t.s.
As267c **Cannabis sativa,** hemp, root t.s.
As268c **Clivia miniata,** t.s. of root showing polyarch central bundle
As269c **Quercus robur,** oak, young root from seedling t.s.
As270c **Quercus robur,** older woody root t.s.
As280c **Nicotiana tabacum,** tobacco, t.s. of root showing primary and secondary xylem
As281c **Actaea,** baneberry, young root with primary xylem t.s.
As282c **Sambucus,** elderberry, root t.s.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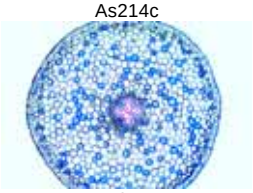
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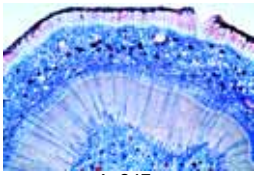
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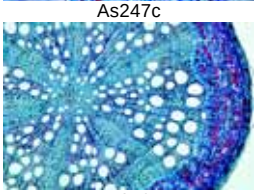
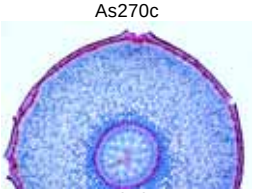

As270c

Adaptation to water: Hydrophytes and hygrophytes

As212d • **Lemna,** duckweed, root tip and cap (calyptra) w.m.
As213d **Lemna,** l.s. of root tip and cap
As225c • **Elodea,** Canadian waterweed, t.s. of an aquatic root
As283d **Nymphaea,** water-lily, t.s. of root showing branch root origin
As2415d • **Caltha palustris,** t.s. of primary root showing endodermis and the Casparian strips
As253c • **Monstera,** aerial root t.s.
As2535c **Avicennia,** mangrove, breathing root (pneumatophore) t.s.
As259c • **Dendrobium,** orchid, aerial root with velamen t.s.
As287c **Taxodium distichum (Cypressacea),** t.s. of aerial root for respiration
As286c **Rhiziphora,** mangrove, t.s. of adventitious root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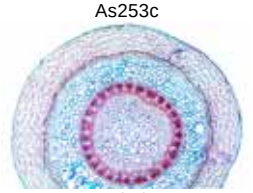
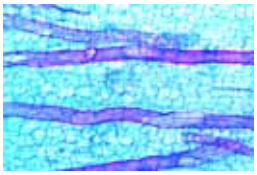

As259c

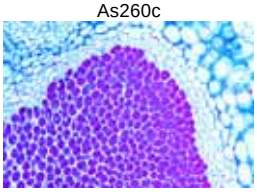
Adaptation to dry habitat: xerophytes

As216c • **Smilax,** carrion flower, t.s. of root shows thickened endodermis
As288c **Pelargonium,** t.s. of root for succulence
As284c **Sarothamnus,** broom, t.s. through woody root


As260c

Adaptation to unusual modes of nutrition

As248c • **Taraxacum,** dandelion, taproot with lactiferous vessels t.s.
As260c • **Scorzonera,** black salsify, root with lactiferous vessels l.s.
As249c **Lupinus,** lupin, root t.s.
As250d • **Lupinus,** root nodules with nitrogen fixing bacteria (Rhizobium radicicola) t.s.
As2502d **Pisum sativum,** pea, t.s. of nodule with nitrogen-fixing bacteria
As2505d **Vicia faba,** bean, t.s. of nodule with nitrogen fixing bacteria
As251d • **Alnus,** alder, root nodules with symbiotic actinomycetes (Streptomyces alni) t.s.
As265d • **Ranunculus ficaria,** root storing starch grains, t.s.
As246c • **Daucus carota,** carrot, storage root t.s.
As255d • **Fagus,** beech, root with ectotrophic mycorrhiza, t.s.
As256d • **Neottia nidus avis,** orchid, root with endotrophic mycorrhiza, l.s.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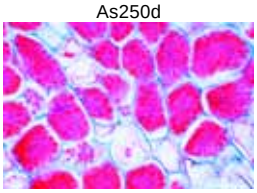
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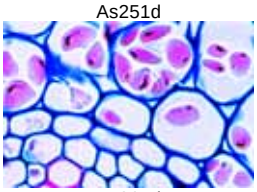
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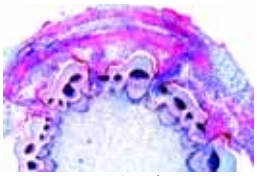
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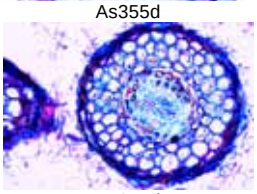
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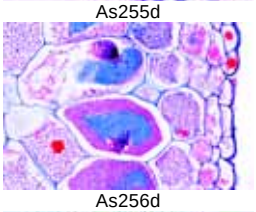
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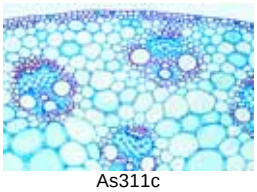
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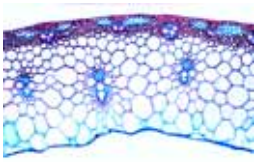
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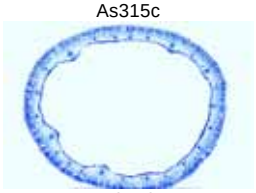
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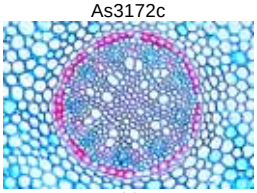
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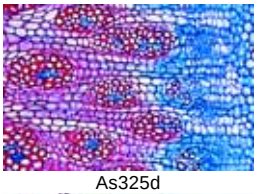
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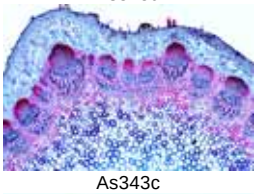
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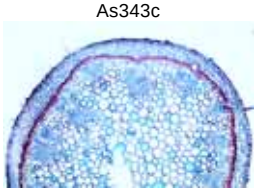
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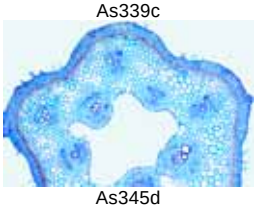

As345d

As2417d **Orchid,** root t.s.
As2475c **Convolvulus,** twining plant, older root with compressed endodermis t.s.
As252c **Hedera helix,** ivy, aerial climbing root t.s.
As355d • **Cuscuta,** dodder, t.s. through stem of host showing the haustoria of the parasite
As285e • **Viscum album,** mistletoe, sec. showing parasitic root in wood of apple tree

III. STEMS

Typical stems in comparison

As305e **Monocot and dicot stems,** two t.s. on one slide for comparison of the different structures
As3052e **Monocot and dicot stems,** two l.s. on one slide
As3054e **Dicot and monocot stem,** t.s. of Helianthus and Canna, on same slide
As3055e **Dicot and monocot stem,** t.s. of Ranunculus and Zea, on same slide
As306e **Stems of annual and perennial plants,** two t.s. on one slide
As3065e **Sun and shadow stems,** two t.s. on one slide
As307e **Herbaceous and woody stems,** two t.s. on one slide
As3942f **Dicot stem,** Aristolochia, t.s. of one year stem with widely separate bundles, two years stem and older stem with anomalous structure all 3 in on slide
As3944e **One year stem** with active cambium and older stem with secondary structures, Tilia, two t.s.
As3432e **Helianthus,** young and older stem, two t.s. on one slide
As3424e **Helianthus,** of older stem, t.s. and l.s. on one slide

Typical monocot stems

As311c • **Zea mays,** typical monocot stem with scattered bundles, t.s., a standard slide for general study
As310c **Zea mays,** corn, young undifferentiated stem t.s.
As3115c **Zea mays,** stem with leaf sheaths t.s.
As312c **Zea mays,** stem with vascular bundles l.s.
As3941e **Zea mays,** t.s. and l.s. of monocot stem on one slide
As317c • **Lilium,** lily, t.s. of stem showing assimilating parenchyma
As3203c **Tulipa,** tulip, t.s. of stem
As3989c **Allium,** l.s. of a subterraneous bulb
As3172c **Allium sativum,** stem t.s.
As3988c **Asparagus,** t.s. of stem
As3204c **Dianthus,** pink, t.s. of stem
As315c • **Triticum,** wheat, t.s. through the stem of a gramineous plant with pith cavity and the ring-shaped arrangement of vascular bundles
As316d **Triticum,** l.s. transition node – internode
As3162c **Secale,** rye, t.s. of typical grass stem
As323c • **Holcus lanatus,** grass, stem t.s.
As320c **Acorus calamus,** sweet flag, rhizome t.s.
As321c • **Convallaria,** lily of the valley, t.s. of rhizome with concentric vascular bundles
As322c • **Iris,** rhizome t.s. showing storage of starch
As325d **Dracaena,** dragon tree, stem t.s., secondary growth in a monocot plant
As3813c **Saccharum,** sugarcane, stem t.s.
As3986c **Phragmites,** reed, t.s. of monocot stem
As3987c **Alisma plantago,** t.s. of stem

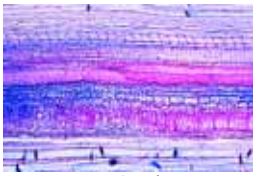
Typical dicot stems: Herbaceous plants

As343c • **Helianthus,** sunflower, typical dicot herbaceous stem t.s. showing open vascular bundles and all structures very clearly
As3432e **Helianthus,** young and older stem, two t.s. on one slide
As3424e **Helianthus,** older stem, t.s. and l.s. on one slide
As3943c **Helianthus,** young sprout t.s.
As376b **Helianthus,** sunflower, t.s. of marrow shows large parenchyma cells
As339c **Pelargonium,** geranium, t.s. through young stem of an annual plant
As340c **Pelargonium,** geranium, t.s. through older stem of an annual plant showing phellogen and fascicular cambium

As344d • **Cucurbita,** pumpkin, l.s. of stem with sieve tubes and vascular bundles
As345d • **Cucurbita,** t.s. of stem showing large sieve tubes and vascular bundles
As3451e **Cucurbita,** pumpkin, t.s. and l.s. of stem
As365c **Ranunculus,** buttercup, t.s. of stem with open vascular bundles, no interfascicular cambium
As354c • **Lamium,** deadnettle, square stem with well developed collenchyma and continuous vascular cylinder t.s.
As3542c **Galium,** t.s. of typical square stem showing collenchyme cells
As367c • **Salvia,** sage, t.s. of a square stem
As368c **Coleus,** t.s. of a square stem showing collenchyma clearly
As3877c **Amaranthus,** stem t.s.
As375c **Arctium lappa,** burdock, stem t.s.
As3876d **Atriplex,** orache, stem t.s. with bladder hairs
As374c **Bryonia,** t.s. of stem showing large sieve plates
As385c • **Cannabis sativa,** hemp, t.s. of stem showing woody sclerenchyma fibres
As3985c **Chelidonium,** celandine, t.s. of stem
As3872c **Chenopodium,** goosefoot, stem t.s.
As382d **Coleus,** stem with leaf base and axillary bud l.s.
As380c **Digitalis,** foxglove, stem with continuous circular stele t.s.
As358c • **Euphorbia,** spurge, stem with lactiferous vessels l.s.
As3949c **Fuchsia,** t.s. of stem
As352c **Hedera helix,** ivy, stem with crystals t.s.
As359c **Hoya carnosa,** wax flower, stem with stone cells t.s.
As387c **Hydrangea,** stem t.s.
As3946c **Impatiens,** t.s. of stem
As3565c **Lactuca,** lettuce, stem t.s.
As3566c **Lactuca,** lettuce, stem l.s.
As3752c **Lonicera,** t.s. of young stem
As3753c **Lonicera,** t.s. of older stem
As357c • **Medicago,** alfalfa, young stem t.s.
As3571d • **Medicago,** alfalfa, old stem t.s. with secondary growth
As3982c **Mercurialis,** t.s. through monopodial rhizome
As3983c **Mercurialis,** t.s. of stem
As3878d **Ononis,** restharrow, stem t.s.
As3866c **Passiflora,** passion flower, stem t.s.
As3972c **Primula,** primose, t.s. of stem
As381c **Trifolium,** clover, stem t.s.

Typical dicot stems: Shrubs and trees

As341c • **Aristolochia,** one year stem t.s. for general study
As342c • **Aristolochia,** older stem t.s. for general study
As3422e **Aristolochia,** one year and older stem, two t.s. on one slide
As3423c • **Aristolochia,** older stem l.s. for general study
As3426c **Aristolochia,** meristematic stem t.s. showing developing vascular bundles
As3428c **Aristolochia,** macerated xylem elements w.m.
As363c • **Aesculus hippocastanum,** chestnut, petiole t.s.
As369c **Aesculus hippocastanum,** chestnut, young stem (shoot) t.s.
As386d • **Aesculus hippocastanum,** chestnut, twig with leaf scar t.s.
As346c • **Clematis,** young hexagonal stem t.s., collenchyma
As347c • **Clematis,** older stem t.s., phelloderm, phellogen, phellem
As3767c **Fagus silvatica,** beech, stem t.s.
As3945c **Fagus,** beech, t.s. of mature wood
As377c **Fagus,** beech, macerated wood cells w.m.
As3772e **Fagus,** three sections of wood: t.s., r.l.s., t.l.s.
As3505c **Fraxinus excelsior,** ash, one year stem t.s.
As3506d **Fraxinus excelsior,** ash, three sections of wood; t.s., r.l.s., t.l.s.
As3882d **Hibiscus tiliaceus,** stem t.s.
As3899d **Liquidambar,** sweetgum, woody stem t.s.
As3783d **Liriodendron,** three sections of wood; t.s., r.l.s., t.l.s.
As3784c **Liriodendron,** stem t.s.
As3785c **Liriodendron,** stem l.s.
As3781c **Magnolia,** stem, l.s.
As3895e **Magnolia,** stem t.s. and l.s. in one slide
As3782c **Magnolia,** macerated xylem elements w.m.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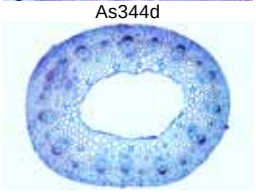
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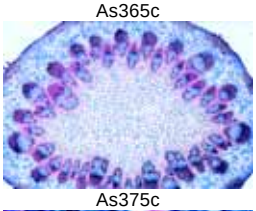
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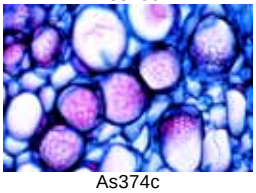
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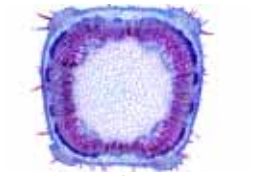
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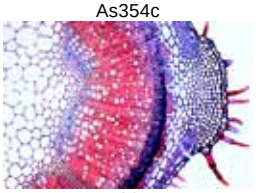
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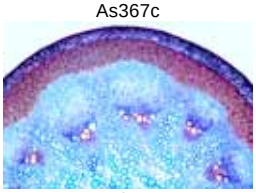
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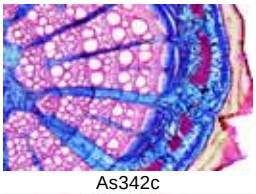
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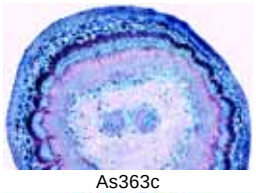
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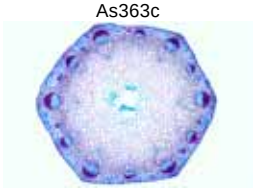
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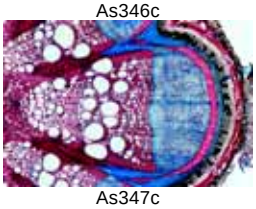
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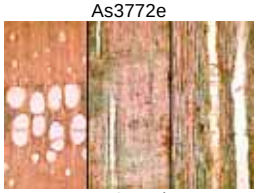
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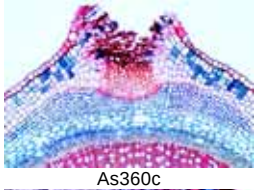
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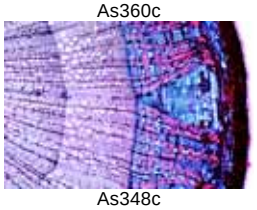
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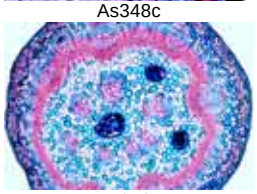
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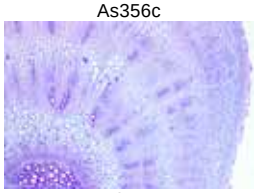
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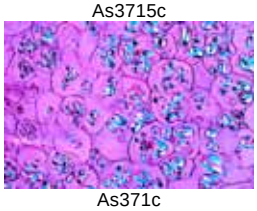
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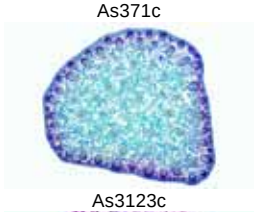
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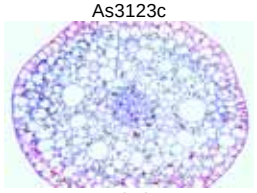
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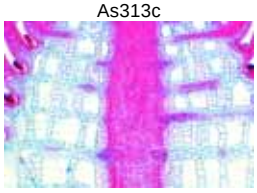
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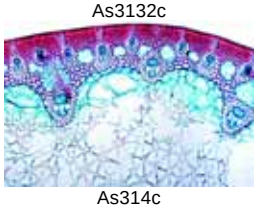

As314c

As3502d **Prunus avium,** cherry, one year, two year and three year stems, three t.s. on same slide for comparison
As3475c **Quercus robur,** oak, young stem t.s.
As3476c • **Quercus robur,** older woody stem t.s., annual rings
As3477d **Quercus robur,** three sections of wood, t.s., r.l.s., t.l.s.
As388d **Rhus,** poison ivy, stem t.s.
As3522d **Salix nigra,** willow, three sections of wood: t.s., r.l.s., t.l.s.
As3523c **Salix,** macerated xylem elements w.m.
As360c • **Sambucus,** elderberry, stem with lenticells t.s.
As3603d **Sambucus,** three sections of wood: t.s., r.l.s., t.l.s.
As3896f **Sycamore,** three sections of wood: t.s., r.l.s., t.l.s.
As348c • **Tilia,** lime, older woody stem t.s.
As349c • **Tilia,** older woody stem l.s.
As3492d **Tilia,** older woody stem t.s. and l.s. on one slide
As3494c **Tilia,** one year stem during the summer t.s., showing active cambium, ring-shaped primary vascular tissue
As3495c **Tilia,** one year stem during the winter t.s., showing resting cambium
As3496c **Tilia,** two year stem t.s., showing primary and secondary vascular tissues
As3497c **Tilia,** three year stem t.s.
As3498e **Tilia,** one year, two year and three year stems, three t.s. on same slide for comparison
As3499c **Tilia,** young stem l.s.
As350d • **Tilia,** three sections of wood: t.s., r.l.s., t.l.s.
As378c **Tilia platyphyllos,** lime, macerated wood cells w.m.
As351c • **Vitis vinifera,** grape, stem with medullary rays t.s.
As3512d **Vitis,** three sections of wood: t.s., r.l.s., t.l.s.
As3884d **Wisteria sinensis,** stem t.s.

Stems of selected useful plants

As3947c **Anthriscus,** t.s. of stem
As3948c **Asperula odorata,** woodruff, t.s. of stem
As3715c **Beta,** beet, t.s. of a superterrestrial storage root
As3911d **Brassica,** cabbage, stem with leaf traces t.s.
As3897c **Coffea arabica,** coffee, stem t.s.
As3851c **Linum,** flax, t.s. of stem showing husk fibres
As3898d **Nicotiana tabacum,** tobacco, stem t.s.
As3874d **Persea,** avocado, stem t.s.
As356c **Piper nigra,** pepper, dicot stem with scattered bundles t.s.
As362c **Ribes,** currant, t.s. of stem showing cork cambium (phellogen)
As3891c **Ricinus,** castor oil bean, young stem t.s. with separate bundles
As3892c **Ricinus,** older stem t.s. with secondary xylem cylinder
As371c **Solanum tuberosum,** potato, t.s. of tuber with starch grains and cork
As3713c **Solanum tuberosum,** aerial stem t.s.
As3514c **Vicia faba,** stem t.s.

Adaptation to water: Hydrophytes and hygrophytes

As3146d **Bamboo,** stem t.s.
As3984c • **Caltha,** march-marigold, t.s. of stem
As3123c **Canna,** t.s. of monocot stem showing scattered bundles
As3662c **Ceratophyllum,** hornwort, stem t.s.
As3285d • **Eichhornia,** water hyacinth, rhizome t.s.
As313c • **Elodea,** waterweed, t.s. of aquatic stem showing primitive bundle
As3132c **Hippuris,** t.s. of stem showing typical aquatic stem with large central pith
As314c • **Juncus,** bulrush, stem with internal stellate cells t.s.
As366c • **Myriophyllum,** water-milfoil, t.s. of aquatic stem
As353c • **Nymphaea,** water lily, stem with idioblasts t.s.
As3145c **Potamogeton,** pondweed, stem with aerial chambers t.s.
As3133c **Sagittaria,** t.s. monocot stem of a hydrophytic plant

Adaptation to dry habitat: xerophytes

As327d **Aloe,** stem t.s. showing secondary growth in a monocot plant
As383d • **Opuntia,** cactus, succulent stem t.s.
As3734d **Leaf thorn** on stem of Berberis (barberry), l.s.
As3735d **Stem thorn** on stem of Crataegus (hawthorn), l.s.
As373d **Prickle** on stem of Rosa (rose), l.s.
As3585c • **Nerium,** oleander, t.s. stem to show lactiferous ducts
As3586c **Nerium,** oleander, l.s. stem to show lactiferous ducts
As328d • **Smilax,** carrion flower, stem t.s.
As3854d **Bauhinia,** tropical liana, climbing stem t.s.
As3852d **Thunbergia,** liana, stem t.s. shows vascular bundles with enclosed phloem
As326d **Yucca,** stem t.s., formation of bark in a monocot plant

Adaptation to unusual modes of nutrition

As355d • **Cuscuta,** dodder, t.s. through stem of host showing the haustoria of the parasite
As370d **Dentaria,** toothwort, l.s. through bulbil

Petioles and miscellaneous

As4646c • **Acer platanoides,** maple, petiole t.s.
As4647c **Acer platanoides,** maple, l.s. stem and petiole leaf abscission
As363c • **Aesculus hippocastanum,** chestnut, petiole t.s.
As4794d **Canna indica,** petiole t.s.
As4674d **Eichhornia,** petiole t.s.
As4795d **Fragaria,** strawberry, petiole t.s.
As4671c • **Nymphaea,** petiole t.s.
As4798d **Passiflora,** passion flower, petiole with nectaries t.s.
As479c **Plantago,** plantain, petiole t.s.
As4797d **Portulak,** petiole t.s.
As4793d **Vitis vinifera,** petiole t.s.
As3971c **Drymis,** t.s. of stem with bark
As395e **Wound healing** on stem, early stage, t.s.
As396e **Wound healing** on stem, later stage, t.s.
As398e **Graft scion** on stem t.s.

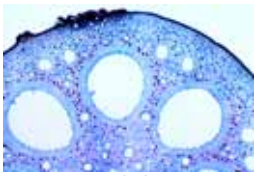
IV. LEAVES

Typical leaves in comparison

As4005e **Monocot and dicot leaf epidermis** with stomata, two w.m. in one slide for comparison
As4118d **Monocot and dicot leaves,** two t.s. in one slide for comparison
As4119e **Leaf types,** composite slide of three t.s. through hydrophytic, mesophytic, and xerophytic leaves

Leaf epidermis and stomata

As411c • **Tulipa,** tulip, leaf epidermis with stomata w.m., showing large stomata and guard cells for general study
As410c **Calla,** leaf epidermis with stomata w.m.
As4102d **Sedum,** epidermis with stomata w.m.
As4103d **Saccharum (blade),** epidermis with stomata w.m.
As4108d **Allium cepa,** onion, leaf epidermis with stomata w.m.
As4109d **Lilium,** lily, leaf epidermis with stomata w.m.
As4112c • **Iris,** leaf epidermis w.m. showing stomata in rows
As4113d **Grass,** leaf epidermis w.m. or horizontal sec. showing stomata of a gramineous plant
As4114d **Saxifraga,** leaf epidermis w.m. or horizontal sec. showing stomata without accessory cells
As4115d **Begonia or Sedum,** leaf epidermis w.m. showing scattered stomata with many accessory cells
As4116d **Dianthus,** leaf epidermis w.m. showing stomata with two accessory cells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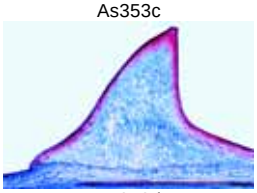
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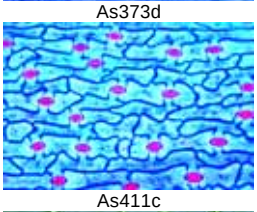
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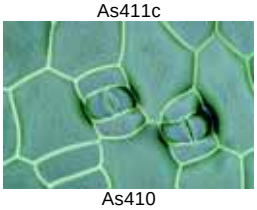
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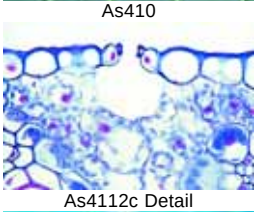
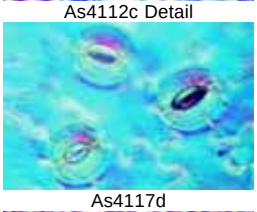

As4112c Detail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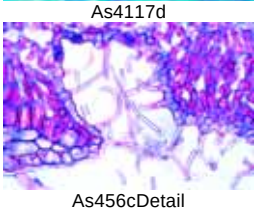
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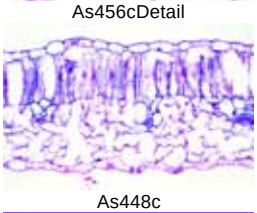
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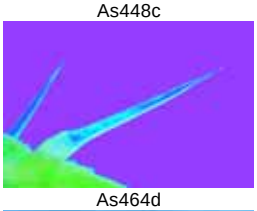
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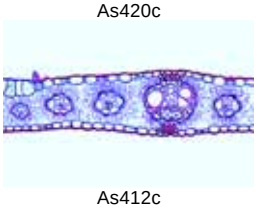
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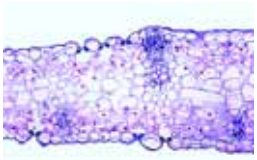
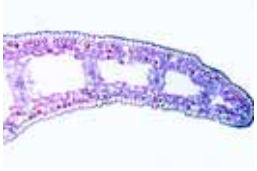
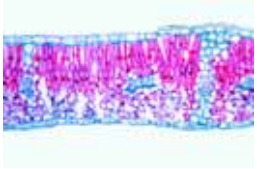

As415c

As4117d **Helleborus niger,** leaf epidermis w.m. with stomata
As448c • **Solanum tuberosum,** potato, leaf t.s. showing raised stomata
As456c • **Nerium,** oleander, leaf with sunken stomata t.s., showing the typical structures of a xerophytic leaf
As4953c • **Ruellia,** t.s. of leaf showing raised stomata


As418c

Leaf hairs and emergences

As420c • **Elaeagnus,** olive tree, scale-like stellate hairs w.m.
As421c • **Verbascum,** mullein, branched leaf hairs w.m.
As422c **Verbascum,** leaf with branched hairs t.s.
As464d • **Urtica,** stinging nettle, stinging hairs with poison ducts
As471c **Pelargonium,** geranium, t.s. of leaf with multicellular glandular hairs
As478c **Nicotiana tabacum,** tobacco, leaf with glandular hairs t.s.
As4955c **Galium,** w.m. of leaf showing climbing hairs
As4642d **Aesculus hippocastanum,** chestnut, leaf bud scales with colleteres t.s.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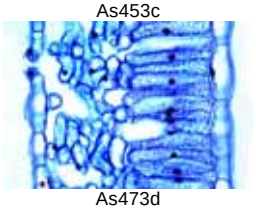
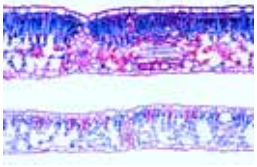

As473d

Typical monocot leaves

As412c • **Zea mays,** corn, monocot gramineous leaf t.s.
As415c • **Iris,** typical isobilateral leaf t.s.
As414c • **Lilium,** lily, leaf t.s. showing arm palisade cells
As429c **Allium schoenoprasium,** chive, t.s. of an unifacial folding leaf
As4166d **Aloe,** leaf t.s.
As4799c **Canna indica,** leaf t.s.
As4962c **Festuca,** grass, t.s. of leaf
As418c **Galanthus,** snowdrop, leaf t.s.
As4967c **Hyacinthus,** t.s. of leaf
As4167d **Musa,** banana, leaf t.s.
As4968c **Narcissus,** daffodil, t.s. of leaf
As413c **Poa annua,** meadow grass, leaf t.s.
As4172d **Saccharum,** sugarcane, leaf t.s.
As4961c **Secale,** rye, t.s. of stem enclosed in sheath leaves
As417c **Triticum,** wheat, t.s. of leaf showing stomata
As4183c **Tulipa,** tulip, t.s. of leaf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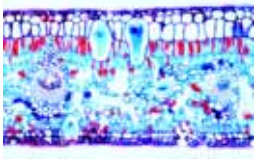
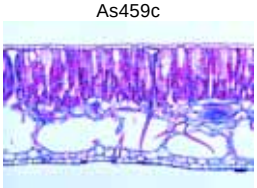

As459c

Typical dicot leaves

As453c • **Syringa,** lilac, t.s. of a typical mesophytic dicot leaf for general study, showing all structures very clearly
As4535c **Syringa,** paradermal l.s. through all leaf layers
As454c • **Ligustrum,** privet, t.s. of dicot leaf
As4541c **Ligustrum,** paradermal (horizontal) l.s. through all leaf layers
As455d • **Fagus,** beech, sun and shadow leaves t.s. on same slide for comparison of the different structures
As473d • **Helleborus,** t.s. of a typical mesophytic dicot leaf for general study, showing large cellular structures
As476c **Helianthus,** sunrose, t.s. of dorsiventral dicot leaf
As4964c **Ranunculus,** buttercup, t.s. of dicot leaf
As489c **Asclepias,** milkweed, leaf with lactiferous vessels t.s.
As449c **Begonia,** leaf t.s.
As488c **Belladonna,** deadly nightshade, leaf t.s.
As4676c **Beta vulgaris,** beet, leaf t.s.
As4971c **Brassica,** cabbage, t.s. of leaf
As4787d **Camellia (Thea) sinensis,** tea plant, leaf t.s.
As4785c **Coffea arabica,** coffee, leaf t.s.
As4965c **Dictamnus,** t.s. of leaf showing crystals
As446c **Eucalyptus,** an isobilateral foliage leaf t.s.
As459c • **Ficus elastica,** India rubber plant, leaf with cystoliths t.s.
As4912c **Gossypium,** cotton, leaf t.s.
As4958c **Hedera,** ivy, t.s. of evergreen leaf
As4782c **Lycopersicum,** tomato, leaf t.s.
As490c **Medicago sativa,** alfalfa, leaf t.s.
As4918c **Populus,** poplar, leaf with calcium oxalate crystals t.s.
As4944c **Quercus,** oak, t.s. of leaf showing stomata
As477c • **Rosa,** rose, leaf with several palisade layers t.s.
As423c **Sagittaria,** arrowhead, leaf t.s.
As4792d **Vitis vinifera,** grape, leaf t.s.
As493d **Netted venation,** portion of dicot leaf w.m. showing venation only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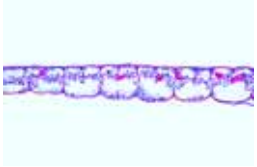
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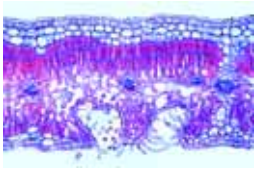
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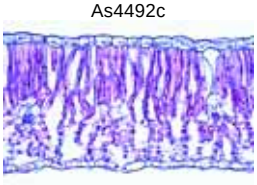
As4492c


As477c

Adaptation to water: hydrophytes and hygrophytes

As4155c • **Elodea,** t.s. of leaf showing the simple structure of an aquatic leaf
As416d • **Elodea,** w.m. of leaf showing large chloroplasts
As4946c **Calla palustris,** t.s. of leaf of a typical marshy plant
As4673c **Eichhornia,** water hyacinth, aquatic leaf t.s.
As4595c **Impatiens,** hydrophytic foliage leaf t.s.
As4948c **Lemna,** duckweed, t.s. of leaf
As4949c **Myosotis palustris,** w.m. of leaf showing hairs for water reservoir
As467c • **Nymphaea,** water lily, floating leaf of an aquatic plant with air chambers t.s.
As425c • **Potamogeton,** pondweed, leaf t.s.
As457d **Tropaeolum,** nasturtum, showing hydathodes, w.m. or t.s.
As419c **Vallisneria,** tape grass, leaf of an aquatic plant t.s.

Adaptation to dry habitat: Xerophytes

As456c • **Nerium,** oleander, leaf with sunken stomata t.s., showing the typical structures of a xerophytic leaf
As4165d **Agava,** xerophytic leaf with thick epidermis t.s.
As4567c • **Ammophila,** xerophytic leaf t.s.
As475c **Calluna,** ling, revolute leaves t.s.
As4564d **Cistus,** leaf of an evergreen xerophytic shrub t.s.
As4492c **Clivia nobilis,** leaf t.s. showing typical xerophytic thick epidermis
As4752c • **Erica,** xerophytic leaf t.s.
As4914c **Hakea,** a proteacean, leaf t.s.
As4563d **Ilex,** holly, leaf t.s.
As4959c **Sempervivum,** t.s. of leaf for succulence
As4565d **Larea tridentata,** creosote bush, leaf of a desert plant t.s.
As4566c **Lavandula,** lavender, leaf with oil sacs, t.s.
As4916d **Olea,** olive tree, leaf t.s.
As458c • **Sedum,** stonecrop, a typical succulent leaf t.s.
As4969c **Sempervivum,** t.s. of succulent leaf
As4963c **Stipa capillata,** t.s. of revolute grass leaf

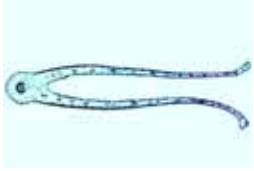
Adaptation to unusual modes of nutrition

As469c • **Dionaea,** Venus flytrap, t.s. of leaf with digestive glands
As4957f **Dischidia,** t.s. of pitcher leaf showing cauline root
As462d • **Drosera,** sundew, leaf with glandular hairs w.m.
As463c • **Drosera,** leaf with glandular hairs t.s.
As4951c **Lathraea squamaria,** t.s. of leaf without chloroplasts
As470d **Nepenthes,** pitcher plant, t.s. of pitcher with digestive glands
As460c • **Pinguicula,** butterwort, leaf with glandular cells t.s.
As4703d **Sarracenia,** pitcher plant, leaf t.s.
As465d • **Utricularia,** bladderwort, w.m. of bladder
As466c **Utricularia,** t.s. through leaves and bladders
As4941d **Viscum album,** mistletoe, t.s. of leaf showing chloroplasts

Leaf buds, leaf joints, leaf abscission

As451c • **Fagus,** beech, leaf bud t.s. showing leaf development
As452d • **Fagus,** beech, leaf bud l.s. showing leaf development
As4524d **Aesculus hippocastanum,** t.s. of leaf bud showing bud squama and embedded, folded leaves
As474d **Mimosa pudica,** sensitive plant, l.s. of leaf joint
As485d **Robinia pseudacacia,** black locust, leaflets with pulvini l.s.
As487d **Aesculus,** leaf base with leaf abscission l.s.
As361c **Acer platanoides,** maple, t.s. of petiole


As475c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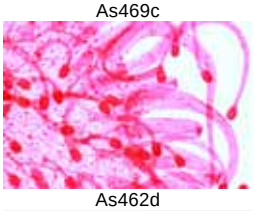
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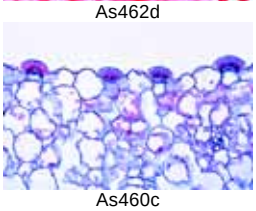
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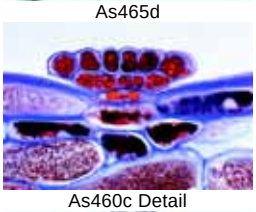
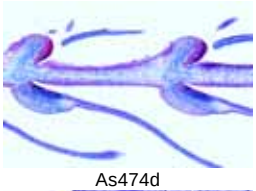

As460c Detail


As451c


As452d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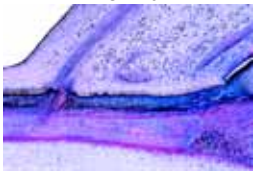
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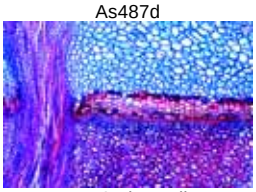
As487d Detail


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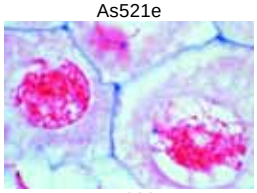
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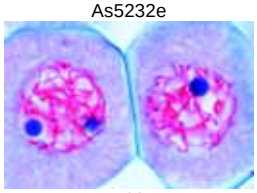
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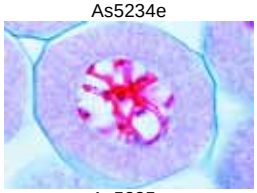
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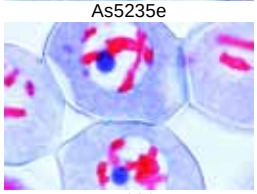
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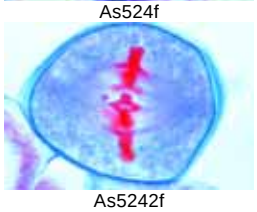
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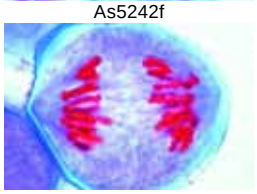
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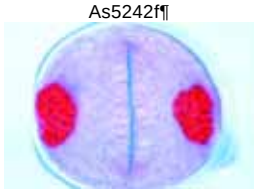
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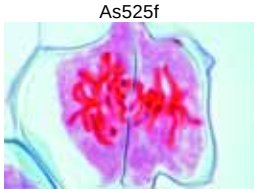
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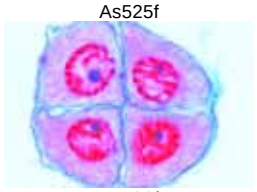

As526f

V. FLOWERS AND FRUITS

Microspore development in Lilium

As521e **Lilium, anther** t.s., very young with microspore mother cells and tapetal layers
As522e **Lilium, anther** t.s., early prophase for general study
As523e **Lilium, anther** t.s., late prophase for general study
As5232e • **Lilium, anther** t.s., microspore mother cells in leptotene
As5233e • **Lilium, anther** t.s., microspore mother cells in zygotene
As5234e • **Lilium, anther** t.s., microspore mother cells in pachytene
As5235e • **Lilium, anther** t.s., microspore mother cells in diplotene
As5236e • **Lilium, anther** t.s., microspore mother cells in diakinesis
As524f • **Lilium, anther** t.s., microspore mother cells showing metaphase and anaphase of first (heterotypic) division (meiosis)
As5242f **Lilium, anther** t.s., microspore mother cells showing telophase of first and prophase of second (homeotypic) division
As525f • **Lilium, anther** t.s., microspore mother cells showing metaphase and anaphase of second (homeotypic) division (mitosis)
As526f • **Lilium, anther** t.s., microspore mother cells in tetrad stage
As5262e • **Lilium, anther** t.s., uninucleate (haploid) microspores after the separation of the daughter cells
As5264f **Lilium, anther** t.s., third division *
As5266e • **Lilium, anther** t.s., binucleate mature pollen grains at the time of shedding with tube cell and generative cell
As527d • **Lilium, anther** t.s. for general study showing pollen chambers and pollen grains
As5271d **Lilium, anther** l.s. for general study

Pollen types

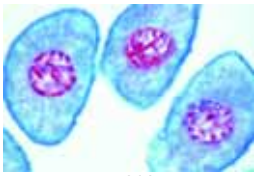
As528b • **Lilium,** mature pollen grains w.m.
As577d **Tulipa,** anthers with pollen and pollen chambers t.s.
As625b • **Helianthus,** sunrose, pollen grains w.m.
As6252b **Ambrosia,** ragweed, pollen grains w.m.
As626b • **Corylus,** hazel, pollen grains w.m.
As6262b **Oenothera,** pollen w.m. showing viscin filaments
As6263b **Helianthus and Cucurbita,** pollen grains w.m.
As630c • **Mixed pollen types,** showing various forms of many different species

Fertilization

As529d **Lilium,** t.s. of stigma before pollination
As530e • **Lilium,** l.s. through pistil and stigma with pollen and pollen tubes
As531e **Lilium,** germinating pollen grains with pollen tubes w.m.
As609e • **Oenothera,** evening primrose, stigma with pollen grains and pollen tubes l.s.
As655e **Stigma of Eschscholtzia,** w.m. showing penetrating pollen
As656e • **Stigma of Eschscholtzia,** l.s. showing penetrating pollen
As6571e **Vicia,** bean, stigma and anthers, w.m.
As583d • **Fritillaria,** nectary with glands t.s.

Megaspore development in Lilium

As541e **Lilium, ovary** t.s., very young, showing the developing tissue before the formation of the megaspore mother cell. Abundant mitotic figures can be observed
As5412f **Lilium, ovary** t.s., with megaspore mother cell
As542f • **Lilium, ovary** t.s., showing uninucleate embryosac with megaspore mother cell
As543g **Lilium, ovary** t.s., uninucleate embryosac with first (heterotypic) division of megaspore mother cell *
As544h **Lilium, ovary** t.s., binucleate embryosac *
As545k **Lilium, ovary** t.s., showing second (homeotypic) division with two division figures *
As546h **Lilium, ovary** t.s., first four-nucleate stage *
As547h **Lilium, ovary** t.s., showing migration of three nuclei to the chalazal end of the embryosac while one nucleus remains in the micropylar end
As5472k **Lilium, ovary** t.s., showing third division after the three chalazal nuclei have fused *
As548g • **Lilium, ovary** t.s., second four-nucleate stage, a vacuole can be seen between the nuclei
As549i **Lilium, ovary** t.s., showing fourth division *
As550g **Lilium, ovary** t.s., showing the stage of eight-nucleate embryosac for general study, not all nuclei present
As551k • **Lilium, ovary** t.s., eight-nucleate embryosac showing all the nuclei in one or more serial sections *
As5514k **Lilium, ovary** t.s., embryosac showing double fertilization in one or more serial sections *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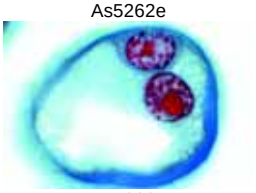
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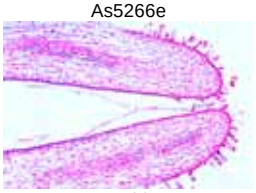
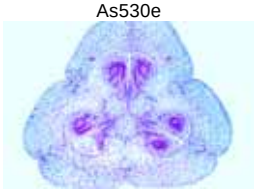

As530e

Ovaries, formation of ovules and embryos (monocot)

As560d • **Lilium,** ovary t.s., showing arrangement of ovules and all structures for general study
As561d • **Lilium,** ovary l.s., showing arrangement of ovules and all structures for general study
As553f **Lilium,** ovary t.s., early embryonic stage
As554f • **Lilium.** ovary t.s., mature embryo
As555f • **Lilium,** ovary t.s., mature seed with embryo and endosperm
As571d • **Tulipa,** tulip, t.s. of ovary showing arrangement of ovules and all structures for general study
As572d • **Tulipa,** l.s. of ovary showing arrangement of ovules
As573d **Tulipa,** l.s. of ovary showing development of embryos
As574d **Iris,** t.s. of ovary showing arrangement of ovules
As575e **Iris,** t.s. of ovary showing later stage of embryo and endosperm
As582d **Fritillaria,** fritillary, ovary with embryosac t.s.
As584d **Hyacinthus,** ovary t.s.
As586d **Epipactis,** orchid, ovary with ovules t.s.
As564d **Ovary,** t.s. showing orthotropic attachment of ovules
As565d **Ovary,** t.s. showing anatropic attachment of ovules
As566d **Ovary,** t.s. showing kampylotropic attachment of ovules
As568s **Ovary types,** composite slide with four t.s. through various typical types of ovaries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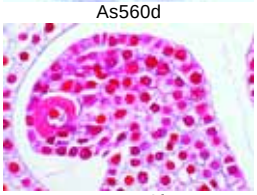
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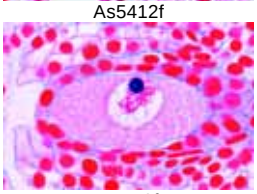
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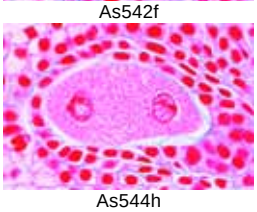
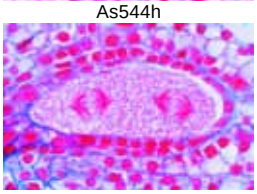

As544h

Ovaries, formation of ovules and embryos (dicot)

As662d **Helleborus,** l.s. of atrope ovary
As664d • **Hyoscyamus,** t.s. of young ovary
As665d • **Hyoscyamus,** t.s. of older ovary
As663d **Impatiens,** t.s. of ovary
As615d **Lathraea,** toothwort, ovary of a parasitic plant t.s.
As6151d **Lathraea,** t.s. of young ovary
As6152d **Lathraea,** t.s. of elder ovary
As614d **Monotropa,** Indian pipe, ovary t.s. with developing embryosacs
As616d **Rosa,** rose, ovary t.s.
As6132d • **Solanum,** potato, t.s. of ovary with formation of embryos
As619d • **Capsella bursa pastoris,** shepherd's purse, l.s. of ovule with embryos in situ for general study
As6192f **Capsella,** l.s. of embryo in precotyledon stage
As6193f **Capsella,** l.s. of embryo in early cotyledon stage
As6194f **Capsella,** l.s. of embryo in later cotyledon stage
As6195f **Capsella,** l.s. of embryo with curving cotyledons (mature)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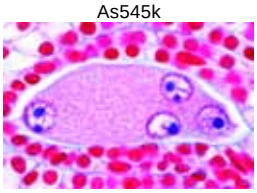
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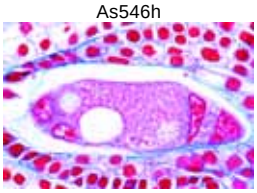
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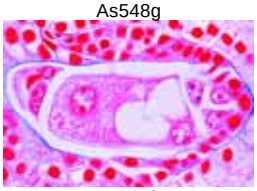
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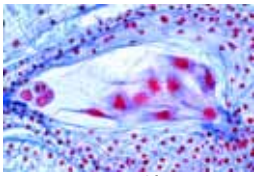
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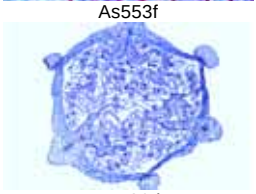
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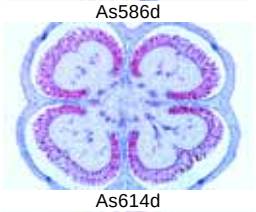
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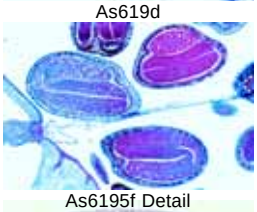
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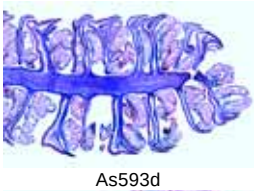
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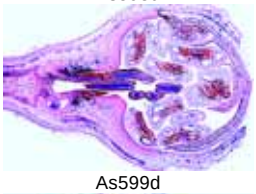
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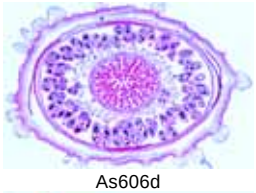
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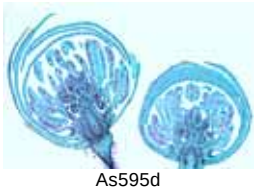
As595d

Flowers and floral diagrams (monocot)

As501e **Monocot and dicot flower buds** t.s. on same slide for comparison
As511d • **Lilium candidum,** lily, t.s. of flower bud showing floral diagram of a monocot
As512d • **Lilium,** l.s. of flower bud
As653d **Galanthus,** snowdrop, t.s. of flower
As5778d **Secale,** rye, t.s. of a typical gramineous flower
As5798d **Zea,** t.s. of male flower
As588d **Anthurium,** flamingo plant, pedicel with flowers t.s.
As590e **Arum maculatum,** cuckoopint, l.s. of flower, insect trap
As657d **Arum maculatum,** t.s. of flower bud showing ovary

Flowers and floral diagrams (dicot)

As651d • **Bellis,** l.s. of a composite flower bud
As652d **Caltha palustris,** l.s. of flower
As658d **Cheirantus,** wallflower, t.s. of flower bud with marginal-parietale placentation
As593d • **Corylus avellana,** hazel, diclinous male flower l.s.
As594d • **Corylus avellana,** diclinous female flower l.s.
As6551d **Cucurbita,** pumpkin, t.s. of female flower
As654d **Linum,** flax, t.s. of flower
As601d • **Lycopersicum,** tomato, t.s. of flower bud shows floral diagram and axile placentation
As602d • **Lycopersicum,** l.s. of flower bud
As6521d **Magnolia,** t.s. of flower bud showing anthers with microspore mother cells
As606d • **Papaver,** poppy, t.s. of flower shows parietal placentation
As607d • **Papaver,** poppy, t.s. of older flower, formation of embryos
As599d **Pyrus malus,** apple, flower bud with hypogynous ovary l.s.
As6561d **Primula,** primose, t.s. of flower
As600d **Prunus avium,** cherry, flower bud with perigynous ovary l.s.
As595d **Ranunculus,** buttercup, l.s. of flower
As659d **Rhododendron,** t.s. of flower showing bud scales
As603d **Ribes,** currant, l.s. of flower bud
As6522d **Senecio,** t.s. of a composite flower
As613d • **Solanum tuberosum,** potato, t.s. flower bud for floral diagram
As604d • **Taraxacum,** dandelion, l.s. of composite flower with tubular florets and ligulate florets
As605d • **Taraxacum,** t.s. of composite flower

Simple fruits

As576d • **Iris,** t.s. of mature seed
As639d **Cruzifera sp.,** mustard or other, t.s. of silique with seed
As627c • **Cocos nucifera,** coconut, endosperm t.s.
As631d • **Lycopersicum,** tomato, young fruit t.s.
As632d **Prunus domestica,** plum, young drupe (stone fruit) t.s.
As634d **Juglans regia,** walnut, young drupe (stone fruit) t.s.
As6375d **Corylus avellana,** hazelnut, young stone fruit t.s.
As640d **Citrus,** lemon, young fruit t.s.
As644d **Aesculus hippocastanum,** chestnut, young fruit l.s.

Aggregate fruits

As596d **Ranunculus,** l.s. of fruit
As597d **Ranunculus,** t.s. of fruit
As633d • **Pyrus malus,** apple, young pome t.s., a fleshy, many seeded fruit
As6165d **Rosa,** syncarpous fruit l.s.
As641d **Rubus idaeus,** raspberry, young aggregate fruit l.s.
As642d **Fragaria,** strawberry, young aggregate fruit l.s.
As6035d **Ribes,** l.s. of a simple berry fruit
As643d **Morus,** mulberry, young multiple fruit l.s.
As645e **Ficus carica,** fig, young fruit t.s.

Seeds

As578d • **Triticum,** wheat, grain (seed), t.s. showing embryo and endosperm
As579e • **Triticum,** grain (seed), sagittal l.s. showing embryo and endosperm
As580d • **Zea mays,** corn, grain (seed) l.s. showing embryo and endosperm
As6641d • **Zea mays,** young corn cob t.s.
As5809e **Zea mays or Triticum,** germinating seed l.s.
As581d **Secale,** rye, grain (seed) t.s.
As6621d **Asparagus,** t.s. of seed
As585d • **Hyacinthus,** mature seed t.s.
As623d • **Helianthus,** sunflower, t.s. of achene fruit
As638d • **Phaseolus,** bean, t.s. of pod showing pericarp and seed
As622d **Tropaeolum,** nasturtium. semen (seed) t.s.
As635d **Amygdalus,** almond, endosperm t.s.
As636d **Myristica,** nutmeg, endosperm t.s.
As661c • **Ricinus,** t.s. of seed showing aleurone grains in endosperm with cotyledons
As628d • **Juglans,** walnut, mesocarp with stone cells t.s.
As629b • **Populus,** poplar, hairs from seed w.m.

ULTRATHIN SECTIONS *

Our ultrathin sections of animal and plant tissue are cut at 1,5 µm (micrometers) as compared to 5–10 µm for conventional sections. This augments the possibilities for exploration of animal and plant cells without special microscopes. The eminent clarity of cells makes visible a lot of cell details which up to now could not be investigated in standard tissue sections. Depending on the extremely short depth of field ultrathin sections are very easy focusing on for students. – Availability upon request.


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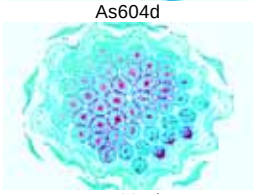
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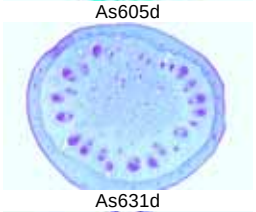
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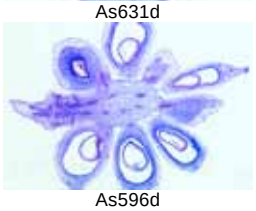
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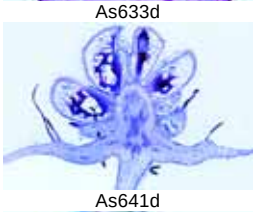
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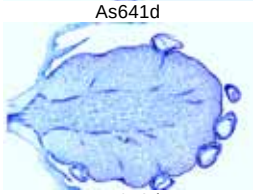
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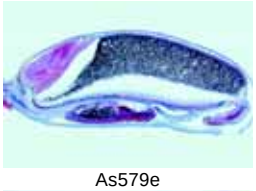
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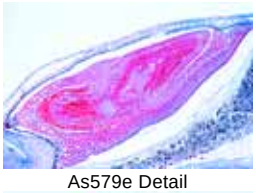

As579e Detail


As623d

LIST OF CONTENTS: PREPARED MICROSCOPE SLIDES IN SYSTEMATIC ORDER

LIEDER

NEW!

MULTIMEDIA-PACKAGES FOR TEACHERS AND STUDENTS

LIEDER offers a new range of **MULTIMEDIA PACKAGES OF LIFE SCIENCE** for interactive learning and teaching in school and education.The new media aim to give a strictly outlined synopsis of all those lines of biology important for instruction at schools, colleges and universities and suitable for working with the microscope. Well selected media packages of 6 and 12 units with microscope slides, overhead transparencies, sketch- and work sheets, descriptions and pictures of the drawings serve the teacher to work with the subject during the lessons.

We offer **TEACHER PACKAGES** and **STUDENT SETS**.

– The teacher packages comprise all necessary media for classroom work:

1. Set of selected **prepared microscope slides in plastic box.** Prepared Microscope Slides are made in our laboratories under rigourous scientific control. They are the product of long experience combined with the most up to date techniques.

2. Set of **overhead transparencies,** large size, full color. Overhead Transparencies immediately show, on the screen, the details of the specimen required for demonstration at the most suitable magnification. The student subsequently finds it easier to locate the relevant part of the microscopic slide under the microscope. The transparencies are printed by a special process and excel by reason of their high projection quality.

3. Set of **sketch- and worksheets with drawings** for all slides. The Sketch- and Work Sheets serve to facilitate seeing his way through the prepared microscope slides and finding the detail important in the lesson. They start processes of learning and understanding by comparing microscope slides with the diagrammatic drawings, thus to identify and label the details relevant in the lesson. They allow completing or colouring the drawings according to own observations, and finally the sheets can be used for tests. Teacher may take photocopies of the sheets for the number of students.

4. **Textbook** with detailed description of all slides, drawings and transparencies. The Textbooks are intended to help you make more effective use of our teaching material both in the classroom and during individual study. They provide a description of the morphological structures involved, making it considerably easier to look for and find the relevant spots in the microscope slides. They also furnish information regarding systematic and physiological relationships and general biological principles, as well as stimulating classroom interpretation and didactic use of the observations made.

5. Special **cardboard box** for storing and packing

– The number of student sets should correspond to the number of students in a class. The student sets comprise:

1. Set of selected **prepared microscope slides in plastic box** (the same as the teacher slides)
2. **Textbook** with detailed description of all slides
3. Special cardboard box for storing and packing

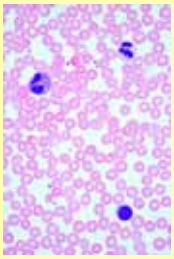
All CD-OM can be ordered separately or together with the Multimedia Packages for teachers and students. Owners of previously acquired Multimedia Packages for teachers and students can purchase the accompanying CD-ROMs separately.

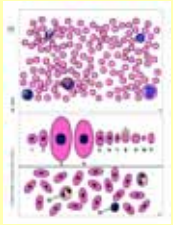
LIEDER

NEW ADDITIONAL INTERACTIVE CD-ROM MATCHING THE MULTIMEDIA PACKAGES FOR TEACHERS AND STUDENTS

We offer a new range of 47 CD-ROM for interactive learning and teaching in school and education, matching and supplementing our Multimedia Packages for Teachers and Students. Newly developed programs guarantee easy installation and unproblematic running of the program. Every CD comprises the following topics:

- Comprises a great variety of beautiful **diagrams, color photos, tables, anatomical pictures, electron and X-ray photographs, impressive life cycles, human photographs, landscape photographs, scenes, test data and results**, necessary for teaching the subjects.
- Comprises all necessary **photomicrographs of microscopic slides**, which can be observed by **five different steps of magnification** by using **a special „MicroScope“**. The slides can be moved under this microscope and can be observed in all its parts.
- Comprises all necessary **drawings** matching the pictures, with **explanations** of all the parts.
- The same number of comprehensive **explanatory texts** to help understanding the pictures.
- A special **test program** to check the students' knowledge in several levels of difficulty. A variable number of random selected pictures have to be identified. After a successful run the students receive notes about their progress in learning. By repeating the test any success will by revealed by the program.
- A comprehensive **index, a search function** and a comfortable **browser** for all pictures and texts on every CD-ROM.
- All pictures can be shown also in **full-screen size**, just by pressing the ENTER button.
- Special **accompanying material,** which enables evaluation of what has been seen, and creative learning is an important part of the program. **Drawings, sketch- and worksheets** are supplied for many of the pictures on the CD. They are stored in **full printing quality (high resolution** of 300 to 600 dpi). After printing the drawings may be supplemented or colored. In addition, the worksheets – which are allowed to be copied – can be used as **accompanying material for class tests**.
- The novel **demo program** features the functionality to start a self-running demo of the program in sequential or random order. A sophisticated **presentation mode** allows the user to prepare a collection of chosen pictures for an impressive full-screen presentation.
- The complete set of images on this CD can be displayed in **thumbnail view** for a comprehensive overview of all available material. Thus, the user is also able to compile pictures around topics of special interest for the classroom.
- A comprehensive **index**. The entire set of material, that is, pictures, supplemental texts and slides, and drawings, are accessible via the main program's dropdown-menu Tools – „Search picture…“ or „Select picture“.
- The texts will be provided in **up to five languages** (English, German, French, Spanish and Portuguese) by pre-selection when starting the program. The program surface is adapted to the well-known „WINDOWS™-LOOK“.
- All pictures and texts can be **printed** by the user.
- The CD works with all Windows versions (WINDOWS™ 95, 98, NT, 2000, XP, VISTA and Windows7). The resolution is **960 x 640 or higher for superior quality.** Full color representation with **over 1 Million colors** (depending on the screen). Optionally the CD runs also on PowerMac G4 and higher with WINDOWS™ emulation.
- The size of the **desktop** and the **windows for texts and pictures** can be scaled and adapted to the requirements of the user.





SME-01 MULTIMEDIA TEACHER PACKAGE
Teaching Series for Elementary Science
Basic Package of 6 items

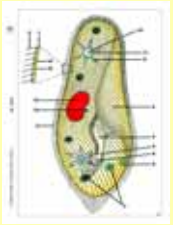
Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Letter „e“ - 2. Leg of house fly w.m. - 3. Wing scales of butterfly - 4. Human blood smear - 5. Large plant cells in the marrow of elderberry t.s. - 6. Colored threads w.m.

SSE-01 MULTIMEDIA STUDENT SET
Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-01
Elementary Science
Basic CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-02 MULTIMEDIA TEACHER PACKAGE
Protozoa
Basic Package of 8 items

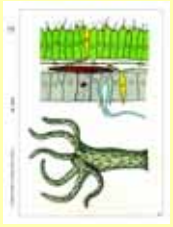
Comprising: 8 Microscope Slides in Plastic Box, 4 OHP Color Transparencies, 8 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Amoeba proteus, showing nucleus and pseudo-podia - 2. Paramecium, a ciliate found in hay infusions - 3. Euglena, a common green flagellate - 4. Ceratium, dinoflagellates - 5. Vorticella, a staked ciliate. - 6. Radiolaria, different forms - 7. Monocystis, sporozoa in earthworm seminal vesicle - 8. Trypano-soma, blood flagellate causing sleeping sickness, blood smear

SSE-02 MULTIMEDIA STUDENT SET
Comprising: 8 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM CD-SM-02
The Protozoa
Basic CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-03 MULTIMEDIA TEACHER PACKAGE
Invertebrates (Zoology)
Basic Package of 6 items

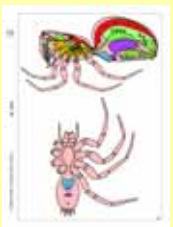
Comprising: 6 Microscope Slides in Plastic Box, 4 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Marine sponge (Grantia), t.s. - 2. Hydra, fresh-water polyp, t.s. of body - 3. Earthworm (Lumbricus), t.s. showing intestine, body wall, muscles - 4. Water flea (Daphnia), small fresh water crustaceans w.m. - 5. Araneus, spider, leg with comb w.m. - 6. Starfish (Asterias), arm with tube feet, t.s

SSE-03 MULTIMEDIA STUDENT SET
Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-03
Invertebrates (Zoology)
Basic CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-04 MULTIMEDIA TEACHER PACKAGE
Invertebrates (Zoology)
Supplementary Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Hydra, fresh-water polyp, w.m. - 2. Commercial sponge (Euspongia), skeleton of horny fibres - 3. Laomedea, w.m. of colony, vegetative and reproductive polyps - 4. Sea Anemone (Actinia), t.s. of the body - 5. Planaria, t.s. for general structure - 6. Tape-worm (Taenia), proglottid t.s., intestinal parasite - 7. Cyclops sp., copepode, w.m. - 8. Crayfish (Astacus), intestine, t.s. - 9. Dermanyssus gallinae, chicken mite, w.m. - 10. Clam (Mya arenaria), gills. t.s - 11. Echi-nus, young sea urchin, t.s. - 12. Amphioxus, Bran-chiostoma, typical t.s. region of gills and intestine

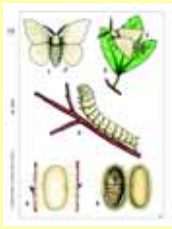
SSE-04 MULTIMEDIA STUDENT SET
Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-04
Invertebrates (Zoology)
Supplementary CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-05 MULTIMEDIA TEACHER PACKAGE
The Insects
Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box



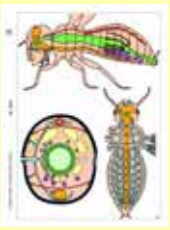
1. Musca domestica, housefly, leaking-sucking mouth parts w.m - 2. Apis mellifica, honey bee, anterior and posterior wings w.m. - 3. Musca domestica, house fly, leg with pulvilli w.m. - 4. Pieris, butterfly, portion of wings with scales w.m. - 5. Trachea from insect w.m. - 6. Spiracle from insect w.m.

SSE-05 MULTIMEDIA STUDENT SET
Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM
No. CD-SM-05
The Insects
Basic CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-06 MULTIMEDIA TEACHER PACKAGE
The Insects, Supplementary Package of 12 items
Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

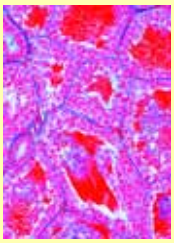


1. Culex pipiens, mosquito, piercing sucking mouth parts w.m. - 2. Apis mellifica, posterior leg with pollen basket w.m. - 3. Drosophila, fruit fly, w.m. of adult - 4. Culex pipiens, mosquito, w.m. of larva - 5. Apis mellifica, honey bee, mouth parts of worker t.s. - 6. Pieris, butterfly, clubbed antenna w.m. - 7. Aphidae, plant lice adults and larvae w.m - 8. Pieris, butterfly, walking leg w.m. - 9. Apis mellifica, honey bee, sting and poison sac w.m. - 10. Musca domestica. house fly, wing w.m - 11. Drosophila, fruit fly, sagittal l.s. for general insect anatomy - 12. Apis mellifica, head with compound eyes and brain t.s.

SSE-06 MULTIMEDIA STUDENT SET
Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM
No. CD-SM-06
The Insects
Supplementary CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-07 MULTIMEDIA TEACHER PACKAGE
The Frog Histology (Rana)
Basic Package of 12 items

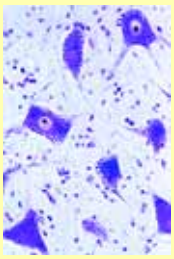
Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box.

1. Frog, simple sac-like lung t.s. - 2. Frog, blood smear, shows nucleated red corpuscles - 3. Frog, stomach t.s., glandular epithelium - 4. Frog, small intestine t.s., folds - 5. Frog, large intestine (colon) t.s., goblet cells - 6. Frog, liver t.s., showing liver parenchyma cells- 7. Frog, ovary t.s. shows follicle development, yolk - 8. Frog, testis t.s. showing spermatogenesis - 9. Frog, heart l.s. of the entire organ - 10. Frog, tongue t.s., papillae, glands, muscles - 11. Frog, skin t.s., skin glands, epidermis, pigment cells - 12. Frog, brain t.s. showing nerve cells.

SSE-07 MULTIMEDIA STUDENT SET
Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM
No. CD-SM-07
The Frog Histology (Rana)
Basic CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-08 MULTIMEDIA TEACHER PACKAGE
The Animal Cell (Cytology)
Basic Package of 6 items

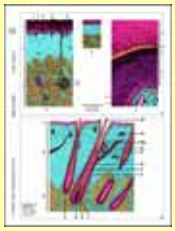
Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box.

1. Simple animal cells in t.s. of salamander liver - 2. Squamous epithelial cells from cheek - 3. Nerve cells and fibers - 4. Bone cells, t.s. of compact bone - 5. Striated muscle cells, l.s. of skeletal muscle - 6. Blood cells, smear of human blood with red and white corpuscles

SSE-08 MULTIMEDIA STUDENT SET
Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM
No. CD-SM-08
The Animal Cell (Cytology)
Basic CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-09 MULTIMEDIA TEACHER PACKAGE
Human and Animal Histology
Basic Package of 6 items

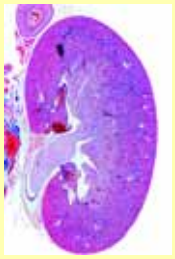
Comprising: 6 Microscope Slides in Plastic Box,3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box.

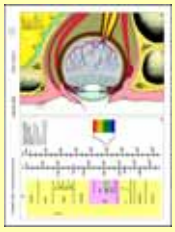
1. Squamous epithelium, isolated cells - 2. Hyaline cartilage of calf, t.s - 3. Compact bone of cow, t.s. - 4. Striated muscles of cat, l.s - 5. Smooth muscles of cat, t.s. and l.s. - 6. Blood, human, Giemsa or Wright stained smear

SSE-09 MULTIMEDIA STUDENT SET
Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-09
Human and Animal Histology Basic CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.





SME-10 MULTIMEDIA TEACHER PACKAGE
Human and Animal Histology
Supplementary Package I of 12 items

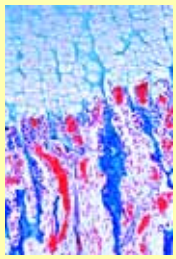
Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box.

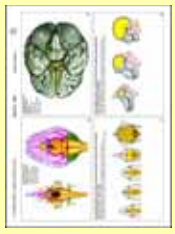
1. Columnar epithelium, human gall bladder, t.s - 2. Elastic cartilage, ear, t.s. Elastic tissue stain - 3. Skin, human, from palm, t.s. showing sweat glands - 4. Lung, human t.s. showing alveoli - 5. Heart muscle, t.s. and l.s., striations, intercalated discs - 6. Stomach of cat, fundic region, t.s. - 7. Kidney, cat, t.s. showing cortex and medulla - 8. Testis, rabbit, t.s. showing spermatogenesis - 9. Ovary, rabbit, t.s. follicle development - 10. Cerebrum, human, cortex, t.s. - 11. Spinal cord, cat, t.s. for general structure - 12. Tongue, rabbit, t.s., papillae with taste buds

SSE-10 MULTIMEDIA STUDENT SET
Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-10
Human and Animal Histology Supplementary CD I
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.





SME-11 MULTIMEDIA TEACHER PACKAGE
Human and Animal Histology
Supplementary Package II of 12 items

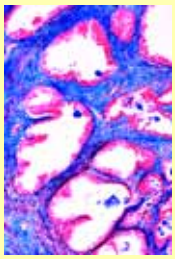
Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box.

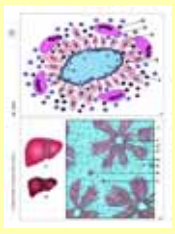
1. Ciliated epithelium, trachea, t.s. - 2. Adipose tissue, t.s. - 3. Bone development (intracartilaginous), l.s. of foetal finger - 4. White fibrous tissue of cow, l.s. of tendon - 5. Artery, human, t.s., elastica stained - 6. Vein, human, t.s., elastica stained - 7. Small intestine of cat, t.s. stained for goblet cells - 8. Pancreas, human, t.s. with islets of Langerhans - 9. Liver of pig, t.s. - 10. Cerebellum, human, t.s. - 11. Thyroid gland of cow, t.s - 12. Mammary gland of cow, t.s. active stage

SSE-11 MULTIMEDIA STUDENT SET
Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-11
Human and Animal Histology Supplementary CD II
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.





SME-12 MULTIMEDIA TEACHER PACKAGE
Human Diseases (Pathology)
Basic Package of 6 items

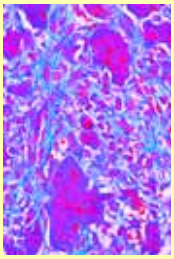
Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box.

1. Tuberculosis of the lung, t.s. with bacterial foci - 2. Anthracosis of lung (smokers´s lung) - 3. Struma of thyroid gland (Goiter) - 4. Acute hemorrhagic nephritis (Kidney) - 5. Cirrhosis of liver, t.s. (abuse of alcohol) - 6. Eberthella typhi (typhoid fever), smear

SSE-12 MULTIMEDIA STUDENT SET
Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-12
Human Diseases (Pathology) Basic CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-13 MULTIMEDIA TEACHER PACKAGE
Human Diseases (Pathology)

Supplementary Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Miliary tuberculosis of liver - 2. Influenzal pneumonia - 3. Spindle cell sarcoma - 4. Carcinoma of liver (primary) - 5. Hypertrophy of prostate - 6. Adiposis of heart - 7. Icterus hepatis - 8. Myoma of uterus - 9. Carcinoma of uterus - 10. Malaria parasites in blood (Plasmodium), smear - 11. Sleeping disease of humans, blood smear with flagellates (Trypanosoma) - 12. Pus bacteria, smear showing cocci in irregular balls

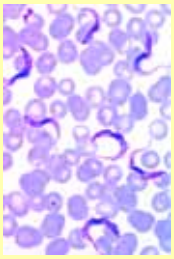
SSE-13 MULTIMEDIA STUDENT SET

Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-13
Human diseases (Pathology)
Supplementary CD

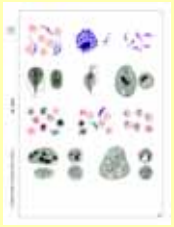
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-14 MULTIMEDIA TEACHER PACKAGE
Parasites of Man and Animals

Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box



1. Trypanosoma, blood flagellate causing sleeping sickness, blood smear - 2. Plasmodium falciparum, causing malaria tropica, human blood smear - 3. Taenia, tapeworm, proglottids in different stages t.s - 4. Ascaris lumbricoides, roundworm of human, adult female t.s. in region of gonads. - 5. Trichinella spiralis, t.s. of infected muscle with larvae - 6. Fasciola hepatica, beef liver fluke, t.s. of the body

SSE-14 MULTIMEDIA STUDENT SET

Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-14
Parasites of Man and Animals
Basic CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-15 MULTIMEDIA TEACHER PACKAGE
Parasites of man and animals

Supplementary Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Entamoeba histolytica, smear or section - 2. Eimeria stiedae, coccidiosis in rabbit liver, t.s. - 3. Monocystis, from earthworm seminal vesicle - 4. Fasciola hepatica, beef liver fluke, w.m. - 5. Taenia pisiformis, tapeworm, mature proglottids w.m. - 6. Enterobius vermicularis (Oxyuris), pin worm, w.m. - 7. Echinococcus granulosus, dog tapeworm, cyst wall and scolices sec. - 8. Dermanyssus, chicken mite w.m. - 9. Anopheles, malaria mosquito, mouth parts of female w.m. - 10. Culex pipiens, common mosquito, mouth parts of female w.m. - 11. Pediculus humanus, human louse, w.m. - 12. Ctenocephalus canis, dog flea, adult w.m.

SSE-15 MULTIMEDIA STUDENT SET

Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

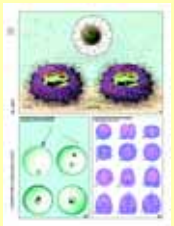
Additional Interactive CD-ROM No. CD-SM-15
Parasites of Man and Animals
Supplementary CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-16 MULTIMEDIA TEACHER PACKAGE
Reproduction of animals

Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box



1. Mitotic (division) stages in red bone marrow of mammal t.s. - 2. Meiotic (maturation) stages in testis of mouse t.s. - 3. Sea-urchin development, first cleavage stages of egg cells, w.m. - 4. Growing egg and yolk cells in ovary of bird, t.s. - 5. Ovary of rabbit or other mammal showing oogenesis, t.s. - 6. Sperm smear of bull showing w.m. of spermatozoa

SSE-16 MULTIMEDIA STUDENT SET

Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-16
Reproduction of Animals
Basic CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-17 MULTIMEDIA TEACHER PACKAGE
Embryology and development of animals

Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Frog, early tail bud stage, t.s. with neural tube, notochord - 2. Frog, young tadpole, t.s. through head - 3. Chicken, 36 hour, t.s. with neural tube, differentiation of mesoderm - 4. Chicken, 48 hour, t.s. with differentiation of mesoderm and ectoderm - 5. Chicken, 3 day, t.s. of head with primordium of brain, eyes and heart - 6. Mouse embryo, t.s. of head, development of hairs, brain, etc.

SSE-17 MULTIMEDIA STUDENT SET

Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-17
Embryology and Development Baseic CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-18 MULTIMEDIA TEACHER PACKAGE
Embryology and development of animals

Supplementary Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Vinegar eels (Anguillula), various stages w.m. - 2. Ascaris megalocephala, first and second maturation divisions in oocytes - 3. Ascaris, oocytes with male and female pronuclei - 4. Mosquito (Culex), larva of insect, w.m. - 5. Frog, hatching stage, t.s. region of midbody - 6. Frog, young tadpole, t.s. thorax - 7. Frog, young tadpole, t.s. of abdomen - 8. Chicken, 3 day, t.s. through body showing amnion and serosa. - 9. Chicken, 4-5 day, t.s. through region of heart shows heart, lungs, vertebrae, spinal cord - 10. Chicken, feather development, sec. of wings - 11. Mouse embryo, t.s. of body - 12. Pig embryo, 11-12 mm, typical t.s. region of abdomen

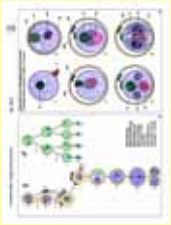
SSE-18 MULTIMEDIA STUDENT SET

Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-18
Embryology and Development Supplementary CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-19 MULTIMEDIA TEACHER PACKAGE
Genetic slides

Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Allium cepa, onion, root tips, l.s. showing all stages of mitosis - 2. Chromosomes, human, of culture of peripheral blood, smear preparation - 3. Sea urchin, developing of eggs, w.m. of most stages up to pluteus in the same slide - 4. Ascaris megalocephala, male and female pronuclei, sec. - 5. Testis of rabbit, t.s. showing spermatogenesis in all stages - 6. Spirogyra, scalariform conjugation showing zygotes following conjugation

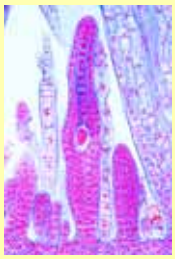
SSE-19 MULTIMEDIA STUDENT SET

Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-19
Genetics Basic CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-20 MULTIMEDIA TEACHER PACKAGE
Genetic slides

Supplementary Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Allium, root tips, t.s. showing polar view of mitosis, iron-hematoxyline - 2. Ovary of rabbit, l.s. follicles in various stages of development - 3. Lilium, microspore mother cells, prophase stages t.s. - 4. Paramaecium, from mass culture showing stages of binary division - 5. Rhizopus or Mucor, mold, formation of zygospores w.m. - 6. Mnium, moss, archegonium, l.s. - 7. Mnium, moss, antheridium, l.s. - 8. Pinus, young female cone at time of pollination, l.s. - 9. Pinus, male cone with pollen l.s. - 10. Lilium, stigma, l.s. showing penetrating pollen grains - 11. Drosophila genetics, adult wild type, w.m. - 12. Drosophila genetics, “barr eye” mutant, w.m.

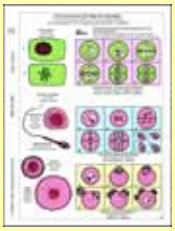
SSE-20 MULTIMEDIA STUDENT SET

Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-20
Genetics Supplementary CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-21 MULTIMEDIA TEACHER PACKAGE
Mitosis and Meiosis (Cell division)

Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Allium, root tips, l.s. showing lateral view of all stages of mitosis, iron-hematoxyline - 2. Whitefish mitosis, l.s. of embryo showing animal mitosis - 3. Testis of mouse, t.s. showing spermatogenesis in all stages - 4. Giant chromosomes from salivary gland of Chironomus, squash preparation special stained for chromomeres - 5. Lilium, microspore mother cells, prophase of first division showing meiosis, - 6. Lilium, microspore mother cells, meta- or anaphase of first division, showing mitosis

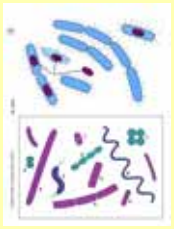
SSE-21 MULTIMEDIA STUDENT SET

Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM
No. CD-SM-21
Mitosis and Meiosis (Cell division)
BasicCD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-22 MULTIMEDIA TEACHER PACKAGE
Bacteria

Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Bacteria from mouth, smear with Gram positive and negative rods - 2. Typical bacteria: three smears on one slide, cocci, bacteria and spirilli are shown, carefully stained - 3. Staphylococcus aureus, pus organism - 4. Bacillus subtilis, hay bacillus, smear with bacilli and spores - 5. Escherichia coli, colon bacteria - 6. Spirillum volutans, large species from putrid water

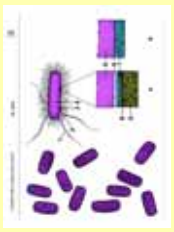
SSE-22 MULTIMEDIA STUDENT SET

Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM
No. CD-SM-22
Bacteria
Basic CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separatelyor together with the Multimedia Packages for teachers and students.



SME-23 MULTIMEDIA TEACHER PACKAGE
Bacteria

Supplementary Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Streptococcus pyogenes, pus organism - 2. Sarcina lutea, chromogenic rods occurring in packets - 3. Streptococcus lactis, milk souring organism, short chains - 4. Mycobacterium tuberculosis, causing tuberculosis - 5. Corynebacterium diphtheriae, causing diphtheria - 6. Rhizobium radicicola, nitrogen fixing bacteria in root nodules - 7. Proteus vulgaris, putrefaction - 8. Eberthella typhi, causing typhoid fever - 9. Clostridium botulinum (botulism), causing food poisoning, smear - 10. Acetobacter aceti, manufacture of vinegar, smear - 11. Salmonella enteritidis, causes meat poisoning, smear - 12. Rhodospirillum rubrum, chromogenic spirilli

SSE-23 MULTIMEDIA STUDENT SET

Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM
No. CD-SM-23
Bacteria
Supplementary CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-24 MULTIMEDIA TEACHER PACKAGE
Algae

Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Nostoc, blue-green alga with heterocysts - 2. Diatoms, fresh water, recent, mixed species - 3. Spirogyra, vegetative filaments with spiral chloroplasts, w.m. - 4. Cladophora sp., branching filaments with multinucleate cells - 5. Chlamydomonas, biflagellate cells, w.m. - 6. Desmids, strewn slide showing several selected forms

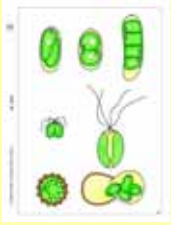
SSE-24 MULTIMEDIA STUDENT SET

Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM
No. CD-SM-24
Algae
Basic CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-25 MULTIMEDIA TEACHER PACKAGE

Algae. - Supplementary Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Chroococcus, a single-cell alga, w.m - 2. Oscillatoria, a blue-green filamentous alga w.m. - 3. Microcystis, irregular colonies w.m. - 4. Draparnaldia, main filaments and clusters of branches w.m. - 5. Hydrodictyon, water net, w.m. - 6. Oedogonium, a filamentous green alga with vegetative and sexual stages - 7. Volvox, spherical colonies with daughter colonies and sexual stages w.m. - 8. Dinobryon, a golden alga forming colonies w.m. - 9. Pleurococcus (Protococcus), small colonies growing on bark, w.m. - 10. Laminaria saccharina,thallus with sporangia, c.t. - 11. Fucus vesiculosus, seaweed, male conceptacle with antheridia, t.s. - 12. Fucus vesiculosus, female conceptacle with oogonia t.s.

SSE-25 MULTIMEDIA STUDENT SET

Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-25 Algae Supplementary CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-26 MULTIMEDIA TEACHER PACKAGE

Cryptogams - Basic Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Oscillatoria, blue green alga - 2. Spirogyra sp., vegetative filaments w.m. - 3. Mucor, black mold, mycelium and sporangia - 4. Peziza, apothecium with asci t.s. - 5. Saccharomyces, yeast, budding cells - 6. Coprinus, mushroom, t.s. showing typical basidia and spores - 7. Moss stem with leaves w.m. - 8. Marchantia, liverwort, archegonia l.s. - 9. Marchantia, liverwort, antheridia l.s. - 10. Equisetum, horsetail, strobilus with spores l.s. - 11. Pteridium, bracken fern, t.s. of rhizome - 12. Aspidium (Dryopteris), fern, leaflet with sporangia and spores t.s.

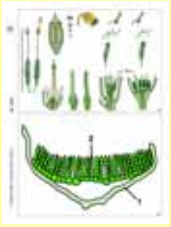
SSE-26 MULTIMEDIA STUDENT SET

Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-26 Cryptogams Basic CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separatelyor together with the Multimedia Packages for teachers and students.



SME-27 MULTIMEDIA TEACHER PACKAGE

Cryptogams - Supplementary Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Nostoc, blue green alga with heterocysts - 2. Diatoms, mixed species - 3. Albugo candida, white rust of cruzifers, t.s. - 4. Penicillium, blue mold, mycelium and conidiophores - 5. Puccinia graminis, wheat rust, uredinia on wheat t.s. - 6. Psalliota, gill fungus, pileus with lamellae t.s - 7. Claviceps purpurea, ergot, stroma with perithecia l.s. - 8. Physcia, sec. through thallus of a typical lichen showing the fungus and the embedded algae - 9. Polytrichum, moss, capsule with spores t.s. - 10. Equisetum, horse tail, spores with elaters w.m. - 11. Lycopodium, clubmoss, sporophyll with spores l.s. - 12. Fern prothallium w.m.

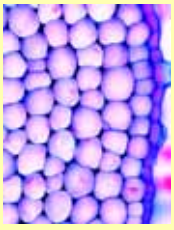
SSE-27 MULTIMEDIA STUDENT SET

Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-27 Cryptogams Supplementary CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-28 MULTIMEDIA TEACHER PACKAGE

The Plant Cell (Cytology)

Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Epidermis of Allium cepa (onion), w.m. showing simple plant cells with cell walls, nuclei and cytoplasm - 2. Fruit of Pyrus (pear) t.s. showing stone cells (sclerenchyma cells) - 3. Tuber of Solanum (potato) t.s. shows cork and starch grains - 4. Cucurbita pepo (pumpkin) l.s. of stem showing vascular bundles with sieve tubes, spiral and annular vessels, sclerenchyma fibres - 5. Anthers of Lilium (lily), t.s. showing pollen sacs and pollen grains - 6. Ovary of Lilium (lily), t.s. showing arrangement of ovules and embryosac

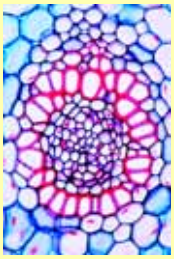
SSE-28 MULTIMEDIA STUDENT SET

Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

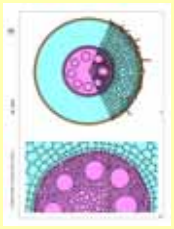
Additional Interactive CD-ROM No. CD-SM-28 The Plant Cell (Cytology) Basic CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-29 MULTIMEDIA TEACHER PACKAGE
Typical Roots of Phanerogams
Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box



1. Zea mays, corn, typical monocot root t.s. - 2. Ranunculus, buttercup, typical dicot root t.s. - 3. Root tip and root hairs, t.s. to show epidermal origin of root hairs - 4. Smilax, carrion flower, t.s. of root shows thickened endodermis - 5. Elodea, Canadian waterweed, t.s. of an aquatic root - 6. Lupinus, root nodules with nitrogen fixing bacteria (Rhizobium radicicola) t.s.

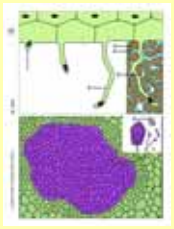
SSE-29 MULTIMEDIA STUDENT SET
Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-29
Typical Roots of Phanerogams Basic CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-30 MULTIMEDIA TEACHER PACKAGE
Typical Roots of Phanerogams
Supplementary Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box



1. Herbaceous and woody roots, two t.s. on one slide - 2. Young (primary) and older (secondary) roots, two t.s. on one slide - 3. Salix, willow, l.s. of root showing origin of lateral roots - 4. Iris, typical monocot root t.s. - 5. Medicago, alfalfa, root t.s. showing secondary growth - 6. Tilia, lime, older woody root t.s. - 7. Monstera, aerial root t.s. - 8. Taraxacum, dandelion, taproot with lactiferous vessels t.s. - 9. Fagus, beech, root with ectotrophic mycorrhiza, t.s. - 10. Neottia nidus avis, orchid, root with endotrophic mycorrhiza, l.s. - 11. Cuscuta, dodder, t.s. through stem of host showing the haustoria of the parasite - 12. Pinus, older woody root t.s.

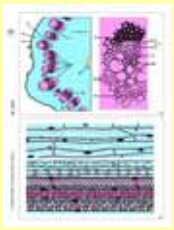
SSE-30 MULTIMEDIA STUDENT SET
Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-30
Typical Roots of Phanerogams Supplementary CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-31 MULTIMEDIA TEACHER PACKAGE
Typical Stems of Phanerogams
Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box



1. Zea mays, typical monocot stem with scattered bundles, t.s., a standard slide for general study - 2. Helianthus, sunflower, typical dicot herbaceous stem t.s. showing open vascular bundles - 3. Cucurbita, pumpkin, l.s. of stem with sieve tubes and vascular bundles - 4. Triticum, wheat, t.s. through the stem of a gramineous plant - 5. Elodea, waterweed, t.s. of aquatic stem showing primitive bundle - 6. Convallaria, lily of the valley, t.s. of rhizome with concentric vascular bundles

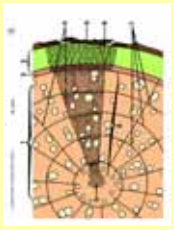
SSE-31 MULTIMEDIA STUDENT SET
Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-31
Typical Stems of Phanerogams Basic CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-32 MULTIMEDIA TEACHER PACKAGE
Typical Stems of Phanerogams
Supplementary Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box



1. Aristolochia, one year stem t.s. for general study - 2. Aristolochia, older stem t.s. - 3. Fagus, beech, three sections of wood: t.s., r.l.s., t.l.s. - 4 Tilia, lime, older woody stem with annual rings, t.s. - 5. Nymphaea, water lily, aquatic stem with idioblasts t.s. - 6. Potamogeton, pondweed, stem with aerial chambers t.s. - 7. Opuntia, cactus, succulent stem t.s. - 8. Ranunculus, buttercup, t.s. stem with open vascular bundles - 9. Coleus, t.s. of a square stem showing collenchyma clearly - 10. Hedera helix, ivy, stem with crystals t.s - 11. Clematis, young hexagonal stem t.s., collenchyma - 12. Solanum tuberosum, potato, t.s. of tuber with starch grains

SSE-32 MULTIMEDIA STUDENT SET
Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-32
Typical Stems of Phanerogams Supplementary CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-33 MULTIMEDIA TEACHER PACKAGE
Typical Leaves of Phanerogams

Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Zea mays, corn, monocot gramineous leaf t.s. - 2. Syringa, lilac, t.s. of a typical mesophytic dicot leaf for general study - 3. Tulipa, tulip, leaf epidermis w.m., showing lstomata and guard cells - 4. Elodea, t.s. of leaf showing the simple structure of an aquatic leaf - 5. Nerium, oleander, leaf with sunken stomata t.s., showing the typical structures of a xerophytic leaf - 6. Pinus, leaves (needles), t.s. for general study of gymnosperm leaves

SSE-33 MULTIMEDIA STUDENT SET

Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-33
Typical Leaves of Phanerogams
Basic CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-34 MULTIMEDIA TEACHER PACKAGE
Typical Leaves of Phanerogams

Supplementary Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Iris, typical isobilateral leaf t.s. - 2. Poa annua, meadow grass, leaf t.s. - 3. Ligustrum, privet, t.s. of dicot leaf - 4. Helleborus, t.s. of a typical mesophytic dicot leaf for general study - 5. Ficus elastica, India rubber plant, leaf with cystoliths t.s. - 6. Nymphaea, water lily, floating leaf of an aquatic plant with air chambers t.s. - 7. Potamogeton, pondweed, leaf t.s. - 8. Calluna, ling, revolute leaves t.s. - 9. Verbascum, mullein, branched leaf hairs w.m. - 10. Dionaea, Venus flytrap, t.s. of leaf with digestive glands - 11. Drosera, sundew, leaf with glandular hairs, t.s. - 12. Fagus, beech, leaf bud t.s. showing leaf development

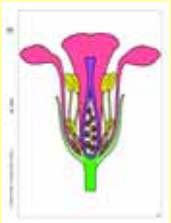
SSE-34 MULTIMEDIA STUDENT SET

Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-34
Typical Leaves of Phanerogams
Supplementary CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-35 MULTIMEDIA TEACHER PACKAGE
Flowers and Fruits

Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Lilium candidum, lily, t.s. of flower bud showing floral diagram of a monocot - 2. Lycopersicum, tomato, t.s. of flower bud shows floral diagram of a dicot - 3. Lilium, anther t.s. showing pollen chambers and pollen grains - 4. Lilium, ovary t.s., showing arrangement of ovules - 5. Capsella bursa pastoris, shepherd's purse, l.s. of ovule with embryos - 6. Triticum, wheat, grain (seed), t.s. showing embryo and endosperm

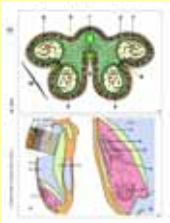
SSE-35 MULTIMEDIA STUDENT SET

Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-35
Flowers and Fruits
Basic CD I

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-36 MULTIMEDIA TEACHER PACKAGE
Flowers and Fruits

Supplementary Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Lilium, l.s. of stigma with pollen and pollen tubes - 2. Monotropa, Indian pipe, ovary t.s. with developing embryosacs - 3. Papaver, poppy, t.s. of flower shows parietal placentation - 4. Solanum tuberosum, potato, t.s. flower bud for floral diagram - 5. Taraxacum, dandelion, l.s. of composite flower - 6. Cocos nucifera, coconut, endosperm t.s. - 7. Citrus, lemon, young fruit t.s. - 8. Lycopersicum, tomato, young fruit t.s. - 9. Pyrus malus, apple, young pome t.s., a fleshy, many seeded fruit - 10. Mixed pollen types, many different species - 11. Pinus, ovule l.s. showing archegonia, for general study - 12. Pinus, male cone with pollen l.s.

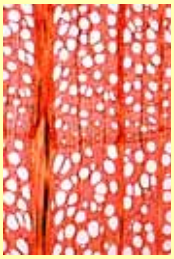
SSE-36 MULTIMEDIA STUDENT SET

Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-36
Flowers and Fruits
Supplementary CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-37 MULTIMEDIA TEACHER PACKAGE
Varieties of wood
Basic Package of 6 items

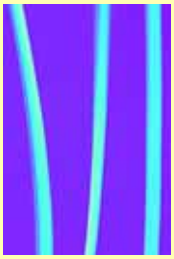
Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Maple. Acer platanoides, three sections of wood - 2. Beech. Fagus silvatica, three sections of wood - 3. Pine. Pinus silvestris , three sections of wood - 4. Spruce. Picea excelsa , three sections of wood - 5. Poplar. Populus alba, three sections of wood - 6. Lime. Tilia platyphylla, three sections of wood

SSE-37 MULTIMEDIA STUDENT SET
Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-37 Vaieties of Wood Basic CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-38 MULTIMEDIA TEACHER PACKAGE
Textile Fibres, Hairs and Furs
Basic Package of 6 items

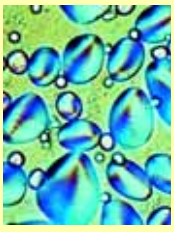
Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Merino wool - 2. Cocoon silk, raw - 3. Linen (flax) - 4. American cotton - 5. Cellulose fibers - 6. Nylon fabric

SSE-38 MULTIMEDIA STUDENT SET
Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-38 Textile Fibres, Hairs and Furs Basic CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-39 MULTIMEDIA TEACHER PACKAGE
Foodstuff and its Adulteration
Basic Package of 6 items

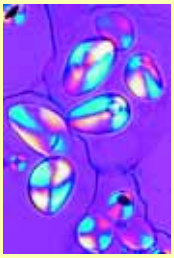
Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

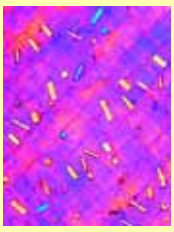
1. Mold in spoiled foodstuffs - 2. Sour milk, stained for bacteria - 3. Wheat flour adulterated with chalk - 4. Corn flour spoiled with spores of corn smut (Ustilago) - 5. Rye flour spoiled with moths - 6. Flour spoiled with mites (Tyroglyphus farinae)

SSE-39 MULTIMEDIA STUDENT SET
Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-39 Foodstuff and its Adulteration Basic CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.





SME-40 MULTIMEDIA TEACHER PACKAGE
Foodstuffs and Spices Under the Microscope
Basic Package of 12 items

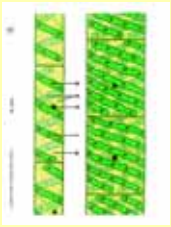
Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Rye flour - 2. Potato starch - 3. Soya meal - 4. Wheat flour - 5. Rice starch - 6. Coffee bean t.s. - 7. Black pepper, ground - 8. Paprika, ground - 9. Nutmeg t.s. - 10. Cocoa powder - 11. Tobacco, leaves t.s. - 12. Hazelnut, t.s. stained for fat

SSE-40 MULTIMEDIA STUDENT SET
Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-40 Foodstuffs and Spices Under the Microscope, Basic CD
Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-41 MULTIMEDIA TEACHER PACKAGE
The Wonderful World in a Drop of Water

Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Euglena, green flagellate with eyespot - 2. Paramecium, nuclei stained - 3. Daphnia and Cyclops, small crustaceans - 4. Spirogyra, green alga with spiral chloroplasts - 5. Spongilla, fresh water sponge, isolated spicules - 6. Diatomeae, diatoms, mixed species

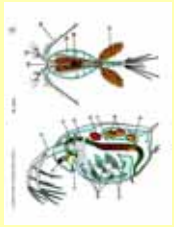
SSE-41 MULTIMEDIA STUDENT SET

Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-41
The Wonderful World in a Drop of Water, Basic CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-42 MULTIMEDIA TEACHER PACKAGE
The Wonderful World in a Drop of Water

Supplementary Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Ceratium hirundinella, dinoflagellates - 2. Vorticella, a stalked ciliate - 3. Putrefaction causing bacteria from hay infusions - 4. Hydra, fresh water polyp, t.s. of the body - 5. Cladophora, green alga, branched filaments - 6. Eudorina, small colonies within gelatinous sheaths - 7. Microcystis, irregular colonies - 8. Rotatoria, rotifers, mixed species - 9. Planaria, fresh water flat worm, t.s. of body - 10. Plumatella, moss animal, section of colony - 11. Tubifex, a fresh water oligochaete - 12. Mixed plankton, strewn slide

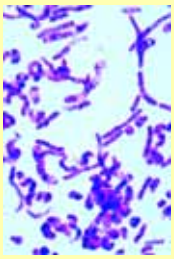
SSE-42 MULTIMEDIA STUDENT SET

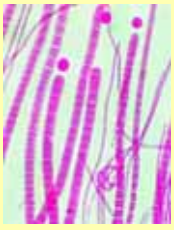
Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-42
The Wonderful World in a Drop of Water, Supplementary CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.





SME-43 MULTIMEDIA TEACHER PACKAGE
Identifying Polluted Water Under the Microscope

Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Intestinal bacteria (Escherichia coli) from putrid water - 2. Putrefactive bacteria (Spirillum) from sludge poor in oxygen - 3. Sludge bacteria (Methanobacterium) causing sewer gas - 4. Wasserbluthe (Microcystis), blue-green alga "blooming" in stagnant water - 5. Ciliates, different species from nutrient-rich water - 6. Water mold (Saprolegnia), harmful to plants and animals

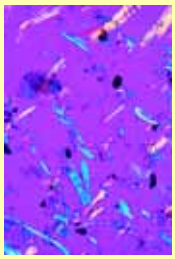
SSE-43 MULTIMEDIA STUDENT SET

Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-43
Identifying Polluted Water Under the Microscope, Basic CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-44 MULTIMEDIA TEACHER PACKAGE
Air Pollution and Allergens

Basic Package of 6 items

Comprising: 6 Microscope Slides in Plastic Box, 3 OHP Color Transparencies, 6 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Pollen grains of different kinds of grass - 2. Pollen grains of different kinds of conifers - 3. Mixed house dust (causing allergens) - 4. Asbestos powder (cancerogenous) - 5. Dust mite from a living room - 6. Spores of different fungi

SSE-44 MULTIMEDIA STUDENT SET

Comprising: 6 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

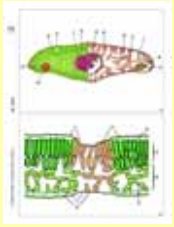
Additional Interactive CD-ROM No. CD-SM-44
Air Pollution and Allergens, Basic CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-45 MULTIMEDIA TEACHER PACKAGE
Animals and Plants Damaged by Environmental Influences

Basic Package of 8 items

Comprising: 8 Microscope Slides in Plastic Box, 4 OHP Color Transparencies, 8 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box



1. Skin of fish injured by chemicals, t.s. - 2. Skin ulcer of an amphibian, t.s. - 3. Human lung injured with dust particles, t.s. - 4. Gall nut on oak caused by insects, t.s. - 5. Beech (Fagus), t.s. of leaves with destroyed epidermis and chloroplasts - 6. Damaged lichen, caused by air pollution - 7. Wood with anomalous narrow annual rings caused by drought, t.s. - 8. Wood destroyed by fungus

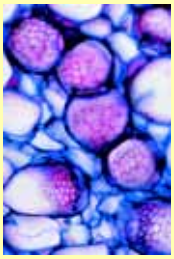
SSE-45 MULTIMEDIA STUDENT SET

Comprising: 8 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-45
Animals and Plants Damaged by Environmental Influences, Basic CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.



SME-50 MULTIMEDIA TEACHER PACKAGE
Anatomy of Phanerogams

Basic Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Zea mays, corn, monocot root t.s. - 2. Ranunculus, buttercup, dicot root t.s. - 3. Root tip and root hairs, t.s. epidermal origin of root hairs - 4. Zea mays, monocot stem with scattered bundles, t.s. - 5. Helianthus, sunflower, dicot herbaceous stem t.s. - 6. Zea mays, corn, monocot gramineous leaf t.s. - 7. Syringa, lilac, t.s. of a typical mesophytic dicot leaf - 8. Tulipa, tulip, leaf epidermis w.m., stomata and guard cells - 9. Lilium, lily, t.s. of flower bud showing floral diagram - 10. Lilium, anther t.s. showing pollen chambers and pollen grains - 11. Lilium, ovary t.s., showing arrangement of ovules - 12. Triticum, wheat, seed t.s. embryo and endosperm

SSE-50 MULTIMEDIA STUDENT SET

Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

Additional Interactive CD-ROM No. CD-SM-50
Anatomy of Phanerogams Basic CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

SME-51 MULTIMEDIA TEACHER PACKAGE
Anatomy of Phanerogams

Supplementary Package of 12 items

Comprising: 12 Microscope Slides in Plastic Box, 6 OHP Color Transparencies, 12 Sketch- and Worksheets, Brochure with explanatory text, Special cardboard box

1. Herbaceous and woody roots, two t.s. on one slide - 2. Lupinus, root nodules with nitrogen fixing bacteria t.s. - 3. Fagus, beech, root with ectotrophic mycorrhiza, t.s. - 4. Aristolochia, older stem t.s. - 5. Cucurbita, pumpkin, l.s. of stem with sieve tubes and vascular bundles - 6. Solanum tuberosum, potato, t.s. of tuber with starch grains - 7. Nerium, oleander, leaf with sunken stomata t.s. xerophytic leaf - 8. Pinus, leaves (needles), t.s. - 9. Lycopersicum, tomato, t.s. of flower bud shows floral diagram - 10. Mixed pollen types, many different species - 11. Pinus, ovule l.s. showing archegonia - 12. Pinus, male cone with pollen l.s.

SSE-51 MULTIMEDIA STUDENT SET

Comprising: 12 Microscope Slides in Plastic Box, Brochure with explanatory text, Cardboard box

NEW

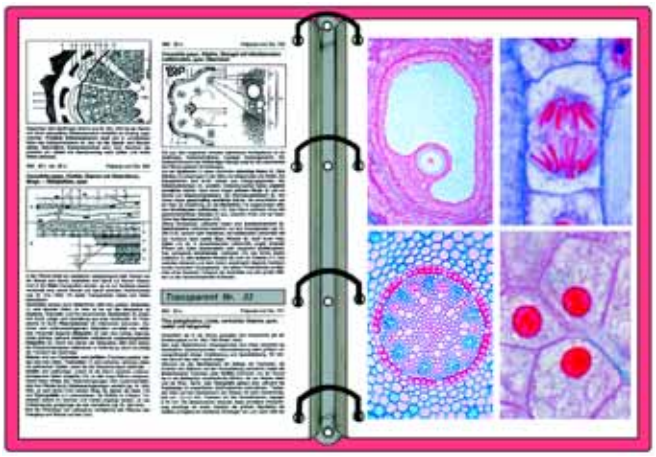
Additional Interactive CD-ROM No. CD-SM-51
Anatomy of Phanerogams Supplementary CD

Matching the Multimedia Packages for teachers and students and providing a great number of additional pictures and designs in excellent quality. A novel phantastic virtual MicroScope with different magnifications, test- and demo-programs. All pictures and texts can be printed by the user. The CD can be ordered separately or together with the Multimedia Packages for teachers and students.

All CD-OM can be ordered separately or together with the Multimedia Packages for teachers and students. Owners of previously acquired Multimedia Packages for teachers and students can purchase the accompanying CD-ROMs separately.

OVERHEAD TRANSPARENCY ATLASES

Color Overhead Transparencies as modern visual aids become more and more part of biology, physics and chemistry teaching programs. Therefore we have created a new and comprehensive range of Transparency Atlases of outstanding quality.
The atlases consist of large-format transparency sheets (size 22 x 28 cm) comprising a great variety of beautiful drawings, diagrams, tables, anatomical pictures, brilliant micro- and macrophotographs, electron and X-ray photographs, impressive life cycles, human photographs, landscape photographs, scenes, test data and results, etc.



- Each Transparency atlas is accompanied by a comprehensive interpretation text giving a detailed description of all pictures, based on the latest scientific findings (available in different languages).
- Our multi-colored transparencies are printed by a special process and excel by reason of their high projection quality.
- Transparencies and texts are held in a strong plastic file with ring mechanism.
- **NEW in 2011:** Sketch and work-sheets with semidiagrammatic designs and texts. Teacher may take photocopies from the sheets and use for classroom work and tests.

PROGRAM OF OVERHEAD TRANSPARENCIES

8201E **Anatomy and Physiology of the Human Body. Volume I**. The skeleton - The muscular system - The respiratory system - The circulatory system - Digestive system. - Urinary organs. Atlas 36 Overhead-Transparencies, size 22 x 28 cm, comprising 110 color pictures, mostly with several component figures. Sketch and work-sheets with semidiagrammatic designs and texts. Manual with depictured explanatory comments for the teacher. All in strong plastic file with ring-mechanism ***NEW***

8202E **Anatomy and Physiology of the Human Body. Volume II.** Reproduction, sex education and genetics - The nervous tissue - The human spinal cord - The human brain and the transmission of information - The autonomic nervous system – Atlas 36 Overhead-Transparencies, size 22 x 28 cm, comprising 110 color pictures, mostly with several component figures. Sketch and work-sheets with semidiagrammatic designs and texts. Manual with depictured explanatory comments for the teacher. All in strong plastic file with ring-mechanism ***NEW***

8203E **Anatomy and Physiology of the Human Body. Volume III.** Eye and vision - Ear and auditory mechanism, sense of equilibrium - Sensory perception: Smell, taste, touch, perception of temperature and movement. - Hormones and hormone systems – Atlas of 27 Overhead-Transparencies, size 22 x 28 cm, comprising 75 color pictures, mostly with several component figures. Sketch and work-sheets with semidiagrammatic designs and texts. Manual with depictured explanatory comments for the teacher. All in strong plastic file with ring-mechanism ***NEW***

8211E **The Human Apparatus of Movement.** Connective and supporting tissues. The human skeleton and its parts. The human muscular system. – Atlas of 30 transparencies with 87 pictures

8212E **The Human Organs of Digestion.** Digestive and excretory systems. Structure and function of human mouth, pharynx, stomach, intestine, liver and pancreas, kidney and urinary organs. The metabolism. – Atlas of 30 transparencies with 88 pictures

8213E **The Human Respiratory and Circulatory Systems.** Nose, trachea, lungs, heart, blood and blood vessels, lymphatic system. Respiration, circulation, blood pressure, blood groups. The immune system. – Atlas of 42 transparencies with 110 pictures

8217E **Reproduction and Germ Development of Human and Animals**. Atlas valuable for teaching sex instruction. Reproductive systems. Human sexual organs, egg and sperm development, growth of fetus, birth. – Atlas of 30 transparencies with 104 pictures

8214E **Nervous System Part I.** The nervous cells and tissues. The nervous systems of invertebrates and vertebrates. – Atlas of 30 transparencies with 76 pictures

8215E **Nervous System Part II.** The human spinal cord. The human brain as a control organ. Reception, conduction and transmission of information. The autonomic nervous system. – Atlas of 36 transparencies with 82 pictures

8218E **Hormones and Hormone Systems Part I and II**. The function and interaction of hormones. Thyroxin, adrenalin, and insulin. Sexual hormones and hypophysis. Releasing and gonadotrope hormones, feedback control, gene activity and protein synthesis, neurosecretion, second messenger and cascade mechanism, inhibiting and stimulating factors, anabolica, hormonal contraception. – Atlas of 42 transparencies with 116 pictures

8216E **The Organs of Sense**. Eye and vision, ear and hearing, sense of equilibrium, senses of smell, taste, touch, temperature and proprioception. – Atlas of 36 transparencies with 90 pictures

8220E **Cytology and Molecular Genetics.** Cell nuclei, chromosomes, genes, crossover, self-replication, germ-line. DNA as a carrier of hereditary information. Structure and replication of DNA and RNA. Genetic code and mutation. Synthesis, structure and function of proteins. The double helix. – Atlas of 46 transparencies with 172 pictures

8224E **Mitosis and Meiosis in Animals and Plants.** Outstanding color photomicrographs of cell division, reduction division, fertilization, and cleavage. – Atlas of 25 transparencies with 90 pictures ***NEW***

8248E **Cytology and Genetics.** Short version (TE). – Atlas of 10 transparencies with 67 pictures. ***NEW***

8222E **Transmission Electron Micrographs.** Cells and tissues of man, animals and plants. Greatly enlarged electron micrographs (50000 up to 100000 x) show the ultra-structures of the cell organelles. Pictures of lower magnification (5000 up to 30000 x) give an impression of the microstructure of the tissues and organs. – Atlas of 24 transparencies with 120 pictures

8225E **Mendelian Inheritance and Variability.** Types of crossings, modifications and mutations in plants and animals, adaptation, genotype and phenotype. – Atlas of 32 transparencies with 95 pictures

8226E **Human Genetics Part I.** Basic knowledge of formal genetics, modes of inheritance, chromosomal aberrations, cytogenetics, tumorgenetics, examples of medical genetics. – Atlas of 32 transparencies with 94 pictures

8227E **Human Genetics Part II**. Molecular genetics, statistic genetics, population genetics, mutations, blood groups. Genetic counseling and prenatal diagnosis, teratogenous injury of the fetus, estimated risk, behavior genetics, twin research. – Atlas of 42 transparencies with 116 pictures

8228E **Origin and Evolution of Life Part I.** Comprehensive edition. Stellar, chemical and organic evolution. Formation of procaryonts. – Atlas of 24 transparencies with 60 pictures

8229E **Origin and Evolution of Life Part II**. Comprehensive edition. The biological evolution from the procaryonts to the vegetable and animal kingdom. – Atlas of 24 transparencies with 45 pictures

8230E **Origin and Evolution of Life Part III.** Comprehensive edition. Basis, mechanisms and ways of evolution of the vegetable and animal kingdom. – Atlas of 30 transparencies with 60 pictures

8204E **The Origin and Evolution of Life.** Short Version. – Stellar, Chemical, and Organic Evolution. Development of Prokaryotes - The Biological Evolution from the Prokaryotes to the Vegetable and Animal Kingdom - Basis, Mechanisms, and Ways of Evolution of the Vegetable and Animal Kingdom - Atlas of 39 Overhead-Transparencies, size 22 x 28 cm, comprising 105 color pictures, mostly with several component figures. Sketch and work-sheets with semidiagrammatic designs and texts. Manual with depictured explanatory comments for the teacher. All in strong plastic file with ring-mechanism ***NEW***

8232E **Our Environment - Threats and Protection.** Typical examples show which processes are changing the natural structure of our environment and how the dangers arising from this can be counteracted. It consists of three parts: I. The Landscape. II. Ground and Water. III. The Air. – Atlas of 36 transparencies with 73 pictures

8233E **Our Waters, Problems of Pollution, Methods of Protection and Recycling.** Water courses in cultivated areas. Examination and supervision of the water. Levels of water purity. Water pollution, sewage water, eutrophication, acidification, biocides. Methods for cleaning and protection. – Atlas of 42 transparencies with 114 pictures

8234E **The Forest - Essential to Life.** The forest as an ecological system. Plants and animals of the wood. The multifarious functions of the forest. Threats caused by air pollution and acid rain. – Atlas of 30 transparencies with 81 pictures

8235E **Protecting Crops from Damage and Diseases.** Plant diseases of economic importance, plant pests, destructive weeds and animals. Plant protection: mechanical, chemical, biological and biotechnical treatments. – Atlas of 30 transparencies with 101 pictures

8238E **Ecosystems.** Natural biological communities become rarer and rarer. Their abundance of species, the problems of their preservation as well as their importance for the whole ecological structure are treated in these atlas on hand and documented by characteristic examples. – Atlas of 42 transparencies with 205 pictures

8250E **Environmental Damages to Animals and Plants**. Short version (TH). – Atlas of 18 transparencies with 80 pictures. ***NEW***

8236 E **Color Atlas of Photomicrographs of General Biology.** Atlas of Transparencies to Accompany the Multimedia Program for Biology (Series A, B, C and D). Color photomicrographs for General Biology: Human Science, Zoology, Botany, Cytology, Genetics, Parasitology, Bacteriology, Ecology. – Atlas of 45 transparencies with 252 pictures. ***7th Edition!***

72303E **Histology** (former no. 172303), NEW enlarged and revised Comprehensive Edition. Types of cells. Epithelial, connective, muscular and nervous tissues. Digestive organs. Glands. Respiratory organs. Blood and lymphatic system. Urinary and genital organs. Endocrine glands. Scalp and hair. Organs of sense. Central nervous system. With 228 photomicrographs, histological and anatomical designs and graphs on 41 color transparencies. Plus NEW Sketch- and worksheets with semidiagrammatic designs and texts. ***NEW PUBLICATION***

8245E **Histology and Human Science.** Short version (TA)**.** – Atlas of 30 transparencies with 171 pictures. ***NEW***

8237E **Zoology (Microscopic Anatomy of Invertebrates).** New comprehensive edition (TB). Atlas of 26 transparencies with 165 pictures. Microscopic anatomy and histology of the invertebrates. Protozoa, Mesozoa, Porifera, Coelenterata, Platyhelminthes, Nemathelminthes, Annelida, Crustacea, Arachnida, Mollusca, Echinodermata, Acrania. –***NEW***

72306E **Parasitology** (former no. 172303). NEW enlarged and revised Comprehensive Edition. Humoral and cellular reactions. Parasitic protozoa, Malaria, Trematodes, Cestodes, Nemathelminthes, Roundworms. Mosquitoes, Ticks, Lice, Bugs and Fleas. Helminth eggs and larvae. Protozoan cysts. With 228 color photomicrographs, habit photographs, designs and life-cycles of the parasites on 35 transparencies. Plus NEW Sketch- and worksheets with semidiagrammatic designs and texts. ***NEW PUBLICATION***

8249E **Bacteria, Parasites and Human Diseases. (TG).** Comprehensive edition. Bacteria as causative agents of diseases. Ecto- and Endoparasites of man and animals. Pathological changing in diseased human organs. – Atlas of 32 transpar. with 230 pictures. ***NEW***

8231NE **Embryology.** New enlarged edition. Embryological development of Ascaris, Sea-urchin, Frog, Chicken, Mammals and Human. – Atlas of 21 transparencies with 122 pictures. ***NEW***

72304E **Plant Anatomy Part I: Phanerogams. The Flowering Plants** (former no. 172304). NEW enlarged and revised Comprehensive Edition. Microscopic anatomy and physiology of flowering plants. Cytology and tissues. Construction and function of roots, stems and leaves. Flowers, fruits and reproduction. With 270 photomicrographs, designs, graphs and life-cycles on 43 color transparencies. Plus NEW Sketch- and worksheets with semidiagrammatic designs and texts. ***NEW PUBLICATION***

72305E **Plant Anatomy Part II: Cryptogams. The Non-Flowering Plants** (former no. 172305). NEW enlarged and revised Comprehensive Edition. Morphology of Thallophyta and Archegoniatae. Non-pathogenic Bacteria. Fungi and Lichenes. Algae. Bryophyta. Pteridophyta. With 194 photomicrographs, designs, graphs and life-cycles on 32 color transparencies. Plus NEW Sketch- and worksheets with semidiagrammatic designs and texts. ***NEW PUBLICATION***

8246E **Botany Part I. The Cryptogames.** Short version (TC) – Atlas of 18 transparencies with 116 pictures. ***NEW***

8247E **Botany Part II. The Phanerogames.** Short version (TD) – Atlas of 20 transparencies with 142 pictures. ***NEW***

8253E **Atlas of Oral and Dental Histology.** Atlas of 40 Transparencies size 22 x 28 cm, with over 150 pictures and 20 sketch- and worksheets. With detailed explanatory textbook. - Comprising the following themes: General and foodstuffs. Human mouth, tongue and throat. Human teeth and teeth development. Dental hygiene. Salivary glands, esophagus and stomach. Cells and tissues. Examples of histopathology.

8255E **Basic Medicine and First Aid.** Atlas of 18 Transparencies size 22 x 28 cm, with over 76 pictures and 20 sketch- and worksheets. With detailed explanatory textbook. - Comprising the following themes: The use of the microscope, bacteria and hygiene, medical instruments, first aid and assistance.

8240E **The Structure of Matter Part I.** Elementary particles, atomic nuclei, structure of the atomic shell. Energy, matter, interactions. Classes of matter, chemical bonding. Symmetry of crystals, properties of minerals, research into the structure. – Atlas of 35 transparencies with 110 pictures

8241E **The Structure of Matter Part II**. Morphology of the most important minerals: elements and bonds, silicates, rocks, gems and precious stones. – Atlas of 27 transparencies with 204 pictures

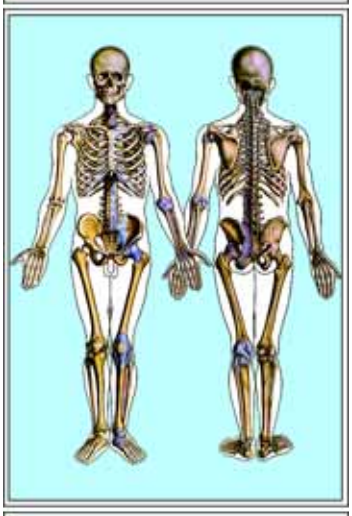
No. 8201E **Anatomy and Physiology of the Human Body. Volume I**

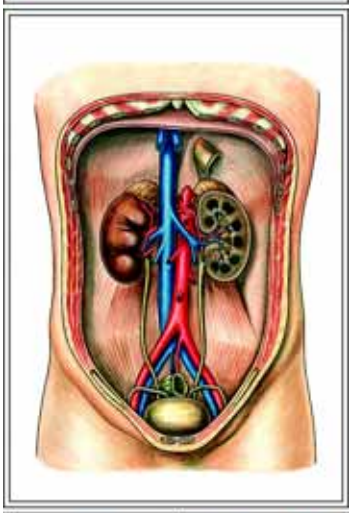
A comprehensive presentation of the construction, biology and function of the human body in three volumes.
Volume I comprises the human skeleton, the muscular system, the respiratory organs, circulatory system, blood and lymphatic organs, heart and blood vessels, the digestive system, and the urinary organs.
These atlases of human biology and life science are of great value for teaching in schools, colleges and universities, in the training of nurses, medical technicians and for the students of physiotherapy and physical education.

Contents:

- *36 Overhead-Transparencies, size 22 x 28 cm, comprising 110 color pictures, mostly with several component figures (anatomical pictures, photomicro- and macrographs, nature photographs, human photographs, electron micrographs, X-ray photographs, drawings, diagrams, tables, scenes, test data and results). The color pictures were prepared by university illustrators specializing in this field.*
- *Sketch and work-sheets with semidiagrammatic designs and texts. Teacher may take photocopies from the sheets and use for classroom work and tests.*
- *Manual with depictured explanatory comments for the teacher. All in strong plastic file with ring-mechanism.*

The human skeleton - The human skeleton, front and rear view - Fine structure of bone, diagram - Structure of a long bone - Joints: diagram, hinge, ball-and-socket joint - Spinal column, cervical and thoracic vertebrae - Lumbar vertebrae, sacrum and coccyx - Articulations of the skull: skull, atlas, axis - Thorax and shoulder girdle - Skeleton of the arm, pronation and supination of the hand - The elbow joint - The skeleton of the hand - The skeleton of the foot - The pelvic girdle with and without its ligaments - The knee joint, menisci - The skull, anterior and lateral view - Skull with separated bones - X-ray of a dislocation - X-ray of a fracture - **The human muscular system -** Human body showing the skeletal muscles, front and rear views - The structure of a skeletal muscle - The sensory and motor innervation of a muscle - The muscles of the head and the neck - The muscles of the trunk - The superficial and the deeper muscles of the back - The muscles of the shoulder, pairs of antagonists - Pronating and supinating muscles of the forearm - The muscles of the hand - The muscles of the leg and foot - The muscles of the pelvis - Flexors and extensors of the leg - Muscles for lifting and lowering the arm - Example of a complex muscular action - **The human respiratory system -** General view - Position of the lungs in the thorax. Thorax with trachea, bronchi, and lungs - X-ray of human thorax, inspirated and expirated position - The larynx; front view, dorsal view, l.s. - Swallowing and breathing - Function of the arytenoid cartilages, glottis and vocal cords - Respiratory duct and air passages - Nasal cavity with its sinuses - Intercostal muscles during inspiration and expiration - Detailed structure of the lungs - Comparison of inspired and expired air - Diagram of gaseous exchange in the pulmonary alveoli - Volume of air respirated - Connection between work and respiration per minute - Regulation of respiration- Absorption of carbon monoxide and oxygen by hemoglobin - Smoke and sulphur dioxide-content of the air - **The circulatory system I: Blood and lymphatic Organs -** Shape and size of an erythrocyte - Serum reactions to show hereditary relationship - Leucocytes with phagocyted bacteria - Composition of the blood - The steps of blood clotting, diagram - The AB0 blood group determination - Positive and negative reactions - Diagram to understand agglutination of the AB0-blood groups - Diagram to understand Rh-incompatibility - The human lymphatic system - Human immune system - Structure of a lymph node - The vascular system of the human spleen - Exchange of substances between blood capillaries, tissue, and lymph capillaries - Development of lymphocytes. Memory cells, plasma cells - **The circulatory system II: Heart and blood Vessels -** The heart and the big vessels - Human heart, l.s. - Arterio-ventricular and semilunar valves - Endocardium, myocardium, epicardium - The cardiac cycle - Cycle of pressure and volume of the left ventricle. Blood pressure in the aorta, cardiac sounds - Heart, pulmonary and systemic loop - Stimulation and coordination of the heart. Sinoatrial node, atrioventricular node - Human electrocardiogram - Diagram of human blood circulation. Big vessels and capillary networks - Arrangement for taking the human blood pressure - Diagram to explain the pulse during reduction of the pressure in the bag - The heart in the circulatory system of vertebrates - Artery and vein, three-dimensional designs - **Digestive system. Mouth, esophagus and stomach** - The human organs of nutrition - The deciduous and the permanent set of teeth - The types of teeth - Position and structure of the salivary glands - Human esophagus, spatial diagram and section - Position and fixation of the human abdominal digestive organs. - Human stomach, spatial diagram, sections, gastric glands - **The intestine -** Small intestine, sections, mucous glands, principle of peristaltic movement - Structure of an intestinal villus - Human colon, l.s., low magnification - Human colon, spatial color design and transverse section - **The liver and the pancreas** - General structure of a liver lobule- Structure of a hepatic cord - Vascular systems of a liver lobule - Liver, t.s. showing liver lobules, bile ducts, diagram - Blood supply, exchange of substances of liver and small intestine - The venous system of the liver, portal vein and hepatic vein - **The urinary organs** - The urinary organs, situs - Kidney, l.s., diagram - The blood vessels of the kidney - Nephron and glomerulus - Function of the kidney, the course of renal tubules, renal corpuscle.





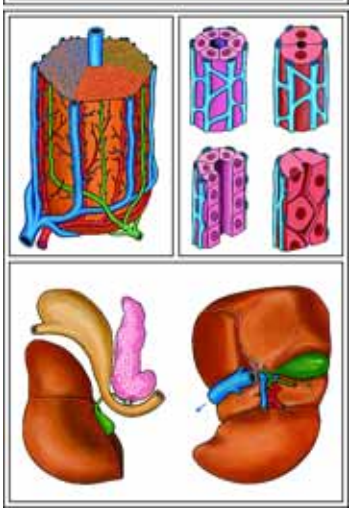
No. 8202E **Anatomy and Physiology of the Human Body. Volume II**

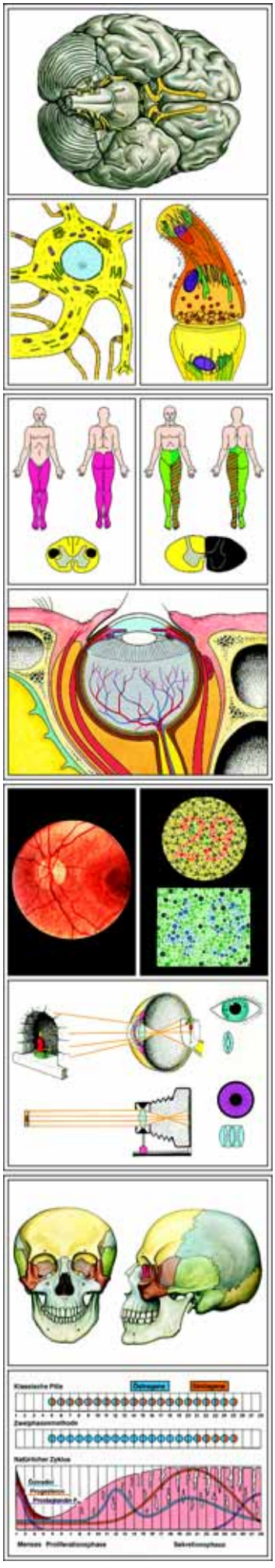
A comprehensive presentation of the construction, biology and function of the human body in three volumes.
Volume I comprises the human skeleton, the muscular system, the respiratory organs, circulatory system, blood and lymphatic organs, heart and blood vessels, the digestive system, and the urinary organs.
These atlases of human biology and life science are of great value for teaching in schools, colleges and universities, in the training of nurses, medical technicians and for the students of physiotherapy and physical education.

Contents:

- *32 Overhead-Transparencies, size 22 x 28 cm, comprising 101 color pictures, mostly with several component figures (anatomical pictures, photomicro- and macrographs, nature photographs, human photographs, electron micrographs, X-ray photographs, drawings, diagrams, tables, scenes, test data and results). The color pictures were prepared by university illustrators specializing in this field.*
- *Sketch and work-sheets with semidiagrammatic designs and texts. Teacher may take photocopies from the sheets and use for classroom work and tests.*
- *Manual with depictured explanatory comments for the teacher. All in strong plastic file with ring-mechanism.*

Reproduction, sex education and genetics - Asexual reproduction of Amoeba - Sexual reproduction of Hydra - Reproduction of the sea urchin - Reproduction in fishes - The reproductive organs of the human male; lateral view of situs and diagram - Testis, epididymis, spermatogenesis - Spermatozoa - Human hair, egg, and spermatozoa; comparison of sizes - The reproductive organs of the human female; lateral and front view of situs and diagram - The maturation of the oocyte - Oogenesis, ovulation, fertilization, cleavage of fertilized egg, and implantation of blastocyst in the uterine wall - Changes of the endometrium during menstrual cycle and after fertilization - The menstrual cycle of the woman - The fertilization of the egg, first development in the fallopian tube and imbedding in the uterus - Hereditary transmission of the sex and sex-linked inheritance - The human chromosomes - Normal karyotype with banding pattern - Growth of embryo and fetus in the uterus - Full term baby in maternal abdomen - Beginning of birth, entrance of amniotic sac into the birth canal - The chromosomes as carriers of the hereditary factors - Oogenesis, spermatogenesis fertilization and cleavages in animals - Fertilization and maturation divisions in Ascaris - Fertilization of the sea urchin egg and development - Development of the central nervous systems of Branchiostoma (Amphioxus) and frog, from. Closing of neural groove to neural tube - Chicken embryo, 48 hour, t.s. with neural tube and chorda - Development of the human heart - Graduation of vertebrate hearts - Graduation of the vertebrate lungs - Development of the human eye - **The nervous tissue -** Human nervous system, entire view - Motor nerve cells of the gray matter, cell body, dendrites, axon - Nerve





fibers, t.s. Axons and myelin sheaths - Various shapes of human neurons - Diagram of a neuron - Various neurons from human nervous system - Medullated nerve fibers, showing Ranvier's nodes - The nervous systems - The evolution of the nervous system in worms - The nervous system of the earthworm - Concentration of ganglia in insects - The head of a locust l.s. - Position of the brain - The nervous system in arthropods: lobster, crab, spider, scorpion - The nervous system of a freshwater mussel, a snail and a starfish - Embryonic development of the spinal cord in frog and human - Human vertebra. Superior and lateral view of three vertebrae with intervertebral discs - Brains of vertebrates (shark, bony fish, amphibian, reptile, bird, mammal), dorsal views and sagittal sections - Human central nervous system, lateral view. Position of the dura sac in the spinal canal - Human spinal cord in the spinal canal, lateral view. Opened dural sac, surface view with segments - Human spinal cord and medulla oblongata. Lateral, dorsal and ventral view with spinal nerves - Comparison of the masses of brain and spinal cord in Branchiostoma, frog, rabbit, cat, ape, human - Cranial nerves of frog and sheep - Human brain, ventral view with cranial nerves - Proportion between brain and head in vertebrates and in mammals - **The human spinal cord -** Position of the spinal cord in the spinal canal, transection - Spinal cord of mammal, t.s. silver stained, photomicrograph - Portion of the spinal cord with roots, ganglia, and branches of spinal nerves, three-dimensional diagram - Simple reflex arc - Tactile corpuscle, spinal cord, motor end plate on muscle fiber - Polio: syndrome of the ventral gray matter - Tabes, tertiary syphilis: syndrome of the dorsal white matter - Sclerosis of the pyramidal tracts - Complete section of the spinal cord: Paraplegia - **The human brain and the transmission of information -** The human brain, lateral view - Sagittal section of the human brain, view on the right half showing cut surfaces - Frontal section of human brain - The hierarchic structure of the brain, archipallium and neopallium - Electrotonic or resting potential and action potential - Receptors receive various types of sensory input and transduce them into action potentials of equal magnitude - Intensity of stimulus is reported by impulse frequency - Propagation of action potential along unmyelinated axon - Fine structure of a Ranvier's node (after Krstic) - Nerve cell body from the cerebrum with dendrites, axon, and synapses - Exciting and inhibiting synapses, their location and structure - Synapsis, spatial picture - Synaptic transmission, diagram - Brain stem, ventral and dorsal view - The blood supply of the brain, ventral and lateral view - Lesion caused by diving accident - Lesion caused by hemorrhage (stroke) - Cerebral cortex, t.s. silver stained to show the pyramidal cells and their connections - The lobes and areas of the left cerebral hemisphere - Areas and tracts of the cerebrum, diagram - Views of the cerebellum from various sides, and sagittal section - Fine structure of the cerebellar cortex, neuronal connections, diagram - Tracts connecting the cerebrum with the cerebellum - **The autonomic nervous system -** Effect of atropine on one eye, both eyes exposed to equal incidence of light - Innervation of the iris muscles. Antagonism of sympathetic and parasympathetic nervous system - Antagonistic effect of the sympathetic and parasympathetic system on glands and involuntary muscle - The location of the spinal cord, spinal nerves, sympathetic trunk, and sympathetic ganglion II - Transmitter and inhibiting substances of synapses and motor end plates in the somatic, sympathetic, and parasympathetic nervous system - Typical courses of sensory and motor tracts of the autonomic nervous system - Regulation of the body temperature - Location of the receptors and controlling centers in the body, negative feedback system

No. 8203E **Anatomy and Physiology of the Human Body. Volume III**

NEW!

A comprehensive presentation of the construction, biology and function of the human body in three volumes.
Volume I comprises the human skeleton, the muscular system, the respiratory organs, circulatory system, blood and lymphatic organs, heart and blood vessels, the digestive system, and the urinary organs.
These atlases of human biology and life science are of great value for teaching in schools, colleges and universities, in the training of nurses, medical technicians and for the students of physiotherapy and physical education.
Contents:

- *27 Overhead-Transparencies, size 22 x 28 cm, comprising 75 color pictures, mostly with several component figures (anatomical pictures, photomicro- and macrographs, nature photographs, human photographs, electron micrographs, X-ray photographs, drawings, diagrams, tables, scenes, test data and results). The color pictures were prepared by university illustrators specializing in this field.*
- *Sketch and work-sheets with semidiagrammatic designs and texts. Teacher may take photocopies from the sheets and use for classroom work and tests.*
- *Manual with depictured explanatory comments for the teacher. All in strong plastic file with ring-mechanism.*

Eye and vision - Range of visible light in the electromagnetic spectrum - The human eye. Eyeball, eye muscles, eyelid, sagittal section - Human retina, t.s. detail view. Rods, cones, bipolar cells, ganglion cells, photomicrograph - Human retina. Chief synaptic connections, diagram - Retina, t.s. for detail of rods and cones - Orbital muscles of the eyeball - Optic pathways, optic chiasm, diagram - Retina seen through the ophthalmoscope. Central fovea, optic disc - Formation of an image in a normal eye - The eye as a camera - Accommodation for distant and near vision - Pupillary light reflex - Image produced by "normal" and astigmatic glasses - Eye with pathological turbidity of the lens (cataract) - Defects of vision: short-sighted and far-sighted eye - Image produced by an astigmatic cornea - Tests for color-blindness. Red-green deficiency and blue weakness - Optical illusions by ambiguous information - Optical illusions caused by the influence of the surrounding areas - Optical illusions caused by non-conformity of rational interpretation and optical perception - Trichromatic triangle. Different combinations of three primary colors give all other colors - Spectral sensitivity of rods and cones (dominator system), three pigment color vision (modulator system) - **Ear and auditory mechanism, sense of equilibrium -** The formation of sound waves. Areas of rarefaction and areas of compression caused by a tuning fork. - Anatomy of the human ear. Ear concha, external auditory canal, middle ear, internal ear - Movement of the eardrum, auditory ossicles, oval window and round window - Position of epithelia of the internal ear - Organ of Corti, diagram - Movement of Reissner's membrane and basilar membrane. Stimulation of the hair cells by the hairs in the tectorial membrane - Broadening of the basilar membrane from the base of the cochlea to the helicotrema - Formation of damped waves in the membranous labyrinth - Displacement of the membranous labyrinth by the waves generated by sound vibrations - Amplitude pattern of vibration of the membranous labyrinth for high and low frequencies - Detection of sound direction by the time difference between the entry of sound into the ears - Diagram of main auditory pathways. Acoustic centers in the brain - Function of the vestibular system - **Sensory perception: Smell, taste, touch, perception of temperature and movement -** Section through nasal cavity and pharyngeal cavity - Location of the olfactory mucous membrane and respiratory pathway - Nasal conchae of human and deer. Microsmates, macrosmates - Olfactory and respiratory mucous membrane t.s. - Detail view of olfactory epithelium with sensory cilia - Tongue of rabbit, t.s. of papilla foliata with taste buds - Human skin from palm, v.s. showing cornified epidermis, germinative zone, sweat glands, diagram - Human scalp, vertical section showing l.s. of hair follicles, sebaceous glands, epidermis - Human skin with cutaneous receptors of touch, pressure and thermal sensation - Tactile hair, median l.s. and t.s. - Ruffini's warmth receptor - Krause's corpuscle, cold receptor - Meissner's corpuscle from human finger - Back of human hand marked with warmth and cold spots - Sensitivity differences caused by touch-stimulation: excitation nearby or far away, weak or strong - Proprioceptors: muscle spindle and Golgi tendon apparatus. Conscious awareness of the position and movements of the joints - **Hormones and hormone systems** - The human hormone glands, position, shape, size - The human thyroid gland, situs - Exocrine and endocrine glands, diagram - Thyroid gland, sec. showing glandular epithelium and colloid - Acceleration of tadpole development caused by thyroxin - Effect of thyroxin therapy on a child - Cretinism caused by insufficiency of thyroid gland - Relation between iodine and goiter - The parathyroid glands - Pancreas showing islets of Langerhans - Regulation of blood sugar level by A- and B-cells of the islands of Langerhans - Control of the blood sugar level by insulin and glucagon - Human kidney and adrenal gland - Adrenal gland, t.s. through cortex and medulla - Interstitial cells of Leydig, t.s., high magnification photomicrograph - Corpus luteum, t.s., photomicrograph - Castrated fowl, effect of castration on rooster and hen - Secondary sex characters in humans - Processes during the menstrual cycle - The antibaby pill, hormonal contraception - Relations between endocrine glands, diagram - Location of pituitary gland and pineal body - Thymus of juvenile and adult person

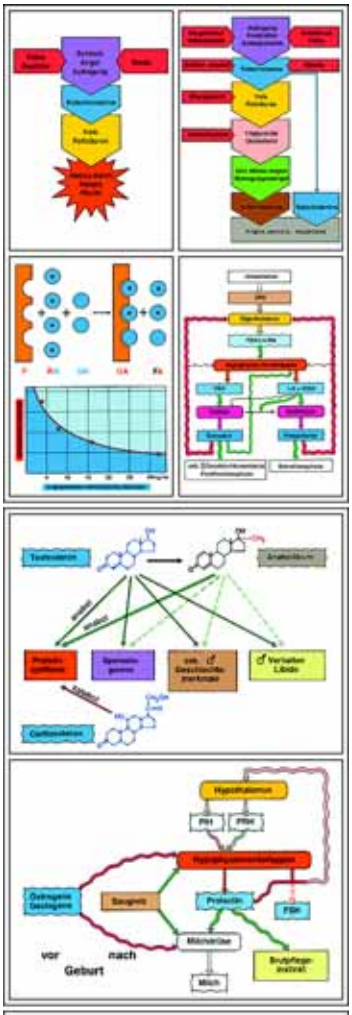
No. 8211E **The Human Apparatus of Movement**

Atlas of 30 OHP Transparencies size 22 x 28 cm, comprising 66 color pictures, mostly with several component figures (drawings, diagrams, anatomical pictures, photomicrographs and macrographs, X-ray photographs). - Sketch and work-sheets with semidiagrammatic designs and texts - Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Prof. Walter Mergenthaler

Connective and supporting tissues. - Embryonic connective tissue - Areolar connective tissue - White fibrous tissue, l.s. of tendon - Yellow elastic fibrous tissue, l.s. of ligamentum nuchae - Hyaline cartilage of frog - Costal cartilage of man - Yellow elastic cartilage - Fibrocartilage from intervertebral disc - Bone cells and canaliculi - Tibia of man, t.s. showing general structure: fundamental lamellae, Haversian lamellae, interstitial lamellae - Compact bone, t.s. showing systems of lamellae, medium magnification - Long hollow bone, entire epiphysis for general study - Compact bone, l.s. showing Haversian canals - Haversian system, t.s. for finer detail - Structure of bone, schematic figure - Finger of human embryo, l.s. cartilaginous predisposition of finger bones - Finger of human embryo, beginning ossification - Bone development, l.s. details of intracartilaginous ossification - Bone development, t.s. - Osteoblasts, high magnification - Red bone marrow showing megakaryocytes

The skeleton. - The skeleton, entire front and entire back view - Division of the skeleton in its functional parts - Joints: hinge joint, ball-and-socket joint - Finger joint, sagittal l.s. low magnification - Vertebral column, cervical and thoracic vertebrae - Lumbar vertebra, sacrum, coccygeal bone - Skull, atlas, axis - Thorax and shoulder girdle, front and back views - Construction of a long bone, 3 schematic figures - Skeleton of the arm showing supination and pronation - The elbow joint, entire view and longitudinal section - The skeleton of the hand - The pelvis, 2 figures, one showing the ligaments - The knee joint, 4 figures: long. section, front view, back view, and menisci - The skeleton of the foot: side view, frontal view, ankle joint - The skull, front view and side view - The skull dissected in its different bones - X-ray photograph of a dislocation (luxation) - X-ray photograph of a bone fracture

The muscular system. - The skeletal musculature of man, general view of front side and back side - Structure of the muscle, 4 schematic figures - Striated muscle, electron micrograph - Striated muscle, t.s. showing fascia, connective tissue, muscle bundles and muscle fibers - Striated muscle, l.s. muscle fibers and nuclei - Striated muscle fibers, l.s. showing the striations, high magnification - Striated muscle fibers, t.s. showing the fibrillae, high magnification - Capillary blood vessels in the muscle, injected preparation - The sensory and motor innervation of the muscle (muscle spindles and motor end plates), 4 schematic figures - Motor nerve end plates - Neuromuscular synapses in skeletal muscle, electron micrograph - Motor innervation of muscle, low magnification - Muscle spindle - The muscles of head and neck, front view and side view - The muscles of the trunk, front view - The superficial muscles of the back - The deeper muscles of the back - The muscles of the shoulder (antagonism) - The muscles of the arm - The pronation and supination muscles of the arm - The muscles of the hand, front view and back view - The muscles of the pelvis - The muscles of the leg, front view and side view - Extensor and flexor muscles of the leg - The muscles of the shank and the foot - Example of a complex muscular efficiency.



No. 8212 E **The Human Organs of Digestion**

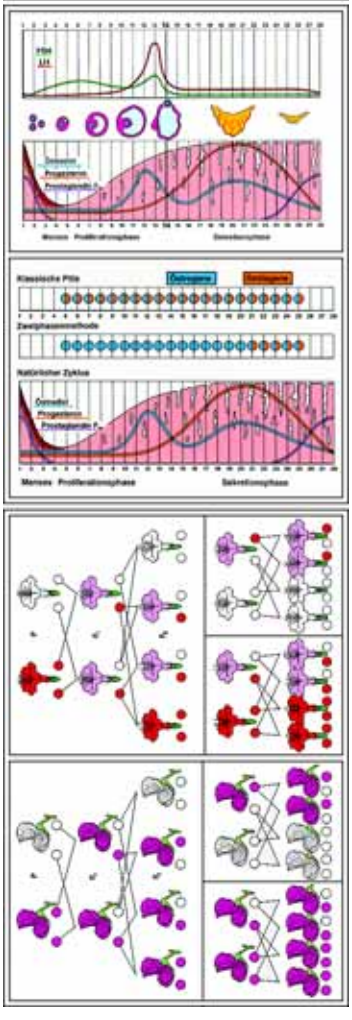
Atlas of 30 OHP Transparencies size 22 x 28 cm, comprising 77 color pictures, mostly with several component figures (drawings, diagrams, anatomical pictures, photomicro- and macrographs) - Sketch and work-sheets with semidiagrammatic designs and texts - Compilation and text: Prof. W. Mergenthaler

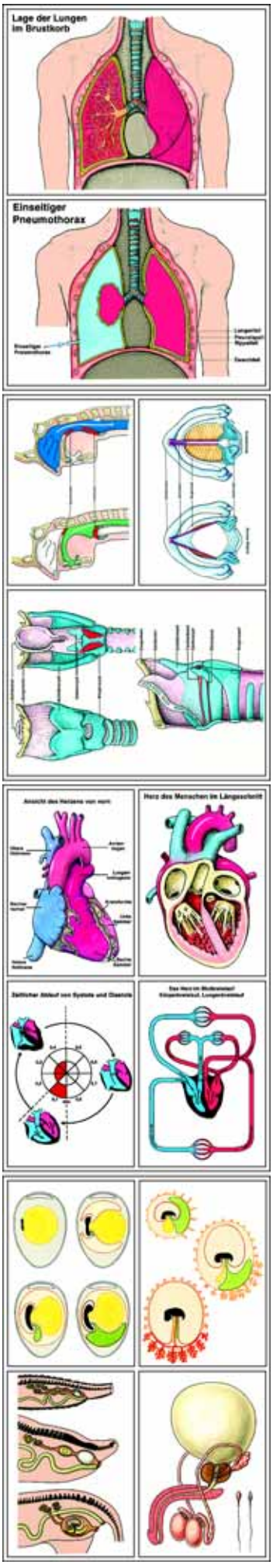
Mouth, pharynx and stomach. - Milk teeth and permanent teeth - The different kinds of teeth: incisor tooth, canine tooth, premolar tooth - Gum with milk tooth and permanent tooth, l.s. - Incisor tooth and gum, l.s. - Gum with root of tooth, t.s. - Head of mammalian embryo showing primordia of teeth, frontal section - Tooth development: dental lamina and young dental sac - Older dental sac - Dental sac with primordium of tooth - Primordium of tooth, upper part showing the crown - Primordium of tooth, high magnification shows dentine, enamel, enamal organ, odontoblastic cells - Human tooth, ground thin to show enamel, dentine and pulp - Bacteria of caries in l.s. of diseased human tooth - Bacteria from human mouth, smear - Bacteria from human intestine - Human tongue, section shows muscles and papillae - Tongue of cat, sec. with cornified papillae - Wallate papilla of human tongue with taste buds - Location of the salivary glands in the head - Part of the salivary gland, low magnification - Submaxillary gland, a predominating serous gland - Submaxillary gland, high magnification showing detail of acini - The structure of a salivary gland, schematic figure - Sublingual gland, a predominating mucous gland - Parotid gland, a pure serous gland - Esophagus of man, t.s. low magnification - Esophagus of man, t.s. medium magnification shows muscular layers and mucous membrane - Stomach of man, sagittal l.s. shows cardiac, fundic and pyloric region - Stomach, l.s. medium magnification shows muscular layers and mucous membrane - Mucous membrane of stomach, t.s. - Mucous membrane of stomach, t.s. high magnification - shows detailed structures of gastric glands

Intestine. - Location of the abdominal viscera of man - Small intestine of newborn child, t.s. entire view and detail view with suspensory ligamentum - Duodenum of man, l.s. showing intestinal wall, folds, and villi - Duodenum, l.s. of a fold with Brunner's glands - Duodenum, l.s. showing villi, crypts, and glands - Jejunum of man, l.s. showing intestinal wall, folds, and villi - Jejunum, l.s. of intestinal villi medium magnification - Epithelium of intestine with mucous cells - Intestinal loop with injected blood vessels - Small intestine of cat, t.s. injected to show the blood vessels - Intestinal villi injected to show the blood vessels, surface view - Detailed structure of an intestinal villus, 3 schematic figures - Large intestine (colon) of man, l.s. - Tubular glands of colon, l.s. - Tubular glands of colon, t.s.

Liver and pancreas. - Liver and pancreas, general view - Liver of pig, t.s. shows liver lobules, low magnification - Liver lobule, schematic figure to show the glandular structure of the liver - Trabecula of liver cells, 2 schematic figures - Liver lobule, schematic figures to show the construction and the vascular systems - Capillary vessels of liver, central veins and collecting vein, schematic figure - The venous vascular system of the liver; portal vein and liver vein, schematic figure - Liver of pig, t.s. medium magnification for finer details - Liver lobule, t.s. showing the structure of the liver cells, high magnification

The excretory system of man. - The urinary organs: kidney, ureter, urinary bladder - The kidney, l.s. schematic figure - Kidney of mouse, sag. sec. of complete organ - Kidney of human fetus, entire sagittal l.s., low magnification - The blood vessels of kidney, schematic figure - Human kidney, l.s. shows cortex, medulla, and pelvis, low magnification - Human kidney, t.s. of cortex, medium magnification - Malpighian corpuscle, showing Bowman's capsule, glomerular loop of afferent and efferent arteries, convoluted tubules - Cortex of kidney, l.s. with injected blood vessels - Medulla of kidney, l.s. with renal tubules and collecting tubes - Kidney, injected with trypane blue to demonstrate storage in the convoluted tubules - Nephron and glomerulus, 2 schematic figures - Ureter, t.s. - Urinary bladder, t.s. of the wall





No. 8213 E **The Human Respiratory and Circulatory Systems**

Atlas of 42 OHP Transparencies size 22 x 28 cm, comprising approx. 110 color pictures, mostly with several component figures (drawings, diagrams, tables, graphs, anatomical pictures, photomicrographs and macrographs, human photographs, electron micrographs, X-ray photographs). - Sketch and work-sheets with semidiagrammatic designs and texts - Compilation and text: OStR Michael Duenckmann

The respiratory system of man. - The human respiratory organs, general view - Longitudinal section through head and neck. Air passages marked - Frontal section through the facial part of the skull showing the nasal cavity with its sinuses - Frontal section through the nasal septum and the hard palate - Diagram of the processes of swallowing and breathing - Frontal and dorsal view and longitudinal section of the larynx - Functions of the arytenoid cartilage and the shape of the glottis in various voices. - Human trachea, l.s. - Ciliated epithelium of the trachea - Structure of ciliated epithelial cells, electron micrograph - Position of the lungs in the thorax - Inner lining of the thorax. Visceral pleura, parietal pleura, pleural gap, pneumothorax of one lung - X-ray of human thorax, inspirated and expirated - Longitudinal section through thorax, inspirated and expirated position - Intercostal muscles during in- and expiration - Structure of the lungs, two steps of enlargement - Human lung, t.s. low magnification for general view - Human lung, t.s. showing bronchioles and alveoli - Lung of cat. Blood vessels injected - Alveolar septum, electron micrograph - Lung of cat, t.s. stained for elastic fibers - Comparison of inspired and expired air, diagram - Diagram of gaseous exchange in the pulmonary alveoli - Volume of air respirated, diagram - Connection between work and respiration per minute - Lung of salamander, t.s. - Lung of frog, t.s. - Lung of lizard, t.s. - Enlargement of pulmonary respiratory surface of various vertebrates - Influence of varying composition of the air on respiratory frequency - Frequency of nervous impulses due to O_2- and C O_2-contents in the blood - Regulation of respiration - Feedback system explaining the regulation of respiration - Miliary tuberculosis of human lung - Deposition of dust in human lung - Dust concentration depending on the number of inhabitants in towns - Absorption of carbon monoxide and oxygen by hemoglobin - The London smog catastrophe of December 1952. Smoke and sulphur dioxide-content of the air

The circulatory system of man: blood and lymphatic organs. - Cylinders with precipitated structural components and clotted blood - Composition of the blood. Precipitated and coagulated blood - Human blood smear, low magnification - Human blood smear, high magnification. Erythrocytes and various forms of leucocytes - Shape and size of an erythrocyte - Relation between partial pressure of oxygen and oxygen-saturated hemoglobin - Red bone marrow of mammal. Giant cells, blood forming cells - Mature erythrocyte and erythroblast, electron micrograph - Blood smears of frog and chicken. Nucleated red blood corpuscles - Various types of leucocytes. Granulocytes, lymphocytes, monocytes - Blood smear from leukemic person compared with normal blood smear - The steps of blood clotting - Electophoresis of protein fractions in human blood - Human leucocytes with phagocyted bacteria - Leucocyte, moving through the capillary wall - Structure of antibodies with antigen binding sites - Serum reactions to show hereditary relationship - The AB0 blood groups - Positive and negative reactions in determination of AB0-blood group - Diagram to understand agglutination of the AB0-blood groups - Diagram to understand Rh-incompatibility in second and further child - The human lymphatic system with lymph nodes - Exchange of substances between blood capillaries, tissue, and lymph capillaries - Human lymph node, t.s. - Follicle in human lymph node, t.s. - Structure of a lymph node with afferent and efferent blood and lymph vessels. Diagram - The human immune system - Development of lymphocytes. Memory cells, plasma cells - Fine structure of a plasma cell of bone marrow, electron micrograph - Human spleen t.s. Red and white pulp, capsule, trabeculae - The vascular system of the human spleen - Fine structure of a splenic sinus, electron micrograph - Human palatine tonsil, t.s. - Thymus gland of young cat, t.s. Hassall's corpuscles - Human pharyngeal tonsil, t.s. epithelium interspersed with lymphocytes

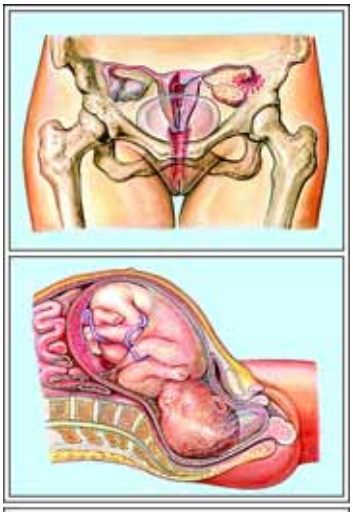
The circulatory system of man: heart and blood vessels. - Position of the heart in the body - Front view of the heart and big vessels - Human heart, semidiagrammatic longitudinal section - View of the cardiac valvular plane. Arterioventricular and semilunar valves - Transverse section of the two cardiac ventricles. Endocardium, myocardium, epicardium - Structure of the cardiac muscle. Interlacing network of fibers, intercalated discs, striation, nuclei - Activity of the heart, papillary muscles, shift of the valvular plane, opening and closing of cusps - Cardiac cycle. Diagram - Cycle of pressure and volume of the left ventricle. Blood pressure in the aorta, cardiac sounds - The human circulatory system. Heart, pulmonary and systemic loop - Stimulation and coordination of the heart - Human electrocardiogram - Diagram of human blood circulation. Big vessels and capillary networks - Catchment areas of the hepatic portal vein. Stomach, small and large intestine, pancreas, spleen - Blood share of the different organs - The heart in the circulatory system of vertebrates. Fishes, amphibians, reptiles, birds, mammals - Human artery and vein, t.s. - Artery of muscular type, t.s. - Artery of the elastic type, t.s. - Carotid artery, t.s. showing the elastic elements - Bagpipe function of the aorta. Diagram - Arrangement for taking the human blood pressure - Diagram to explain the pulse during reduction of pressure in the bag - Blood capillaries in the mesenteries - Ultrastructure of the capillary wall, electron micrograph - Interchange of substances between capillary and tissue - Pressure and volume in human circulation. Diagram - Human vein, t.s. - Transport of blood in the veins by pulse waves of neighboring artery and by contraction of neighboring muscles - Position of the main baroreceptors for regulation of the blood pressure - Analysis of manipulated blood pressure. Diagram - Regulation of arterial blood pressure. Negative feedback system

No. 8217E **Reproduction and Germ Development of Human and Animals**

Atlas of 30 OHP Transparencies size 22 x 28 cm, comprising 104 color pictures, mostly with several component figures (drawings, diagrams, tables, anatomical pictures, photomicrographs and macrographs, human photographs). In strong plastic file with ring-mechanism. - Sketch and work-sheets with semidiagrammatic designs and texts - Compilation and text: Prof. Walter Mergenthaler and Dipl. Biol. Christine Himmelein

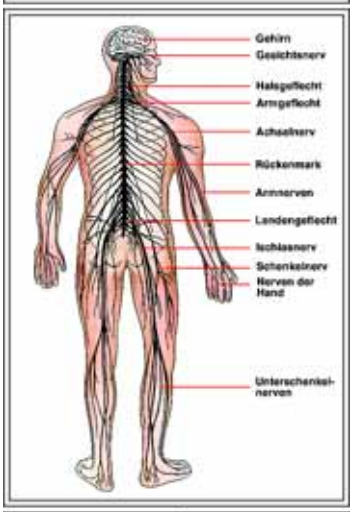
Reproduction of man and animals. - A series illustrating reproduction from protozoa to man. It will therefore not only be an invaluable aids in biology classes but equally valuable for teaching sex instruction. The beautiful anatomical picture plates have been made by university illustrators specializing in this field. - Asexual reproduction (division) of Amoeba - Asexual reproduction (budding) of Hydra - Sexual reproduction of Hydra - Reproduction of the sea urchin (Echinus) - Fertilization of the sea urchin egg - Reproduction in fishes - Reproduction in salamanders - The female reproductive organs of reptiles, birds, and mammals - The reproductive organs of the human male; lateral view of situs - Ditto; diagram - Testis, t.s., low magnification - Seminiferous tubules showing spermatogenesis; t.s. - Testis, epididymis, spermatogenesis; diagrams - Sperm smear of bull - Human hair, egg, and spermatozoa; comparison of sizes - The reproductive organs of the human female; lateral view of situs - Ditto; front view of situs - Ovary; t.s., low magnification - Egg development: primary follicle - Egg development: secondary follicle - Egg development: early stage of Graafian follicle - Egg development: mature Graafian follicle with germ hillock and egg cell - Egg development: mature ovulated egg with corona radiata - Corpus luteum - Human fallopian tube t.s. - Ciliated epithelium of the Fallopian tube; t.s., high magnification - The yolk sac and the embryonic development of fishes - The embryonic membranes of chicken - The embryonic membranes of mammals and humans - Wall of human uterus, t.s. - Changes of the endometrium during menstrual cycle and after fertilization - Oogenesis, ovulation, fertilization, cleavage of fertilized egg, and implantation of blastocyst in the uterine wall - Growth of embryo and fetus in the uterus, 4 stages - Structure and function of the

placenta, diagram - Fetus in uterus showing placenta, umbilical cord, and amniotic cavity - Full term baby in maternal abdomen, normal cephalic presentation - Beginning of birth, entrance of amniotic sac into the birth canal
Germ development of man and animals. - Starting with the fertilization of the egg and the fusion of the two haploid nuclei, the various types of egg and corresponding types of cleavage are shown. The gastrulation, neurulation and formation of germ layers in Branchiostoma, frog and human beings are then illustrated. - Fertilization of the Ascaris egg, entering of a sperm *I. The beginning of embryonic development - fertilization* - Fertilization of Ascaris egg, entrance of spermatozoon in the oocyte - Mature oocyte of Ascaris with male and female pronuclei, each nucleus contains two chromosomes. - *II. Cleavage* - Metaphase of the first cleavage of Ascaris, equatorial plate in side view shows chromosomes, spindle fibers, centrioles - Telophase of the first cleavage of Ascaris, division of the cell body - Total equal cleavage: 2-, 4-, 8-cell stage, morula - Types of eggs and patterns of cleavage I: as far as the 8-cell stage - Types of eggs and patterns of cleavage II: morula and blastula - Blastula of sea urchin (Echinus), after total equal cleavage - Blastula of frog (Rana), after total unequal cleavage - Insect, blastula after superficial cleavage - *III. Gastrulation* - Gastrulation of sea urchin, Echinus, diagram - Gastrula of sea urchin, Echinus, photomicrograph - *IV. Neurulation - Organogenesis in frog and chicken* - Neurulation in Amphioxus, t.s. diagram - Neurulation in frog, antero-lateral and dorsal view, diagram - Neurulation in frog, t.s. - Neurula of frog, t.s. - Neurula of frog, mid-dorsal region, t.s., detail - Neurula of chicken, t.s. - Chicken embryo 33 hours of incubation, l.s. - Frog embryo, tail bud stage, l.s. - Frog embryo, tail bud stage, t.s. - Frog larva, 3 days after hatching, l.s. - Frog larva after hatching, t.s. - Frog larva, t.s. of heart region - Chicken embryo, 48-hours, t.s. - Chicken embryo, 72-hours, l.s. - Chicken embryo, 72-hours chick, embryonic disc with circular system injected - Chicken, older embryo, l.s. - *V. Organogenesis in humans, Summary* - Median l.s. through a human embryo - Development of the human heart, t.s. of three stages - External changes in the human heart, ventral view - Development of human lungs, t.s. of 6 weeks old embryo - Stages of human pulmonary development - Development of the human eyes, four stages - Head of mammalian embryo, sagittal section showing eyes - Mammalian embryo, median sagittal section of whole body with primordia of organs

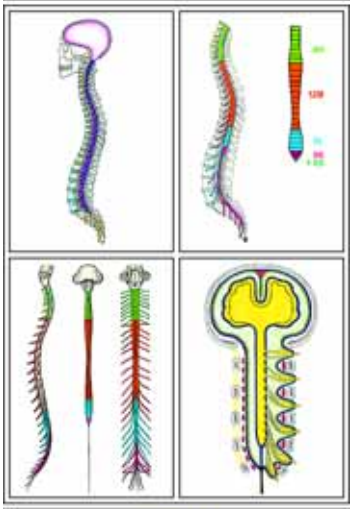


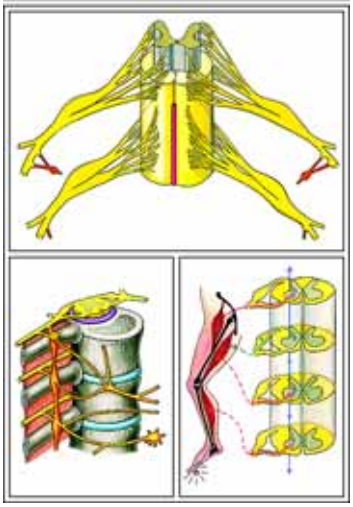
No. 8214 E **The Nervous System Part I**

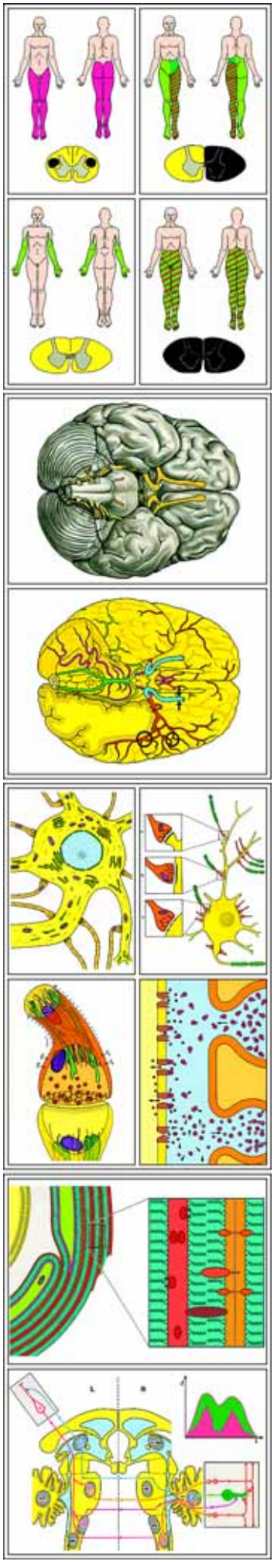
Atlas of 30 OHP Transparencies size 22 x 28 cm, comprising 76 color pictures, mostly with several component figures (drawings, diagrams, tables, graphs, anatomical pictures, photomicro- and macrographs, electron micrographs). In strong plastic file with ring-mechanism. - Sketch and work-sheets with semidiagrammatic designs and texts - Compilation and text: Dr. K.-H. Meyer, BS)



The nervous tissue. Introduction to the total complex of the nervous system. - Introduction to the total complex nervous system. It shows the occurrence of typical nerve cells in the human nervous system, the structure of the neuron, the composition of a nerve, motor end plates, glia cells etc. - Human nervous system, entire view - Sagittal section of human cerebellum - Spinal ganglion, t.s. - Spinal cord of cat, t.s. silver stained - Gray matter of spinal cord, t.s. showing nerve cell bodies - White matter of spinal cord, t.s. showing nerve fibers - Motor nerve cell from spinal cord. - Purkinje cells from human cerebellum - Pyramidal cells from cortex of human cerebrum - Pseudounipolar neuron (T-cell) from spinal ganglion - Bipolar neurons in the retina of the eye, diagram - Various shapes of human neurons, 5 figures - Nerve cell showing neurofibrils - Nissl substance in neurons from the spinal ganglion - Diagram of a neuron - Various neurons from human nervous system, 4 figures - Human sciatic nerve, t.s., low magnification - Bundle from sciatic nerve, t.s., medium magnification - Nerve fibers, t.s., high magnification, axons and medullary sheaths - Nerve fibers, l.s. high magnification shows the Ranvier's nodes - Structure of myelinated nerve fiber, diagram, 2 figures - Neuromuscular junction, motor end plate - Motor end plates, diagram, 2 figures - Glial cells from brain
The nervous systems of the invertebrates. - The study of the evolution of the nervous system beginning with primitive animals is necessary for a more profound understanding of the human nervous system. The series shows the net-like nervous system of the coelenterates, the rope-ladder-like systems of the arthropods, and the nervous systems of mollusks and echinoderms; progressive concentration and differentiation; structural elements as neuron, ganglion, centers, reflex-arcs, automatisms, etc. - Reactions of single cells to stimuli: pore-cell of a sponge, nematocysts - The nervous system of Hydra - Reaction of Hydra to stimuli. Type of reaction depending upon strength of stimulus - The nervous system of a jellyfish (Scyphozoa) - The nervous system of Planaria (Platyhelminthes) - The nervous system of a roundworm (Nematoda) - The evolution of the nervous system in worms - The nervous system of the earthworm - Reflex arcs in the earth worm. Corresponding nervous connections between sensory and muscular cells - Reactions of the earthworm to stimuli - The nervous system of insects - Concentration of ganglia in insects - Development of the nervous system of a beetle, larval instars, pupa, and beetle - Brain of a worker honey-bee, structure. Forebrain with optic lobes, mid- and hindbrain - Frontal section of an insect brain, diagram - Longitudinal section through the head of a locust - Head of a worker honey-bee, t.s. Midbrain, optic lobes, compound eyes - Unisegmental reflex arcs in insects. Connections of sensory and motor cells - Intersegmental reflexes in insects. Connections between sensory and motor cells and brain centers - Antenna cleaning reflex of the cricket. Complex reflex action involving a chain of linked reflexes - The nervous system in arthropods: lobster, crab, spider, scorpion - The nervous system of Chiton. Nervous ring surrounding esophagus - The nervous system of a freshwater mussel. Cerebral, pedal and visceral ganglion - The nervous system of a freshwater snail, lateral view. Concentration of the ganglia towards the head - The nervous system of a freshwater snail, dorsal view - The nervous system of a terrestrial snail (Helix pomatia). Advanced concentration of the ganglia in the head. - The nervous system of a cuttlefish - The brain of the cuttlefish. Consisting of three pairs of ganglia - The nervous system of a starfish - General structure of echinoderms (starfish, sea urchin, sea cucumber)
The nervous system of the vertebrates. - The central idea of the series is the evolution of the nervous system from primitive forms to complicated ones. It shows the progressive differentiation of the brain, the construction of its parts in the different classes of vertebrates and their relation to each other. The purpose of the series is to render the human nervous system more understandable. - The nervous system of Branchiostoma (Amphioxus), frog, and human - Embryonic development of the central nervous system of Branchiostoma (Amphioxus) - Ditto. of frog, from the side and from above. Closing of neural groove to neural tube - Ditto. of frog, corresponding transverse sections - Ditto. in humans - Development of the neural tube in humans - Development of the neural tube into the brain, frontal sections - Mammalian embryo. Formation of the central nervous system and other organs - The spinal cord of Branchiostoma, lamprey, and bony fish; t.s. showing differentiation of grey and white matter - Spinal cord of a salamander larva, t.s. with notochord - Spinal cord of a cow, t.s. - Comparison of the masses of brain and spinal cord in Branchiostoma, frog, rabbit, cat, ape, human - Brains of vertebrates (shark, bony fish, amphibian, reptile, bird, mammal), dorsal view - Brains of vertebrates, corresponding sagittal sections. Increase of the size of the forebrain, variation of the cerebellum depending upon the mobility of the animal - Shift of the optic pathways to the endbrain. Development of the thalamus into a relay station - Formation of the neopallium from concentric growth rings - Pattern of mammalian cerebral convolutions, phylogenetic tree - Cranial nerves of frog and sheep, ventral view - Human brain, ventral view with cranial nerves - Innervation of body regions by sensory and motor cranial nerves - Proportion between brain and head in vertebrates. Increase of relative size of the brain from shark to frog, reptile, bird, cat - Proportion between brain and head in mammals. Ditto dog, chimpanzee, man







No. 8215 E **The Nervous System Part II**

Atlas of 36 OHP Transparencies size 22 x 28 cm, comprising 82 color pictures, mostly with several component figures (drawings, diagrams, tables, graphs, anatomical pictures, photomicro- and macrographs, electron micrographs). - Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Dr. K.-H. Meyer, BS

The human spinal cord. - The study of development, general and microscopic structure of the spinal cord forms the basis on which the function of the grey and the white matter can be worked out by analyzing reflexes and diseases of man - The human nervous system. Central, peripheral, and autonomic nervous system - Embryonic development of the spinal cord in frog and human - *A. External structure of the spinal cord* - Human vertebra. Superior view, left, lateral view of three vertebrae with intervertebral discs, right. - Human central nervous system, lateral view. Position of the dura sac in the spinal canal - Human spinal cord in the spinal canal, lateral view. Opened dural sac, surface view with segments. - Human spinal cord and medulla oblongata. Lateral and dorsal view with spinal nerves, ventral view without nerves. - The membranes of the brain and the spinal cord, diagram - Position of the spinal cord in the spinal canal, t.s. - *B. Internal structure of the spinal cord* - Spinal cord of cow, t.s. - The gray matter, motor neuron, dendrites, axon - The white matter, myelinated axons - Evolution of the spinal cord. Branchiostoma, lamprey, bony fish - Proportion of gray to white matter. A series of t.s. of human spinal cord - Entrance of dorsal root of spinal nerve into the dorsal column - Spinal ganglion, l.s. - Portion of the spinal cord with roots, ganglia, and spinal nerves, three-dimensional diagram - *C. Function of the spinal cord* - Simple reflex arc, diagram. Tactile corpuscle - spinal cord - motor end plate on muscle fiber - Knee jerk reflex. Stimulated organ responds - Stepping on a nail. Not stimulated organ responds - Somatic dermatomes supplied by segments of the spinal cord - Polio: syndrome of the ventral gray matter - Tabes, tertiary syphilis: syndrome of the dorsal white matter - Sclerosis of the pyramidal tracts - Hemisection of the spinal cord - Where do the tracts of somatic sensibility cross? - Complete section of the spinal cord - Course of typical sensory tracts: conscious and unconscious deep pressure sensibility, conscious dermal sensibility - Course of typical motor tracts: volitional and involuntary control of movement

The human brain. An introduction to the reception, conduction and transmission of information. - Starting from the external structure, the embryonic development of the brain is treated and its hierarchic structure. As the brain is a connecting and conducting organ, reception, conduction, and transmission of information is treated in a separate chapter. As controlling organ of our body, the brain is its biggest consumer of energy. To introduce into the structure and function of the brain parts, similar to series „The Human Spinal Cord“, we shall start from lesions of the medulla oblongata and then follow the course of the typical sensory and motor tracts introduced in the last chapter through the medulla oblongata, pons, mid- and interbrain, to the cortex and cerebellum. - *A. External structure of the brain* - The human brain, lateral view - Sagittal section of the human brain, view on the right half - Frontal section of human brain - Visual and hidden part of the cerebral surface - *B. Development of the brain* - Hierarchic structure of the human brain, embryonic development - The hierarchic structure of the brain, archipallium and neopallium, sagittal section - *C. Reception, conduction, and transmission of information* - Electrotonic or resting and action potential - Receptors receive various types of sensory input and transduce them into action potentials of equal magnitude - Intensity of stimulus is reported by impulse frequency - Propagation of action potential along unmyelinated axon - The myelin sheath of peripheral nerve fibers (Schwann cells) - Fine structure of a Ranvier’s node - Composition of myelin compared with liver cell membrane - The myelin sheath in the brain, after Krstic - Fine structure of the myelin sheath - Nerve cell body from the cerebrum with dendrites, axon, and synapses. Diagram - Exciting and inhibiting synapses, location and structure - Synapsis, spatial picture - Synaptic transmission, diagram - *D. Blood supply of the brain* - The blood supply of the brain, ventral view - The blood supply of the brain, lateral view - Meninges and glia, spatial diagram (after Krstic) - The blood-brain-barrier - The drainage of the brain - The reflections of the dura mater - The ventricles (liquor spaces) of the brain - *E. Structure and function of the brain parts - 1. The brain stem* - Brain stem, ventral and dorsal view - *a. Medulla oblongata* - Lesion caused by diving accident - Lesion caused by hemorrhage (stroke) - The course of sensory tracts through the medulla - The course of motor tracts through the medulla - *b. Pons* - The course of sensory tracts through the pons - The course of motor tracts through the pons. - *c. Midbrain and interbrain* - The course of sensory tracts through the mid- and interbrain - The course of motor tracts through the mid- and interbrain - *2. Cerebrum* - Pyramidal cells of the cerebral cortex - Areas and tracts of the cerebrum, diagram - The lobes and areas of the left cerebral hemisphere - Sensomotor homunculus - Severed corpus callosum: differing functions in cerebral hemispheres - *3. Cerebellum* - Views of the cerebellum from various sides - Purkinje cells of cerebellar cortex - Fine structure of the cerebellar cortex, neuronal connections - The most important neuronal arcs of the cerebellar cortex - Tracts connecting the cerebrum with the cerebellum

The autonomic nervous system. - Starting from the simple pupillary reflex and from emptying the urinary bladder by reflex action, this series introduces into the autonomic nervous system. It widens the knowledge about the antagonistic effect of the sympathetic and parasympathetic part of the autonomic nervous system (ANS). The structural and physiological differences between the somatic and autonomic nervous system are studied as well as the connections between the sympathetic ganglia and the central nervous system. The reflex arcs linking both systems to each other and regulating the body temperature. - Effect of atropine on one eye, eyes exposed to equal incidence of light - Innervation of the iris muscles. Antagonism of sympathetic and parasympathetic nervous system - Control of urinary bladder. Innervation by somatic and autonomic nervous system. - Antagonistic effect of the sympathetic and parasympathetic system on glands and involuntary muscles - Tracts of somatic and autonomic nervous system - Transmitter and inhibiting substances of synapses and motor end plates in the somatic, sympathetic, and parasympathetic system. - The location of the spinal cord, spinal nerves, sympathetic trunk, and ganglion II - Courses of sensory and motor tracts of the autonomic nervous system through the spinal cord, sympathetic trunk, and ganglion II - Regulation of the body temperature. Location of the receptors and controlling centers in the body, negative feedback system

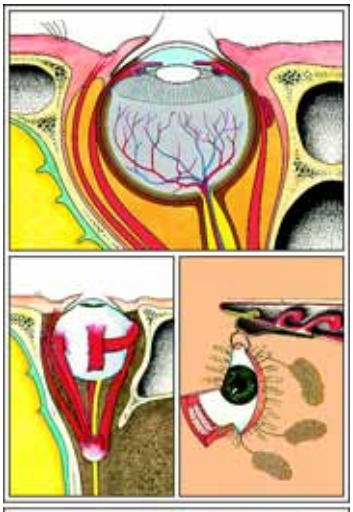
No. 8218 E **Hormones and Hormone Systems Part I and II**

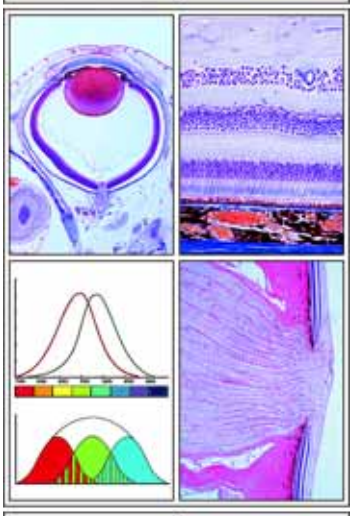
Atlas of 42 OHP Transparencies size 22 x 28 cm, comprising 116 color pictures, mostly with several component figures (drawings, diagrams, tables, anatomical pictures, photomicrographs and macrographs, portraits, human photographs, test results). Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Prof. Walter Mergenthaler and Dr. Karl-Heinrich Meyer, BS

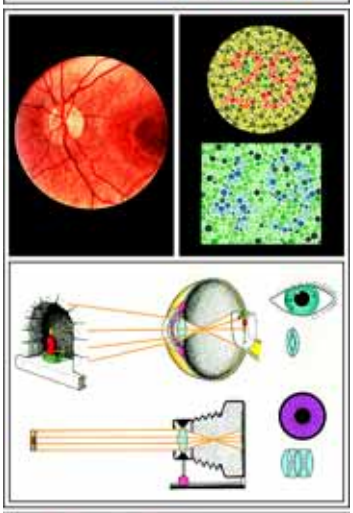
Part I: Giving the basic insights in the nature and function of hormones, and shows the collaboration of hormones as well as their relation to the autonomic nervous system. - Effect of thyroxin therapy on a child, 2 figures - Effect of thyroxin therapy on a child - The human thyroid gland, situs - Exocrine and endocrine glands, diagrams - The human hormone glands, position, shape, size - Human thyroid gland, t.s. - Effect of thyroxin on Ambystoma: Development from aquatic to terrestrial form - Acceleration of tadpole development caused by thyroxin - Inhibition of growth of rabbits caused by thyroxin deficiency - Myxedema before and after thyroxin treatment - Cretinism caused by insufficiency of thyroid gland - Cretin with goiter - Endemic cretinism - Relation between iodine and goiter - Control of goiter by treatment with iodides - Basedow’s or Graves’ disease - The parathyroid glands, situs - The pancreas, situs - Islands of Langerhans, t.s. - Control of the blood sugar level by insulin and glucagon - Kidney and adrenal gland, sagittal l. s. - Kidneys and adrenal glands of a rabbit, situs - Human kidney and adrenal gland, entire view and section - Adrenal gland, t.s. - The control of blood sugar level by adrenalin - Child with „moonface“ due to cortical tumor - Bull and ox,

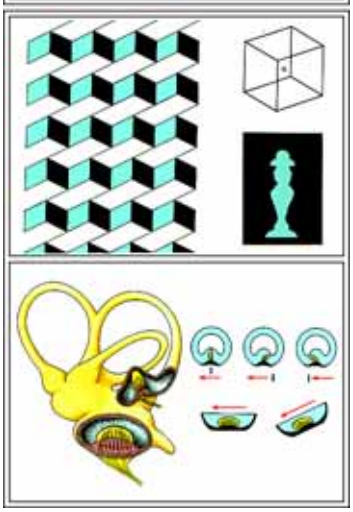
effect of castration - Castrated fowl, effect of castration on rooster and hen - Castrated rooster before and after treatment with sex hormone - Testis of mammal, t.s., showing details - Interstitial cells of Leydig, t.s. - Human ovary, diagram - Ovary with follicles in different stages, t.s. - Corpus luteum, t.s. - Effect of follicle hormone on growth of uterus - Location of pituitary gland and pineal body, sagittal l.s. of head - Human pituitary gland, l.s. showing the anterior and posterior lobe - Human pituitary gland, t.s. of anterior lobe, high magnification - Inhibition of growth of a dog caused by pituitary removal - Pituitary dwarfism in humans caused by hormone deficiency - Gigantism in humans caused by pituitary overactivity - Acromegaly of human - Adiposogenital dystrophy (Froehlich's syndrome) - Gonadotropic pituitary effects on ovary - Relations between endocrine glands - Thymus of juvenile and adult person - Thymus with Hassall's bodies, t.s. - Delayed development of tadpoles caused by feeding thymus - Comparison of feeding thyroid with feeding thymus

Part II: It demonstrates the development of hormone glands, the interaction of releasing and gonadotropic hormone as well as the feedback control of the peripheral hormones. Influence on the gene activity and protein synthesis, neurosecretion, second messenger and cascade mechanism. Dovetailed operation of different hormones, inhibiting and stimulating factors, animal production, anabolica, hormonal contraception, insect hormones and auxines. - Feedback on thyroid hormones, loop scheme - Feedback on thyroid hormones, hierarchic scheme - General diagram of feedback circuit - Feedback circuit for blood thyroxin level - Neurosecretory cells in hypothalamus produce thyrotropin-releasing hormone (TRH) - Hypothalamus and pituitary gland l.s. - Hypothalamus and pituitary gland with neurosecretory cells and vessels for TRH and TSH - Development of pituitary gland and primordium of thyroid gland - Thyroid follicles (three-dimensional) and functional states - Effect of TSH on thyroid gland - Biosynthesis, storage, transportation, and effect of thyroxin - Effect of inhibitors on secretion of thyroid gland - Blood calcium level and release of parathormone resp. calcitonin - Regulation of the blood calcium level, scheme - Synthesis of human insulin - Island of Langerhans, three-dimensional picture - Regulation of blood sugar level by A- and B-cells of the islands of Langerhans - Homeostatic regulating mechanism of the blood glucose level - Phylogenetic and embryonic development of the adrenal gland - The function of the adrenal medulla based on its origin from the sympathetic nervous system. - Biosynthesis of adrenaline, a beta-receptor blocker - Effect of noradrenalin and adrenaline on heart and vascular muscles - Second messenger and cascade mechanism at glycogenolysis - Catecholamines give special efficiency to the body in case of emergency - Daily stress and lack of exercise may cause angina pectoris and cardiac infarction - Structure and nomenclature of cortical hormones - Effects of the renal hormone renine and of the mineral corticosteroid aldosterone - The feedback mechanism on the secretion of aldosterone (hierarchic and loop scheme) - The feedback mechanism on the secretion of corticosterone (hierarchic scheme) - The feedback mechanism on the production of corticosterone (loop scheme) - Corticosterone affects gene activity - Effects of corticosterone - Increasing population density inhibits reproduction - Stress and animal breeding - The effect of nicotine and caffeine on the endocrine system - Adrenal androgens, relation between adreno-cortical and sexual hormones - Development of the gonads - Leydig's cells and Sertoli's cells - Control of the secretory action of male gonads (hierarchic scheme) - Secondary sex characters in humans - Recessive hereditary receptor defect causes female phenotype - The effect of anabolica - Control of ovarian functions (hierarchic scheme) - Processes during the menstrual cycle - Pregnancy: hormonal control by the blastocyst - Pregnancy: hormonal control by the placenta - The antibaby pill - hormonal contraception - Stimulation and maintenance of milk production - Long bones with epiphyseal line - Growth in length of a long bone - Hormonal control of growth (hierarchic scheme) - Hormone release in the posterior pituitary - Structure and effect of oxytocin - Effects of vasopressin (antidiuretic hormone) - Hormone production in head and thorax of an insect - Juvenile hormone (neotenin) and moulting hormone (ecdysone) - The cooperation of hormones during moulting (hierarchic scheme) - Moulting hormone ecdysone influences pattern of puffs - Quantitative analysis of hormones by bonding to proteins - Gibberellines promote growth - Germinating grain, drawing - Germinating grain, photograph - Growth of animal and plant cells - The coleoptile tip produces somatotropic hormone indolacetic acid - Polar movement of auxin in the coleoptile tip - Positive phototropism of coleoptile tip - Lateral illumination causes redistribution of auxin in the coleoptile tip - Action spectrum of phototropism and absorption spectrum indicate a flavoprotein to function as photoreceptor







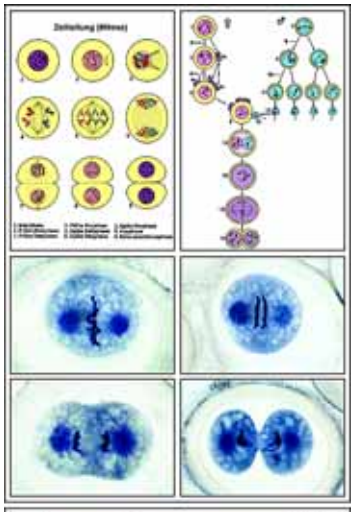


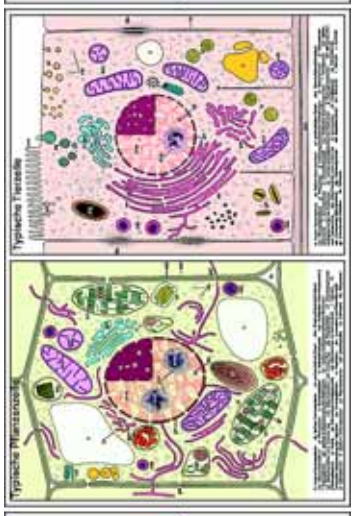
No. 8216 E **The Organs of Sense**

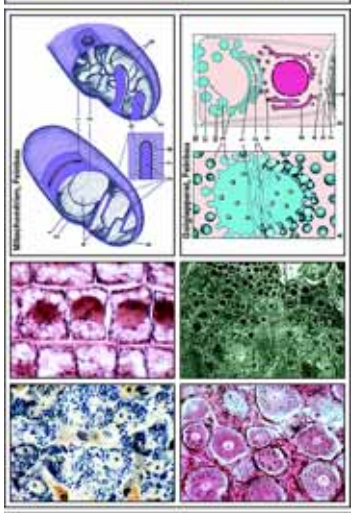
Atlas of 36 OHP Transparencies size 22 x 28 cm, comprising 90 color pictures, mostly with several component figures (drawings, diagrams, tables, graphs, anatomical pictures, photomicrographs and macrographs, electron micrographs, human photographs). Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Dr. Bernd Zucht

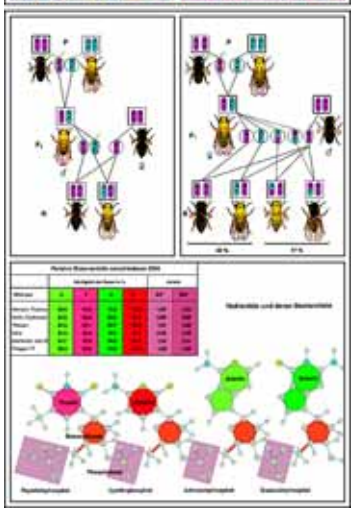
Eye and vision. - Range of visible light in the electromagnetic spectrum - Sagittal section through the human eye. Cornea, iris, lens, ciliary body, retina with entrance of optic nerve, muscles - Cornea of the human eye, t.s. detail view with epithelium and connective tissue - Wall of the human eye ball, t.s. detail view. Retina, choroid, and sclera - Human retina, detail view. Rods and cones, bipolar cells, ganglion cells - Human retina. Chief synaptic connections, schematic figure - Retina, detail view of the rods l.s. - Central fovea of retina - Papilla of optic nerve - Retina seen through the ophthalmoscope - Developing eyes of young and elder mammalian embryos, sections - Ocular muscles that moves the eyeball - Front view of the eye with lachrymal glands and lachrymal duct - Visual pathways, optic chiasm, schematic figure - Accommodation for distant and near vision - Mechanism of pupillary light reflex - Vision of moving objects. Depth perception, caused by convergence of the optical axes, identical and disparate points of the retina - Vision of motion explained by the principles of reafference - Formation of an image on the retina of a normal eye. The eye as a camera - Defects of the image-forming mechanism, nearsightedness, farsightedness - Formation of an image by an astigmatic cornea - Image seen through normal glasses and glasses correcting astigmatism - Eye with pathological turbidity of the lens (cataract) - Physiological contrast, simultaneous contrast. Influence of horizontal cells on neighbor cells in the retina for the improvement of clearness of vision - Optical illusions by ambiguous information: cubes of Necker and picture-puzzle - Optical illusions caused by the influence of the surrounding areas: converging and diverging lines, oblique hatching, surrounding area of different size, simultaneous contrast - Basis for the arrow illusion - Optical illusions caused by the nonconformist of rational interpretation and optical perception: round bars coming out of a square, twisted triangle, endless stairs, modern picture - Trichromatic triangle. Different combinations of three primary colors lead to all other color. Color vision - Spectral sensitivity of rods and cones (dominator system), three pigment color vision (modulator system) - Tests for color-blindness. Red-green deficiency and blue weakness - Color perception and emotion

Ear and Hearing, Sense of Equilibrium. - The formation of sound waves - Areas of rarefaction and areas of compression caused by a tuning fork - Characteristics and mutual influence of sound waves - Eardrum of the frog - Auditory ossicles at the skull of a frog - Auditory ossicles of man and cat compared with the size of a pin - Transformation of jawbone articulation into auditory ossicles during evolution - Development of the inner ear (labyrinth) and the perilymphatic space in vertebrates - Morphology of the human ear. Ear conch, external auditory canal, middle ear, inner ear - Ear drum with healed up fissure - Middle ear and inner ear. Movement of the eardrum, auditory ossicles, oval window and round window - Section through the auditory canal, eardrum and cochlea - Cochlea l.s. showing auditory nerve and organ of Corti - Organ of Corti, detail view shows sensory and supporting cells, tectorial membrane - Organ of Corti, schematic figure - Movement of Reissner's membrane and basilar membrane. Stimulation of the hair cells by the to-and-fro movement of the hairs in the tectorial membrane - Broadening of the basilar membrane from the base of the cochlea to the helicotrema - Formation of damped waves in the membranous labyrinth, depending on volume pressure of the inner ear, different elasticity of the windows and asymmetric perilymph masses - Displacement of the membranous labyrinth by the waves generated by sound vibrations - Amplitude pattern of vibration of the membranous labyrinth









for high and low frequencies - Detection of sound direction by the time lack between the entry of sound into the ears - Diagram of main auditory pathways. Centers of sound in the brain - Relationship of the two sets of the semicircular canals arranged in perpendicular plains - Semicircular canals, section - Ampullar crista, t.s. - Otolithic organ (macula), t.s. - Function of the vestibular system

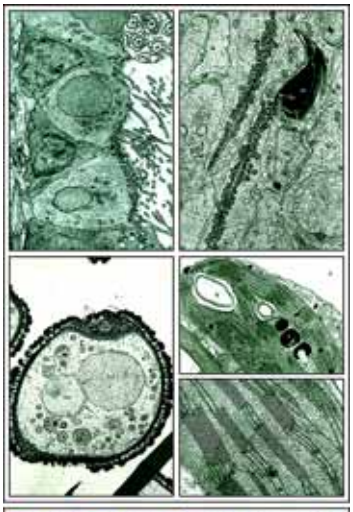
Senses of Smell, Taste, Touch, Temperature and Proprioception. - Section through nasal cavity and pharyngeal cavity - Location of the olfactory mucous membrane and air stream of the breath - Olfactory and respiratory mucous membrane of mammal t.s. - Detail view of olfactory epithelium with sensory cilia - Olfactory epithelium, electron micrograph of an ultrathin section - Nasal conchae of man and deer - Tongue of man with areas of taste - Tongue of rabbit, t.s. of papilla foliata with taste buds - Papilla foliata t.s., detail view of taste bud - Vallate papilla t.s. - Fungiform papilla t.s. - Human skin with cutaneous receptors of touch, pressure and thermal sensation - Sinus hair, l.s. and t.s. - Pacinian corpuscle - Meissner's corpuscle from human finger - Eimer's corpuscle from mouth of mole - Grandry's and Herbst's touch corpuscles from beak of duck - Sensitivity differences caused by touch-stimulation: excitation nearby or far away, weak or strong - Ruffini's warmth receptor - Krause's corpuscle, cold receptor - Back of human hand marked with warmth and cold reception points - Thermoreceptors of the infrared detector of rattle snake - Proprioceptors: muscle spindle and Golgi tendon apparatus. Conscious awareness of the position and movements of the joints - Muscle spindle in muscle, t.s.

No. 8220 E **Cytology and Molecular Genetics**

Atlas of 46 OHP Transparencies size 22 x 28 cm, comprising 172 color pictures, often with several component figures (drawings, diagrams, tables, anatomical pictures, photomicrographs and macrographs, electron micrographs, autoradiographs, test data and results). - Sketch and work-sheets with semidiagrammatic designs and texts - Compilation and text: Dr. Heinz Streble and Dr. Horst Boehnke

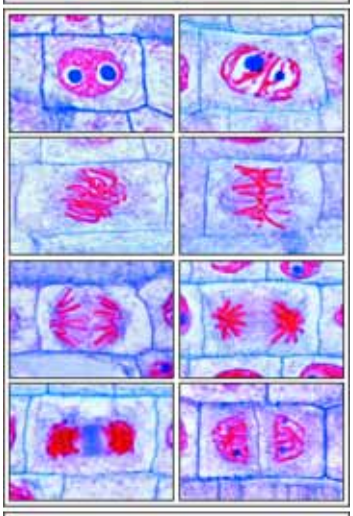
Cell nucleus and chromosomes. - This series illustrates the various structures of nuclei and chromosomes, pictures of mitosis and polyploidy, living nuclei, shape of nuclei and function, giant chromosomes, polyploidy, fine structure of nuclei, chromosome structure, mitosis, individuality of chromosomes. - Typical animal cell, all details visible by light and electron microscope - Typical plant cell, all details visible by light and electron microscope - Nuclei of alga Spirogyra and of amoeba, live - Position of nucleus in plant cell, live (phase contrast) - Nucleus fixed and stained - Nuclear membrane of a plant cell, fluorescence - Simple animal cells in sec. of salamander liver - Nuclear equivalents in bacteria, fluorescence - Chromato- and centroplasm in blue-green algae, fluorescence - Metabolically active nucleus of Vicia faba. Chromocentres, chromonemata, centromeres - Lampbrush chromosomes in living egg cell of salamander (phase contrast) - Polytene giant chromosomes: nucleus from salivary gland of Chironomus larva, live - Sex chromosomes: spermatozoa without and with X-chromosomes - Arrangement and shape of nuclei due to tissue functions - Nuclear volume and size due to activity - Nuclear shape in cancer cells not due to function - Polynucleate cells: giant cells of Langerhans - Giant cell of a sarcoma - Syncytium, an undivided mass of protoplasm with many nuclei - Position of nuclei in animal cells, classes of nuclear size - Polyploid nuclei - Chromosomes during mitosis, DNA stained by Feulgen - Polyploid chromosome sets of cultivated plants - Enlargement of nuclear surface: giant nuclei in endocrine organs - Pigment cells in the skin - Motor nerve cell shows nucleus, nucleolus, Nissl's granules - Glandular epithelium, t.s. goblet cells - Nuclear membrane, nuclear content, nucleoli, RNA exit, fibrillar structure of chromosomes, electron micrographs - Rearrangement of nuclei in spermatozoa, electron micrograph - Mitochondria in thin sec of animal and plant cells - Mitochondria, diagram - Golgi apparatus in epithelial cells, section and diagram - Golgi apparatus, electron micrograph: endoplasmatic reticulum and dictyosomes - Chloroplasts with grana from cells of Tradescantia, bright field and fluorescence - Chloroplasts, 3 electron micrograph in different magnifications, mesophyll cell: cell walls, vacuole, chloroplasts, grana, thylakoids, ribosomes - Chloroplasts, diagram - Amitosis, direct division without appearance of chromosomes, t.s. of liver - Amitotic division of the nucleus of Amoeba proteus - Paramaecium in binary fission and in conjugation (exchange of nuclear material) - Paramaecium, anatomy, diagram - Amoeba proteus, habit, cyst, feeding, division, diagram - Mitosis in animals, 9 stages, diagram - Mitosis in root tips of onion, 8 stages, diagram - Mitosis: root tip of Allium cepa; all stages in one picture - Mitosis: root tip of Hyacinth; high magnification photomicrographs. Metabolically active nucleus and early prophase, prophase and early metaphase, equatorial plate and early anaphase, telophase and reconstruction - Chromatid bridges with fragment during anaphase - Centrioles, centrospheres, spindle fibers: meiosis of an egg cell - Spindle apparatus and chromosomes, electron micrograph - Comparison of haploid and diploid chromosome sets of various plants and animals - Human chromosomes during metaphase - Normal karyotype with GAG banding pattern - Individuality of chromosomes I and II - Development of follicles in mammalian ovary: Young and older primary follicles, secondary follicle, young and older Graafian follicle, discus proligerus and mature oocyte with membrana pellucida and corona radiata t.s. - Sea-urchin development: Uncleaved egg, before and after fertilization, two-cell stage and four-cell stage, polar view - **Chromosomes and genes. -** Nuclei and chromosomes are conspicuous structures of cells. The part they play in cellular activities, their function and importance in heredity and cell division, as well as their molecular-biological aspects are treated in part II and III of this atlas. - Structure of chromosome as seen under the light microscope - Giant chromosomes of Chironomus, diagram - Structure and activity of chromosomes: loop complex of a chromosomal puff in polytene chromosome - Giant chromosomes of Chironomus, DNA-RNA-staining with orceine and light green - Inheritance of two linked genes in Drosophila: cross, backcross, linkage groups - Gene exchange between two corresponding linkage groups of Drosophila, chromosomal interpretation - Oogenesis, spermatogenesis, fertilization and cleavage in animals, diagram - Map of loci on chromosomes of Drosophila - Meiosis: t.s. and squash preparation of mammalian testis. Spermatogonia, meiosis of spermatocytes I and II, spermatids, spermatozoa - Maturation divisions in mammals, diagram - Maturation divisions in plants (Lilium), 18 stages, diagrams - Meiosis and mitosis in microspore cells of Lilium, 18 high magnification photomicrographs. Microspore mother cells, leptotene, pachytene, diplotene, diakinesis, metaphase of the first (heterotypic) division, formation of the equatorial plate, metaphase stage, ring- and cross-shape of chromosomes, anaphase stage, telophase, metaphase of the second (homeotypic) division, pollen tetrads, uninuclear microspores after the separation of the daughter cell, telophase of the third division, mature two-nucleate pollen grain at the time of shedding with tube cell and generative cell - Causal relations between crossing-over and chiasmata; separation of chromatid tetrads - The crossing-over: breakages, healing - Fine structure of genes: crosses of mutants of the coli phage T4 - Localization of genes in chromosomes: chromosome aberrations - Chromosome mutations: ring-chromosomes, deletions, duplications, inversions, translocations - Extra chromosomes: karyotype of a human with Down's syndrome - Sex chromatin: Barr bodies (sex chromatin) in human female epithelial and nerve cells - Replication: macronucleus before division - Replication of chromosomes: introduction of radioactively labeled thymidine distribution by mitoses - Equatorial plate showing four large chromosomes of Ascaris - Chromosome diminuition - **Gene and molecule**. - This series was conceived to not only present the results of research, but also to show the experimental basis. - Topics: Providing the material structure of the gene. Structural characteristics of DNA. Identical replication as a cause of hereditary constancy. DNA, RNA and protein synthesis as causes of character formation. Genetic code and molecular mechanisms in mutations. - Specialized didactic guiding ideas: Relations between structure and function on a molecular level. Explanation of genetic observations by means of characteristics and reactions of molecules. Problematization of the results by illustration of the hypotheses, methods and experiments. - *I. DNA, the hereditary substance* - Transformation in Streptococcus pneumoniae - DNA-content of various cells - Hereditary substances of bacteriophages (phages) - Electron micrograph of T2 phages - Reproduction of the phage T2 - Transmission of DNA into human cells - *II. Structure of DNA* - Nucleotides and their components - Relative components of bases in various DNA - Hydrogen bonding between bases - Structure of the double helix - Electron micrograph of phage-DNA - Electron micrograph of sections through bacterial cells (E. coli) - *III. Replication of DNA* - Models of replication - Prediction of density of replicated DNA - Density gradient centrifugation - Replicating DNA molecule I. -

Replicating DNA molecule II. - *IV. DNA and RNA* - Differences between DNA and RNA - Fractionation of cell components by centrifugation - Synthesizing ability of components - Function of ribosomes - Structure of ribosomes - Amino acid-tRNA-complexes - Specifity of tRNA - Kinds of RNA in the cell - Experiments with artificial messengers - Polysomes on bacterial DNA - Electron micrograph of RNA-phages - Coat protein-gene of an RNA-phage - Summary: replication, transcription, translation - *V. Genetic code and mutation* - Colinearity between nucleotide- and amino-acid sequence - Frame shift mutations - Triplet-binding test - The genetic code - Relations between codon and anticodon - Begin of protein synthesis - Section of phage RNA - Chemical mutagenesis - Effect of mutations - *VI. Synthesis, structure, and function of proteins* - Protein-synthesizing complex I - Protein-synthesizing complex II - Secondary structure of proteins: a-helix - Secondary structure of proteins: b-pleated sheath - Tertiary structure of a protein: b-chain of hemoglobin - Sickle cell anemia, erythrocytes - Molecular interpretation.

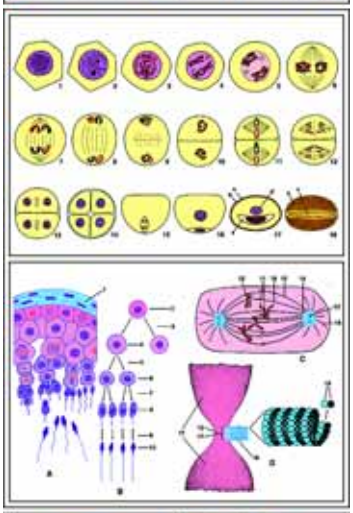


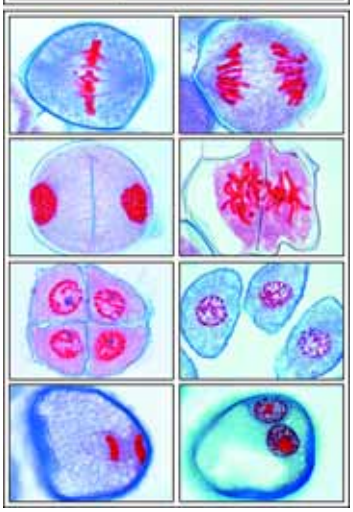
No. 8224 E **Mitosis and Meiosis**

Atlas of 25 OHP Transparencies size 22 x 28 cm, comprising over 95 color pictures. Specially selected and beautiful multicolored photomicrographs are presented on this atlas. Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism.



Typical Cell Division in the Root Tip of the Hyacinth. - An unique series to illustrate the normal sequence of mitosis. The photomicrographs show each stage in a high degree of magnification. The cell components are differentiated in contrasting colors by a special staining technique. - Interphase, the resting nucleus shows the chromatin in the form of a fine network, nuclear membrane and nucleoli are present - Early prophase, the chromosomes appear as fine threads - Late prophase, the chromosome threads shorten by contraction - Early metaphase, duplicate daughter chromosomes are formed - Metaphase, the chromosomes are arranged on the equatorial plate - Early anaphase, the daughter chromosomes move away from the equator - Late anaphase, the chromosomes reach the opposite cell poles - Early telophase, chromosomes become reorganized to form the daughter nuclei, primary cell wall - Late telophase, new cell wall is formed and the nucleoli are reformed - Reconstruction. Complete separation of the daughter cells - **Development of the Microspore Mother Cells of Lilium (Anthers). -** New combination of hereditary traits and reduction of the number of chromosomes are the aim of meiotic division. - Young anther of lily. t.s. - Microspore mother cells, resting stage - Leptotene, the chromosomes appear as fine threads - Zygotene, the homologous chromosomes associate in pairs - Pachytene, complete pairing of the chromosomes - Diplotene, bivalent chromosomes split, chiasmata, interchange of genetic material - Diakinesis, contraction of the bivalents - Metaphase of the first (heterotypic) division showing the equatorial plate - Equatorial plate, surface view with duplicated chromosomes - Metaphase, side view, a spindle is formed - Anaphase, two haploid sets of chromosomes are separated - Telophase, new cell wall between the daughter cells - Prophase of the second (homeotypic) division - Metaphase of the second division - Pollen tetrads. Four nuclei are formed after the second division - Uninuclear microspores - Prophase, metaphase, anaphase and telophase of the third division - Mature two-nucleate pollen grain. Each pollen grain possesses a tube cell and a generative cell - Mature pollen grain with surface structure - Growing pollen grain showing pollen tube - Growing pollen tube, l.s. showing the division of the generative cell into two sperm nuclei - **Development of the Megaspore Mother Cells of Lilium (Embryosac). -** Thousands of sections had to be prepared in order to produce this series - Ovary of lily, t.s. low magnification - Very young ovary before the formation of the megaspore mother cell. Abundant mitotic figures in the tissue - Developing embryosac mother cell - Megaspore mother cell, pachytene stage of prophase - Anaphase and telophase of the first (heterotypic) division. Spindle fibers - Two-nucleate embryosac, prophase of the second division - Anaphase and telophase of the second (homeotypic) division. Two division figures - Primary or first four-nucleate stage - Primary four-nucleate stage, three nuclei migrate to the chalazal end of the embryosac, one nucleus remains in the micropylar end - Prophase and metaphase of the third division after the three chalazal nuclei have fused - Telophase of the third division - Second four-nucleate stage, consisting of two haploid and two triploid nuclei. A vacuole can be observed - Metaphase and anaphase of the fourth division - Eight-nucleate stage, the mature embryosac. Egg nucleus, synergid nuclei, polar nuclei, and antipodal nuclei - Double fertilization by the two sperm nuclei of the pollen tube - Formation of the embryo, early and later stage. Many mitotic figures in the endosperm cells - Young embryo with suspensor cells, l.s. - Older embryo, l.s. formation of cotyledons - **Maturation and Cleavage of Ascaris megalocephala bivalens. -** Due to its low number of chromosomes (only four), Ascaris megalocephala bivalens is an ideal zoological example to demonstrate the complex phenomena of reduction divisions, fertilization and early cleavage in animals - Primary germ cells - Entrance of spermatozoon in the oocyte - Oocyte before the reduction divisions. The genetic substance appears in form of two tetrads - First maturation division. Eight chromosomes and the spindle visible. The male pronucleus in the middle of the oocyte - Formation of the first polar body - Second maturation division. Four chromosomes visible - Formation of the second polar body. Only two chromosomes remain in the oocyte, subsequently they change to the female pronucleus - Mature oocyte with male and female pronuclei, each nucleus contains two chromosomes - The nuclear membranes of the pronuclei disappear, and the maternal and paternal chromosomes become visible (fertilization) - Metaphase of the first cleavage. The somatic number of chromosomes is now restored - Metaphase, equatorial plate in side view shows chromosomes, spindle fibers, centrioles - Anaphase, beginning movement of the daughter chromosomes towards the poles - Early telophase, beginning constriction of the cell - Telophase, further division of the cell - Late telophase, complete division of the cell - Second cleavage with two division figures - Later stage of fetal development showing young embryo - **Development of the Female Gametophyte of Pinus. -** The ovules of pine mature within two vegetation periods. In the first year pollination and growth of the female gametophytes. In the following spring the formation of archegonia and the fertilization take place. - Young female cone, median l.s. for general view - Bract scale, ovuliferous scale and ovule, median l.s. - Young ovule before pollination, l.s. with megaspore mother cell - Growing ovule at free nuclear stage, after repeated division of the megaspore mother cell without formation of cell walls - Growing ovule, later stage with young macroprothallium - Mature archegonium, median l.s. showing neck canal cells, ventral canal cell, egg nucleus, layer of jacket cells, paranuclei - Fertilization of the archegonium by entrance of the pollen tube - First division of fertilized egg nucleus, anaphase - Four-nucleate stage, all nuclei in the centre of the archegonium - Four-nucleate stage, the nuclei migrate towards the base of the archegonium - Sixteen-nucleate stage, the nuclei lie in four tiers of four. Rosette cells, suspensor cells, embryonic cells - Young proembryo with short suspensor cells - Older proembryo with elongated suspensor cells and four young embryos - Mature embryo with endosperm, median l.s. showing cotyledons, radicle, hypocotyl, plumule, and t.s. showing the eight cotyledons.



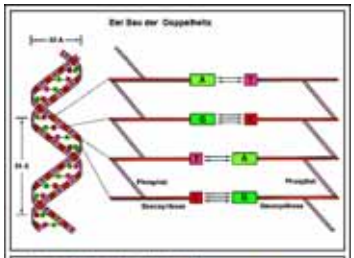
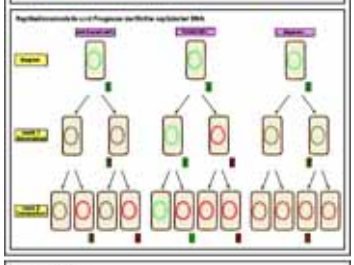
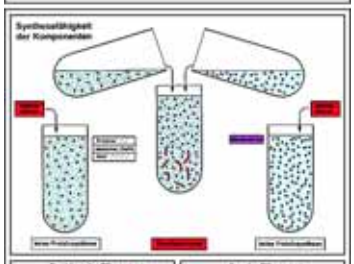
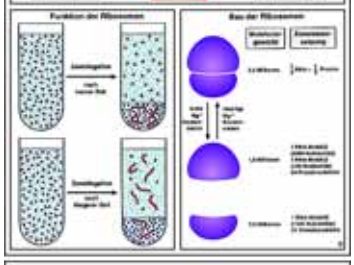
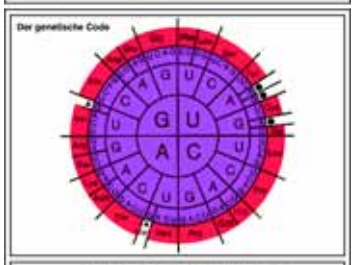
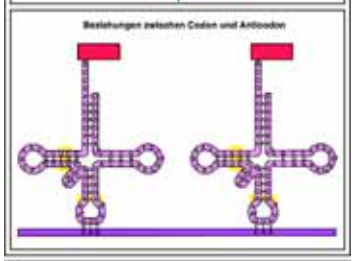
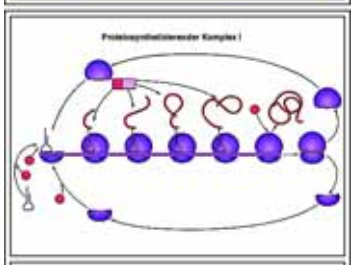
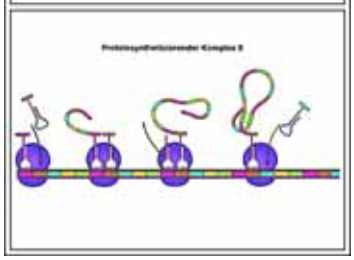


NEW!

No. 8248 E **Cytology and Genetics** (Short Version TE)

Atlas of 10 Overhead-Transparencies size 22 x 28 cm, comprising 67 pictures (anatomical pictures, photomicro- and macrographs, nature photographs, electron micrographs, drawings, diagrams, tables, scenes, test data and results). With comprehensive interpretation text. - Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Dr. Dieter Gerlach and Johannes Lieder.

Animal Cells and Genetics: - Typical Animal Cell, showing all details visible by light and electron microscope in different color - Squamous epithelium, isolated cells. Nuclei and cytoplasm are shown - Striated muscle l.s. showing nuclei, striations, myofibrils - Compact bone, human t.s. showing cells and canaliculi - Hyaline cartilage, human t.s. - Nerve

fibers isolated, showing myeline sheaths and Ranvier's nodes - Simple animal cells in liver, t.s. with cellular membranes, nuclei, and cytoplasm - Electron micrograph of a liver cell showing nucleus, mitochondria, cytosomes, lysosomes, dictyosomes, glycogen - Phagocytosis in Kupffer's star cells of the liver, t.s. - Ovary of cat, t.s. showing primary, secondary, and Graafian follicles - Fallopian tube with embedded egg (oocyte), t.s. high magnification detail - Testis of frog, t.s. showing spermatogenesis. Spermatogonia, spermatocytes, spermatids, and mature spermatozoa - Testis of crayfish, t.s. showing meiosis and spermatogenesis - Animal mitosis, color graphic design with 9 different stages - Reduction division during spermatogenesis in human and animals, all stages, color graphic design - Giant chromosomes in the salivary gland of Chironomus larva, with large chromomeres. Stained for DNA - Giant chromosomes of Chironomus, color graphic design - Human chromosomes in smear from culture of blood - Karytype of human chromosomes - Lampbrush chromosomes of diplotene stage in living egg cell of salamander (phase contrast) - Uteri of Ascaris megalocephala, t.s. to show details of meiosis with chromosomes and nuclear spindles - Barr bodies (sex chromatin) in female squamous epithelium - Pigment cells in skin - Storage of glycogen in liver cells, sec. - Nucleus of an amoeba, live microphotograph - Mitochondria in thin sec. of kidney or liver, specially prepared and stained - Mitochondria, fine structure, color schematic design - Golgi apparatus in sec. of spinal ganglion - Golgi apparatus, fine structure, color schematic design - Ova from Psammechinus (sea urchin). Fertilized ovum - Ova from Psammechinus (sea urchin). Two-cell stage - Ova from Psammechinus (sea urchin). Four-cell stage - Ova from Psammechinus (sea urchin). Eight-cell stage - Inheritance of two linked genes in Drosophila: cross, backcross, linkage groups - Gene exchange between two corresponding linkage groups of Drosophila, chromosomal interpretation - Drosophila genetics, adult wild type, w.m. - Drosophila, "barr eye" mutant, w.m. - Drosophila, "brown eye" mutant, w.m. - Drosophila, "vestigial wing" mutant, w.m. - Drosophila, "white eye" mutant, w.m.

Plant Cells and Genetics: - Typical Plant Cell, showing all details visible by light and electron microscope in different colors - Electron micrograph of a plant cell with nucleus, cell walls, vacuoles, mitochondria, endoplasmatic reticulum, plasmodesma and chloroplasts - Epidermis of Allium (onion), w.m. showing simple plant cells with cell walls, nuclei and cytoplasm - Stem apex and meristematic tissue of Elodea, l.s. showing growing zone and leaf origin - Wood of Tilia macerated and w.m. showing wood cells, vessels and fibers - Root tips of Allium l.s. showing cell division (mitosis) in all stages: - Mitosis: root tip; interphase (resting stage) - Mitosis: root tip; early prophase - Mitosis: root tip; late prophase - Mitosis: root tip; early metaphase - Mitosis: root tip; equatorial plate of metaphase - Mitosis: root tip; early anaphase - Mitosis: root tip; telophase - Mitosis: root tip; reconstruction - Maturation divisions (meiosis and mitosis) in the pollen mother cells of Lilium, 18 stages, color design - Pollen mother cells of Lilium. Early prophase (leptotene) first division (meiosis) showing chromosomes as fine threads - Pollen mother cells of Lilium. Later prophase (diakinesis) of first division (meiosis) Shortening of chromosomes - Pollen mother cells. Metaphase and anaphase of first division (meiosis) showing nuclear spindles and contracted chromosomes - Pollen mother cells. Second division, interkinesis, four cells stage - Plasmodesmata, in t.s. of palm seed - Mitochondria, thin l.s. of Allium root tips stained to show the mitochondria - Fruit of Pyrus (pear) t.s. showing stone cells (scelerenchyma) - Tuber of Solanum (potato) t.s. shows cork and starch grains - Cucurbita (pumpkin) l.s. of stem showing vascular bundles with sieve tubes, spiral and annular vessels, sclerenchyma fibers - Ricinus endosperm t.s. showing aleurone grains - Ovary of Lilium (lily), t.s. showing arrangement of ovules and embryosac - Spirogyra, green alga, showing conjugation stages and formation of zygotes.

No. 8222 E **Transmission Electron Micrographs**

Atlas of 24 OHP Transparencies size 22 x 28 cm, comprising over 120 individual pictures. They are made from extremely high quality, faultless and instructive transmission electron micrographs. All micrographs are marked with letters facilitating the location and interpretation of the important or special structures. Greatly enlarged electron micrographs - magnification 50000 up to 100000 x - show the ultra-structures of the cell organelles as far as the range of macromolecules. Electron micrographs of lower magnification - 5000 up to 30000 x - give an impression of the microstructure of the tissues and organs, their specific performance and functions. The resolution capability of a modern electron microscope is approximately 1000 times greater than that of the optical microscope. In strong plastic file with ring-mechanism. - Compilation: Dr. Heinz Streble

Electron Micrographs of Animal Cells and Tissues. - Techniques: production of ultra-thin sections for electron microscopy - Electron microscope: composition and function, refraction and lenses - Liver cell: distinctive marks of fine structure; nucleus, mitochondria, cytosomes, lysosomes, dictyosomes, glycogen, gall capillaries - Liver cell: fine structure of an animal cell - Liver cell: details of cell organelles and endoplasmatic reticulum - Skin: desmosomes, tonofilaments, microvilli and fissures for lymph in stratum spinosum cells of epidermis - Ciliated epithelium of trachea: t.s. and l.s. of cilia - Cilia, flagella and their structures: t.s. of a group of cilia; three cilia are constructed divergently - Secretory cells: exocrine cells of pancreas, endoplasmatic reticulum and dictyosomes as origin-structures of digestion enzymes - Ribosomes: fixed on membranes or free floating in cytoplasm the ribosomes form designs - Resorption: simple columnar epithelium of intestine showing microvilli - Resorption: cells of proximal tubule of kidney; the highly active cells with numerous long microvilli, basal invaginations and mitochondria - Glomerulus of kidney, details: capillary loops and podocytes; the barrier between blood and primary urine - Lung: epithelial layer of pneumocytes, basement membrane capillary epithelium and erythrocytes - Collagenous connective tissue: fibroblasts and matrix bundles of banded collagen fibrils - Cartilage: cartilage cells in matrix of cartilage - Bone, osteocytes: long cytoplasmatic processes, collagen fibrils and mineralized matrix - Smooth muscle: elongated units showing two kinds of filaments - Skeletal muscle, striated: plasma membrane, sarcoplasm, myofibrils, T-tubules, segments and bands, actin and myosin filaments - Cardiac muscle, striated: segmentation and bands, mitochondria, intercalated discs - Nervous tissue: t.s. of myelinated axons and non-myelated axons within grooves of Schwann's cells - Nervous tissue: l.s. of axon, neurofilaments, microtubules, vesicles, mitochondria, Schwann's cell with node of Ranvier - Neuro-muscular synapses in skeletal muscle: the junction shows vesicles in presynaptic component and junctional folds that reach the myofibrils in postsynaptic component - Blood: mature erythrocytes including homogeneous mass of hemoglobin, and erythroblast with large nucleus and polyribosomes - Blood: granular leukocytes, eosinophils: lobulated nucleus and disc-shaped cytoplasmatic granules - Olfactory epithelium: sensory cells with cilia, mucous cells w. microvilli - Retina: rod cells in longitudinal view; the outer segment and banded rootlet of each cell is a highly specialized cilium - Ovary: details of ovum, zona pellucida and follicular epithelium. - Testicles; spermatogenic epithelium: in longitudinal view an early spermatid and an matured spermatozoon

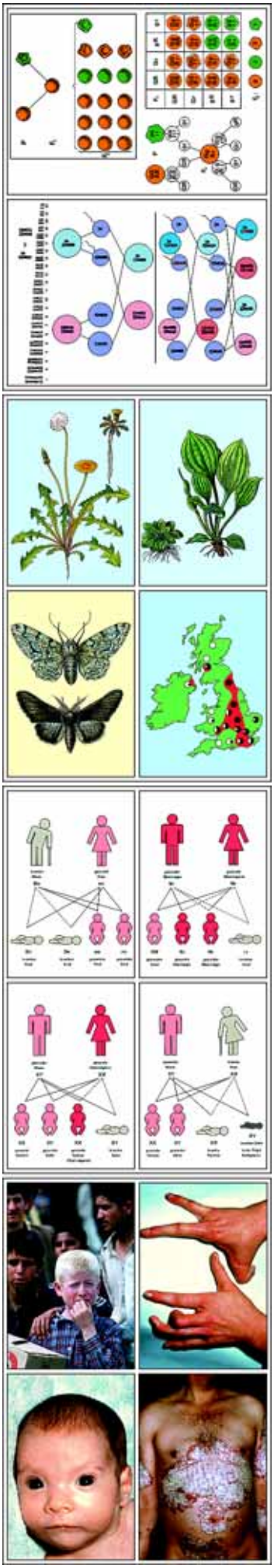
Electron Micrographs of Plant Cells and Tissues. - Typical plant cells: electron micrograph of low magnification with nucleus, cell walls, vacuoles, mitochondria, dictyosomes, endoplasmatic reticulum, plasmodesma and chloroplasts - Meristematic plant cell: representation of the membrane systems - Plant cell: three dimensional reconstruction - Meristematic plant cell: fine structures of organelles; high magnified - Cell of root tip: very high magnified cut-out showing cell wall, plasma membrane, clusters of ribosomes and microtubules - Plasmodesmata: high magnified electron micrograph showing details - Cytokinesis and mitosis in early telophase stage: cell plate formation and phragmoplast - Mesophyll cell: cell walls, large vacuole, chloroplasts, grana of plastids, starch and nucleotides - Mesophyll cell: chloroplast showing starch, grana and thylakoids - Mesophyll cell: chloroplast; highly magnified cut-out with details in grana, thylakoids, and ribosomes in stroma - Cuticle: epidermal cuticle of petiole, cutin layer with residual wax on the surface and primary cell wall - Leaf stoma: section cut parallel to surface of a leaf, with two guard cells and two subsidiary cells - Leaf stoma: transverse sections through stoma cells - Gland cells: section through a gland from leaf of privet showing gland cells and a stalk cell - Root: central cylinder, transverse section showing Casparian strips, endodermis, cortex, gas spaces, pericycle, sieve tubes and tracheids - Root: high magnified section through a Casparian strip - Primary xylem: longitudinal section through a primitive xylem element with secondary, ring-shaped thickenings of the wall - Vascular cambium: t.s. through cambium of a woody stem; low magnification - Vascular cambium, detail: cambial initial

cells showing large vacuoles, phragmoplast, proplastids - Primary phloem: l.s. showing living companion cells and almost dead sieve elements with a sieve plate - Fibers: t.s. of fibers with thick layering in the walls - Secondary xylem: Ray cells in longitudinal view and tracheids with bordered pits and half bordered pits in t.s. - Bordered pit: high magnified section; middle lamella, torus, membrane of pit, layers of the wall - Pit membrane and torus: surface relief of torus and microfibrils of cellulose; plastic replica shadowed by subliming metal - Collenchyma: cell of angular collenchyma with thickened corners; intercellular spaces filled with pectins - Stone cell: section with plasmodesmata, primary and secondary cell walls, nucleus, plastids, mitochondria, and endoplasmatic reticulum - Raphid cell: cell with innumerable vesicles in cytoplasm, raphidosomes and crystals of calcium oxalate - Sporogenous cells of anther: nuclei of cells with meiotic chromosomes in t.s. and l.s.; synaptic association of homologous chromosomes - Pollen grain: section of a pollen grain showing exine, intine, pollen grain pore, vegetative nucleus and sperm nucleus

No. 8225 E **Mendelian Inheritance and Variability**

Atlas of 32 OHP Transparencies size 22 x 28 cm, comprising 95 color pictures, mostly with several component figures (drawings, diagrams, anatomical pictures, photomicro- and macrographs, nature photographs, life cycles, scenes of landscape, fossils, test data and results). Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation: Prof. Walter Mergenthaler and OStR Heribert Schmid

The Mendelian Laws. - This series introduces into classical genetics and is intended for use in all types of schools, especially high schools. The rich material allows the teacher to select according to the special situation. - Johann Gregor Mendel - Similarity of father and son - Identical (uniovular) twins - Intermediary inheritance in Mirabilis jalapa (Marvel of Peru) - Backcross in Mirabilis jalapa - Intermediary inheritance in chicken - Dominant inheritance of color in pea flowers - Dominant inheritance of color in pea seeds - Yields of Mendelians monohybrid crosses of peas - Dominant inheritance in stinging nettles - Dominant inheritance in corn (Zea mays) - Dominant inheritance in the snail Cepaea hortensis - Dominant inheritance in guinea pigs - Backcross of F1 in dominant inheritance - Backcross of F2 in dominant inheritance - Yields of pea crosses performed by various scientists - Dihybrid cross of peas - Distribution of characters in dihybrid cross of peas - Punnett square for dihybrid cross of peas - Backcross of dihybrid peas - Dihybrid inheritance in the snail Cepaea hortensis - Dihybrid inheritance in guinea pigs - Dihybrid inheritance in snapdragons - Punnett square for dihybrid cross - Distribution of characters in trihybrid crosses - Ratio of numbers in polyhybrid crosses - Distributing of parental genetic makeup to children - Genetic makeup common to a family - Additive factors - Supplementary factors in Lathyrus odoratus (Spanish vetch) - Polygeny in mammalian fur color - Lethal factor in canary (Serinus canaria) - Lethal factor in yellow mice
Variability Part I: The Modifications. - Modifiability is the changeability of the appearance or the ability of the whole genetic makeup (of the idiotype) to be expressed in the phenotype under the various developmental conditions, as well as internal and external influences. This is limited by the range of variation which itself is determined genetically. Modifications are changes of the phenotype which do not influence the idiotype. - Development of dandelion (Taraxacum officinale) in mountains and lowlands (experiments of Bonnier) - Different shape of plantain (Plantago) growing on track across the field and on forest margin - Different shape of pine growing singly and within the forest - Modifications of leaves on one branch - Modifications of leaves of a ginkgo tree - Gentiana plants from various sea levels - Stimulating and inhibiting effects on plants - Table of binomials and Pascal's triangle - Binomial distribution or normal curve of variation for $(a+b)^4$ and $(a+b)^{10}$ - Variation curve for number of tail fin rays and lateral scales in two species of fish - Variation curve of the size in the identical progeny of a single Paramaecium - Unsuccessful selection in culturing Paramecia - Fingerprints of identical twins - Starvation and mast form in sheep of the same age - Length of tadpole intestine depending on type of food - Growth speed of plaice depending on population density - Queen and worker bee, nutritional modifications - Changing modifications: biastrepsic and normal Dipsacus plants - Spring and summer form in the butterfly Araschnia levana - Cooling the pupa effects the color of butterfly wings - Change of temperature modifies color and size of an ichneumon wasp - Temperature and light modify the color of petunia flowers - Temperature modification in Russian rabbit - Forms transitional between submersed and floating leaves - Leaves of young and old English ivy - Sex change depending on body length of a marine annelid - Phenotypic sex determination in the worm Bonellia - Transplantation of frog tissue to salamander tadpole - Mossy rose gall - Pine galls produced by aphids
Variability Part II: The Mutations. - Sudden changes in animals and plants which later proved to be hereditary are called mutations. They are either spontaneous or caused by mutagens, e.g. radiation, chemical substances, or change of temperature. Mutations are highly important for the further development of life, for breeding animals and culturing plants. The possibility of curing defective genes or purposefully changing intact or defective genes means total genetic manipulation of humans and organisms. This opens a both promising and shocking, but also utopian perspective. - Normal celandine (Chelidonium majus) and its laciniate mutant - Leaves of various plants and their laciniate mutant - Wild-type sheep and short-legged ancon mutant - Goldfish and its mutant - Wild-type carp and its mutants - Shape and skeleton of a normal and a brachydactylous human hand - Wild-type moth (Biston betularia) and its carbonaria mutant. Protective color - Industry melanism of Biston betularia in Great Britain - Tailless mutant of domestic cat - Beetle with duplicated legs - Biastrepsis in Dipsacus and fasciation in Japanese spindle tree - Normal corn plants and gravitation-blind mutants - Normal snapdragon (Antirrhinum majus) and its cupuliformic mutant - Factor mutation of snapdragon. Shape and color of flowers. Multiple alleles - Progressive reduction of wings in the fruit fly Drosophila. Multiple alleles - Fur color of guinea-pig (black, brown, white). Multiple alleles - Diagram showing various types of gene mutations - Chromosome mutation in a female fruit fly Drosophila. Normal and mutated set of chromosomes - Relation between mutated chromosomes and eye size of fruit flies - Types of chromosome mutations - Inversion of chromosome segment in Drosophila. Inversion loop during chromosome pairing - Chromosome mutations in two varieties of peas. Karyograms and chromosome pairing during meiosis - Chromosome sets of epidermal cells and pigment pattern of the heads of haploid, diploid, and triploid salamander larvae - Haploid, diploid, triploid, and tetraploid plants of Solanum (nightshade) - Genome mutations in Drosophila - Leaf shape of stock (Matthiola) due to various surplus chromosomes - Normal shoot growing from the variegated leaf of Sansevieria nobilis. Proof of development of a chimera and of somatic mutation - Mutagenic effect of nitrous acid on DNA. Change of nucleic acid bases - Selection of deficiency mutants in bacteria - Metabolic block and accumulation of products. Tracing of metabolic chains

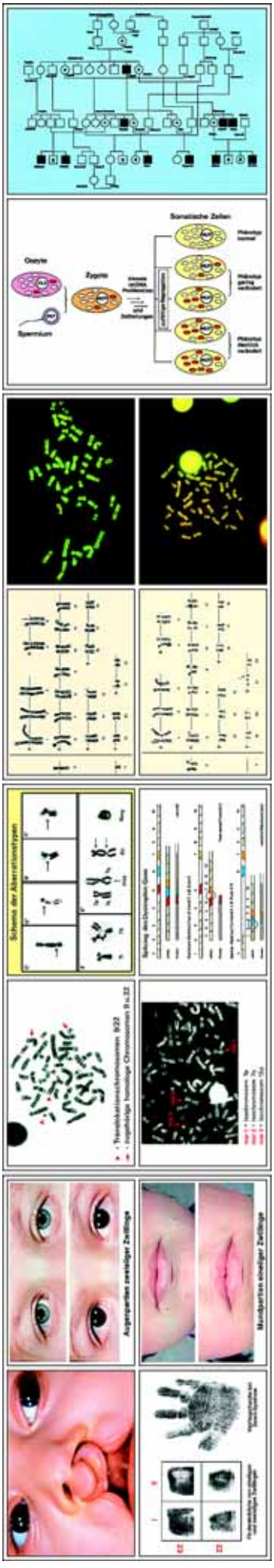


No. 8226 E **Human Genetics Part I**

Atlas of 32 OHP Transparencies size 22 x 28 cm, comprising 88 color pictures, some with several component figures (drawings, diagrams, tables, graphs, anatomical pictures, photomicro- and macrographs, electron micrographs, clinical appearance of patients, pedigrees, karyotypes). Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism.

Recent new developments in all fields of human genetics made a completely revised edition of this subject necessary. The four series of color transparencies covering human genetics incorporate the latest developments in research. The new brilliant visual material is highly informative. The detailed explanatory texts fulfill the didactic requirements of modern teaching.

Modes of inheritance. - The series of transparencies covers the basic knowledge of formal genetics, illustrated with examples of medical genetics. Compilation and text: Prof. Dr. med. Klaus Zerres (Institut für Humangenetik, Universität Bonn) and Prof. Dr. med. Tiemo Grimm (Institut für Humangenetik, Universität Würzburg).



A. Autosomal dominant inheritance - Autosomal dominant inheritance - Clinical appearance of neurofibromatosis, multiple fibromas - Ditto., cafe au lait spots - Pedigree of a family with neurofibromatosis - Clinical appearance of cleft hand - Pedigree of a family with cleft hand - Pedigree of a family with achondroplasia - Codominant mode of inheritance (AB0 blood groups) - *B. Autosomal recessive mode of inheritance* - Autosomal recessive mode of inheritance - Probability of being heterozygous for the relatives of a homozygous individual - Clinical appearance of albinism - Albinism in animals - Pedigree of a family with albinism - The decomposition of phenylalanine - Pedigree of a family with phenylketonuria (pseudodominance) - Pedigree of a family with deafmutism (genetic heterogeneity) - Heterozygosity-effects - *C. X-chromosomal inheritance* - X-chromosomal recessive inheritance - Color plate for testing red-green-blindness - Pedigree of a family with red-green-blindness - Clinical appearance of muscular dystrophy of Duchenne type - Structure of the gene of muscular dystrophy - Examples of changing on deletions in the dystrophin gene - Pedigree of families with muscular dystrophy - Clinical appearance of hemophilia - Hemophilia A in the European aristocracy - X-chromosomal dominant inheritance - Clinical appearance of incontinentia pigmenti (Bloch-Sulzberger syndrome) - Pedigree of a family with incontinentia pigmenti - *D. Multifactorial inheritance* - Multifactorial inheritance (effect of threshold value) - Recurrence risks of multifactorial inheritance - Clinical appearance of harelip and cleft palate - Harelip and cleft palate due to amniotic bands - Different causes of harelip and cleft palate - Clinical appearance of the van der Woude syndrome - Pedigree of a family with van der Woude syndrome - Clinical appearance of neural tube defects, spina bifida - Ditto. anencephalus - Clinical appearance of clubfoot - Ditto. of psoriasis - Example of pyloric stenosis illustrating the so-called „Carter-effect" - *E. Mitochondrial inheritance* - Mitochondrial inheritance - Pedigree of a family with Leber's optic atrophy

Cytogenetics. - Part II illustrates various types of human cell cultures, the preparation of sex-chromatin (X- and Y-chromatin) in normal and pathological states through analysis of Barr-bodies, drumsticks and F-bodies. It also includes the analysis of metaphase chromosomes by various banding techniques, including NOR- and SCE-methods, and the most common types of chromosomal aberrations and the phenotypic consequences. Secondary chromosomal aberrations following exposure to clastogens and illustrating repair defects are shown. The series ends with examples from the field of tumorcytogenetics: leukemias and solid tumors. - Compilation and text: Dr. rer. nat. Ulrike Gamerdinger, Dipl.-Biol. Katja Weiske and Prof. Dr. Gesa Schwanitz (Institut für Humangenetik, Universität Bonn). - *A. Cell cultures* - Lymphocyte culture - Tissue culture - Clones in tissue culture - Mitotic activity in tissue culture - *B. Sex chromatin* - Barr bodies in cells of the hair bulb - Drumstick in a mature segmented granulocyte - Two Barr bodies; karyotype 47,XXX - F-body in a human lymphocyte - Two F-bodies; karyotype 47,XYY - *C. Chromosome staining and banding techniques* - Uniform staining - GTG-banding pattern - QFQ-banding pattern - RBA-banding pattern - C-banding pattern - SCE (sister-chromatid-exchange) - Nucleolus organizing region (NOR), silver staining - Normal karyotype with GAG banding pattern - Paris nomenclature of chromosomes - *D. Chromosomal aberrations* - Trisomy 21; karyotype - Boy with Down's syndrome - Simian crease in a boy with Down's syndrome - Karyotype of a patient with translocation trisomy 21 - Trisomy 13; karyotype - Trisomy 18; karyotype - Ring chromosome 18; karyotype - Isochromosome X; karyotype - Inversion 2; karyotype - Karyotype of a girl with „cri-du-chat" syndrome - Child with „cri-du-chat" syndrome - Pedigree of a family showing segregation of a reciprocal translocation - Monosomy X; karyotype - Patient with Turner's syndrome (monosomy X) - Klinefelter's syndrome; karyotype - Risk for the birth of a child with chromosome aneuploidy - Chromosomal findings in spontaneous abortions - Triploidy; karyotype - Alterations of chorionic villi due to triploidy - *E. Mutagenesis, clastogenes, tumor cytogenetics* - Increased SCE rate - Mitosis with multiple aberrations - Diagram of aberration types - Micronuclei - Unspecific chromosome aberrations - Table of chromosome breakage syndromes - Philadelphia chromosome in chronic myeloic leukemia - Marker chromosomes in solid tumors

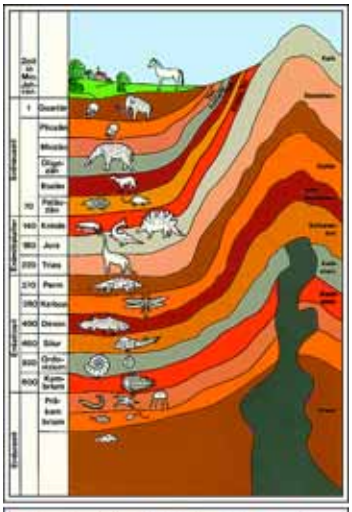
No. 8227 E **Human Genetics Part II**

Atlas of 42 OHP Transparencies size 22 x 28 cm, comprising 116 color pictures, some with several component figures (drawings, diagrams, tables, graphs, anatomical pictures, photomicro- and macrographs, electron micrographs, clinical appearance of patients, pedigrees, karyotypes) - Sketch and work-sheets with semidiagrammatic designs and texts.

Molecular genetics, statistic genetics. - Part III starts with an introduction into the principles of molecular genetics. Main emphasis is put on the application of the new molecular techniques in medical genetics and genetic counseling. Aspects of population genetics, mutations and blood groups are furthermore described. - Compilation and text: Prof. Dr. med. Klaus Zerres (Institut für Humangenetik, Universität Bonn) and Prof. Dr. med. Tiemo Grimm (Institut für Humangenetik, Universität Würzburg). - *A. Molecular genetics, statistic genetics* - From DNA to chromosomes - Genetic code - Restriction enzymes - Evidence of DNA sequences by Southern-blots - Polymorphisms of restriction fragments (RFLP) in Southern-blots - Ditto. and CA-repeats as molecular markers - Polymerase chain reaction (PCR) - Indirect diagnosis of genotypes. Example: muscular dystrophy of Duchenne type - Direct diagnosis of genotypes. Example: Ditto. - Erythrocytes in sickle cell anemia - Indirect diagnosis of genotypes. Example: sickle cell anemia - Ditto. Example: spinal muscular atrophy - Direct diagnosis of genotypes. Example: mucoviscidosis - Gene map of the X-chromosome - Diagram of fluorescence-in-situ-hybridization - Proof of a deletion in the elastin-gene on Williams-Beuren-Syndrom by FISH - Mode of operation and therapy of hereditary diseases - Therapy of mucoviscidosis - Germ line therapy and somatic gene therapy - Problems and risks on gene transfer - Principles of somatic gene therapy - *B. Population genetics, mutations* - Crossing over - Linkage analysis, segregation of two loci with independent inheritance - Ditto. with dependent inheritance - Ditto. with possible crossing-over - Calculation of lodscore-data for linkage analysis - Linkage analysis, example Chorea Huntington - Law of Hardy and Weinberg - IQ of couples, an example of assortative mating - Rate of frequency of homozygotes and heterozygotes - Types of mutation - Mutation rates of autosomal dominant inheritance and X-chromosomal recessive inheritance - Role of paternal age in case of new mutations - Newborn with Apert's syndrome - Pedigree with autosomal dominant mutation (aniridia) - Congenital lack of the iris (aniridia) - Diagram of oogenesis - Diagram of spermatogenesis - Molecular genetic evidence for germ cell mosaicism in case of muscular dystrophy (Duchenne type) - Unstable trinucleotid-mutations, a new type of mutations - Imprinting, parent-specific loss of gene function causing hereditary diseases - Origin of tumors according to Knudson's two hit model - *C. Blood groups* - Determination of AB0 blood groups - Positive and negative reactions in AB0 blood group determination - Genotypes and phenotypes in AB0 blood groups - Inheritance of AB0 blood groups - Exclusion of paternity by AB0 blood groups - DNA fingerprints as evidence of paternity - Importance of Rh-incompatibility for blood-donors and during pregnancy - The HLA gene complex on chromosome 6 - HLA linkage with the adreno-genital syndrome (AGS) in a family - HLA associations in various diseases

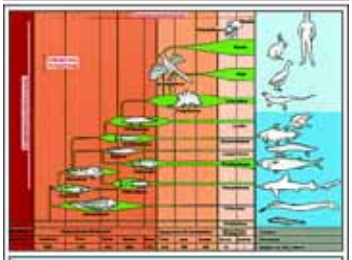
Genetic counseling and prenatal diagnosis. - The subject of this series includes principles of genetic counseling and prenatal diagnostic, effects of damage to the fetus, calculation of risks, genetics of behavior, twin research. - Compilation and text: Prof. Dr. med. K. Zerres (Institut für Humangenetik, Universität Bonn) and Prof. Dr. med. T. Grimm (Institut für Humangenetik, Universität Würzburg). - *A. Genetic counseling and prenatal diagnosis* - Indications for genetic counseling - Concepts of genetic counseling - Recurrence risk in a family, if only one child is affected - Potential consequences after genetic counseling - Neural tube defect as seen with ultrasound - Maternal serum-AFP-level during normal pregnancy and with a neural tube defect - Indications for prenatal diagnosis - Biopsy of chorionic villi - Amniocentesis, fetal blood sampling - Diagram of germ cell development of a balanced 14;21 translocation - Ditto. 12;21 translocation - *B. Teratogenetic injury to the fetus* - Appearance of alcohol embryopathy - Characteristics of alcohol embryopathy - Appearance of hydantoin-barbiturate embryopathy - Appearance of thalidomide embryopathy - Influence of maternal PKU to the fetus - Appearance of rubella embryopathy - Time-table of the development of organs and sensitivity teratogens - *C. Estimated risk* - Everyday risks - Bayes' theorem in case of incomplete penetrance - Balance between mutation and selection in case of lethal X-chromosomal inheritance - Estimated risk in case of lethal X-

chromosomal inheritance - Consanguinity (inbreeding coefficient) - Frequency of homozygotes and heterozygotes in autosomal-recessive inheritance - Estimated risk on consanguinity and autosomal-recessive inheritance - *D. Behavior genetics - Twin research* - Pedigree of the Bach family - Pedigree of the Darwin-Galton family - What is intelligence? - Frequency distribution of I.Q. values - Frequency distribution of I.Q. values in siblings of persons with different degrees of mental defects - Cytogenetics and clinical appearance of the fragile-X-syndrome - Correlation of I.Q. depending on the degree of relationship - Heritability - I.Q. test data of identical (monozygotic) twins - Twin data depending on school performance - I.Q. test data of female twins above 60 years of age - Position of twins in the uterus - Typical adult identical (monozygotic) twins, front view - Typical adult identical (monozygotic) twins, profile - Oral aspect of the identical (monozygotic) twins - Atypical adult identical (monozygotic) twins, front view - Atypical adult identical (monozygotic) twins, profile - Eye regions of identical (monozygotic) twins - Structure of the iris of identical (monozygotic) twins - Noses of identical (monozygotic) twins, view from the bottom - Siamese twins - Incomplete conjoined twins - Experimental production of complete and incomplete uniovular twins during the early development of amphibians - Fraternal (dizygotic) twins, front view - Fraternal (dizygotic) twins, profile - Eye regions of fraternal (dizygotic) twins - Structure of the iris of fraternal (dizygotic) twins - Ears of fraternal (dizygotic) twins - Hands of fraternal twins - Dermatoglyphics of identical and fraternal twins - DNA-fingerprints of identical and fraternal twins - Identical (monozygotic) triplets - Eye regions of the identical (monozygotic) triplets - Ears of identical (monozygotic) triplets - Twin findings in endogenous psychosis - Family findings in schizophrenia depending on the proportion of common genes - Comparison of concordance rates in manic-depressive twins - Family findings in manic-depressive psychosis depending on the share of common genes - Reasons for and frequency of twin pregnancy

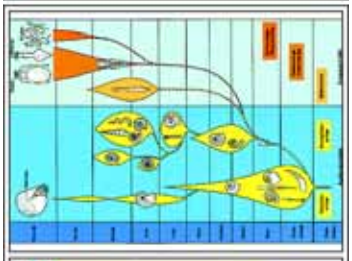


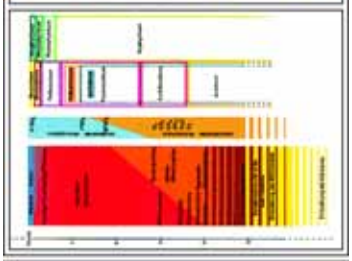
No. 8228 E **Origin and Evolution of Life Part I** (Comprehensive Version)

Atlas of 24 OHP Transparencies size 22 x 28 cm, containing 60 color pictures, mostly with several component figures (drawings, diagrams, tables, anatomical pictures, photomicro- and macrographs, fossils, test data and results). -Sketch and work-sheets with semidiagrammatic designs and texts - Compilation and text: Dr. B. Zucht



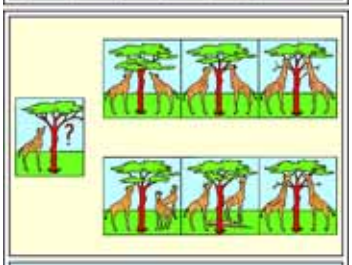
Stellar, chemical and organic evolution. Formation of procaryonts
The temporal course of evolution: nomenclature - The temporal course of evolution: events and epochs - Origin of the celestial bodies - Origin of the solar system - Rise of light chemical elements - Rise of heavy chemical elements - Landscape of the earth in prehistoric times, scene - The prehistorical landscape as a chemical cooking-pot - Apparatus of MILLER for generation of amino acids in simulated primary atmospheres - Molecular structures of primary spheres - List of authors: Formation of organic compounds in simulated primary atmospheres - Abiotic formation of amino acids - Abiotic formation of oligopeptids - Abiotic formation of polypeptides (proteinoids) - Abiotic formation of purine and pyrimidine bases - Abiotic formation of important bio-molecules by means of hydrocyanic acid as a result of simulated experiments - Simulated polycondensation of amino acids to proteinoids I: heated lave - Simulated polycondensation of amino acids to proteinoids II: melting, formation of steam - Simulated polycondensation of amino acids to proteinoids III: condensation reaction - Simulated polycondensation of amino acids to proteinoids IV: removing of the polymerizates - Abiotic formed proteinoid-microspheres - Formation of co-acervates, simple 'metabolism' of co-acervates - Formation of lipid bilayer, schematic diagram - Formation of longer nucleic acid sequences - Stages of formation and decomposition of polynucleotides - Formation of polynucleotide aggregates - Concentration and formation of specific polynucleotide aggregates - Catalytic reaction net of protein molecules - Complementary reproduction and evolution of nucleic acids - Catalytic circle of protein and nucleic acid molecules. The hyper cycle according to EIGEN - Protobiotics originated from random proteins - Hypothetic propagation of protobiotics - Hypothetic evolutionary stages of reproduction of protobiotics - Early metabolic processes of eobiotics - Basic life forms of eobiotics - Evolutionary stages of metabolism I: Beginning to protobiotics - Evolutionary stages of metabolism II: Protobiotics to procaryotes - Evolutionary stages of metabolism III: Fermenting, respiring, photosynthetic protobiotics - Metabolic processes of the cell, basic scheme - Precambrian evidences of life, scheme - Itabitite. Sedimentation in reducing atmosphere - Precambrian microfossils I: Unicellular organisms of South African Precambrian (about 3 000 000 000 years old) - Precambrian microfossils II: Spherical, filiform, umbrella-shaped organisms of North American gunflint formation (about 2 000 000 000 years old) and cell aggregates and cell colonies of the Australian bitterspring formation (about 1 000 000 000 years old) - Precambrian stromatolithe blue-green algae with azurite as a medium of petrifaction - Stromatolithe algal reefs from the museum of St. Petersburg - Simple present organisms I: Blue-green algae - Simple present organisms II: Bacteria - Evolution course of the living beings, diagram

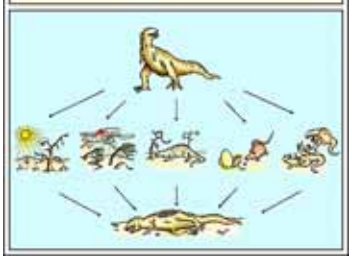




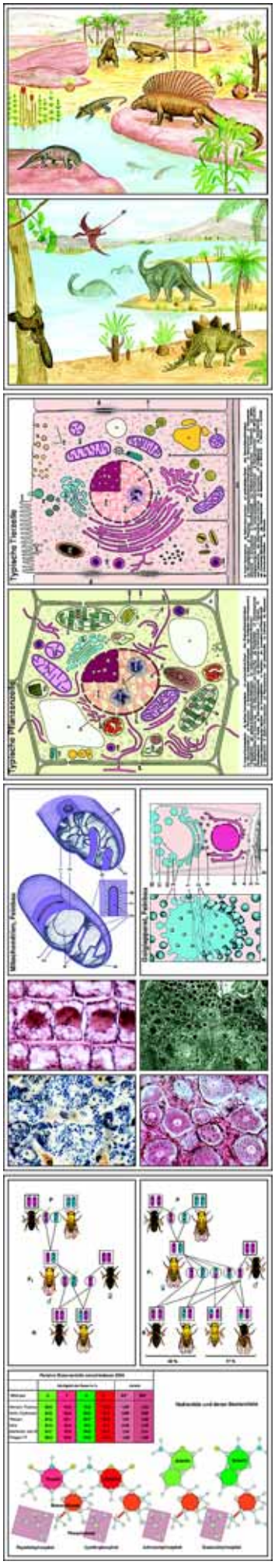
No. 8229 E **Origin and Evolution of Life Part II** (Comprehensive Version)

Atlas of 24 OHP Transparencies size 22 x 28 cm, comprising 45 color pictures, mostly with several component figures (drawings, diagrams, anatomical pictures, nature photographs, photomicro- and macrographs, life cycles, scenes of landscape, fossils, test data and results). - Sketch and work-sheets with semidiagrammatic designs and texts - Compilation and text: Dr. B. Zucht





The biological evolution from the procaryonts to the vegetable and animal kingdom
Theory of spontaneous generation and realization - Tapestry with a presentation of the Christian Genesis (12th cent.) - Pattern of the descent and ramification of the five phyla of organisms - Rise of the eucyte according to the theory of endosymbiosis — Bacterial endosymbiosis in Amoeba (Pelomyxa) - Development of flagellate eucytes to different algae and other forms of life - Colonial forms of unicellular organisms as a pattern of the development of multicellular organisms - Development of the spore-plants from aquatic to terrestrial forms - Reconstruction of Rhynia (Psilophyta), an early terrestrial primitive fern - Evolutionary lines of terrestrial spore-plants - Evolutionary process according to the telome theory - Phylogeny of leaves according to the telome theory - Positions of sporangia according to the telome theory I - Positions of sporangia according to the telome theory II - Phylogeny of types of vascular bundles according to the stelar theory - Thin section of a fossil actinostele (Lepidodendron) - Psilotum, a present archaic fern. Protostele and actinostele - Selaginella, a moss-fern, fertile stem with sporangia, w.m. - Ginkgo biloba, ginkgo tree, leaves - Dicyema (Mesozoa), a simple animal with body and sexual cells - Gastraea theory according to HAECKEL - Notoneuralia and gastroneuralia theory according to HEIDER - Coelom theory according to REMANE - Hypothetic phylogenetic tree of Deuterostomia - Development of the abdominal cavity in the Coelomates - Evolution of the Chordates I: wormlike animal to lancet-like animal - Amphioxus (Branchiostoma lanceolatum), whole mount - Evolution of the Chordates II: vertebrates - Simplified scheme of ramifications to show the course of evolution in the vertebrates - Morphological variety of an animal group: the evolution of the cephalopoda - Saurians: Ornithischia and Saurischia - Phylogenetic relations among saurians - Comparison of numbers of species of the animals - Course of the earth history. Geological times - Earth history. Table of formations - Cambrian period: Scene of landscape with typical animals and plants - Silurian period: Scene of landscape with typical animals and plants - Devonian period: Scene of landscape with typical animals and plants - Carboniferous period: Scene of landscape with typical animals and plants - Permian period: Scene of landscape with typical animals and plants - Triassic period: Scene of landscape with typical animals and plants - Jurassic period: Scene of landscape with typical animals and plants - Cretaceous period: Scene of landscape with typical animals and plants - Tertiary period: Scene of landscape with typical animals and plants - Quaternary period: Scene of landscape with typical animals and plants



No. 8230 E **Origin and Evolution of Life Part III** (Comprehensive Version)

Atlas of 30 OHP Transparencies size 22 x 28 cm, comprising 60 color pictures, mostly with several component figures (drawings, diagrams, anatomical pictures, photomicro- and macrographs, life cycles, scenes of landscape, fossils, test data, results). - Sketch and work-sheets with semidiagrammatic designs and texts - Compilation and text: Dr. B. Zucht

Basis, mechanisms and way of evolution of the vegetable and animal kingdom
Ways of evolution represented for example on the evolution of vertebrates - Morphological homologies I: Cells and cellular structures - Common structure plan of limbs of the vertebrates - Morphological homologies II: Construction plans of mollusks - Morphological homologies III: Formation of notochord and vertebrae - Morphological homologies IV: Graduation of the vertebrate brains - Graduation of the vertebrate heart - The development of vertebrate kidneys - Graduation of the vertebrate lung - Homologies in metabolism I: Adenosine triphosphate (ATP) as an universal energy carrier - Homologies in metabolism II: Comparison between various processes of photosynthesis and chemosynthesis - Homologies in fundamental vital functions: Mitosis in onion root tips - Petrified tree-trunks in the national park 'petrified forest' Arizona USA - Petrified swordtail (Xiphosura) from the Jurassic period (Solnhofen, Germany) - Extinct linking animals: Ichthyostega and Archaeopteryx - Archaeopteryx: Reconstruction and fossil - Living fossil: Swordtail Limulus (Xiphosura) - Important living fossils in invertebrates, vertebrates and vascular plants - Parallelism in the evolution between African and South American animals - Nauplius larvae of various crustacean groups - Embryonic stages of various vertebrate classes - The ancestral development of the horse foot - Foot skeletons of artiodactyla - Embryos with gill clefts. The biogenetic law after HAECKEL - Pelvic rudiments of a whale - Irregular dew-claw of a horse (atavism) - Phylogeny of behavioral pattern in ducks - Biochemical relationship of serum albumins of mammals - Theory of catastrophes according to CUVIER - The Lamarckian theory (inheritance of acquired characteristics) and the Darwinian theory (natural selection) - Modification I: Curves of variation - Different grows of two plantains, one taken from a field, the other taken from a forest - Modification II: Dissimilar growth of parts of a dandelion plant, unsuccessful selection while culturing paramecia - Modification and mutation - Mutation I: Mutagenous effects and mutability - Mutation II: Types of mutation - Mutation III: Various frequency of gene mutations ('hot spots') - Mutation IV: Mutagenic effect by nitrous acid on DNA - Recombination in grass parakeets - Allopolyploidy in wheat - Selection I: Kinds of selection - Selection II: Natural selection and selection by man - Selection III: Cryptic appearance and warning coloration - Selection IV: Quick selection by preadaptation. Industrial melanism of peppered moth (Amphidasys betularia) - Selection V: Extinction of whole animal groups caused by extreme selection - Isolation I: The continental drift theory - Isolation II: Geographical and ecological isolation - The finches of Darwin as an example for endemism - Isolation III: Isolation during reproduction in frogs - Species splitting by separation - Evolution speed. Gene shift - Adaptive radiation of marsupials and mammals - The theory of evolution by synthesis. The co-operation of evolutionary factors in course of time. Genetic landscape - Transspecific evolution. Total view - Principles of the development of forms I: Improvement - Principles of the development of forms II: Gigantism - Principles of the development of forms III: Overdevelopment (hypertely) in a beetle (Lamellicornia) - Spiral lines of ontogeny - Evolutionary history of the horse - Phylogenetic tree based on the structural relationship of cytochrome C - Moss (Bryophytes). Life cycle with all development stages - Fern (Pteridophytes). Life cycle with all development stages - Pine (Gymnospermae). Life cycle with all development stages - The evolution of languages out of the Indo-European primitive language

No. 8204E **The Origin and Evolution of Life** (Short Version)

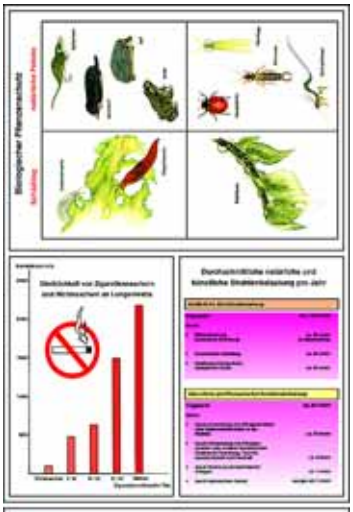
NEW!

The theory of evolution, that means the history of the descent of organisms, is regarded now as a basic, general and suggestive biological theory. The transparency atlas presents current facts and ideas in order to acquaint the student with the most important views and models of evolution. The arrangement of the series is based on a general conception. The order in principle corresponds to the description of three fundamental subjects of evolution: Problem of the self-organization of bio-systems, the problem of the reconstruction of phylogenies, and the problem of species variation.
Contents:

- *39 Overhead-Transparencies, size 22 x 28 cm, comprising 90 color pictures, mostly with several component figures (drawings, diagrams, anatomical pictures, photomicro- and macrographs, nature photographs, life cycles, scenes of landscape, fossils, test data and results). The color pictures were prepared by university illustrators specializing in this field. The application of a strong, hard-wearing carrier foil warrants great durability.*
- *Sketch and work-sheets with semidiagrammatic designs and texts. Teacher may take photocopies from the sheets and use for classroom work and tests.*
- *Manual with depictured explanatory comments for the teacher. All in strong plastic file with ring-mechanism.*

Stellar, Chemical, and Organic Evolution. Development of Procaryotes - The temporal course of evolution: Nomenclature, events and epochs - Origin of the celestial bodies - Origin of the solar system - Landscape in primeval times of the earth - The prehistorical landscape as a chemical cooking pot - Apparatus of MILLER for synthesis of amino acids in simulated primary atmosphere - Simulated polycondensation of amino acids to proteinoids I: Hot lava and amino acids, II: Melting, generation of steam, III: Condensation reaction, IV: Removal of the polymers - Abiogenic production of proteinoid-microspheres - Basic functions of the life of eobionts - Evolutionary stages of metabolism: Primeval mud to protobionts, protobionts to procaryotes, fermenting, breathing, and photosynthesizing procaryotes - Precambrian evidences of life - Precambrian microfossils: Protists from the South African Precambrian, ca. 3 billion years old - Spherical, filiform, umbrella-shaped organisms from the North American Gunflint-formation, and cell filaments from the Australian Bitterspring-formation - The course of evolution of the organisms, diagram - **The Biological Evolution from the Procaryotes to the Vegetable and Animal Kingdom -** Theory of spontaneous generation and realization - Tapestry with a presentation of the Christian Genesis (12th century) - Diagram of the descent and ramification of the five kingdoms of organisms - Possible development of flagellated eucytes to various algae and other life forms - Development of the spore-plants from aquatic to terrestrial forms - Evolutionary lines of terrestrial spore-plants - Hypothetical phylogenetic tree of Deuterostomia - Gastraea theory according to HAECKEL - Evolution of the Chordata: Vertebrata - Simplified scheme of ramifications to show the course of evolution in the vertebrates - Saurians: Ornithischia and Saurischia. Skulls with homologous lower jaw - Phylogenetic relations among saurians - Comparison of numbers of species of the animals - Course of the earth history. Geological times - Earth history. Table of rock formations - Morphological variety of an animal group: Evolution of the Cephalopoda - Cambrian period: Scene of landscape with typical animals and plants - Silurian period: Scene of landscape with typical animals and plants - Devonian period: Scene of landscape with typical animals and plants - Carboniferous period: Scene of landscape with typical animals and plants - Permian period: Scene of landscape with typical animals and plants - Triassic period: Scene of landscape with typical animals and plants - Jurassic period: Scene of landscape with typical animals and plants - Cretaceous period: Scene of landscape with typical animals and plants - Tertiary period: Scene of landscape with typical animals and plants - Quaternary period: Scene of landscape with typical animals and paints - **Basis, Mechanisms, and Ways of Evolution of the Vegetable and Animal Kingdom -** Courses of evolution exemplified by the evolution of vertebrates - Morphological homologies: Formation of notochord and vertebrae, common structural plan of the vertebrate appendages, evolutionary stages of vertebrate brains, hearts, lungs and excretory organs - Extinct intermediate animals: Ichthyostega and Archaeopteryx - Archaeopteryx, fossil and reconstruction - Living fossils: Horseshoe crab Limulus (Xiphosura) - Important living fossils of invertebrates, vertebrates, and vascular plants - Parallel evolution of the African and South American fauna - Nauplius larvae of various crustacean groups - Embryonic stages of various vertebrate classes - The ancestral development

of the horse's foot - Foot skeleton of even-toed ungulates - Embryos with gill clefts, HAECKEL'S biogenetic law - Pelvis rudiments of a whale - Irregular dewclaw of a horse (atavism) - Biochemical relationship of vertebrate serum proteins - Catastrophe theory of CUVIER, documented by "Scheuchzer's skeleton" - Lamarckism (inheritance of acquired characters) and Darwinism (natural selection) - Modification: Curve of modification - Modification: unsuccessful selection in culturing Paramaecium - Mutation: Mutagenous influences and mutability - Mutation: Types of mutation - Selection: Quick selection by preadaptation. Industrial melanism of the peppered moth (Biston betularia) - Selection: Extinction of whole animal groups by extreme selection - Isolation: The continental drift theory - Isolation: Geographic and ecological isolation. Endemism of DARWIN's finches - Speciation by geographic separation - Adaptive radiation of marsupials and mammals - Forming principles: Perfection, gigantism, hypertely of a lamellicorn beetle, individual and ancestral development of stag's antlers - Transspecific evolution, diagram - Ontogenic spirals - Evolution of the horse - Phylogenetic tree based on structural relationship of cytochrome C - Evolution of languages from the primeval Indo-European language.



No. 8232 E **Our Environment - Threats and Protection**

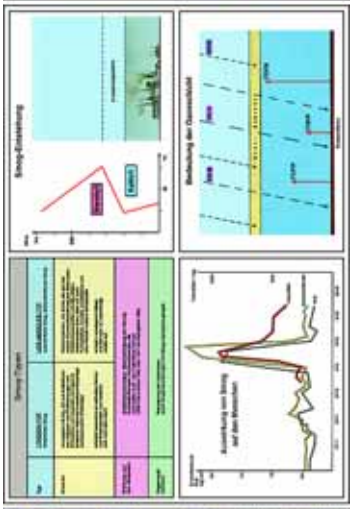
Atlas of 36 OHP Transparencies size 22 x 28 cm, comprising 74 color pictures, many with several component figures (drawings, diagrams, tables, schemes, landscape photographs and pictures, scenes, nature photographs, photomicrographs and macrographs, diagrammatic designs, test data and results). - Manual with comprehensive interpretation text, drawings and designs. - Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Dr. Joachim Mueller

Exemplifying dangers to the environment typical of Central Europe and methods of conservation practiced, this series of transparencies shall help the teacher to introduce universal valid and acute fundamentals of ecology and protection of the environment. Not only in Europe, but all over the world, mechanization of all areas of life and its consequences change the structure of nature, destroy our environment, and finally endanger the basis of our life. The newly curricula of all types of schools provide instruction of the subject complex „Environment - threats to environment - protection of environment". This series transparencies offers visual aids to improve this instruction. Typical examples show which processes are changing the natural structure of our environment and how the dangers arising from this can be counteracted.

I. The Landscape. - Old type of land developed and cultivated by humans in Central Europe (color photo) - Monoculture (color photo) - Culture steppe (color photo) - Woodland (color photo) - Healthy trees (color photo) - Sick forest (color photo) - Distinctive marks of damaged trees (color photo) - Stages of damaged tree - Natural course of a running water (color photo) - Straightened course of a running water (color photo) - Recultivation of a closed waste disposal site, general view (color photo) - Ditto. diagram of transection - Stag heap (color photo) - Incorporation of stag heap into the landscape (color photo) - Nature reserves (color photo) - Water reservation (color photo) - Drinking water dams (color photo) - Animals extinct or in danger of extinction in the 20th century, selection (table) - Heavily endangered animals, selection (table) - Plants extinct or in danger of extinction in the 20th century, selection (table) - Heavily endangered plants, selection (table)

II. Soil and Water. -Average number of small animals in the top layer of meadows, pastures, and forests (table) - Unsightly open dumping (color photo) - Controlled waste disposal site, general view of site (color photo) - Controlled waste disposal site, detail view (color photo) - Controlled waste disposal site (diagram of structure) - Compostable and non-compostable components of waste (graph) - Composting of waste (diagram) - Wild burning of waste in the open country (color photo) - Incinerating plant, function (diagram) - Introduction of sewage into a flowing water (color photo) - Change of oxygen content of a flowing water caused by introduction of sewage (graph) - Full biological sewage plant (diagram) - Primary, mechanical treatment in a sewage plant: grit, sand catch (color photo) - Primary, mechanical treatment in a sewage plant: primary sludge basin (color photo) - Mechanical treatment in a sewage plant: function (diagram) - Biological treatment in a sewage plant: activated sludge basin (color photo) - Ditto: activated sludge basin (color photo) - Ditto: function of activated sludge (diagram) - Ditto: organisms of the activated sludge (drawing) - Ditto: drip towers (color photo) - Ditto: drip towers, function (diagram) - Basin for secondary clarification (color photo) - Chemical clarification of sewage (graph) - Causes for salting of surface- and ground water (graph) - Dangerous concentrations of harmful substances in the water (table) - Chemical pest control (color photo) - Biological chain of pesticides (graph) - Biological pest control, pests and their natural enemies, selection - Biological pest control by plants (table) - Contamination of the environment with heavy metals (graph) - Accumulation of poisonous heavy metals in the food chain (graph)

III. The Air. -Structure of the terrestrial atmosphere - Importance of the ozone layer (diagram) - Exposure to natural and human-made radiation (table) - Half-life of radioactive isotopes (table) - Main storage organs for radioactive isotopes (table) - Various radiations (table) - Sensitivity to radiation (table) - Types of smog (table) - Development of smog (diagram) - Effect of smog on humans (graph) - Consumption of air and oxygen by humans and motor vehicles (table) - Dangerous substances in exhausts from combustion motors (table) - Fluctuation of CO-concentration in the air of a main thoroughfare (graph) - Effect of CO on humans (table) - Plants damaged by polluted air (color photo) - Buildings damaged by polluted air (color photo) - Lichens indicate air pollution (color photo) - Harmful substances in tobacco smoke and their effect on humans (table) - Mortality by lung cancer of cigarette-smokers and non-smokers (graph) - Power of various noises (graph) - Noise map of a big town (graph) - Effect of noise on humans (table)



No. 8233 E **Our Waters, Problems of Pollution, Methods of Protection and Recycling**

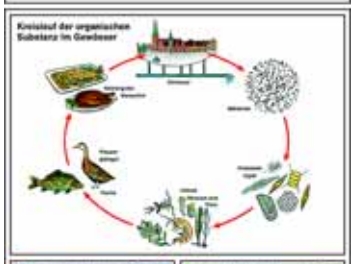
Atlas of 42 OHP Transparencies size 22 x 28 cm, comprising 118 color pictures, some with several component figures (drawings, diagrams, tables, schemes, landscape photographs and pictures, nature photographs, photomicrographs and macrographs, technical photographs, test data and results). - Manual with comprehensive interpretation text, drawings and designs. - Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Prof. Dr. Otto Klee

Themes: Due to progressing pollution, bathing in rivers, ponds, or lakes has become rather risky, drinking their water is dangerous. Technical requirements additionally changed the „water landscape". This atlas of transparencies at hand informs about the dangers to our waters, treats general questions of pollution and clarification of surface waters, shows the importance of analysis and control, describes the methods of clearing sewages, and discusses natural treatment of flowing waters as well as steps to redevelop lakes.

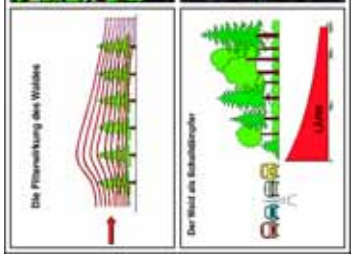
Running and standing waters in land developed and cultivated by humans. Dynamic hydrosphere, diagram - Natural water cycle, diagram - Natural dynamic of water: waterfall - Clear mountain creek. Natural purification and oxygenation - Big stones on the banks of mountain creek - Creeks and rivers coming from wooded areas ensure steady flow and deep temperature - Correcting of the course and covering the banks with concrete depopulates a river and lowers the neighboring ground water level - Cutting down trees and shrubs on river banks, a wrong step.

Natural structure of a running water. Subdivision of a running water into head-waters, creek, river, and brackish water region, diagram - Morphology of a running water with upper, middle, lower reaches including erosion and sedimentation







regions, diagram - Build-ups, weirs protect from high water and serve to raise the ground-water level - Line of water-level duration and profile of bank vegetation - Change of the transverse profile to shade the water and lower its temperature, diagram - Installation of small steps on the bed to raise the water-level - a) steps of local stone, - b) groynes and disturbing stones support the dynamic development of the water - Protected by trees and shrubs, the water gradually runs a natural course with undercut bank and slope. - Fish ladders improve biotope - Measures to protect flat and steep coasts, diagram - Active cliff - Marram grass (*Ammophila arenaria*) fixes shores and dunes

Water tests and survey. Test of water quality: determination of temperature - Test of water quality: electrometrical determination of oxygen content, conductivity, and pH - Taking water samples: measuring contents of oxygen, conductivity and pH with electric gauge - Analysis of water in the laboratory - Fully automatic testing of water in laboratory installed close to a river

Grades of waters. Grade I: pure water zone of a mountain creek (oligosaprobic zone) - Bioindicators (organisms) of grade I (oligosaprobic zone) - Grade II: moderately polluted surface water (beta-mesosaprobic zone) - Bioindicators (organisms) of grade II = Moderately polluted zone (beta-mesosaprobic zone) - Grade III: heavily, critically polluted surface water (alpha-mesosaprobic zone) - Bioindicators (organisms) of grade III = heavily polluted zone (alpha-mesosaprobic zone) - Grade IV: extremely polluted superficial water (polysaprobic zone) - Bioindicators (organisms) of grade IV = extremely polluted zone (polysaprobic zone) - Extremely polluted water (grade IV, polysaprobic zone) of an oasis - Water grades between source and mouth of a river, graph - Subdivision of a running water according to degree of organic pollution, grades of saproby, saproby index, identifying colors, and oxygen minima - Chemical criteria for grades of biological pollution, table - Classification of running waters according to bacteriological findings

Pollution of waters by introduction of sewage. Cycle of organic substances in the water, diagram - Mouth of a sewage drain on the Mediterranean shore - Same place of shore with bathing persons. Extreme danger of infection ((cholera, typhoid, paratyphoid, enteritis) - Introduction of unprocessed sewage of a town with 100 000 inhabitants into a river - Introduction of dairy sewage into a standing water - Introduction of dyes into a brook - Creek, totally destroyed by hot effluents containing stains - Creek, extremely polluted with domestic sewage and waste - Effluents of an iron factory color the water and the bed red-brown - Destruction of natural biocoenosis by deposition of non-ferrous metal sludge - Use of wood for poison dump killed trees by toxic quantities of chromate - Introduction of liquid manure containing proteins causes formation of scum - Highly polluted effluents drawing out of cellulose plant - Ligninsulphonic acid contained in cellulose effluents colors creek dark - Consequence of introducing cellulose effluents: bacteria (*Sphaerotilus natans*) and fungi (*Leptomites lacteus*) produce great quantities of mucilage - Oil floating on water - Physical, chemical, and biological processes decompose oil floating on water, diagram

Eutrophication of lakes and running water. Eutrophication of a river by introduction of phosphates and nitrates - Eutrophication (lack of oxygen) and pollution cause death of fish - Completely eutrophicated lake due to introduction of domestic sewage and liquid manure - Odors caused by microorganisms forming alga bloom, diagram - Mass reproduction of algae I: *Euglena viridis* - Mass reproduction of algae II: *Asterionella formosa* - Production of methane and hydrogen sulphide in the marginal zone of an eutrophicated lake - Mass reproduction of jellyfish in the sea indicates unbalanced biological equilibrium - Jellyfish, photograph

Redevelopment and restoration of lakes. Unspoiled oligotrophic mountain lake - Polysaprobic lake with extreme alga growth - Phosphorus cycle in a lake, diagram - The lake, a phosphate trap: cause of accelerated refertilization - trophication spiral, diagram - Reoligotrophication of lakes due to external and internal treatment, reduction of nutrient spiral to normal nutrient cycle, diagram - Reoligotrophication I: installation of deep water drain for various zones - Installation of deep water drain - Percentage biomass of the various alga groups after deep water drainage - Reoligotrophication II: addition of oxygen to deep water (hypolimnion), diagram - Reoligotrophication III: injection of nitrates for biochemical oxidation of reduced sediments - Manipulation of food chain: purposeful fishing of zooplankton-eating fish reduces algae-eating zooplankton - Manipulation of food chain: reduction of zooplankton-eating fish increases number of predaceous ones, diagram - Fishing manipulates food chain

Purification and protection of waters, methods. Removal of organic substances by mechanical and biological processes in sewage plants and recipients, diagram - Structure and function of a sewage plant - Retention of coarse particles by the grit - *1st Cleaning step* - Size of particles in sewage, diagram - Fluctuations of urban sewage quantity during 24 hours, diagram, - Long sand catch with gauge for water quantity - Basin for primary sedimentation with clearing bridge - *2nd Cleaning step* - Drip tower filled with synthetic elements - Section through a drip tower, diagram - Decrease of biochemical oxygen demand during 5 days indicates biological clarification - Biological clarification of sewage with diving cylinders. - View on a group of drip towers filled with synthetic elements to clear effluents from a paper mill - Drip tower with water circulation and filled with synthetic elements - General view of a modern full biological activated sludge plant - Turbines swirl and aerate - Aeration of activated sludge by bubbles - Aeration of activated sludge by tubes - Organisms in the activated sludge basin, diagram - Organisms in activated sludge I. Vorticella microstoma - Organisms in activated sludge II. Rotaria rotatoria - Clarification of sewage with pure oxygen, diagram - Supply with pure oxygen in closed system by surface aeration (Detroit, USA) - Biocoenosis of activated sludge treated with pure oxygen I: mass reproduction of Carchesium polypinum - Ditto. II: Vorticella convallaria - Basin for secondary sludge in big oxygen treatment sewage plant (Detroit, USA) - Flow over of the purified water - Function test by determination of sludge volume, sludge weight and sludge index, diagram - *3rd Cleaning step* - Phosphate elimination by chemical precipitation in sewage plant - Denitrification eliminates nitrogen - *Anaerobic sludge fermentation* - Fermentation (digestion) of sludge in fermentation towers - Fermentation (digestion) in separate towers, diagram - Efficiency of various clarification steps in a sewage plant

Acidification of surface waters - Biocides in waters. Effects of sour rain on aquatic ecosystems, diagram - Lake in Sweden with high acidification - Toxic pH-limit in acid and basic range, diagram - Summary of various contacts of biocides with water, diagram - Accumulation of biocides in the food chain of various aquatic organisms - Direct entry of biocide sprays into the water

Drinking water - Summary. Future demand of water in Sweden (industrial, domestic), diagram - Introduction of surface water into a drinking water plant - Precipitation of unwelcome substances - Filtration with sand - Inconsiderate exploitation of water - Good use and processing of water

No. 8234 E **The Forest - Essential to Life**

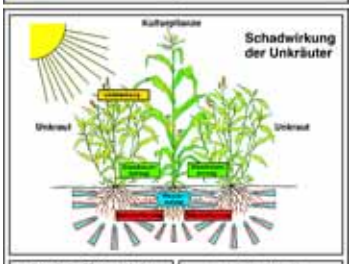
Atlas of 30 OHP Transparencies size 22 x 28 cm, comprising 81 color pictures, some with several component figures (drawings, diagrams, tables, designs and photographs of plants and animals, photomicro- and macrographs, life cycles, scenes, landscape photographs). - Manual with comprehensive interpretation text, drawings and designs. - Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file. - Compilation and text: Hartmut Dietle

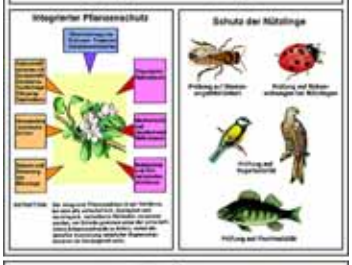
Themes: This series of overhead projector transparencies presents plants and animals typical of the various forest types and their margins. The text introduces into the biology of species, informs about various interrelations between plants, animals, and humans in the ecosystem „forest“, and explains the vital functions of the forest. Instructive graphs are added.

Forest, not only in Central Europe, is threatened by excessive lumbering, demand of agricultural areas, construction of houses, roads, ski-lifts etc., as well as by human-made environmental pollution. As forest means life, it is necessary and vital to give information and knowledge about forest and its problems. The forest as an ecological system. Plants and animals of the wood. The multifarious functions of the forest.

Trees of the Forest. - Mixed deciduous forest - Spruce (Picea excelsa) monoculture - Silver fir (Abies alba) - Spruce (Picea excelsa) - Pine (Pinus silvestris) - Douglas fir (Pseudotsuga taxifolia) - European larch (Larix decidua) - Common beech (Fagus silvatica) - Stone oak (Quercus sessilis or petraea) - Winter lime (Tilia ulmifolia) - Black alder (Alnus

glutinosa) - Ash (Fraxinus excelsior) - Mountain ash or rowan tree (Sorbus aucuparia) - White or canoe birch (Betula pendula) - European mountain maple (Acer platanoides)
The layers of the forest. - Moss cushion (Polytrichum) - Moss (Mnium) with capsules - Horsetail (Equisetum sylvaticum) - Horsetail, spores with hapters - Shield fern (Aspidium), leaflets with sori - Fern gametophyte (Prothallium) with antheridia and archegonia - Mushroom (Xerocomus badius) - Mushroom: basidia and basidiospores of ink-cap (Coprinus) - Flowering plants: anemones (Anemone) and woodruff (Asperula) - Wood sorrel (Oxalis): soil indicator - Mezereum (Daphne): soil indicator - Arum (Arum maculatum) - Blueberry (Vaccinium myrtillus) - Shrub layer: blackthorn (Prunus spinosa), whitethorn (Crataegus) - Shrub layer: hazel (Corylus avellana), wild rose (Rosa) - Step-shaped forest margin - Layers of the forest, graph - Flat and deep rooting plants, graph - Ladies tresses (Neottia), root with endotrophic mycorrhiza, t.s.
The forest during the seasons. - Opening bud - Beech seedling - Maple seedling (Acer platanoides) - Seedling of silver fir (Abies alba) and pine (Pinus silvestris) - Male flower of pine - Female flowers of pine - Cones of silver fir and spruce, comparison - Natural regeneration of forest - Summer aspect of forest - Sun- and shade-leaf of beech, t.s. - Annual rings, t.s. of oak stem - Coloring of leaves in autumn - Dispersal of fruits and seeds, graph - Forest in winter: protection of animals
Animals of the Forest. - Life on and in the forest floor - Red wood ant (Formica rufa) - Wood snipe (Scolopax rusticola) - European fir titmouse (Parus ater) - Black woodpecker (Dryocopus martius) - Crossbill (Loxia curvirostra) - Pellets of an owl (Strix aluco) - Spruce engraver- or bark-beetle (Cryphalus picea) imago and larva (pests) - Engraving pattern of spruce engraver-beetle - Gypsi moth (Lymantria monacha), imago (pest) - Roebuck and roe (Capreolus) - Fraying roebuck - Silver fir damaged by roes - Red fox (Vulpes vulpes) - European squirrel (Sciurus vulgaris) - Tree marten (Martes martes)
Functions and endangering of the forest. - Erosion caused by deforestation - Fireweed (Epilobium angustifolium) growing on clearings - Forest holds the soil on steep slopes - Forest stores water: wood brook - Filter effect of forest, graph - Forest and residential areas, exchange of air, graph - Forests are sound absorbents, graph - Forest improves climate - Forest, a recovering resort - Wild waste disposal at forest margin - Willful destruction of tree bark - Offence against forest law: improper felling of birches - Destruction of forest by ski-lifts - Effects of environmental pollution: yellowed needles - Effects of sour rain: dying spruces - Dying forest („waldsterben") due to air pollution - Lichens on trees are bioindicators for air pollution

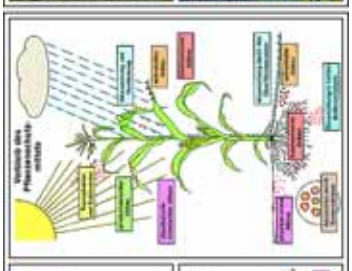


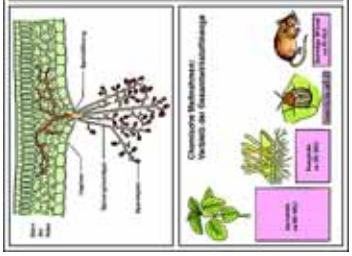


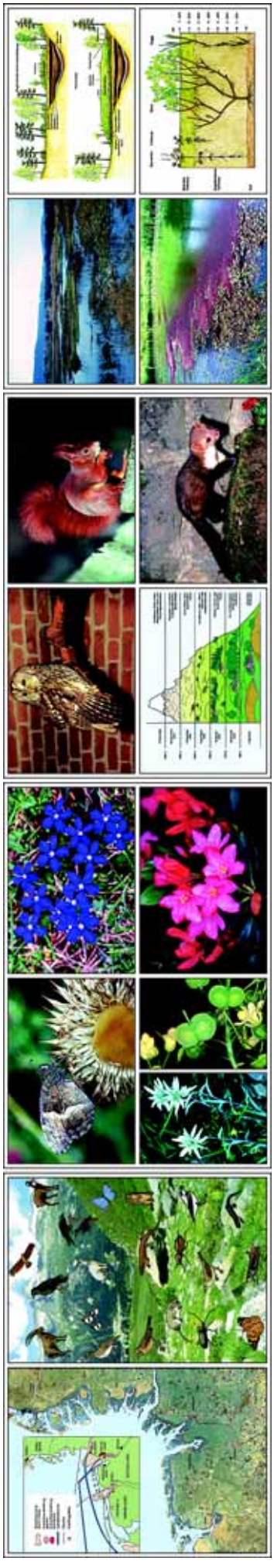
No. 8235 E **Protecting Crops from Damage and Diseases**

Atlas of 30 OHP Transparencies size 22 x 28 cm, comprising 101 color pictures, some with several component figures (drawings, diagrams, tables, designs and photographs of plants and animals, photomicro- and macrographs, life cycles, scenes, nature photographs, landscape photographs). - Manual with comprehensive interpretation text, drawings and designs. -Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Hartmut Dietle and Dr. Anton Mittnacht

Themes: Plants and vegetable products (stocks, store) have to be protected from pests and diseases to avoid economically important parts of plants to be quantitatively and qualitatively damaged. Preventive steps (plant hygiene) and direct protective measures (physical, biochemical, biological, and chemical methods) are used by farmers, gardeners, and hobby gardeners in the defense of harmful plants and animals.
Economically important diseases of plants. - Powdery mildew of grain *(Erysiphe graminis)*, ascomycete - Breaking stem of grain *(Pseudocercosporella herpotrichoides)*, fungus imperfectus - Brown spelt of grain *(Septoria nodorum)*, fungus imperfectus - Bunt of wheat *(Tilletia tritici)*, basidiomycete - Ergot on rye *(Claviceps purpurea)*, ascomycete - Reduction disease of potato *(*various viruses) - Rottenness of potato *(Phytophthora infestans)* phycomycete - False mildew on vegetables *(Peronospora sp.)*, phycomycetes - Mildew of cucumber *(Erysiphe cichoriacearum)*, ascomycete - Bean rust *(Uromyces appendiculatus)*, basidiomycete - Scab on fruit *(Venturia inaequalis* resp. *pirina)*, ascomycete - Gray mold on fruit *(Botrytis cinerea)*, fungus imperfectus - Fungus, a heterotrophic plant, graph - Polynucleate sprout of *Botrytis* spore allows gene combination, fungus imperfectus
Photomicrographs of fungi causing plant diseases. - Potato wart (*Synchytrium endobioticum*), infects tubers, t.s. - False mildew of grapes (*Plasmopara viticola*), leaf with conidiophores, t.s. - Clubroot of cabbage (*Plasmodiophora brassicae*) infected cells with young plasmodia, t.s. - Clubroot of cabbage (*Plasmodiophora brassicae*), host tissue with spores, t.s. - False mildew on cruciferae (*Peronospora parasitica*), t.s. - White smut (*Albugo candida*), mycelium and conidia, t.s. - Head mold (*Mucor mucedo*), zygomycete, sporangia with spores - Mold (*Rhizopus*), zygomycete, formation of zygospore - Disease of plums (*Taphrina pruni*), with asci and ascospores, t.s. - Scab on pears (*Venturia pirina*), conidia, t.s. - Ergot (*Claviceps purpurea*), perithecial head with asci, l.s. - Ergot (*Claviceps purpurea*), sclerotium formed of hyphae, l.s. - *Pilobolus*, sporophorous hypha with sporangium - Mildew on apple (*Podosphaera leucotricha*), conidiophores on leaf - *Penicillium*, mycelium and brush-shaped conidiophores - *Aspergillus*, mycelium and conidiophores - *Sclerotina fructigena*, conidia on surface of fruit - Gray mold on onions (*Botrytis allii*), t.s of leaf. - Tar spot on maple leave (*Rhytisma acerinum*), t.s. of sclerotium - Yeast (*Saccharomyces*), spore formation - Corn smut (*Ustilago maydis*), spores in tissue - Black stem rust of wheat (*Puccinia graminis*), urediniospores (yellow rust), on leaf of wheat t.s. - Black stem rust of wheat (*Puccinia graminis*), teliospores (black rust) on leaf of wheat, t.s. - Black stem rust of wheat (*Puccinia graminis*), aecidia on leaf of barberry.
Vegetable pests: weeds. - Table of weeds - Some common weeds - Four grasses competing with cultivated plants - Chalky soil loving plant: Charlock *(Sinapis arvensis)* - Acid soil loving plant: Wild radish *(Raphanus raphanistrum)* - Nitrogen loving plant: Common chickweed *(Stellaria media)* - Indicator of wetness: Horsetail *(Equisetum arvense)* - Weed in meadowland: Common dandelion *(Taraxacum officinale)* - Weed germinating in spring *(Avena fatua)* - Weeds germinating in summer: many seeded goosefoot or pigweed *(Chenopodium polyspermum)* - Weed germinating in autumn: chamomile *(Matricaria chamomilla)* - Weeds damage by deprivation of light, water, nutrients, space; graph - Erosion
Economically important animal pests. - Piercing-sucking mouth parts of a bug, photomicrograph - Red spiders, Tetranychidae, on leaf of fruit tree - Codlin moth *(Laspeyresia = Carpocapsa pomonella)* - Apple weevil *(Anthonomus pomorum)*, a snout beetle, Curculionidae - White fly *(Trialeurodes)*, Aleyrodidae - Scale insect *(Coccidae)* on salad - Grain aphid *(Sitobium granarium)*, Aphidae - Biting-chewing mouth parts of cockroach *(Periplaneta)* - Radish-root maggot *(Phorbia floralis)*, Anthonomyiidae - Beet leaf-miner *(Pegomyia betae)*, Anthonomyiidae - Rape beetle *(Meligethes aeneus)*, Nitidulidae - Flea-beetle *(Phyllotreta vittata)*, Chrysomelidae - European corn-borer *(Ostrinia = Pyrausta nubilalis)*, Pyraustinae - Frit-fly *(Oscinella frit)*, Chloropidae - Caterpillar of *Pieris brassicae*, Pieridae - Colorado potato beetle *(Leptinotarsa decemlineata)* Chrysomelidae - Radula of the slug *Deroceras*, Limacidae - Common garden slug *(Deroceras agreste)*, Limacidae - Field mouse *(Microtus arvalis)*, Muridae - Vole *(Arvicola terrestris)*, Muridae - Sparrow, pheasant - Muskrat *(Ondrata cibethica)*, Muridae
Measures and methods of plant protection. - Cultivating the soil (plowing, harrowing), protective measure - Preparation of the seed bed, protective measure - Selection of type, protective measure - Disinfection, treatment of seed, protective measures - Rotation of crops: sugar beets, winter wheat, summer grain, corn, field forage - Physical method of weeding - Mechanical method of weeding - Chemical methods of weeding - Steaming of the soil - Chemical measures: Distribution of the total quantity of active substance - Legal requirements: Law of plant protection; procedure of authorization - Legal requirements: Permissible consumer level - Importance of plant protection for business management and work - What happens with pesticides in nature? - Legal requirements: Protection of environment and bees -







Research on metabolites in laboratory, gas chromatography - Biological measures: Ichneumon fly in greenhouse - Biological measures: Predative mites in greenhouse - Biological measures: Ladybird beetles against aphids - Biotechnical methods: Frightening by bang
Integrated protection of plants. - What is integrated protection of plants? - Integrated protection of plants in apple plantations - Economic damage limit - Light trap - Knocking method - Pheromone trap - Electronic scab warning instrument - Conventional method: Mills' table - Protection of useful animals

No. 8238 E **Ecosystems**

NEW!

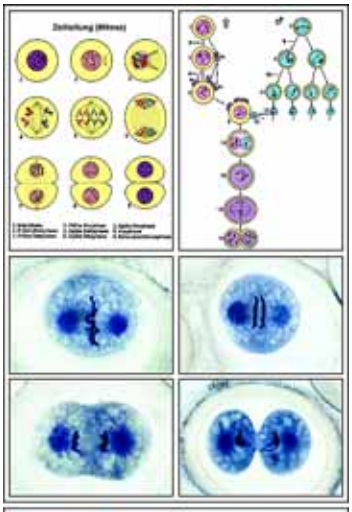
Atlas of 42 OHP Transparencies size 22 x 28 cm, comprising over 210 color pictures, mostly with several component figures (drawings, diagrams, tables, schemes, landscape photographs and pictures, nature photographs, photomicrographs and -macrographs, scenes, diagrammatic designs, test data and results). The series is designated for use in all types of schools, secondary schools, colleges and adult education. - Manual with comprehensive interpretation text - Sketch and work-sheets with semidiagrammatic designs and texts - Compilation: Dr. Rainer Ertel and Dr. Bernd Zucht

Themes: Natural biological communities become rarer and rarer. Their abundance of species, the problems of their preservation as well as their importance for the whole ecological structure, even for inconspicuous microbiotopes, are treated in these series on hand and documented by characteristic examples. Almost all of the details are photographed in their natural site to secure the greatest possible authenticity. The included texts give detail information on the biology of the species as well as on the development and ecology of the biotope.
Ecosystem Pond. Plant Society. - Pond on working days - Pond on weekends - Zone of warping (picture) - Zone of warping (diagram) - Plant living submerged: Chara sp. - Plant with submersed leaves: water buttercup (Ranunculus aquatilis) - Plant with submersed leaves: water milfoil (Myriophyllum sp.) - Plant with submersed leaves: water pest (Elodea canadensis) - Plant with floating leaves: yellow and white pond lily (Nuphar sp.) - Plant with floating leaves: water aloe (Stratiotes aloides) - Reed bed: reed (Phragmites communis) - Reed bed: cat-tail (Typha latifolia) - Reed bed: bur-reed (Sparganium erectum) - Shallow water: water plantain (Alisma plantago-aquatica) and duck weed (Lemna sp.) - Shallow water: arrow head (Sagittaria sagittifolia) - Shallow water: iris (Iris sibirica) - Shallow water: marsh trefoil (Menyanthes trifoliata) - Shallow water: horsetail (Equisetum fluviatile) - Shallow water: mare's tail (Hippuris vulgaris) - Sedge belt: swamp-rush (Heleocharis sp.) - Forest peat - Village pond - Artificial scenery with ponds - School pond
Ecosystem Pond. Animal Society. - Zone of warping of a pond with animals, schematic figure - Fresh-water jellyfish, Craspedacusta sp. - Moss animal (Bryozoans) - Fresh water Snail, Planorbis orbicularis - Fresh water Snail, Puccinea putris - Fresh water Mussel, Unio sp. - Reed Spider, Aranea cornuta - Malaria Mosquito, Anopheles spec. - Alder Fly (Drone Fly), Sialis lutaris - Damselfly, Coenagrion - Dragonfly, Aeschna cyanea - Water Strider (Skipper), Gerris sp. - Carp, Cyprinus carpio - Pike, Esox lucius - Frog, Rana esculenta - Frog spawn, Rana esculenta - Ring Snake (Common Grass Snake), Natrix natrix - Great Reed Warbler, Acrocephalus arundinaceus - Little Bittern, Ixobrychus minutus - Coot, Fulica atra - Gadwall, Anas strepera - Great Crested Grebe, Podiceps cristatus - Muskrat, Ondatra zibethica - Water Shrew, Neomys fodiens
Ecosystem Puddle. - Melt-water puddle in the mountains - Frogs in snow-puddle - Red colored puddle, caused by flagellates - Euglena sanguinea, unicellular red flagellate - Lowland puddle - Branchipus - Water flea, Daphnia and Ephippium with winter eggs - Cartwheel trace with toads, Bombina - Fire-bellied Toad, Bombina variegata - Wood puddle - Molge in wood puddle, Triturus alpestris - Small puddle in root region of fallen tree - Water Striders in a puddle, Gerris sp.
Ecosystem Moor. - Formation of an upland moor I: zones of warping of ponds (diagram) - Formation of an upland moor II: low moor and forest peat (diagram) - Formation of an upland moor III: raised bog (diagram) - Bog with wool grass, Eriophorum - Forest peat - Upland moor (Raised bog) - Marginal slope of an upland moor - Peat Moss, Sphagnum, habitus - Leaf of peat moss, Sphagnum, with water-storage cells - Dying wood at the edge of a moor - Survival of plants in moors: Protection against suffocation by peat moss Sphagnum (diagram) - Hummocks and hollows - Fenberry, Vaccinium oxycoccus - Blueberry, Vaccinium myrtillus, flowers and fruits - Cranberry, Vaccinium vitis-idaea - Heather, Erica. Ling, Calluna - Black Crowberry, Empetrum nigrum - Star Moos, Mnium - Sedge Grass, Carex pauciflora - Sundew, Drosera - Butterwort, Pinguicula - White Birch, Betula pubescens - Moor pine, Pinus montana - Peat cut - Backswimmers, Notonecta glauca - Moor Frog, Rana arvalis - Common Viper, Vipera berus - Black Crouse, Lyrurus tetrix
Ecosystem Forest. - Schematic figure of the sections of the wood - Moss, Polytrichum (soil protection) - Club moss, Lycopodium (soil protection) - Fern, Aspidium, (soil protection) - Blueberry, Vaccinium myrtillus, (soil protection) - Privet, Ligustrum vulgare - Whitethorn, Crataegus oxyacantha - Holly, Ilex sp. - Spruce, Picea sp. - Beech, Fagus silvatica - Red Ant, Formica rufa - Shepherd Spider, Opilio sp. - Crab Spider, Thomisus sp. - Camberwell beauty (butterfly), Nymphalis antiopa - Common Yellow Underwing (butterfly), Noctua pronuba - Long Horned Beetle, Cerambyx cerdo - Stag Beetle, Lucanus cervus - Scolytid Beetle, Ips typographus, gallery design - Grass Frog, Rana temporaria - Toad, Bufo bufo - Common Lizard, Lacerta vivipara - Heron, Ardea cinerea - Goosander, Mergus merganser, breeding place - Goshawk, Accipiter gentilis - Capercaillie, Tetrao urogallus - European Woodcock, Scolopax rusticola - Tengmalm's Owl, Aegolius funereus - Black Woodpecker, Dryocopus martius - Crossbill, Loxia curvirostra - Common Shrew, Sorex araneus - Bank Vole, Clethrionomys glareolus - Yellow-necked Field Mouse, Apodemus flavicollis - Red Squirrel, Sciurus vulgaris - Beach Marten, Martes foina - Red Deer, Cervus elaphus
Ecosystem Alpine Meadows. Plants. - Alpine meadow zone, schematic figure - Alpine meadow zone, landscape - Flora destroyed by winter sports - Crustose lichen, Rhizocarpon geographicum - Foliose lichen, Haematomma sp. - Alpine meadow grass, Poa alpina - Grassland, Nardus stricta - Fern, Botrychium lunaria - Alpine birch, Betula nana - Gentian, Gentiana verna - Gentian, Gentiana punctata - Alpine Rose, Rhododendron ferrugineum - Alpine Soldanel, Soldanella sp. - Biscutella laevigata, an Alpine crucifere - Rampion, Phyteuma sp. – Pasque flower, Anemona pulsatilla - Mountain Avens, Dryas octopetala - Lion's Foot, (edelweiss), Leontopodium alpinum - Lilium martagon, an alpine lily - Nigritella nigra - Orchis globosus, an alpine orchid - Dwarf Pine, Pinus mugo
Ecosystem Alpine Meadows. Animals. - Ecological niches for the animals of the high mountain region - Alpine Blue Butterfly, Lycaena sp. - Painted Lady, Vanessa cardui - Gaurotes virginea - Alpine Carabid Beetle, Carabus sp. - Siberian Grasshopper, Gomphocerus sibiricus - European Black Salamander, Salamandra atra - Mountain Lizard, Lacerta vivipara - Golden Eagle, Aquila chrysaetos - Alpine Ptarmigan, Lagopus mutus - Water Pipit, Anthus spinoletta - Alpine Accentor, Prunella collaris - Wheatear, Oenanthe oenanthe - Snow Finch, Montifringilla nivalis - Alpine Chough, Pyrrhocorax graculus - Raven, Corvus corax - Snow Vole, Microtus nivalis - Blue Hare, Lepus timidus - Marmot, Marmota marmota - Ibex (Steinbock), Capra ibex
Ecosystem Mud-flats (Shallows). - Shallow coast, schematic figure - Shallow coast, photograph - Shoal sand - Shoal mud - Animals, living in the shoal sand and mud (schematic figure) - Lugworm, Arenicola marina - Sea Annelid, Nereis diversicolor - Annelid, Lanice conchilega - Annelid, Heteromastus filiformis - Sea Mussel, Mytilus edulis - Mussels, Scrobicularia plana (Hen) and Solenidae sp. - Soft-shelled Clam, Mya arenaria - Common Periwinkle, Littorina littorea - Shallow Snail, Hydrobia ulvae - Common Cockle, Cardium edule - Shore Crab, Carcinus maenas - Shrimp, Crangon crangon - Shrimp fishing-boat - Plaice, Pleuronectes platessa - Marine Polychaete, Nereis diversicolor - Common Shelduck, Tadorna tadorna - Ringed Plover, Charadrius hiaticula - Dunlin, Calidris alpina - Oystercatcher, Haematopus ostralegus - Avocet, Recurvirostra avosetta - Curlew Sandpiper, Calidris ferruginea - Seal, Phoca vitulina - Baby-seal, Phoca vitulina, juv.

No. 8250 E **Environmental Damages** (Short Version TH)

Atlas of 18 Overhead-Transparencies size 22 x 28 cm, comprising over 80 color pictures (photomicro- and macrographs, nature photographs, human photographs, electron micrographs, life cycles, drawings, diagrams, tables, scenes, test data and results). - With comprehensive interpretation text. - In strong plastic file with ring-mechanism. Compilation and text: Dr. Karl-Heinrich Meyer B.S. and Johannes Lieder.

The Wood: - Pine (Pinus), healthy leaves, t.s. - Pine (Pinus) leaves damaged by acid rain, t.s. - Fir (Abies), healthy leaves, t.s. - Fir (Abies), stem tip damaged t.s. - Beech (Fagus), healthy leaves t.s. - Beech (Fagus), t.s. of leaves with destroyed epidermis and chloroplasts - Rhytisma acerinum, tar spot of maples, consequence of single-crop farming - Early leaf fall, caused by thawing salt - Healthy lichen, indicator of clean air - Damaged lichen, caused by air pollution - Healthy wood of beech, t.s. - Wood destroyed by fungus - Polyporus, wood rot fungus, fruiting body t.s. - Root nodules of Alnus, with symbiotic bacteria - Spruce beetle (Cryphalus picea), larva t.s. - Wood with normal annual rings, t.s. - Wood with anomalous narrow annual rings caused by drought, t.s. - Bark with larval galleries of spruce beetle, t.s. - Pineapple-like gall on spruce caused by lice, t.s. - Gall nut on oak caused insects, t.s.
Water Pollution: - Intestinal bacteria (Escherichia coli) from putrid water - Putrefactive bacteria (Spirillum) from sludge poor in oxygen - Putrefactive bacteria (Sphaerotilus) bacteria, forming long chains with sheaths - Sludge bacteria (Methanobacterium) causing sewer gas - Sulphur bacteria (Thiocystis) - Wasserbluthe (Microcystis), blue-green alga "blooming" in stagnant water - Anabaena, blue green algae, in eutrophic water - Spirogyra, filamentous green alga in nutrient-rich water - Spirulina, corkscrew-shaped algae occurring in bitter seas - Chlamydomonas, one-celled green alga in eutrophic water - Cladophora, green alga with branching filaments from moderately polluted water - Diatoms, mixed algae from scarcely polluted water - Euglena, common green flagellates occurring in stagnant eutrophic water - Ciliates, different species from nutrient-rich water - Rotifers (Rotatoria), small animals from putrid water - Tubifex, fresh water oligochaete, living in the sludge - Carchesium, bell-shaped stalked ciliate from moderately polluted water - Water mold (Saprolegnia), harmful to plants and animals - Skin of fish injured by chemicals, t.s. - Skin ulcer of amphibian, t.s.
Life in the soil: - Acidophile soil bacteria, solution of heavy metals - Nitrite bacteria, formatting harmful nitrogenous substances - Root of beech with ectotrophic mycorrhiza, t.s. - Root of birch with partly endotrophic mycorrhiza, t.s. - Root of lupin with symbiotic nitrogen fixing bacteria - Netted venation, portion of rotted deciduous leaf - Charlock (Sinapis), t.s. of stem. Green manure plant - Soil bacteria (Bacillus megatherium), smear - Hyphae of root fungi, t.s. - Lichen, indicator of clean air - Mushroom (Xerocomus), mycelium - Root of willow (Salix), planting protecting against erosion - Earthworm (Lumbricus) t.s., causing soil improvement - Springtails (Collembola), w.m. - Mite from forest soil, w.m. - Constituents of humus soil - Constituents of peaty soil.
Air Pollution and Allergens: - Pollen grains of different kinds of grass - Pollen grains of different deciduous trees - Pollen grains of different conifers - Mixed house dust - Dust mite from a living room - Spores of different fungi - Wood powder - Asbestos powder (cancerogenous) - Talcum powder - Crystals of washing-powder - Polyamide fibers - Nylon fibers - Mucous membrane of human nose, t.s. - Healthy human lung, t.s. - Human lung injured with dust particles, t.s.



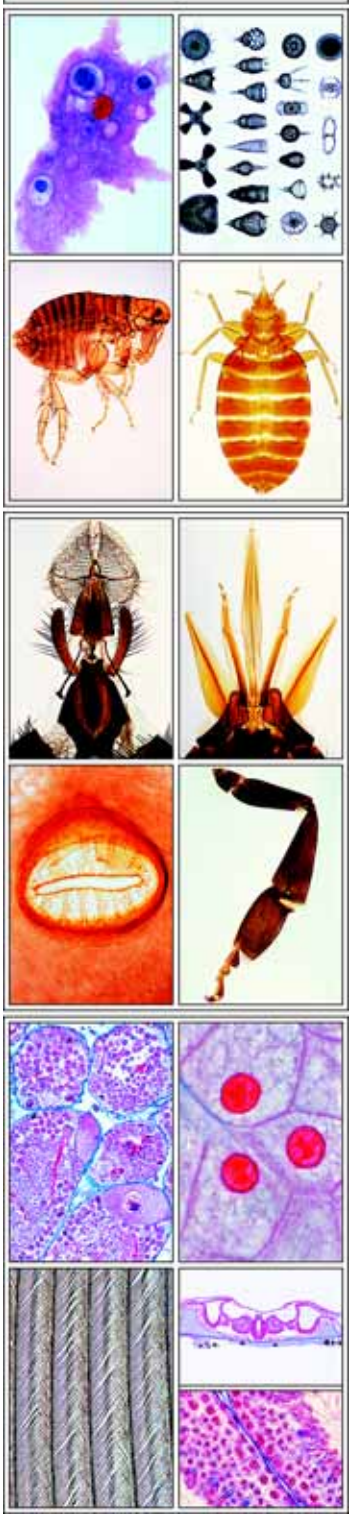
NEW!

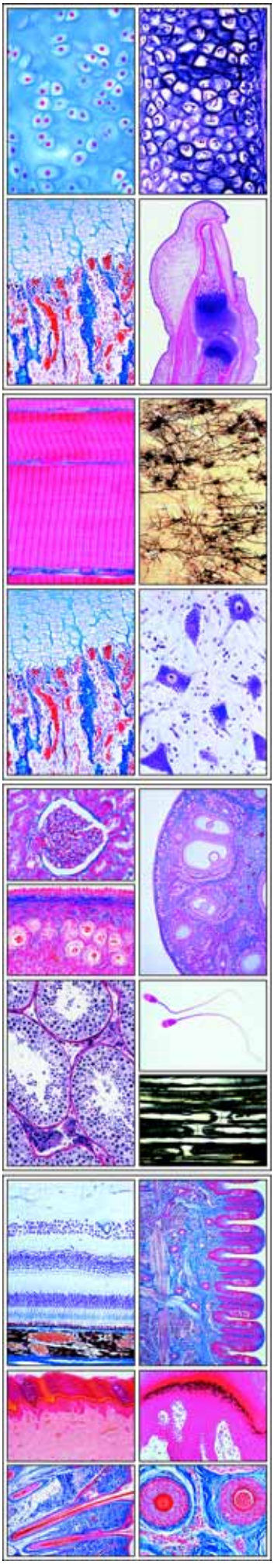
No. 8236 E **Atlas of Color Photomicrographs to Accompany the Multimedia-Program for Biology ABCD** ***7th Edition!***

*Atlas of **45** OHP Transparencies size 22 x 28 cm, comprising **over 252** color photomicrographs according to the 175 Prepared Microscope Slides of the **MULTIMEDIA-SYSTEM FOR BIOLOGY A, B, C and D** (see pages 4 - 10). Detailed explanatory textbook. Plus new sketch and work-sheets with semidiagrammatic designs and texts.*

This atlas of OHP transparencies is intended to present a clear-cut outline of all fields of biology and cover all the organisms studied in schools. Each of the specimens has been carefully chosen on the basis of its instructional value.

***Zoology.* - Amoeba proteus**, showing nucleus and pseudopodia - **Radiolaria**, mixed species - **Foraminifera**, mixed species - **Euglena**, flagellate with eyespot - **Trypanosoma gambiense**, sleeping disease, blood smear - **Plasmodium berghei**, malaria parasite, blood smear - **Paramecium**, nuclei stained - **Sycon**, marine sponge t.s. - **Hydra**, w.m. extended specimen - **Hydra**, t.s. of body - **Obelia hydroid**, w.m. of colony - **Planaria**, typical t.s. - **Dicrocoelium lanceolatum**, sheep liver fluke w.m. - **Distomum hepaticum (Fasciola),** beef liver fluke w.m. - **Taenia saginata**, tapeworm, proglottids t.s. - **Taenia**, tapeworm, w.m. of mature proglottids - **Trichinella spiralis**, l.s. of skeletal muscle showing encysted larvae - **Ascaris**, roundworm, t.s. of female in region of gonads - **Lumbricus**, earthworm, typical t.s. back of clitellum - **Daphnia and Cyclops**, small crustaceans - **Araneus**, spider, leg with comb w.m. - **Araneus**, spinneret w.m. - **Dermanyssus gallinae**, chicken mite, w.m. - **Musca domestica**, house fly, head and mouth parts - **Musca domestica**, leg with clinging pads - **Apis mellifica**, honey bee, mouth parts of worker - **Apis mellifica**, honey bee, wings - **Apis mellifica**, hind leg of worker with pollen basket - **Apis mellifica**, sting and poison sac - **Apis mellifica**, head with compound eyes and brain t.s. - **Apis mellifica**, abdomen of worker t.s. with intestine and nephridia - **Periplaneta**, cockroach, chewing mouth parts - **Culex pipiens**, mosquito, head and piercing-sucking mouth parts of female - **Culex pipiens**, mosquito, reduced mouth parts of male - **Trachea** from insect - **Spiracle** from insect - **Pieris**, butterfly, portion of wing with scales - **Ctenocephalus canis**, dog flea, w.m. - **Cimex lectularius**, bed bug, w.m. - **Helix pomatia**, snail, hermaphrodite gland (ovotestis), t.s. with developing ova and spermatozoa - **Mya arenaria**, clam, gill sec. with ciliated epithelium - **Bird feathers**, wing or vane and down feathers - **Asterias rubens**, starfish, arm (ray) t.s. showing tube feet, digestive gland, ampullae - **Branchiostoma lanceolatum** (Amphioxus), t.s. of body with gills, liver, and gonads
***Histology of Man and Mammals.* - Squamous epithelium**, isolated cells from human mouth - **Ciliated epithelium**, in t.s. of fallopian tube - **Fibrous connective tissue** of mammal - **Tendon** of cow, l.s. white fibrous tissue - **Adipose tissue**, stained for fat - **Hyaline cartilage** t.s. - **Compact bone**, t.s. cells, lamellae, and canaliculi - **Striated muscle**, l.s. showing nuclei and striations - **Heart muscle**, human, l.s. branched fibers with intercalated discs - **Smooth (involuntary) muscle** l.s. and t.s. - **Lung** of cat, t.s. showing alveoli - **Human blood smear**, red and white corpuscles - **Frog blood smear**, nucleated red corpuscles - **Artery and vein** of mammal, t.s. - **Lymph gland** of pig, t.s. showing lymphoid tissue - **Thyroid gland** of pig, sec. showing colloid - **Adrenal gland** of cat, t.s. through cortex and medulla - **Esophagus** of cat, t.s. - **Stomach** of cat, t.s. fundic region - **Small intestine** of cat, t.s. - **Large intestine (colon)**, t.s. stained for mucous cells - **Liver** of pig, t.s. - **Pancreas** of pig, sec. with islets of Langerhans - **Kidney** of cat, t.s. through cortex and medulla - **Ovary** of cat, t.s. with primary, secondary, and Graafian follicles - **Testis** of mouse, t.s. showing spermatogenesis - **Sperm** of bull, smear - **Medullated nerve fibers**, osmic acid fixed showing Ranvier's nodes - **Motor nerve cells**, smear from spinal cord of cow - **Spinal cord** of cat, t.s. white and grey matter - **Cerebrum**, human, t.s. of cortex with pyramidal cells - **Cerebellum** of cat, t.s. shows Purkinje cells - **Retina** of cat, t.s. detail of rods and cones - **Tongue** of rabbit, t.s. of papilla foliata with taste buds - **Human skin** from palm, v.s. sweat glands - **Human scalp**, l.s. of hair follicles
***Botany, Bacteria and Cryptogams.* - Bacteria from mouth**, smear Gram stained showing bacilli, cocci, spirilli, spirochaetes - **Bacillus subtilis**, hay bacillus, smear with bacilli and spores - **Streptococcus lactis**, milk souring organisms - **Oscillatoria**, a blue green filamentous alga - **Nostoc**, blue green alga, colonies within gelatinous sheaths - **Diatoms**, mixed species - **Cladophora**, green alga, branched filaments with multinucleate cells - **Volvox**, with daughter colonies and sexual stages - **Spirogyra**, vegetative filaments with spiral chloroplasts - **Spirogyra** in scalariform conjugation, formation of zygotes - **Desmids (Desmidiaceae),** various species - **Fucus vesiculosus**, brown alga, female conceptacle with oogonia t.s. - **Fucus vesiculosus**, male conceptacle with antheridia t.s. - **Mucor or Rhizopus**, mold, w.m. of





mycelium and sporangia - **Morchella**, morel, t.s. of fruiting body with asci and spores - **Claviceps purpurea**, ergot, sclerotium t.s. - **Saccharomyces**, yeast, budding cells w.m. - **Psalliota**, mushroom, t.s. of pileus with basidia and spores - **Puccinia graminis**, wheat rust, uredinia on wheat leaf t.s. - **Puccinia graminis**, aecidia and pycnidia on barberry leaf t.s. - **Physcia**, lichen, thallus with symbiotic algae t.s. - **Marchantia**, liverwort, antheridia l.s. - **Marchantia**, archegonia l.s. - **Moss** stem with leaves w.m. - **Sphagnum**, peat moss, w.m. of leaf with chlorophyll-bearing and hyaline cells. - **Fern prothallium**, w.m. showing sex organs - **Pteridium**, bracken fern, rhizome t.s. - **Aspidium**, t.s. of leaf with sori, sporangia and spores - **Equisetum**, horse tail, strobilus with spores l.s.

Botany, Phanerogams. - **Allium cepa**, onion, w.m. of epidermis shows simple plant cells - **Root tip** and root hairs - **Zea mays**, corn, monocot root t.s. - **Ranunculus**, buttercup, dicot root t.s. - **Tilia**, lime, woody dicot root t.s. - **Dahlia**, t.s. tuber with inuline crystals - **Lupinus**, lupin, root nodules with symbiotic bacteria t.s. - **Elodea**, waterweed, stem apex l.s. meristematic tissue and leaf origin - **Zea mays**, corn, monocot stem with scattered bundles t.s. - **Helianthus**, sunflower, herbaceous dicot stem t.s. - **Pyrus**, pear, t.s. of fruit with stone cells - **Solanum tuberosum**, potato, tuber with starch and cork cells t.s. - **Elodea**, waterweed, aquatic stem with primitive bundle t.s. - **Triticum**, wheat, t.s. of stem of a gramineous plant - **Aristolochia**, birthwort, one year stem t.s. - **Aristolochia**, older stem t.s. - **Sambucus**, elderberry, stem with lenticels t.s. - **Tilia**, lime, three sections of wood - **Cucurbita**, pumpkin, l.s. of stem with sieve tubes and vessels - **Cucurbita**, pumpkin, stem t.s. with sieve plates - **Euphorbia**, spurge, stem with lactiferous ducts l.s. - **Salvia**, sage, t.s. of a square stem with angular collenchyma - **Tulipa**, tulip, epidermis of leaf with stomata and guard cells w.m. - **Iris**, typical monocot leaf t.s. - **Syringa**, lilac, leaf t.s. - **Fagus**, beech, sun and shade leaves, two t.s. - **Nerium**, oleander, xerophytic leaf with sunken stomata, t.s. - **Lilium**, lily, anthers t.s. - **Lilium**, ovary t.s. showing arrangement of ovules - **Taraxacum**, dandelion, composite flower l.s. - **Triticum**, wheat, grain with embryo l.s. - **Pinus**, pine, three sections of wood - **Pinus**, pine, male cone with pollen l.s. - **Pinus**, female cone with ovules l.s. - **Pinus**, mature pollen grains with wings w.m.

Cytology and Genetics. - **Allium cepa**, l.s. of root tips showing mitosis in all stages - **Lilium**, lily, t.s. of young anthers, meiotic stages of the pollen mother cells - **Salamandra larva**, sections with mitotic stages - **Mitochondria**, in thin sec. - **Golgi apparatus**, t.s. through spinal ganglion - **Chloroplasts**, in leaf of Elodea or Mnium, special stained - **Aleurone grains**, in sec. of Ricinus endosperm - **Allium cepa**, onion, w.m. of dry scale showing calcium oxalate crystals - **Storage**, section of liver or kidney, vital stained with trypan-blue to demonstrate storage - **DNA in cell nuclei**, by Feulgen staining technique - **DNA and RNA**, fixed and stained with methyl green and pyronine to show DNA and RNA in different colors - **Giant chromosomes** from the salivary gland of Chironomus. Individual genes and puffs can be observed - **Human chromosomes**, spread in the stage of metaphase, for counting chromosomes - **Meiotic and mitotic stages** in crayfish testis. Nuclear spindles - **Maturation divisions** in ova of Ascaris megalocephala - **Cleavage stages** in ova of Ascaris

Embryology. - **Chicken embryo**, 48 hour, t.s. with neural tube and chorda - **Sea-urchin development** (Psammechinus miliaris), two cell, four cell and eight cell stages - **Sea-urchin development** (Psammechinus miliaris), morula, blastula and gastrula - **Frog embryology** (Rana), sec. trough the blastula stage showing the blastocoel - **Frog embryology** (Rana), sag. sec. through young larva in the tail bud stage, with primordia of organs

Bacteria and Diseased Organs of Man. - **Escherichia coli**, bacteria from colon, probably pathogenic, smear Gram stained - **Eberthella typhi**, causing typhoid fever, smear Gram stained - **Tuberculous lung** of man, t.s. with miliary tuberculosis - **Coal dust lung (Anthracosis**) of man, t.s. (smoker's lung) - **Liver cirrhosis** of man caused by alcohol abuse, t.s. showing degeneration of liver cells - **Arteriosclerosis**, t.s. of diseased coronary artery - **Metastatic carcinoma (cancer)** of human liver, t.s.

Ecology and Environment. - **Leaf (needle) of fir** (Abies), two t.s. of leaves, healthy and damaged by environmental influences (acid rain) - **Leaf of beech** (Fagus), two t.s. of leaves, healthy and damaged by environmental influences (acid rain) - **Bacteria from waste-water**, smear with many typical forms.

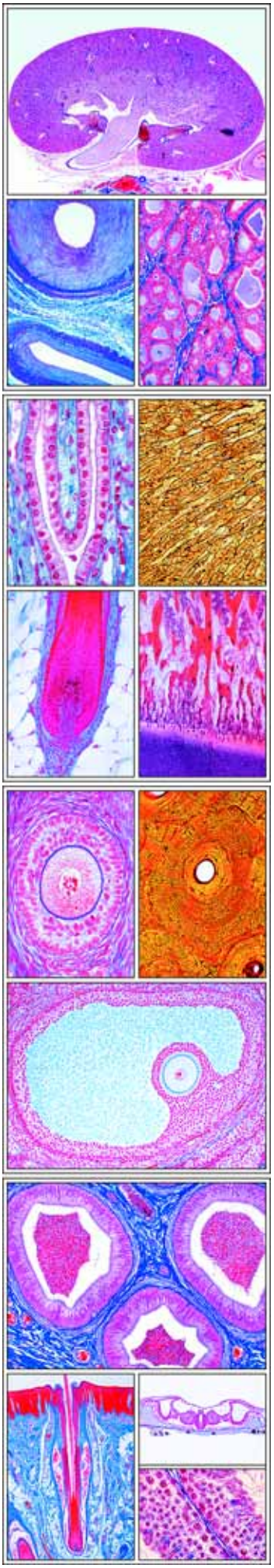
No. 72303 E **Histology** (Comprehensive Version)

NEW!

NEW enlarged and revised Comprehensive Edition *(former no. 172303). Atlas of 41 Overhead-Transparencies size 22 x 28 cm, comprising 228 pictures of color photomicrographs and photomacrographs, histological and anatomical designs and graphs. Types of cells. Epithelial, connective, muscular and nervous tissues. Digestive organs. Glands. Respiratory organs. Blood and lymphatic system. Urinary and genital organs. Endocrine glands. Scalp and hair. Organs of sense. Central nervous system. Plus NEW Sketch- and worksheets with semidiagrammatic designs and texts. Manual with comprehensive interpretation text. Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Prof. Dr. Kurt Fiedler and Johannes Lieder*

Cells, Cell Division and Genetics - Typical Animal Cell, diagram - Typical animal cell, liver cells t.s. - Mitochondria - Golgi apparatus - Barr bodies in mouth epithelial cells and in nerve cell of woman - Storage, sections of liver and kidney, vital stained - Liver parenchyma - Pigment cells - Motor nerve cells, smear - Polynucleate cells - Syncytium - Neuroglia cells - Mucous cells - Metastatic carcinoma (cancer) - Ascaris, metaphase with equatorial plate - Whitefish mitosis - Amitosis - Human chromosomes, GTB-and RBA-banding pattern - Liver cell electron micrograph - Animal cell division, mitotic stages - Mitosis and meiosis in t.s. of testis - **Epithelial Tissues. -** Squamous epithelium - Stratified squamous epithelium, t.s. - Intercellular bridges - Epithelium of the cornea - Endothelium - Transitional epithelium - Cuboidal epithelium - Intestinal epithelium with goblet cells - Ciliated epithelium - Ciliated epithelial cells, electron micrograph - Cilia, flagella and their structures - Types of epithelia, design - **Connective Tissues -** Types of connective tissues, design - Embryonic connective tissue - Adipose tissue of mammal, stained for fat - Areolar connective tissue - Tendon, l.s. - Yellow elastic connective tissue t.s. - Reticular connective tissue - **Cartilage and Bone -** Hyaline cartilage - Elastic cartilage - Fibrous cartilage - Compact bone, human t.s. and l.s. - Fibula (calf-bone), t.s. - Human tibia, t.s. - Bone development, l.s. finger of fetus, intracartilaginous ossification - Bone development, t.s. of fetal skull, the intermembranous ossification - Osteoblasts (bone forming cells), t.s. - Development of bone. Zone of ossification, t.s. - Cancellous bone, t.s. - Long bone with epiphysis, l.s. - Phalanx of human embryo with endochondral ossification, l.s. - Finger joint, l.s. - Diagram of development of a long bone - **Muscle Tissues -** Striated muscle l.s., t.s. and graphic design of skeletal muscles - Striated muscle, principle of contraction, diagram - Capillaries and arteries of a muscle - Striated (skeletal) muscle, electron micrograph - Smooth muscles, l.s. - Cardiac or heart muscle, t.s. and l.s. - Sensory and motor innervation of a muscle, color diagram - Motor end plates on muscle fibers - Muscle with muscle spindle, t.s. - **Respiratory System -** Larynx of mammal, l.s. - Trachea, human t.s. and l.s. - Lung of human and cat, t.s. - Bronchiole, cartilage, and artery t.s. - **Circulatory System and Blood -** Wall of vein and artery, t.s. elastic tissue stain - Artery and vein of mammal, t.s. - Blood capillaries in the mesenteries - Blood of frog, Rana, smear - Human and Frog blood smear - Blood smear from leukemic person - Red bone marrow, smear - Large omentum (mesentery) - **Lymphatic System -** Lymph node of human and mammal, t.s. - Palatine tonsil, t.s. - Lymph node of pig, t.s. - Thymus gland of young cat, Hassall's corpuscles - **Endocrine Glands -** Human thyroid gland, t.s. - Human parathyroid gland, t.s. - Islands of Langerhans, t.s. - Human pituitary gland, l.s. - Pineal body (Epiphysis), human t.s. - Human adrenal gland, t.s. - Interstitial cells of Leydig in human testis t.s. - **Digestive System: Mouth and Teeth -** Development of tooth: Dental lamina, tooth primordium, older tooth - Tooth, detail with ameloblasts, enamel, dentin - Incisor tooth, longitudinal section - Jaw with dental root, t.s. - Human tooth, ground - Bacteria of caries in l.s. of diseased human tooth - Bacteria from human intestine - Lip, t.s. - Fungiform papilla of the tongue t.s. - **Digestive System: Esophagus and Stomach -** Esophagus, human t.s. - Stomach t.s. fundic region - Gastric mucosa, l.s. - Gastric glands, l.s. - **Digestive System: Intestine -** Duodenal fold, l.s. - Human jejunum, l.s. - Intestinal villus - Large intestine (colon), t.s. - Human colon, l.s. - Tubulous glands of colon, l.s. and t.s. -

Vermiform appendix, t.s. - Small intestine with injected blood vessels, t.s. - **Digestive System: Pancreas, Liver and Salivary Glands -** Human pancreas, t.s. - Human liver, t.s. - Liver of pig, t.s. - Liver lobule, t.s. with injected bile canaliculi and t.s. with injected blood vessels - Submaxillary gland, t.s. - Sublingual gland t.s. - Parotid gland, t.s. - **Excretory System -** Kidney of mouse, sagittal l.s. - Kidney of cat, t.s. - Human renal cortex and medulla l.s. - Malpighian corpuscle, - Human urinary bladder, t.s. - Human ureter, t.s. - **Reproductive Organs: Female -** Ovary of cat, t.s. - Egg development: Young and older primary follicle, secondary, early and mature Graafian follicle, germ hillock and egg, ruptured Graafian follicle - Fallopian tube with embedded oocyte, t.s. - Corpus luteum t.s. - Ciliated epithelium of the Fallopian tube t.s. - Uterus, secretory, menstrual post-menstrual and pregnant t.s. - Placenta - Umbilical cord (navel string), t.s. - Vagina t.s. - **Reproductive Organs: Male -** Testis of mammal, t.s. show all stages of spermatogenesis - Human testis, interstitial cells of Leydig, t.s. - Testis, germinal epithelium - Epididymis t.s. - Seminal vesicle, t.s. - Spermatic cord (Ductus deferens), t.s. - Prostate of young man, t.s. - Penis, t.s. - Sperm smear - **Nervous System -** Peripheral nerve, human sciatic nerve, t.s. low, medium and high magnification - Medullated nerve fibers l.s. - Ranvier's node, l.s., electron micrograph - Spinal cord t.s. silvered - Spinal cord with motor nerve cells - Gray and white matter of spinal cord, t.s. - Nerve cells with Nissl's granules - Motor nerve cell - Cerebral cortex, human, t.s. - Cerebellum, human, t.s. - Pyramid cells - Purkinje cells - Pseudounipolar neuron (T-cell) - Spinal cord, spinal and sympathetic ganglion - **Organs of Sense: The Eye -** Eye, mammal and human, sagittal l.s. - Cornea, iris, ciliary body, lens - Papilla of optic nerve l.s. - Optic nerve, t.s. - Retina, t.s. high magnification - Retina, graphic design - **Organs of Sense: The Ear -** Cochlea l.s. - Organ of Corti l.s. - **Organs of Sense: Smell and Taste -** Olfactory region, t.s. - Olfactory epithelium with sensory cilia, t.s. - Tongue of rabbit with papilla foliata and taste buds, t.s. - Taste buds, high magnification - Vallate papilla of the human tongue t.s. - **Organs of Sense: Touch and Perception -** Corpuscle of Eimer, tactile organ l.s. - Tactile hairs with blood sinus, t.s. and l.s. - Vater-Pacinian corpuscles t.s. - Grandry's and Herbst's tactile corpuscles - Touch corpuscles in human skin, t.s. - Meissner's corpuscle from human finger, design - Krause's corpuscle, cold receptor, design - **Integument, Skin and Scalp -** Human skin from palm, l.s. cornified epidermis, germinative zone, sweat glands - Nail development of human embryo, sagittal l.s. of finger tip - Human skin, zone of keratinization and germinative zone - Human skin negro, t.s. with pigmented cells - Human skin with sweat glands, t.s. - Human skin l.s. injected to show the blood vessels - Human scalp, vertical section showing l.s. of hair follicles - Hair papilla and germinative zone, t.s. - Hair shaft with arrector pili muscle and sebaceous gland l.s. - Hair follicles in human scalp t.s. - Sebaceous glands t.s. - Human scalp, injected to show the blood vessels - Mammary gland, human t.s.



NEW!

No. 8245 E **Histology and Human Science** (Short Version TA)

Atlas of 30 Overhead-Transparencies size 22 x 28 cm, comprising over170 pictures (anatomical pictures, photomicro- and macrographs, nature photographs, human photographs, electron micrographs, X-ray photographs, drawings, diagrams, tables, scenes, test data and results). With comprehensive interpretation text. Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Dr. Karl-Heinrich Meyer B.S. and Johannes Lieder.

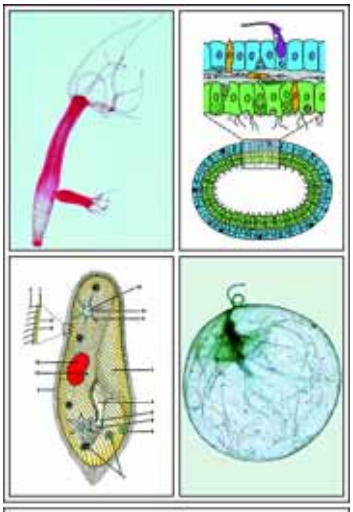
Tissues and Skin: - Squamous epithelium, isolated cells - Squamous epithelium, color drawing and three dimensional design - Cuboidal epithelium in l.s. of kidney tubules - Columnar epithelium, human t.s. - Simple ciliated columnar epithelium, oviduct, t.s. - Pseudostratified ciliated columnar epithelium, trachea, t.s. - Areolar connective tissue, human - Areolar connective tissue, schematic color design - Adipose tissue, human, stained for fat - Adipose tissue, development, schematic color design - White fibrous tissue, tendon, human, l.s. - Yellow elastic connective tissue (Ligamentum nuchae), t.s. - Hyaline cartilage, human t.s. - Yellow elastic cartilage, human, sec. - White fibrous cartilage, human sec. - Compact bone, human tibia, t.s., low magnification - Compact bone, human t.s., high magnification showing Havers system - Spongy bone, human t.s., low magnification - Spongy bone, human t.s., high magnification for finer details - Bone development, l.s. of fetal finger - Striated (skeletal) muscle, human l.s., high magnification showing the striations - Striated muscle, t.s. of muscle bundle - Striated muscle t.s. high magnification for finer details - Smooth (involuntary) muscle, human l.s. - Smooth (involuntary) muscle, schematic color design - Heart (cardiac) muscle, human l.s. - Skin from finger tip, human, l.s. - Scalp, human, shows l.s. of hair follicles, - Scalp, shows t.s. of hair follicles, low magnification - Hair follicles from human scalp, high magnification.

Circulatory, Respiratory and Endocrine System: - Artery, human, t.s. stained for elastic fibers - Vein, human, t.s. stained for elastic fibers - Aorta, human, t.s. - Artery and vein, human t.s., routine stained - Artery and vein, human t.s., schematic color design - Blood smear, human, Giemsa stain - Blood smear, human, schematic color design - Frog blood smear, nucleated erythrocytes - Red blood cells (erythrocytes) of 12 species of animals for comparison, color design - Nasal region of small mammal, t.s. - Trachea, human t.s., low magnification - Trachea, human t.s., high magnification - Lung, human, t.s. - Lymph node, human t.s., general view, low magnification - Lymph node, human t.s., high magnification for fine details - Spleen, human t.s. - The vascular system of the human spleen, color diagram - Tonsil (Tonsilla palatina), human t.s. - Red bone marrow, human, smear - Thymus from human child, t.s. - Thyroid gland (Gl. thyreoidea), human t.s. - Adrenal gland (Gl. suprarenalis), human t.s. - Pituitary gland sag. l.s. of complete organ - Pituitary gland (Hypophysis), human t.s. - Location of pituitary gland and pineal body, sagittal l.s. of human head - Pineal body (Epiphysis), human t.s. - Islets of Langerhans in the pancreas, human, sec.

Digestive System: - Lip, human foetus, t.s. - Tooth, human, t.s. of crown - Tooth, human, t.s. of root embedded in the yaw - Tooth development from human foetus, l.s. early stage - Tooth development from human foetus, l.s. later stage - Tongue, human, t.s. - Tongue of mouse, l.s. showing cornified papillae - Esophagus, human t.s., low magnification of the whole organ - Esophagus, human t.s. high magnification for fine detail - Stomach, fundic region, human t.s. - Duodenum, human t.s. - Jejunum, human t.s. - Vermiform appendix, human t.s. - Colon, human t.s., low magnification - Tubulous glands of the colon, detail, l.s. - Tubulous glands of the colon, detail, t.s. - Submaxillary gland (Gl. submandibularis), human t.s. - Sublingual gland (Gl. sublingualis), human t.s. - Parotid gland (Gl. parotis), human t.s. - Pancreas, human t.s. - Liver, human, t.s. - Liver, human, sec. staining of glycogen - Liver, of pig with liver lobules, t.s. low magnification - Liver lobule, t.s. with injected bile canaliculi - Vascular systems of a liver lobule, three dimensional color diagram - Gall bladder, human t.s.

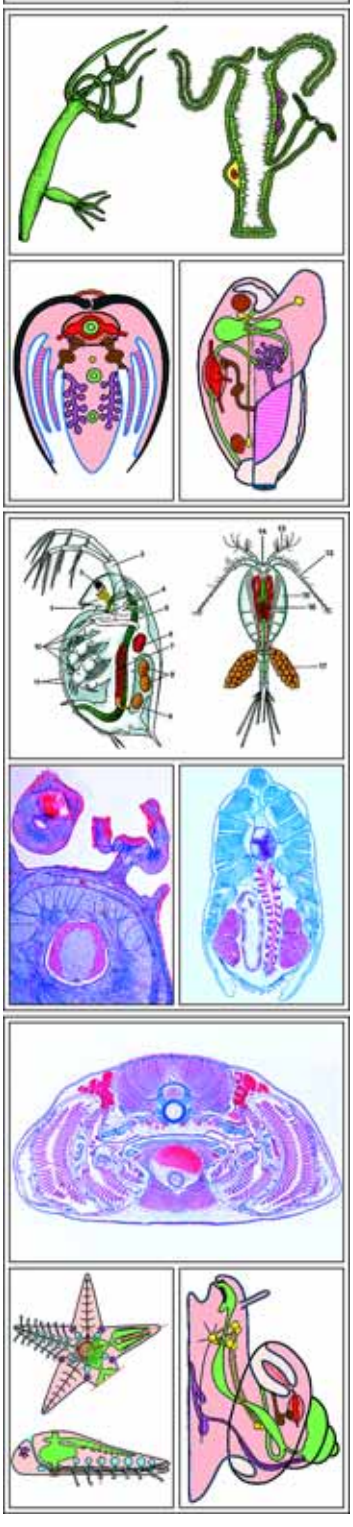
Urinary and Genital system: - Kidney, human l.s., low magnification - Kidney of mouse, sagittal l.s. through complete organ - Structure of kidney, color diagram - Human renal cortex, l.s., higher magnification - Human renal medulla, l.s. - Renal corpuscle (Malpighian corpuscle), high magnification - Kidney, sec. with injected blood vessels - Ureter, human t.s. - Urinary bladder, human t.s. - Ovary, mature, t.s. low magnification for general survey - Egg development: primary follicle - Egg development: secondary follicle - Egg development: mature Graafian follicle with germ hillock and egg cell - Egg development: Ruptured Graafian follicle after the oocyte has been discharged l.s. - Egg development: mature ovulated egg with corona radiata - Ovary with corpus luteum, human t.s. - Uterus, human, t.s. - Oviduct (fallopian tube), human, t.s. - Uterus of rat with embryo in situ, t.s. - Embryo of mouse, sagittal l.s. of entire specimen - Embryo of mouse, sagittal l.s. of head - Embryo of mouse, t.s. of thoracic region - Placenta, human t.s. - Structure and function of the placenta; diagram - Umbilical cord (navel string), human t.s. - Vagina, human t.s. - Mammary gland, human t.s. - Testis from human adult, mature stage t.s. - Testis t.s. stained to show all stages of spermatogenesis, high magnification - Interstitial cells of Leydig, in human testis t.s. - Testis, epididymis, spermatogenesis; color diagrams - Epididymis, human t.s. - Sperm smear of bull - Penis, t.s. - Seminal vesicle, t.s. - Prostate of young man, t.s. - Spermatic cord (Ductus deferens), human t.s.

Nervous System and Sensory Organs: - Cerebral cortex, human, t.s. routine stained - Cerebral cortex, human, t.s. silvered for pyramidal cells - Cerebellum, human, t.s. routine stained - Cerebellum, human, t.s. silvered for Purkinje cells - Human brain, ventral view with cranial nerves - Brain of mouse, l.s. of the complete organ - Human spinal cord and



medulla oblongata. Lateral and dorsal view with spinal nerves, ventral view without nerves - Brain stem with cranial nerves, ventral and dorsal view - Human vertebrae. Superior view and lateral view of three vertebrae with intervertebral discs - Human central nervous system, lateral view. Position of the dura sac in the spinal canal - Spinal cord, t.s. routine stained - Spinal cord, t.s. silver stained - Gray matter of spinal cord, t.s. showing nerve cell bodies - White matter of spinal cord, t.s. showing nerve fibers - Portion of the spinal cord with roots, ganglia, and branches of spinal nerves, three-dimensional diagram - Sympathetic ganglion, human t.s. - Pseudounipolar neuron (T-cell) from spinal ganglion - Peripheral nerve, human sciatic nerve, t.s., low magnification - Peripheral nerve, bundle from sciatic nerve, t.s., medium magnification - Peripheral nerve, nerve fibers, t.s., high magnification, axons and medullary sheaths - Peripheral nerve, teased material of osmic acid fixed material with Ranvier's nodes - Optic nerve, human t.s. - Motor nerve cells, smear from spinal cord of ox shows nerve cells and their appendages - Various shapes of human neurons, 5 figures - Nerve cell body from the cerebrum with dendrites, axon, and synapses. Diagram - Synapsis, spatial picture - Motor nerve endings, muscle stained with gold chloride showing the motor end plates - Motor end plates (neuromuscular junction), diagram, 2 figures - The human eye. Eyeball, eye muscles, eyelid, sagittal section - Eye, anterior part with iris, ciliary body, cornea, l.s. - Eye, posterior part with retina and entrance of optic nerve, l.s. - Retina from eye, t.s. for all details - Human retina, chief synaptic connections, color diagrammatic design - Cornea from eye, human t.s. - Eyelid of cat, t.s. showing Meibomian gland - Cochlea (internal ear) from guinea pig, l.s. showing organ of Corti - Morphology of the human ear. Ear concha, external auditory canal, middle ear, internal ear - Organ of Corti, two color spatial diagrams - Olfactory region from nose of rabbit, t.s. - Olfactory epithelium with sensory cilia, t.s. detail view - Tongue of rabbit with papilla foliata shows abundant taste buds, t.s. - Papilla foliata t.s., detail view of taste bud, high magnification - Vallate papilla of the human tongue t.s., detail view - Tactile hairs with blood sinus, l.s. - Tactile hairs with blood sinus, t.s. - Touch corpuscles in human skin, t.s. - Grandry corpuscles in t.s. through beak of duck - Pacinian corpuscles in mesentery or pancreas - Meissner's corpuscle from human finger - Krause's corpuscle, cold receptor

No. 8237 E **Zoology (Invertebrates)** (TB)

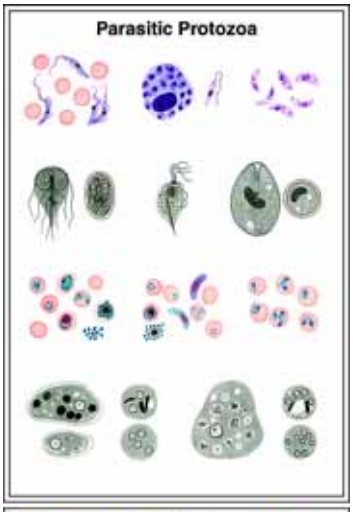


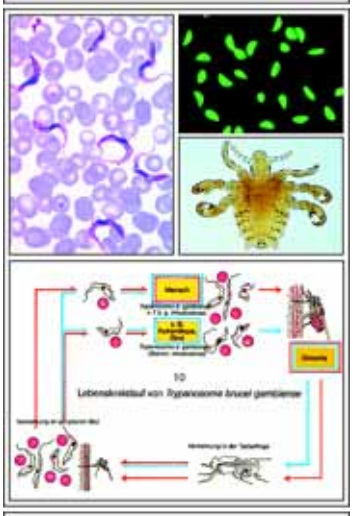
Atlas of 26 Overhead-Transparencies size 22 x 28 cm, comprising over 165 pictures (color photomicrographs and -macrographs, color life-cycles and anatomical pictures).Manual with comprehensive depictured interpretation text. In strong plastic file with ring-mechanism. - Sketch and work-sheets with semidiagrammatic designs and texts - Compilation and text: Dr. K.-H. Meyer and Johannes Lieder

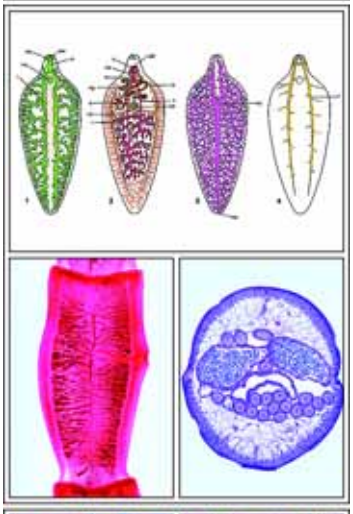
Protozoa Amoeba proteus - Amoeba, color design showing habit, cyst, feeding, division, - Euglena, green flagellate - Euglena, habit, division, conjugation and formation of cysts. Color design - Radiolaria, mixed - Foraminifera, mixed - Trypanosoma gambiense, habit and division, color design and blood smear - Ceratium, dinoflagellates - Noctiluca miliaris - Plasmodium falciparum, tertian malaria, blood smear - Plasmodium berghei, smear with asexual and sexual stages - Eimeria stiedae, coccidiosis, section of liver - Paramecium, ciliate, anatomy, color design, living specimen, macro- and micronuclei stained, binary fission, conjugation and structure of the surface - Vorticella, a stalked ciliate, living specimen - **Porifera** Sponge of the sycon type, schematic design and t.s. - Spongilla, fresh water sponge, t.s. - Sycon, spicules w.m. - Euspongia, commercial sponge, skeleton - **Coelenterata** Hydra, fresh water polyp, anatomy and reproduction, color design - Hydra with bud, transverse section, nematocysts, color design - Hydra, l.s. of a specimen with ingested food - Polyp and medusa (Obelia), life cycle and development - Obelia hydroid, vegetative and reproductive polyps - Obelia medusa, jellyfish, w.m. - Aurelia, ephyra w.m. - Actinia, sea anemone, t.s. and l.s. - **Platyhelminthes** Fasciola hepatica (Distomum hepaticum) liver fluke, digestive, reproductive, excretory, nervous systems, color designs - Fasciola hepatica, t.s. body - Planaria, w.m. general body plan of a flatworm and t.s. - Taenia saginata, tapeworm, t.s. of proglottids and color design - Taenia saginata, mature proglottid w.m. - Moniezia, tapeworm, scolex - Echinococcus granulosus, dog tapeworm, adult specimen with scolex and proglottids and t.s. of cyst with scolices - **Nemathelminthes** Ascaris, roundworm, t.s., color design - Ascaris, t.s. of adult female - Nemathelminthes, body plan of male and female, color design - Trichinella spiralis, section and flat mount of infected muscle with encysted larvae - Enterobius vermicularis (Oxyuris), pin worm - Nereis, t.s. of body - Hirudo medicinalis, medicinal leech, t.s. - Lumbricus, earthworm, copulating specimens, reproduction and t.s. color design - Lumbricus, t.s. of body back of the clitellum - Lumbricus, anterior end 1.-9., 9.-16. and 16.-23. segment l.s. - **Crustacea** Daphnia and Cyclops, small crustaceans, anatomy, color design - Daphnia, water flea, living specimen - Cyclops, copepods - Artemia salina, brine shrimp - Astacus, crayfish, gills t.s. - Astacus, ovary t.s. with developing eggs - Astacus, testis t.s. with spermatogenesis - **Arachnida** Spider, anatomy and general body plan, color design - Spider, sagittal l.s. and t.s with book lung - Spider, entire young specimen - Spider, leg with comb, survey and high magnification - Spider, spinneret - Scorpion, w.m. for all details and sagittal section - Scorpion, poison gland - Varroa, parasitic mite of bees - Argas persicus, tick - Ixodes, tick, six legged larva - Dermanyssus gallinae, chicken mite - Tyroglyphus farinae, mite from meal - **Insecta** Musca domestica, house fly, head and mouth parts w.m., t.s. and color design - Apis mellifica, honey bee, mouth parts w.m., t.s. and color design - House fly, sucking tube, scanning electron micrograph - Blatta, cockroach, anatomy and general body plan of insects, color design - Periplaneta or Blatta, cockroach, biting mouth parts of a herbivore w.m. - Periplaneta, head and mouth parts, color design - Blatta, cockroach, adult female, dorsal view, reproductive organs, color design - Pieris, butterfly, clubbed antenna - Bombyx mori, silk moth, feathered antenna - Melolontha, cockchafer, laminate antenna - Pieris, butterfly, mouth parts with sucking tube - Musca domestica, structure of the leg with pulvilli - Apis mellifica, honey bee, structure of the leg, color design - Apis mellifica, posterior leg with pollen basket and foreleg with antenna cleaner - Melolontha, cockchafer, digging leg - Apis mellifica, anterior and posterior wings - Musca domestica, wing with halters - Spiracle (stigma) of insect, surface view and section, color design and w.m. - Pieris, butterfly, wing showing arrangement of scales, w.m. and design - Trachea from insect, showing elastic spiral threads, w.m. and design - Periplaneta, cockroach, upper and lower wings - Tracheal gills, of May fly nymph, design - Compound eye of an insect, histology, schematic design - Head with brain and eyes of an insect t.s., design - Compound eye, t.s. through head of honey bee - Cornea, showing facets - Compound eye of Melolontha, showing superposed insect eye, l.s. - Grasshopper, testis t.s. with spermatogenesis - Sting of honey bee, anatomy and function, color design and w.m. - Apis mellifica, honey bee, t.s. of abdomen of drone showing testis - Apis mellifica, t.s. of abdomen of queen showing ovaries - Anopheles, malaria mosquito, adult female - Anopheles, head and mouth parts of female and male - Culex pipiens, common mosquito, adult female - Culex pipiens, head and mouth parts of female and female - Drosophila, fruit fly, adult - Flea, anatomy, color design - Ctenocephalus canis, dog flea, adult male - Pulex irritans, human flea, adult female and male - Pediculus humanus, human louse - Cimex lectularius, bed bug - Aphidae sp., plant lice - **Mollusca** Chiton, a primitive mollusk, t.s. through the body - Alloteuthis, cuttlefish, entire young specimen - Octopus, cuttlefish, section through sucking tube - Cuttlefish, anatomy and general body plan, color graphic design - Camera eye of cuttlefish (Sepia), l.s. - Mya arenaria, t.s. and l.s. of gills - Anodonta, mussel, complete t.s. - Mussel (clam), anatomy and general body plan, color design - Snail, anatomy and general body plan, color design - Snail, typical t.s. - Helix pomatia, Roman snail, hermaphrodite gland (ovotestis) t.s. - **Echinodermata** Echinus, sea urchin, reproduction, color design - Asterias, horizontal and sagittal l.s. with internal organs, color design - Asterias, arm t.s. and color design - Sea urchin embryology, uncleaved fertilized egg, 2-cell stage, 4-cell stage, 8-cell stage, morula, blastula, gastrula and pluteus larva - **Acrania, Fish, Amphibians, Reptiles and Birds** Branchiostoma lanceolatum, block diagram combined with t.s. and l.s., color design - Branchiostoma, typical t.s. shows gills, liver and gonads - Scyllium, dogfish, region of head and gills, t.s. - Fresh water fish, abdominal region t.s. - Cyprinus, carp, blood smear - Fish scales, cycloid, ctenoid and placoid scales - Salamandra larva, head with eyes t.s. - Rana, frog, blood smear - Rana, stomach t.s. gastric glands - Rana, small intestine (duodenum) t.s. - Rana, lung t.s., simple baglike lung - Rana, kidney t.s., Malpighian corpuscles - Rana, testis showing spermatogenesis t.s. - Rana, ovary with developing eggs t.s. - Rana, skin with skin glands, l.s. - Lacerta, lizard, skin with scales, l.s. - Lacerta, lizard, lung t.s. - Gallus, chicken, blood smear - Gallus, lung t.s. showing bird lung with parabronchi - Bird feathers, construction and function, color design - Bird feathers, wing and down

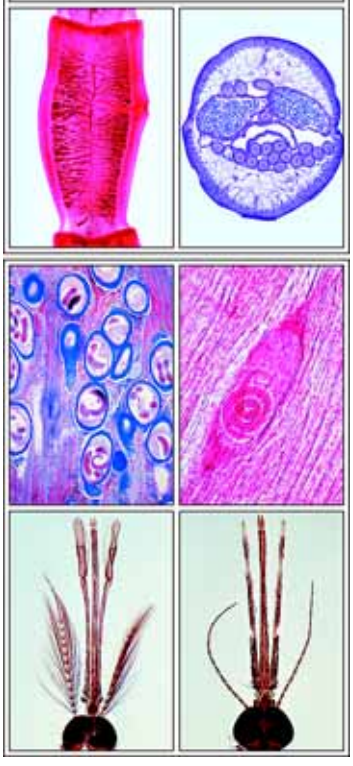
No. 72306 E **Parasitology**

NEW enlarged and revised Comprehensive Edition *(former no. 172306). Atlas of 35 Overhead-Transparencies size 22 x 28 cm, comprising 228 pictures (color photomicro and -macrographs, habit photographs, anatomical pictures, designs and life-cycles of the parasites). Manual with comprehensive interpretation text, drawings and designs. Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Prof. Dr. Werner Frank and Johannes Lieder*

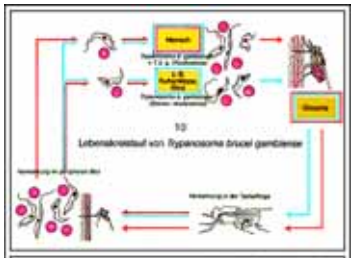


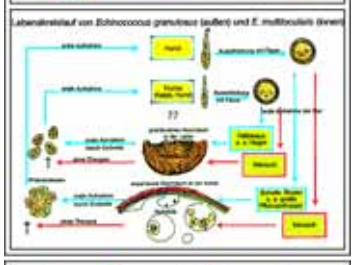


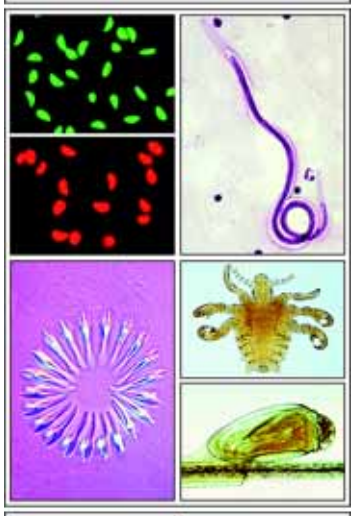


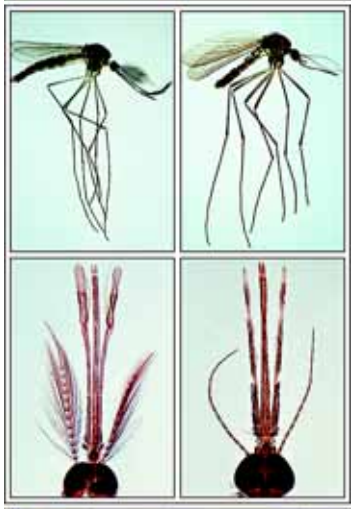


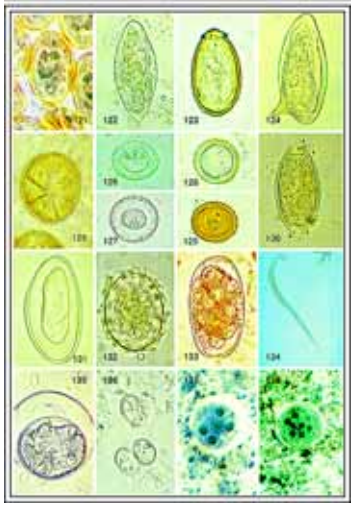
Topics such as „parasitic animals, a menace to human health“ are contents of the biological and health instruction in senior high schools and junior colleges offering general education. There is no doubt that in the near future this curricular aspect will be paid more and more attention to. This transparency atlas hence shall inspire, but also offer the substantial and necessary help to realize an instruction characterized by a higher degree of clearness due to its illustrative material. Almost 50% of all human diseases in the developing countries are caused by parasites, and those animals which constitute human food are affected in a still higher degree. Our modern times are characterized by mass tourism, and travels of teenagers to subtropical and tropical countries of the Third World are no longer the rare exceptions.
As developed countries show a rising tendency of diseases caused by parasites - also by earlier in these regions almost unknown ones - more action is called for in the sphere of schools, too.
That is why this transparency atlas, due to its excellent usefulness to instruction, applies not only to students of human and veterinary medicine, but also to school biologists. To all of them this atlas offers reliable help with its brilliant microphotographs, typical pictures of diseases, impressive life-cycles and the text, based on the latest scientific findings.
Humoral and cellular reactions - Parasitic Protozoa:, color graphic design - Ouchterlony precipitation - Indirect Fluorescent Antibody Test (IFAT - Foreign-body giant cells - Hypertrophy - Granuloma - Proliferation - Hyperplasia - **Protozoa: Trypanosomes** - Trypanosoma gambiense, sleeping disease, life-cycle - Trypanosoma gambiense, blood smear and design - Trypanosoma cruzi blood smear, t.s. of infected heart muscle and life-cycle - Trypanosoma equiperdum, dourine - Apathogenic trypanosomes, blood smear - **Protozoa: Leishmanias** - Leishmania, life-cycle - Leishmania tropica (Oriental Sore), photograph of infected person - Rhodnius prolixus (Cone Nose Bug) the carrier - Leishmania donovani, Kala Azar, from infected spleen, smear and section - **Protozoa: Multiflagellar flagellates** - Trichomonas vaginalis - Giardia lamblia (syn. Lamblia intestinalis), trophozoite and cyst - **Protozoa: Entamoebae** - Entamoeba histolytica, life-cycle - Entamoeba histolytica, section of infected intestine and biopsy of the rectal mucosa - Entamoeba histolytica, trophozoites and 4-nucleate cysts - Entamoeba coli, non-pathogenic, trophozoite and 8-nucleate cysts - **Protozoa: Toxoplasma and Sarcosporidians -** Toxoplasma gondii, life-cycle - Toxoplasma gondii, pseudocyst from Liquor and cyst in section of brain - Sarcocystis, schizont with merozoites - Sarcocystis tenella, section of infected muscle tissue showing Miescher's tubes - Sarcocystis spp., oocysts - **Protozoa: Telosporidia -** Gregarina, from mealworm intestine - Monocystis lumbrici, smear from seminal vesicles of earthworm with sporocysts - Nosema apis, honey bee dysentery, t.s. of diseased intestine - Eimeria stiedae, coccidiosis, section of liver shows all stages of the parasite - **Protozoa: Malaria parasites -** Plasmodium falciparum, malaria tropica, life-cycle - Plasmodium berghei, blood smear from infected mouse with asexual and schizogony stages and design - Plasmodium falciparum, causes the malignant tertian malaria. Blood smear and smear from in-vitro culture - Plasmodium, exoerythrocytic meront (schizont) in the liver - Plasmodium vivax, trophozoite - Plasmodium malariae, trophozoite - Plasmodium vivax, young and mature meront - Plasmodium falciparum, mature meront, ring form stages and gametocyte in the blood - Plasmodium, exflagellation) in a mosquito after a blood meal - Haemoproteus columbae, pigeon malaria, blood smear - Plasmodium, section of the intestine from a mosquito showing oocysts - Plasmodium, section of the salivary gland from an infected mosquito showing sporozoites - Plasmodium gallinaceum, chicken malaria, blood smear - Plasmodium cathemerium, bird malaria, blood smear - **Protozoa: Babesias, Ciliates and Limax amoebae** - Babesia canis, causes piroplasmosis, blood smear - Balantidium coli - Trichodina domerguei, parasitic ciliate on fish gills - Naegleria fowleri, trophozoites and amebic encephalitis - **Platyhelminthes: Trematodes (Flukes and Blood Flukes)** - Distomum hepaticum (Fasciola hepatica, beef liver fluke), life-cycle, digestive, reproductive, excretory and nervous system - Fasciola hepatica, beef liver fluke, w.m. of entire specimen showing all details - Dicroceolium lanceolatum (dendriticum), sheep liver fluke, w.m. - Fasciolopsis buski, giant fluke, w.m. - Echinostoma revolutum, intestinal fluke, w.m. - Opisthorchis felineus, fluke of cats, w.m. - Clonorchis sinensis, Chinese liver fluke, w.m. - Fasciola hepatica (Distomum), ova w, miracidium, sporocyst, redia and cercaria w.m. - Fasciola hepatica, t.s. of body - Fasciola hepatica, t.s. of infected snail liver (intermediate host) with sporocysts and redia - Opisthorchiidae and Heterophyidae, life-cycle - Heterophyes aequalis w.m. dark field photograph - Heterophyes heterophyes in the intestine, l.s. - Schistosoma sp. life-cycle color graphic design - Schistosoma mansoni, copulating male and female - Schistosoma mansoni, egg granuloma - Schistosomulum - Schistosoma mansoni. Fork-tailed cercaria with penetration glands - Schistosoma mansoni, section of the digestive gland from an infected snail - Schistosoma mansoni, t.s. of two pairs in a cross sectioned vein - Schistosoma haematobium, egg with terminal spine - Schistosoma mansoni, egg with subterminal spine - Schistosoma japonicum, egg without spine - **Platyhelminthes: Cestodes (Tapeworms) -** Taenia saginata and Taenia solium, life-cycles - Taenia saginata, tapeworm, mature proglottids, design - Taenia saginata, mature proglottid stained and flat mount - Diphyllobothrium latum - Taenia saginata, tapeworm, scolex without hooklets - Taenia solium, tapeworm, scolex with hooklets - Taenia saginata, proglottid t.s. - Taenia saginata, egg - Hymenolepis nana, egg - Cysticerci of Taenia saginata („Cysticercus bovis“) in muscular tissue - Taenia solium cysticercus (Cysticercus cellulosae), section and w.m. with scolex extended - Taenia pisiformis, mature proglottid w.m. - Dipylidium caninum, dog tapeworm, proglottid w.m. - Hymenolepis nana, dwarf tapeworm, proglottids w.m. - Circular row of hooklets from the scolex of Hymenolepis nana - Cysticercoid of Hymenolepis nana and H. diminuta - Echinococcus granulosus and E. multilocularis, life-cycle - E. granulosus, dog tapeworm, adult specimen complete with scolex and a few proglottids, w.m. - E. granulosus, t.s. of hydatid cyst showing brood capsules - E. multilocularis, section through a multivesicular hydatid with protoscolices - E. granulosus, free protoscolices - E. granulosus, native women of northern Kenya suffering from a course of cystic echinococcosis - E. granulosus hydatids after the successful surgery - E. multilocularis. The infection showing the tumorous changes of the liver - E. multilocularis. The picture shows the sectioned liver of a deceased. - **Nemathelminthes (Roundworms)** - Ascaris lumbricoides and Enterobius vermicularis, life-cycles - Ascaris lumbricoides, roundworm of man and pig, t.s. of female - Ascaris, roundworm, t.s. of female in region of gonads, design - Ascaris lumbricoides and Trichinella spiralis, male and female, design - Heterakis spumosa, intestinal worm w.m. - Enterobius vermicularis (Oxyuris), thread worm of man, adult female filled with ova w.m. - Verminous appendicitis, c.s. of an appendix with an inflammation caused by Enterobius - Trichinella spiralis, life cycle - Trichinella, section and w.m. of infected muscle showing encysted larvae - Trichinella, larvae in muscle, 3 stages, design - Ancylostoma duodenale and Necator americanus, life-cycles - Ancylostoma duodenale, hookworm, posterior end of male shows detail of bursa w.m. - Ancylostoma duodenale, t.s. of adult female - Ancylostoma duodenale, adult male and female in copula w.m. - Trichuris trichiura, whip worm, w.m. - Strongyloides, roundworm, larvae w.m. - Wuchereria bancrofti, life-cycle - Dracunculus medinensis - Wuchereria bancrofti, sheathed microfilaria in a blood film - Onchocerca volvulus, section of nodule with parasites - **Pentastomids: Tongue Worms** - Armillifer armillatus (Tongue worm), picture of surgery and adult specimens - **Eggs of Helminths** - Schistosoma mansoni - Schistosoma haematobium - Schistosoma japonicum - Heterophyes - Fasciola hepatica - Clonorchis sinensis - Hymenolepis nana - Hymenolepis diminuta - Taenia saginata - Echinococcus granulosus - Trichuris trichiura - Enterobius vermicularis - Ascaris lumbricoides - Ancylostoma duodenale - Armillifer armillatus - Sarcocystis, oocysts - **Arachnida: Ticks and Mites** - Ornithodorus moubata, the transmitter of Relapsing Fever - Spirochaeta duttoni (Borrelia recurrentis), causes relapsing fever, blood smear stained for spirochaetae - Argas persicus, fowl tick, carrier of pathogenic spirochaetae, w.m. of adult - Ixodes, tick, six-legged larva - Dermacentor andersoni, tick, carrier of spotted fever - Dermanyssus gallinae, chicken mite - Varroa, Acarus siro, mite of honey bee - Neotrombicula autumnalis, mite - Ixodes ricinus, tick, life-cycle - Demo-











dex folliculorum, follicle mite of humans, w.m. and t.s. of human skin with parasites - Sarcoptes scabiei, itch mite, w.m. sec. through infected skin - **Insecta: Lice and Bugs** - Stomoxys, stable fly, piercing sucking mouth parts - Haematopinus suis, pig louse - Lipoptena cervi, louse fly - Phthirus pubis, pubic or crab louse, w.m. and egg (nit) attached to hair - Pediculus capitis, head louse - Cimex lectularius, bed bug, w.m. and graphic design - **Insecta: Mosquitoes** - Mosquito, Culex pipiens, life-cycle - Culex pipiens, mosquito, adult female and male w.m. - Anopheles, malaria mosquito, adult female and male, w.m. - Culex, mosquito, head and mouth parts of female and male, design - Culex, head and mouth parts of female and male w.m. - Anopheles sp., mouth parts of a female w.m. and male w.m. - Culex, eggs rafts w.m. - Culex, posterior end of larva w.m. - Culex, pupa w.m. - Culex, t.s. of mouth parts of female shows hypopharynx with the salivary duct - Anopheles, female sucking on human skin, photograph - **Insecta: Fleas** - Flea, habitus, anatomy and mouth parts, design - Pulex irritans, human flea, adult female and male w.m. - Xenopsylla cheopis, rat flea, carrier of the bubonic plague, adult female and male w.m. - Ctenocephalus canis, dog flea, adult female and male w.m. - Nosopsyllus fasciatus, rat flea, adult female and male w.m.

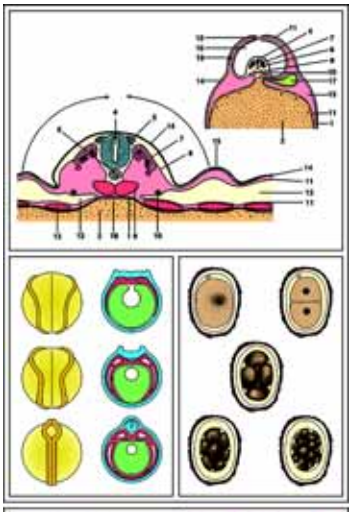
No. 8249 E **Bacteria, Parasites and Human Pathology** (TG)

NEW!

Atlas of 32 Overhead-Transparencies size 22 x 28 cm, comprising over 230 pictures (anatomical pictures, photomicro- and macrographs, nature photographs, human photographs, electron micrographs, life cycles, drawings, diagrams, tables, scenes, test data and results). - With comprehensive interpretation text. Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Dr. K.-H. Meyer B.S.

USEFUL AND HARMFUL BACTERIA: - ***Spherical bacteria, cocci*** **-** Neisseria gonorrhoeae, gonorrhea, diplococci - Staphylococcus aureus, pus organism, smear, Gram stained - Streptococcus pyogenes, smear from pus showing long chains, Gram - Streptococcus lactis, milk souring organisms, smear showing short chains - Sarcina lutea, Gram stained - Gaffkya tetragena, meningitis, occurring in tetrads, Gram - ***Rod-shaped bacteria, non spore-forming, gram-positive*** **-** Mycobacterium tuberculosis, smear from sputum, doubly stained after Ziehl-Neelsen - Mycobacterium leprae, leprosy, smear from lesion, Ziehl-Neelsen - Corynebacterium diphtheriae, Gram - ***Rod-shaped bacteria, non spore-forming, gram-negative*** **-** Azotobacter, soil organisms, Gram - Bacterium prodigiosum (Serratia marcescens), chromogenic organisms, Gram - Aerobacter aerogenes, intestinal bacteria, Gram - Proteus vulgaris, causing putrefaction, smear Gram - Acetobacter aceti, manufacture of vinegar, Gram - Escherichia coli, colon bacillus, Gram - Eberthella typhi, typhoid fever, Gram - Salmonella paratyphi, paratyphoid fever, smear Gram - Salmonella enteritidis, causes meat poisoning, smear Gram - Klebsiella pneumoniae (B. friedlanderi), pneumonia, stained to show bacteria and capsules - Pasteurella pestis, causing plague, smear Gram stained - Hemophilus influenzae (Pfeiffer), smear Gram stained - Rhizobium radicicola, nitrogen fixing organisms, t.s. root nodules of lupin with bacteria - Rhizobium radicicola, smear - Bacterium erysipelatos, causing erysipelas, Gram - ***Rod-shaped bacteria, spore-forming (bacilli)*** **-** Bacillus subtilis, hay bacillus, bacilli and spores doubly stained - Bacillus mycoides, large soil organisms growing in chains, staining of internal particles - Bacillus mesentericus, smear Gram - Bacillus anthracis, causing wool sorters disease, smear from infected spleen, Olt's stain - Bacillus anthracis, spores stained - Clostridium septicum, spores stained - Clostridium tetani, causing lockjaw, special stained to show the terminal spores by the Ziehl-Neelsen method - Clostridium perfringens, showing the central spores - ***Spiral bacteria and spirochaetes*** **-** Vibrio comma, causing Asiatic cholera, smear Gram - Rhodospirillum rubrum, chromogenic rods, smear Gram - Spirillum volutans, a very large spirillum, special stained to show the flagella - Spirochaeta duttoni (Borrelia recurrentis), Central African relapsing fever, blood smear - Treponema pallidum, section of syphilitic lesion, spirochaetae stained by Levaditi's silver method - ***Miscellaneous groups*** **-** Bacteria from human intestine, mixed species Gram - Bacteria from mouth, cocci, bacilli, spirilli, and spirochaetae are shown, smear and color design - Bacteria from bread, methylene blue - Bacteria from yoghurt, carbolfuchsine - Streptomyces griseus, branched organisms (streptomycin), smear Gram stained - Actinomyces, causing lumpy jaw, smear - Sphaerotilus natans, from putrid water, long chains within sheaths - Bacteria of caries in l.s. of diseased human tooth, doubly stained. **- PARASITES OF HUMAN AND ANIMALS: -** ***Protozoa*** - Parasitic Protozoa, color table - Indirect Fluorescent Antibody Test (IFAT). Fluorescein isothiocyanate - Trypanosoma brucei gambiense, Giemsa stain - Apathogenic trypanosomes, Giemsa - Trypanosoma brucei gambiense, blood smear and life-cycle - Trypanosoma cruzi - Life-Cycle, Chagas disease - Trypanosoma cruzi, Chagas disease, blood smear, Giemsa stain - Trypanosoma cruzi, l.s. of heart muscle with amastigotes - Rhodnius prolixus, Cone Nose Bug, vector of Chagas disease - Leishmania, life-cycle - Leishmania tropica, Oriental Sore - Leishmania donovani, Kala Azar, in smear and section of spleen - Trichomonas vaginalis, Giemsa - Giardia lamblia (syn. Lamblia intestinalis), trophozoite and cyst, iron hematoxylin - Sarcocystis tenella, section of infected muscle tissue with parasites in Miescher's tubes - Entamoeba histolytica, life-cycle - Entamoeba histolytica, trophozoites, and 4-nucleate cyst, Iron hematoxylin - Entamoeba histolytica, section of infected intestine - Entamoeba coli, trophozoite, and 8-nucleate Cysts, iron hematoxylin - Plasmodium falciparum, life-cycle - Plasmodium berghei, blood smear - Plasmodium falciparum, blood smear - Plasmodium cynomolgi, exoerythrocytic meront (schizont) in the liver of a monkey - Plasmodium spec., l.s. of the intestine of a mosquito showing oocysts - Plasmodium spec., t.s. of the salivary gland of an infected mosquito with sporozoites - Plasmodium vivax, trophozoite in an erythrocyte and mature meront - Plasmodium malariae, "band form"-shaped trophozoite and young meront - Plasmodium falciparum, (signet) typical ring form stages and gametocyte in the peripheral blood - Plasmodium gallinaceum, chicken malaria - Plasmodium cathemerium, bird malaria - Toxoplasma gondii, cyst and pseudocyst, Giemsa stain - Nosema apis, honey bee dysentery. Section of diseased intestine - Monocystis lumbrici, smear from seminal vesicles of earthworm - Gregarina, from mealworm intestine - Eimeria stiedae, causes rabbit coccidiosis, section of liver shows life cycle of the parasite - Babesia bigemina in blood smear of a cow, Giemsa stain - Balantidium coli - ***Platyhelminthes:*** - Dicroceolium lanceolatum (dendriticum), sheep liver fluke. W.m. of entire specimen - Fasciola hepatica (Distomum), beef liver fluke, w.m. of entire specimen - Fasciola hepatica, ova and miracidium - Fasciola hepatica, t.s. of infected snail liver (intermediate host) with sporocysts and redia - Fasciola hepatica, isolated sporocyst, redia and cercaria w.m. - Schistosoma spp., life-cycle - Schistosoma mansoni. Fork-tailed cercaria with penetration glands - Schistosoma mansoni, t.s. of two pairs in a vein - Schistosoma mansoni, copulating male and female - Schistosoma haematobium, egg with terminal spine - Schistosoma japonicum, egg without spine - Schistosoma mansoni, egg with subterminal spine - Taenia saginata and Taenia solium, life-cycles - Taenia saginata, tapeworm, scolex without hooklets w.m. - Taenia saginata, mature proglottid stained and flat mount and t.s. of proglottids - Taenia saginata, ova with embryos - Taenia solium, tapeworm, scolex with hooklets - Taenia solium cysticercus, bladderworm of pig tapeworm with scolex extended - Taenia pisiformis, mature proglottid w.m. - Hymenolepis nana, dwarf tapeworm of man, scolex with protruded rostellum and suckers - Circular row of hooklets from the scolex - Hymenolepis nana, proglottids w.m. - Diphyllobothrium latum, fish tapeworm, proglottids w.m. - Echinococcus granulosus, dog tapeworm, adult with scolex and a few proglottids, w.m. - Echinococcus granulosus, t.s. of hydatid cyst, and w.m. of free protoscolices from a hydatid - Echinococcus multilocularis. Section through a spongeous hydatid with protoscolices - ***Nemathelminthes:*** - Trichinella spiralis, section of infected muscle showing encysted larvae - Trichinella spiralis, infected muscle piece flattened - Ascaris lumbricoides and Enterobius vermicularis, life-cycles - Ascaris lumbricoides, roundworm of man and pig, t.s. of female and male - Ascaris lumbricoides, egg w.m. - Enterobius vermicularis (Oxyuris), thread worm of man, adult female, and egg - Trichuris trichiura, egg w.m. - Heterakis spumosa, intestinal worm of chicken, adult - Ancylostoma duodenale, hookworm, posterior end of male shows detail of bursa w.m. - Ancylostoma duodenale, adult female and male and female in copula w.m. - Ancylostoma duodenale, t.s. of adult female and egg w.m. - Dracunculus medinensis, macrophotograph - Onchocerca volvulus, filaria in subcutaneous node, t.s. - Wuchereria bancrofti, sheathed microfilaria - ***Arachnida:*** - Ornithodorus moubata, transmitter of the tropical African type of Relapsing Fever - Borrelia duttoni, Giemsa stain - Ixodes ricinus, Hard Tick w.m. - Neotrombicula autumnalis, Harvest Mite or Autumnal Chigger - Demodex folliculorum,

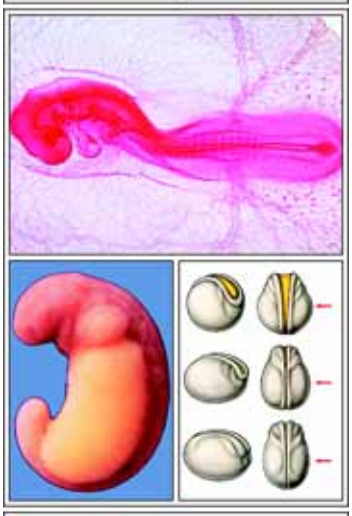
follicle mite of humans, adult specimen w.m. - Demodex folliculorum, human skin with parasites, section - Sarcoptes scabiei, penetrate through the epidermis, sec. of skin - ***Insecta:*** - Lipoptena cervi, louse fly, adult - Pediculus humanus, human louse - Phthirus pubis, pubic or crab louse - Phthirus pubis, egg attached to hair - Cimex lectularius, bed bug - Haematopinus suis, pig louse - Stomoxys, stable fly, piercing sucking mouth parts - Culex pipiens, common mosquito, pupa - Culex pipiens, posterior end of larva - Culex pipiens, adult - Culex pipiens, head and mouth parts of female and male w.m. - Culex pipiens, t.s. through the mouth parts of adult female - Culex pipiens, eggs - Anopheles, malaria mosquito, adult - Anopheles, head and mouth parts of female and male, w.m. - Pulex irritans, human flea - Xenopsylla cheopis, rat flea, carrier of the bubonic plague - Ctenocephalus canis, dog flea, adult male and female - Nosopsyllus fasciatus, rat flea - Ceratophyllus gallinulae, chicken flea **- HUMAN DISEASES (PATHOLOGY): - *Abnormal alterations of cells and tissues* -** Parenchymatous and fatty degeneration of liver - Hemosiderosis of liver - Glycogenosis of liver - Pigmentary cirrhosis of liver - Necrotic esophagitis - Foreign body granulome with hemosiderin and giant cells - Tonsillitis - Liver cirrhosis - ***Injury of circulatory organs and blood-forming organs -*** Adiposis of heart - Cardiac callosity - Myocarditis chronica acute recidivans - Organized venous thrombosis of muscle - Infarct of spleen - Chronic myeloid leukemia of spleen - Malarial melanemia of spleen - Anthracosis of lung - ***Pathologic alterations of lung and liver, tuberculosis, pneumonia -*** Cardiac callosity - Influenzal pneumonia - Croupous pneumonia - Chronic pneumonia - Necrotic (cheesy) pneumonia - Miliary tuberculosis of lung - Chronic tuberculous pulmonary cavity with bacteria - Icterus hepatis - ***Reaction of kidney after arteriosclerosis, disturbance of metabolism, and inflammation; colitis -*** Glomerular atrophy of kidney - Amyloid degeneration of kidney - Acute hemorrhagic nephritis - Chronic glomerulonephritis - Septic embolic nephritis - Colitis dysenterica Shiga-Kruse - ***Specific inflammations after infection with syphilis spirochaetes -*** Congenital syphilis of liver, spirochaetes silvered after Levaditi - Congenital syphilis of liver (Feuerstein liver), routine stained - Gumma of testicle - ***Progressive alteration of injured tissues and organs (Hypertrophy and hyperplasia) -*** Atheroma of head - Struma colloides - Undescended testicle showing hyperplasia of Leydig's cells - Hypertrophy of prostate - Giant cell sarcoma of maxilla - ***Benignant and malignant tumors -*** Chondroma of pubic bone - Myoma of uterus - Fibroadenoma of breast - Fibroepithelial mixed tumor of parotid gland - Melanosarcoma of skin - Spindle cell sarcoma - Carcinoma cervicis uteri - Sarcoma of testicle - Cystadenoma papilliferum of ovary - Gelatinous carcinoma of rectum - Lymphosarcoma mediastini - Metastatic carcinoma of liver.



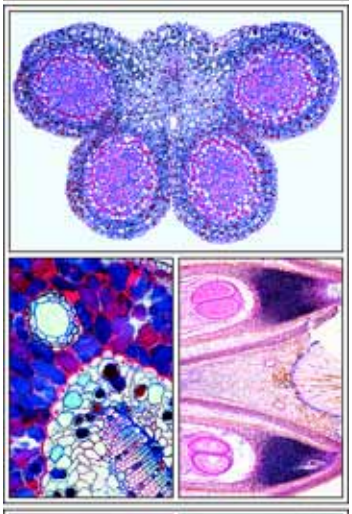
NEW!

No. 8231NE **Embryology and Development** (TF)

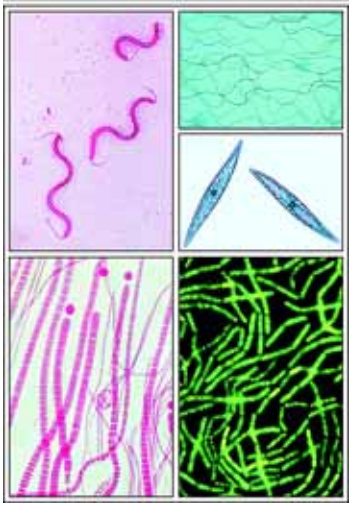
Atlas of 21 Overhead-Transparencies size 22 x 28 cm, NEW ENLARGED EDITION, comprising over 122 pictures (color photomicrographs and -macrographs, color life-cycles and anatomical pictures, drawings and designs). Manual with comprehensive interpretation text, drawings and designs). Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. – Compilation and text: Dr. K.-H. Meyer and Johannes Lieder



Ascaris Embryology. Maturation and Cleavage of Ascaris megalocephala bivalens: - Entrance of spermatozoon - First maturation division - Second maturation division - Formation of the second polar body - Fertilization, 6 stages - Mature oocyte with male and female pronuclei - fertilization - Metaphase of the first cleavage - Anaphase - Maturation, fertilization and cleavage of Ascaris megalocephala bivalens, all stages. **- Types of Eggs and Patterns of Cleavage: -** Types of eggs and patterns of cleavage I: as far as the 8-cell stage - Types of eggs and patterns of cleavage II: morula and blastula. **- Sea Urchin Embryology (Psammechinus Miliaris): -** Unfertilized eggs - Fertilized eggs - Two cells - Four cells - Eight cells - Sixteen cells - Thirty-two cells - Morula - Blastula, beginning gastrulation - Blastula, progressive gastrulation - Pluteus larva, - Sea urchin embryology, schematic graphic color designs of all stages. **- Frog Embryology (Rana): -** Uncleaved egg with jelly envelop - Egg, first division - Two-cell stage - Four-cell stage, second groove vertical to the first one, w.m. and t.s., - Eight-cell stage, four micromeres and four macromeres, w.m., - Median section through the sixteen-cell stage, - Morula, w.m. and section, blastocoel - Blastula, w.m. and section - Gastrula, w.m. and frontal section - Early neurula w.m. and sagittal section - Late neurula, neural folds are closed - Late neurula, detailed view of t.s. - Early tail bud stage, darkfield view - Middle tail bud stage, primordia of gills, - Tail bud stage, sagittal and parasagittal l.s. - Hatching stage t.s. through head showing brain, eyes, heart - Newly hatched larva, w.m. and parasagittal l.s. - Larva, t.s. region of eyes - Larva, t.s. region of heart - Larva, t.s. in region of stomach - Older larva, frontal section through eye region - Tadpole, region of head and eyes, head, thorax, abdomen t.s. - The cleavage divisions, schematic designs - The gastrulation, total views and sagittal sections. Schematic designs - The neurulation, dorsal views and transverse sections. Schematic designs - The early gastrula, schematic designs - Frog embryology, cleavage and formation of the blastula. Schematic designs - Frog embryology, sag. sec. young larva in the tail bud stage. Schematic designs.



Chicken Embryology: - 24 hour, w.m. primitive groove - 24 hour, t.s. through primitive groove - 24 hour, t.s. showing neural plate - 28 hour, w.m. 10 somites - 36 hour, t.s. of anterior and posterior region of abdomen - 40 hour, w.m. - 45 hour, l.s. shows primitive node - 48 hour, t.s. of abdomen - 50 hour, w.m. shows heart - 72 hour, w.m. injected to show the blood vascular system - 3 days, t.s. through head and abdomen - 4 days, t.s. abdomen, pronephros, Wolff's duct, - 5 days, w.m. showing formation of head - 8 days, l.s. - Chicken, skin of body (wing), l.s. and t.s. of feather development, - Chicken, t.s. embryo of 48 and 72 hours, color graphic design - Embryonic development of the central nervous system of Branchiostoma (Amphioxus). **- Development of the Neurula:** - Embryonic development of the central nervous system of the frog, t.s., from the side and from above - Embryonic development of the neural tube and central nervous system of humans. **– Human and Mammalian Embryology: -** Young mouse (Mus musculus), region of thorax and abdomen t.s., development of internal organs, - Developing eyes of mammal - Young mouse, median sagittal l.s. of head with brain - Older embryo of pig (Sus scrofa), median sagittal section - Young mouse, median sagittal l.s. through entire specimen, giving a complete picture of mammalian body plan - Embryonic stages of various vertebrate classes - Human embryo, l.s. - Development of human lungs and eyes.

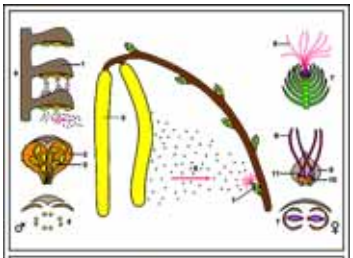
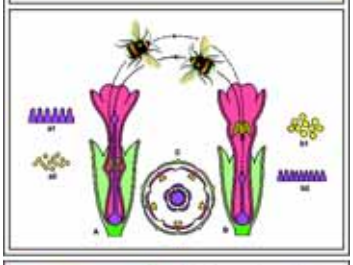
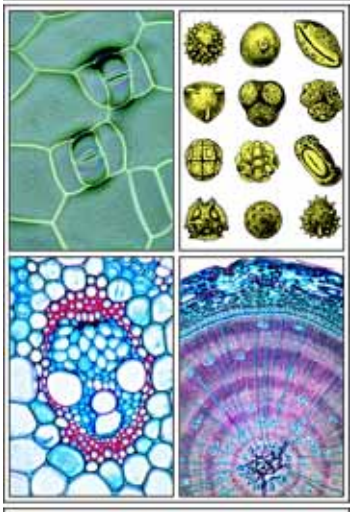
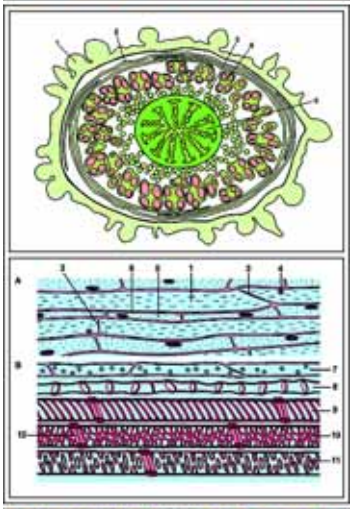
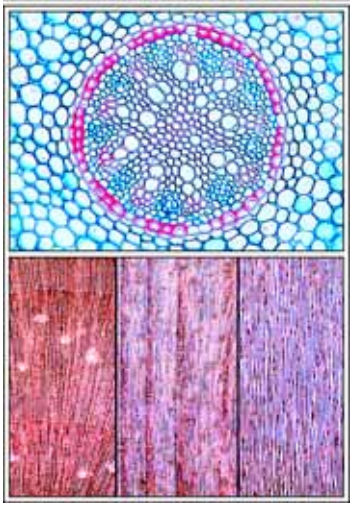


NEW!

No. 72304 E **Plant Anatomy Part I. Phanerogams** (Comprehensive Version)

NEW enlarged and revised Comprehensive Edition *(former no. 172304). Atlas of 43 Overhead-Transparencies size 22 x 28 cm comprising 270 pictures. (Color photomicrographs and -macrographs, anatomical pictures, life-cycles, drawings and designs). - Manual with comprehensive interpretation text, drawings and designs. - Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Dr. Dieter Gerlach and Johannes Lieder*

Cells - Typical plant cell, design and photomicrograph - Raphide producing and meristematic cells - **Cell division** - Hyacinthus, cell division in the root tips, 9 stages, photomicrographs - Mitosis: l.s. of root tip of Allium - DNA and RNA in different colors - Polyploid nuclei. - Principle of cell division (mitosis), 9 color designs - **Plastids** - Nuclear membrane, tetracycline fluorescence - Mitochondria and proplastids - Position of nucleus in plant cell - Mitochondria in plant cells - Spherosomes in epidermal cells, fluorescence - Chloroplasts and grana in a plant cell, 3 electron microphotographs - Chloroplasts, color design - Chloroplasts with grana, bright field and phase contrast - Cells from a Vallisneria leaf, interference contrast - Chromoplasts, dichroism - Starch grains in polarizing microscope - **Vacuole and cell wall** - Concave and convex plasmolysis - Cell walls of medullar cells, interference contrast - Bordered pits from pine tracheids - Stone cells - **Storage in the cell** - Reserve cellulose - Aleurone grains - Fat cells, t.s. stained for fat - Tannins - Calcium

oxalate crystals - Inuline crystals in Dahlia - Crystal sand (raphides) in t.s. of leaf - Lysigenous oil glands, rind of Citrus fruit - Lactiferous vessels - **Parenchyma, aerenchyma, epidermis -** Parenchyma tissue, t.s. - Aerenchyma - Agave, xerophytic leaf - **Trichomes and emergences -** Papillae of a pansy petal - Glandular trichome of Pinguicula - Stinging hair of Urtica, nettle - Scale-like stellate hairs of Elaeagnus - Branched leaf hairs of Verbascum - Drosera, sundew, leaf with glandular hairs - Prickle of a rose shoot - **Supporting Tissue** - Urtica, stinging nettle, t.s. of stem, angular collenchyma - Coleus, t.s. of a square stem - Lamellar collenchyma - Palisade sclereids - Stone cells of Hoya carnosa - Sclerenchyma fibers from the bark of oleander - **Conducting tissue** - Vessel with helical wall structure - Vessel with pitted wall structure - Annular and helical thickenings in l.s. of a stem - Tracheids from pine wood - Sieve cells from pine bast - Vessels with tyloses - Sieve tubes and companion cells - Callose on sieve plates of grape in winter - Sieve plates in surface view, t.s. - Cucurbita, pumpkin, l.s. of vascular bundles, and color design - **Vascular bundles and their arrangement in the stem** - Zea mays, corn, typical monocot stem t.s., and color design - Zea, closed collateral vascular bundle - Ranunculus, vascular bundle t.s. - Ranunculus, buttercup, stem t.s. open collateral bundles - Helianthus, sunflower, typical dicot stem, t.s. and color design - Cucurbita pepo, stem with bicollateral vascular bundles, t.s. - Bicollateral vascular bundle of stem of Cucurbita, t.s. - Triticum, wheat, t.s. of stem of a gramineous plant - Convallaria, lily-of-the-valley, t.s. of rhizome - Convallaria, concentric vascular bundle of rhizome - Elodea, stem with primitive bundle t.s. - Salvia, sage, t.s. of a square stem - Nymphaea, water lily, aquatic stem t.s. - Juncus, bulrush, t.s. of stem with aerenchyma - Piper, pepper, t.s. of dicot stem with scattered bundles - Pinus, older stem with annual rings, resin ducts t.s. - **Secondary growth of the stem -** Aristolochia sipho, birthwort, one year and older stem, t.s. - Helianthus, sunflower, formation of vacular bundles in t.s. of stem - **Wood and bast** - Pinus, pine, wood t.s., r.l.s. and t.l.s. - Pinus, bast transverse section - Tilia, lime, stem showing wood and bast, t.s. - Tilia, lime, wood, t.s. - Tilia, lime, bast, t.s. - Dracaena, dragon-tree, stem t.s. - Pinus, pine, wood t.s., r.l.s. and t.l.s., 3 designs - Tilia, lime (linden), wood t.s., r.l.s. and t.l.s., 3 designs - **Periderm and bark** - Sambucus nigra, elder, periderm t.s. - Sambucus nigra, stem with developing and fully developed lenticell t.s. - Pinus, bark, t.s. - Clematis vitalba. virgin's bower, t.s. of older stem - **Vegetative stem apex, meristem -** Elodea, Hippuris, Asparagus and Pinus, shoot with vegetative apex, 3 median l.s. - **Stomata and leaf stalk -** Tulipa, tulip, epidermis of leaf with stomata, surface view - Helleborus niger, hellebore, stomata of leaf w.m. Interference contrast and fluorescence - Tulipa, tulip, epidermis with stomata, color design - **Structure of the leaf, habitat** - Helleborus niger, hellebore, t.s. of leaf and vascular bundle - Syringa, lilac, a typical dicot leaf, t.s. and color design - Elodea, t.s. of a simple aquatic leaf - Zea mays, corn, and Iris, 2 t.s. of monocot leaves - Fagus, beech, sun and shade leaf, t.s. - Nerium, oleander, xerophytic leaf with sunken stomata, t.s. - Nymphaea, water lily, floating leaf with air chambers t.s. - Ficus, t.s. of leaf with cystoliths - Aesculus, horse-chestnut, t.s. of petiole and t.s. of leaf bud - Abscission zone at the base of leaf stalk - Pinus, pine, needle t.s. - Utricularia, bladderwort, w.m. of bladder - Calluna, ling, revolute leaf t.s. - Picea, spruce, and Abies, fir, 2 t.s. of needles - **The root** - Hyacinthus, root tip l.s. - Zea mays, corn, root cap with statoliths, l.s. - Lemna, duckweed, root tip and cap w.m. - Root tips with root hairs, l.s. and color design - Vicia and Salix, 2 t.s. with formation of lateral woods - Hordeum, barley, development of bundles, t.s. - Zea mays, corn, typical monocot root, t.s. and color design - Iris, t.s. of a monocot root - Convallaria, t.s of the central vascular bundle - Dendrobium, orchid, aerial root with velamen t.s. - Smilax, carrion flower, t.s. of root - Ranunculus, buttercup, dicot root, t.s. and color design - Ranunculus, central cylinder of the root, t.s. - **Secondary growth of the root -** Caltha, marsh marigold, formation of the cambium, t.s. - Pinus, pine, woody root, t.s. - Monstera, aerial root t.s. - **Symbiosis -** Lupinus, t.s. of root nodule with symbiotic bacteria - Endotrophic mycorrhiza and ectotrophic mycorrhiza, t.s. - Alnus, alder, root nodules with symbiotic actinomycetes t.s. - Cuscuta, dodder, haustoria in the host tissue, l.s. - **The flower** - Lilium, lily, t.s. and l.s. of flower bud showing petals - Prunus avium, cherry, flower bud with perigynous ovary, l.s. - Papaver, poppy, t.s. of dicot flower showing floral diagram - Corylus avellana, diclinous male flower l.s. - Arum maculatum, cuckoopint, l.s. of flower, insect trap - Taraxacum, dandelion, l.s. and t.s. of composite flower - Wind pollination and insect pollination, 2 color designs - **Reduction division in pollen mother cells of Lilium** - Lilium, lily, anther, t.s. - Pollen grains, mixed species, scanning electron micrograph - Lilium, lily, pollen grains, w.m. and t.s. - Lilium, lily, germinating pollen grain - Lilium, stigma with pollen tubes l.s. - Maturation divisions in the pollen mother cells of Lilium candidum, all stages in 16 photomicrographs - **Structure of the ovary and development of the embryo sac -** Lilium, lily, ovary t.s. - Lilium, megaspore mother cell, - Lilium, pachytene stage of prophase. - Lilium, anaphase of the first (heterotypic) division - Lilium, two-nucleate embryosac - Lilium, second (homeotypic) division - Lilium, four-nucleate stage, - Lilium, fourth division - Lilium, mature eight nucleate embryosac - Pollen tube, double fertilization - Lilium, growing pollen tube, l.s. - Lilium, double fertilization - Lilium, formation of the embryo l.s. - Capsella, shepherd's purse, development of embryo l.s. - **Development of seed and fruit -** Capsella, fruit with seeds, t.s. and l.s. - Triticum, wheat, l.s. of seed (grain) - Triticum, l.s. of the embryo - Prunus, plum, young drupe (stone fruit) t.s. - Pyrus malus, apple, young pome (fleshy), t.s. - Fragaria, strawberry, young aggregate fruit, l.s. - Phaseolus, bean, t.s. of pod, pericarp and seed - **Reproduction in gymnosperms** - Pinus, pine, life cycle with all development stages, color designs - Pinus, pine, male flower, l.s. - Pinus, mature pollen grains with wings w.m - Laryx, larch, pollen grain, t. s. - Pinus, young female cone, l.s. - Pinus, bract scales, ovuliferous scales and ovules, l.s. - Pinus, ovule with archegonia, l.s. - Pinus, mature archegonium, l.s. - Pinus, growing ovule, with macroprothallium - Pinus, ovule in sixteen-nucleate stage - Pinus, embryo and endosperm, t.s. and l.s.

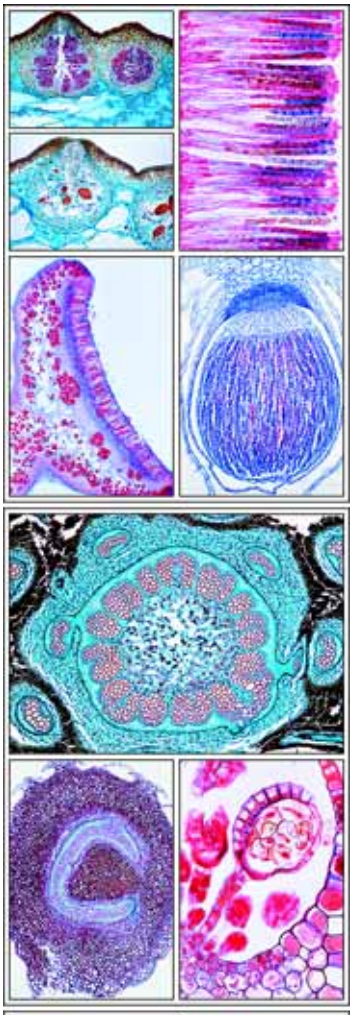
No. 72305 E **Plant Anatomy Part II. Cryptogams** (Comprehensive Version)

NEW!

NEW enlarged and revised Comprehensive Edition *(former no. 172305). Atlas of 32 Overhead-Transparencies size 22 x 28 cm, comprising 194 pictures. (Color photomicrographs and -macrographs, anatomical pictures, life-cycles, drawings and designs). - Manual with comprehensive interpretation text, drawings and designs. Sketch and work-sheets with semidiagrammatic designs and texts - Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Dr. Dieter Gerlach and Johannes Lieder*

Schizophyta: Schizomycetes, Bacteria: - Bacteria types, color design - Bacteria smear Gram stained with bacilli, cocci, spirilli, spirochaetes - Syphilis of liver, stain of spirochaetes - Mycobacterium tuberculosis, - Streptomyces griseus - Bacillus megaterium, cell walls - Bacteria from human intestine - Bacillus megaterium, nuclear equivalents, acridin-orange-Fluorescence - Spirillum volutans, large species - Rhodospirillum rubrum, chromogenic rods - Bacillus subtilis, hay bacillus, bacilli and spores - Clostridium tetani, lockjaw, terminal spores - Sarcina lutea - Streptococcus pyogenes, pus - Eberthella typhi, typhoid fever - Bacillus anthracis, wool sorters disease - Klebsiella pneumoniae pneumonia, bacteria and capsules - Bacillus mycoides, soil organisms - Electron micrograph of sections through bacterial cells (E. coli) - **Cyanophyceae, Blue-Green Algae:** - Gloeocapsa - Nostoc, filaments and heterocysts - Rivularia, blue-green alga - Oscillatoria, chromato- and centroplasm, Acridine orange, fluorescence - Oscillatoria, volutin spheres and drawing - Chroococcus, unicellular algae - Gloeocapsa - Noctiluca miliaris, marine phosphorescence - Pyrrhophyta, Fire Algae, Dinoflagellates: - Different dinoflagellates - Ceratium hirundinella - **Euglenophyta:** - Euglena, green flagellate - **Chlorophyta, Green Algae:** - Chlamydomonas, w.m. and color graphic design of life-cycle - Haematococcus - Volvox, w.m. and color graphic design - Hydrodictyon, waternet, w.m. - Pediastrum, star-shaped flat colonies - Pediastrum, shown in interference contrast - Ulothrix, with girdle-shaped chloroplasts w.m. - Chaetophora sp. - Cladophora, branching filaments - Draparnaldia, green alga - Oedogonium, filamentous green alga, oogonium and dwarf male - Eudorina, spherical colonies - Chlamydomonas, biflagellate algae - Pleurococcus, growing on bark - **Conjugatophyceae: Conjugates** - Spirogyra, in scalariform conjugation, fusion of the protoplasts and formation of zygotes - Spirogyra, vegetative filaments - Spirogyra, sexual reproduction, conjugation, color graphic design - Zygnema, star-shaped chloroplasts - Desmidiaceae, desmids, different species - **Charophyceae, Stoneworts** - Chara, stonewort, tip of the thallus with apical cell - Chara, oogonium and antheridiophore, w.m. and color graphic design - Chara, l. s. - **Xanthophyta, Yellow Algae:** - Ophiocythium majus, and Tribonema aequale, yellow-green alga - Vaucheria, vegetative filaments - Vaucheria, life cycle, color graphic design - Vaucheria, oogonium and antheridium - **Chrysophyta: Bacillariophyceae**

(Diatoms): - Navicula, diatoms - Pinnularia, Surirella, and Melosira, diatoms, interference contrast - Pleurosigma angulatum, test diatoms, polarized light - Diatoms, mixed species - Pleurosigma, diatoms, stained for chloroplasts - **Phaeophyta, Brown Algae:** - Ectocarpus, plurilocular gametangia - Sphacelaria, apical cell and sporangium - Laminaria saccharina, thallus with sporangia t.s. - Fucus vesiculosus, brown alga, male and female conceptacles, t.s. and life - cycle - Laminaria, male and female gametophyte and young sporophyte. - Dictyota, apical cells - Dictyota, thallus with unilocular sporangium - **Rhodophyta, Red Algae:** - Polysiphonia, red alga, antheridia, cystocarp and tetraspores w.m. and color graphic design - Batrachospermum, fresh water red alga - **Myxomycetes - Slime Fungi:** - Stemonitis, slime mold, capillitium with spores w.m. - Diderma spec. plasmodium. - Plasmodiophora brassicae, clubroot, young plasmodia and host cells with spores t.s. - **Phycomycetes - Algalike Fungi:** - Saprolegnia, water mold, oogonia and zoosporangia w.m. - Saprolegnia, life-cycle, color graphic design - Albugo candida, white rust of crucifers - Plasmopara viticola, downy mildew of grapes - Synchytrium endobioticum, potato black scab - Mucor mucedo, black bread mold, sporangium - Rhizopus, bread mold, zygospores w.m. - Pilobolus, sporangiophores - Empusa muscae, l.s. abdomen of house fly - Plasmopara viticola, downy mildew of grapes - Venturia pirinum (Fusicladium), pearscab - **Ascomycetes, Sac Fungi:** - Saccharomyces, yeast, budding cells, ascospores and life cycle - Taphrina pruni (Exoascus), plum pockets - Erysiphe spec., section with cleistothecia - Aspergillus, brown mold - Penicillium, blue mold - Botrytis allii, grey mold of onions - Claviceps purpurea, ergot, sclerotium, stroma and life-cycle - Peziza, cup fungus, t.s. of apothecium - Morchella, morel, fructification, asci and ascospores - Morchella, morel, life-cycle, color graphic design - Tuber rufum, truffle, fruiting body - Rhytisma acerinum, tar-spot of maple - Sclerotinia fructigena (Monilia), plum rot - **Basidiomycetes, Club Fungi:** - Wood, mycelium with clamp connections - Scleroderma vulgare, fruiting body t.s. - Psalliota, mushroom, gill fungus - Boletus edulis, pore fungus - Coprinus, t.s. of pileus with basidia and spores, and life-cycle - Puccinia graminis, wheat rust, uredinia, telia, aecidia t.s. and life-cycle - Ustilago hordei, promycelia with copulating hyphae - Ustilago zeae, cornsmut - **Fungi imperfecti:** - Epidermophyton, fungi imperfecti, hyphae and conidia w.m. - **Lichenes, Lichens:** - Physcia, lichen, thallus with symbiotic algae, t.s. - Physcia, apothecium t.s. - Pleurococcus enclosed by hyphae of a lichenous fungus - **Bryophyta: Hepaticae, Liverworts:** - Marchantia, liverwort, thallus with air chambers, t.s. - Marchantia, young developing archegonium - Marchantia, antheridia, archegonia, sporophyte and gemma-cup l.s. - Marchantia, life cycle - Marchantia, spores with elaters - **Bryophyta: Musci, True Mosses:** - Sphagnum, peat moss, t. s. of primitive stem - Polytrichum, moss, primitive central stele, t.s. - Mnium, moss, protonema - Mnium, w.m. of leaf, large chloroplasts - Sphagnum, peat moss, leaf - Polytrichum, moss, t.s. of leaves - Mnium, moss, - Tortula, moss, entire small plant and sporogonium - Mnium, moss, archegonium, antheridia and sporogonium, l. s. - Sphagnum sp., sporogonium, l. s. - Moss, stem tips with leaves, w.m. - Mnium, moss, life-cycle - Pteridophyta: Psilotales, Psilopsids: - Psilotum, primitive fern, stem with actinostele, t.s. - Psilotum, synangium, t. s. - **Pteridophyta: Lycopodiatae, Clubmosses:** - Lycopodium, club moss, t.s. of stem with plectostele - Lycopodium, l.s. of sporophyll with isospores - Selaginella, micro- and macrosporangium - Isoetes, quillwort, l.s. of entire plant - Isoetes, t. s. of the stem - **Pteridophyta: Equisetatae, Horse-tails:** - Equisetum, horse tail, median l.s. of stem apex - Equisetum, stem with eustele, t. s. - Equisetum, epiphyll with sporangia, t.s. - Equisetum, horse-tail, life-cycle - Equisetum, spores with elaters - Equisetum, germinating spores, color graphic design - **Pteridophyta: Filicatae, Ferns:** - Pteridium, braken fern, t.s. of the root - Pteridium, t.s. of rhizome with concentric vascular bundle - Adiantum, fern, rhizome with siphonostele, t.s. - Polypodium, rhizome with dictyostele, c. s. - Osmunda, royal fern, rhizome with ectophloic siphonostele, t.s. - Fern prothallium, filiform to the plane stage w.m. - Fern prothallium, mature with antheridia and archegonia, w.m. and l.s. - Fern prothallium, older stage with young sporophyte w.m. - Fern life cycle, color graphic design - Ophioglossum, sporophyll with sporangia, l.s. - Aspidium, fern, leaflet with of sporangia and sori l.s. - Phyllitis scolopendrium, leaflet with sporangia and sori, l.s.

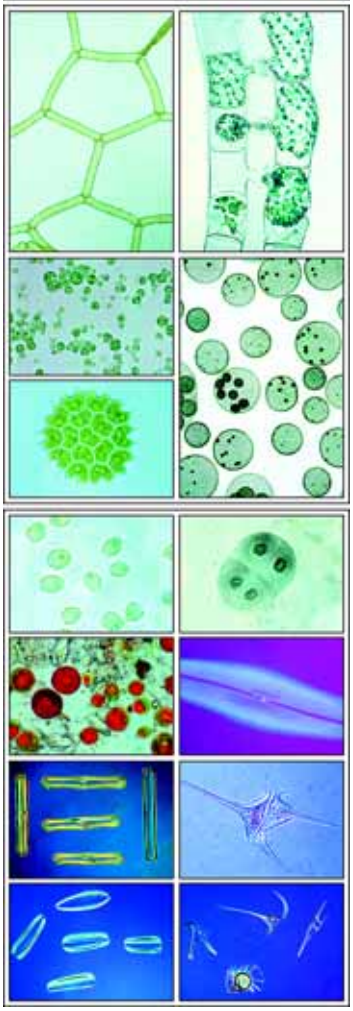


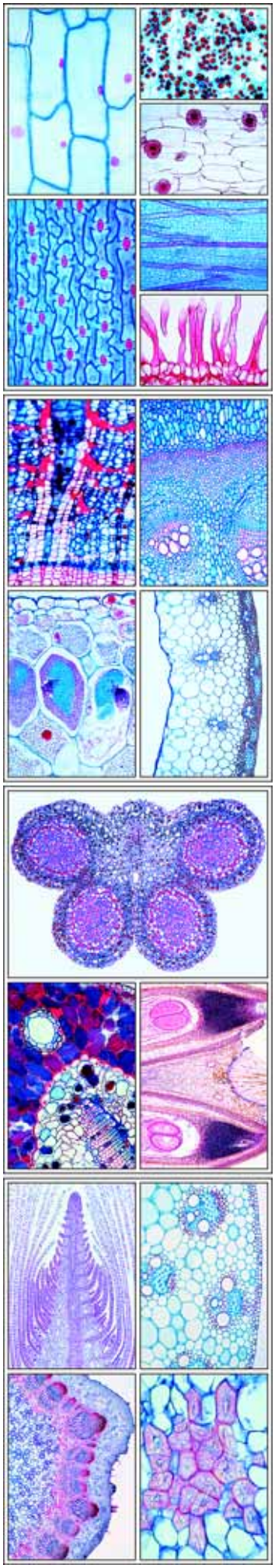
NEW!

No. 8246 E **Botany, Cryptogams** (Short Version TC)

Atlas of 18 Overhead-Transparencies size 22 x 28 cm, comprising 116 pictures (anatomical pictures, photomicro- and macrographs, nature photographs, electron micrographs, drawings, diagrams, tables, scenes, test data and results). With comprehensive interpretation text. Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Dr. Dieter Gerlach and Johannes Lieder.

Algae: - Oscillatoria, a blue-green filamentous alga w.m. - Oscillatoria, a blue-green alga, life cycle, color graphic design - Nostoc, blue green alga, w.m. shows heterocysts - Nostoc, blue green alga, filamentous colonies within gelatinous sheaths, color graphic design - Gloeocapsa, small colonies within sheaths w.m. - Mixed blue-green algae, many different species w.m. - Diatoms, recent marine, cleared shells of mixed species - Pleurosigma angulatum, test diatoms, high magnification to show detail of surface of shell - Spirogyra, alga with spiral chloroplasts, w.m. of vegetative filaments - Spirogyra, in scalariform conjugation and zygotes w.m. - Spirogyra, Conjugatae, fine structure and life cycle, color graphic design - Mixed desmids of various forms, strewn slide w.m. - Chlamydomonas, biflagellate algae w.m. - Chlamydomonas, biflagellate alga, sexual and asexual reproduction, color graphic design - Chlorella, unicellular green algae, w.m. - Cladophora, branching filaments with multinucleate cells w.m. - Cladophora, filiform green alga, life cycle and reproduction, color graphic design - Enteromorpha, seaweed w.m. - Oedogonium, filamentous green alga without branches w.m. - Haematococcus, unicellular red biflagellate algae - Eudorina, spherical colonies of thirty-two cells w.m. - Ulothrix, with girdle-shaped chloroplasts w.m. - Ulva, sea lettuce, a marine green alga, w.m. - Vaucheria sessilis, showing sexual stages w.m. - Volvox, spherical colonies with daughter colonies and sexual stages w.m. - Volvox, fine structure, reproduction, course of development, color graphic design - Chara, stonewort, with reproductive organs w.m. - Fucus vesiculosus, seaweed, male conceptacle with antheridia, t.s. - Fucus vesiculosus, female conceptacle with oogonia t.s. - Fucus (brown alga), habit, conceptacles, antheridia and oogonia, color graphic design - Laminaria saccharina, thallus with sporangia t.s. - Polysiphonia, marine red alga, male plant with antheridia w.m. - Polysiphonia, female plant with cystocarps w.m. - Polysiphonia, tetraspores w.m. - Batrachospermum, a fresh water red alga.
Fungi and Lichenes: - Stemonitis, slime mold, capillitium with spores w.m. - Albugo candida (Cystopus), white rust of crucifers, t.s. - Plasmodiophora brassicae, clubroot, host cells with spores t.s. - Plasmopara viticola, downy mildew of grapes, leaf with conidia t.s. - Synchytrium endobioticum, potato black scab, t.s. of infected tissue - Aspergillus, brown mold, conidiophores and conidia w.m. - Rhizopus, bread mold, sporangia and zygospores w.m. - Rhizopus (mold), sexual reproduction, formation of zygospores, color graphic design - Claviceps purpurea, ergot, stroma with perithecia and asci l.s. - Claviceps purpurea, t.s. of sclerotium showing hyphae - Claviceps purpurea, life cycle, color graphic design - Morchella edulis, morel, fruiting body with asci and spores, t.s. - Morchella edulis, morel, color graphic design - Penicillium, blue mold, mycelium and conidiophores, w.m. - Saccharomyces cerevisiae, yeast, budding cells w.m. - Saccharomyces (yeast), sexual and asexual reproduction, color graphic design - Sclerotinia fructigena (Monilia), plum rot, sec. through conidia on host tissue - Tuber rufum, truffle, fruiting body with asci, t.s. - Boletus edulis, pore fungus, sec. of pileus showing c.s. of pores - Coprinus, ink cap, t.s. showing typical basidia and spores - Mushroom (Basidiomycetes), habit and fine structure, color graphic design - Mushroom, life cycle, + and -spores, development of mycelium, basidia and basidiospores, color graphic design - Puccinia graminis, wheat rust, sec. of uredinia telia - Puccinia graminis, wheat rust, sec. of telia - Puccinia graminis, sec. of aecidia and pycnidia on barberry leaf - Puccinia graminis, life cycle, color graphic design - Psalliota campestris (Agaricus), mushroom, gill fungus, t.s. of pileus - Ustilago zeae, cornsmut, t.s. of pustule with spores - Physcia, sec. of thallus of a typical lichen showing the fungus and the embedded algae - Physcia, l.s. of apothecium showing asci and ascospores - Physcia (lichen), sag. sec. of an apothecium with asci and ascospores, color graphic design.





Mosses: - Marchantia, liverwort, cupule with gemmae, l.s. - Marchantia, liverwort, l.s. of archegonial branch showing archegonia - Marchantia, liverwort, l.s. of antheridial branch showing antheridia - Marchantia, liverwort, young sporophyte with developing spores l.s. - Liverwort (Marchantia) life cycle, all stages of development, color graphic design - Mnium, moss, t.s. of stem with primitive central stele - Mnium, moss, w.m. of leaf stained to show large chloroplasts - Mnium, moss, l.s. of antheridia - Mnium, moss, l.s. of archegonia - Moss (Mnium) life cycle, all stages of development, color graphic design - Mnium, moss, protonema w.m. - Polytrichum, moss, t.s. of leaves showing photosynthetic lamellae - Polytrichum, t.s. of leaf, color graphic design - Polytrichum, moss, t.s. of stem showing primitive vascular bundle - Polytrichum, moss, l.s. of sporophyte with spores - Sphagnum, peat moss, w.m. of leaf showing chlorophyll bearing and hyaline cells.

Ferns and Fern Allies: - Psilotum, primitive fern, t.s. of stem showing exarch protostele - Psilotum, t.s. of three-lobed sporangium - Lycopodium, club moss, t.s. of stem showing actinostele - Lycopodium, t.s. of mature sporophyll showing isospores - Lycopodium, anatomy and life-cycle, color graphic design - Equisetum, horsetail, rhizome t.s. - Equisetum, mature strobilus l.s. - Equisetum, horsetail, life cycle, all stages of development, color graphic design - Equisetum, w.m. of spores with elaters - Aspidium, (Dryopteris), fern, rhizome t.s. - Aspidium, leaves with l.s. of sori - Aspidium, isolated sporangia and spores w.m. - Polypodium, leaf with sori and sporangia w.m. - Osmunda, royal fern, rhizome with ectophloic siphonostele t.s. - Fern prothallium, selected to show antheridia and archegonia w.m. - Fern prothallium, l.s. of antheridium with spermatozoids - Fern prothallium, l.s. of archegonium with egg cell - Fern life cycle, all stages of development in 19 pictures, color graphic design.

No. 8247 E **Botany, Phanerogams** (Short Version TD)

NEW!

Atlas of 20 Overhead-Transparencies size 22 x 28 cm, comprising over 142 pictures (anatomical pictures, photomicro- and macrographs, nature photographs, electron micrographs, drawings, diagrams, tables, scenes, test data and results). With comprehensive interpretation text. Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Dr. Dieter Gerlach and Johannes Lieder.

Cells and Tissues: - Epidermal cells of Allium cepa (onion) shows typical plant cells - Epidermal cells of Allium cepa, color graphic design - Mitosis: l.s. of root tip of Allium cepa (onion), all stages in one picture - Cell division (mitosis) of Allium cepa, onion, 8 stages, color schematic design - Meiosis, t.s. of Lilium (lily) anthers showing pollen development - Meiosis: Lilium, zygotene stage, pairing of homologous chromosomes - Meiosis: Lilium, diplotene stage. Concentration and spiralization of pairs, chiasmata - Meiosis: Lilium, metaphase of first meiotic division, arrangement of chromosomes in the equatorial plate, top view - Meiosis: Lilium, anaphase of first meiotic division. Separation of chromosomes side view - Chloroplasts, w.m. of leaf of Elodea with large chloroplasts, bright field - Chloroplast in a mesophyll cell, electron photograph, low magnification - Chloroplast in a mesophyll cell, electron photograph, medium magnification - Chloroplast in a mesophyll cell, detailed electron photograph of the grana, high magnification - Chloroplasts, color schematic design - Aleurone grains, sec. of Ricinus endosperm - Starch grains, sec. of tuber of potato (Solanum tuberosum) - Starch grains isolated, high magnification detail, polarized light - Fat, t.s. of endosperm of Corylus (hazel) stained for fat - Inulin crystals, t.s. of tuber of Dahlia - Calcium oxalate crystals in w.m. of dry Allium scale - Raphides, t.s. of Impatiens leaf - Stem apex and meristematic tissue of Asparagus l.s. - Tracheids, reticulate, annular, and spiral vessels, isolated and w.m. - Cork cells, t.s. bark of Quercus suber (oak) - Stone cells, t.s. fruit of Pyrus communis (pear) - Parenchyme cells, t.s. of marrow of Sambucus niger (elderberry) - Root tip and root hairs, epidermal origin of root hairs - Pinus, pine, older woody root t.s.

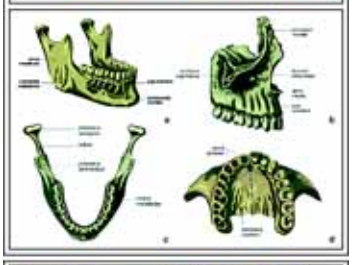
Roots: - Zea mays, corn, root t.s., typical monocot polyarch root - Zea mays, corn, root t.s., color graphic design - Convallaria, lily of the valley, t.s. of root shows endodermis, pericycle, phloem, xylem - Dendrobium, orchid, aerial root with velamen t.s. - Smilax, carrion flower, t.s. of root shows thickened endodermis - Salix, willow, l.s. of root showing origin of lateral roots - Ranunculus, buttercup, t.s. of a typical dicot root for general study - Ranunculus, t.s. of a typical dicot root, color graphic design - Ranunculus, t.s. shows detail view of the vascular tissue with protoxylem - Medicago, alfalfa, root t.s. with secondary growth - Taraxacum, dandelion, taproot with lactiferous vessels t.s. - Lupinus, root nodules with nitrogen fixing bacteria (Rhizobium) t.s. - Alnus, alder, root nodules with symbiotic actinomycetes (Streptomyces) t.s. - Fagus, beech, root with ectotrophic mycorrhiza, t.s. - Neottia nidus avis, orchid, root with endotrophic mycorrhiza, l.s. - Cuscuta, dodder, t.s. stem of host showing the haustoria of the parasite - Cuscuta, entrance of haustoria into the host tissue, high magnification.

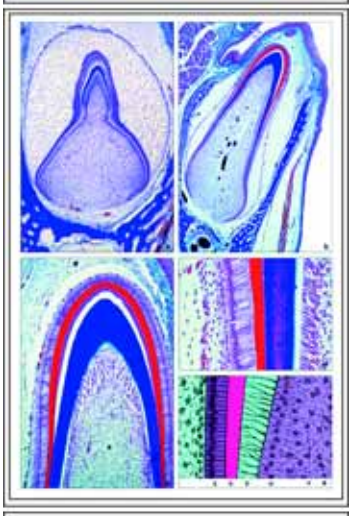
Stems: - Pinus, older stem with annual rings, resin ducts t.s. - Zea mays, typical monocot stem with scattered bundles, t.s. - Zea mays, typical monocot stem, color graphic design - Zea mays, t.s. of a vascular bundle high magnification detail - Triticum, wheat, t.s. stem of a gramineous plant with pith cavity and the ring-shaped arrangement of vascular bundles - Saccharum, sugarcane, stem t.s. - Helianthus, sunflower, typical dicot herbaceous stem t.s. showing open vascular bundles - Helianthus, sunflower, dicot herbaceous stem, color graphic design - Cucurbita, pumpkin, l.s. of stem with sieve tubes and vascular bundles - Cucurbita, pumpkin, l.s. of stem, color graphic design - Cucurbita, t.s. of stem showing surface of sieve tubes - Cucurbita pepo, t.s. of vascular bundle high magnification detail: xylem, phloem, sieve plates - Nymphaea, water lily, aquatic stem with idioblasts t.s. - Coleus, t.s. of a square stem showing collenchyma - Aristolochia, one year stem, t.s. - Aristolochia, older stem, t.s. - Fagus, beech, three sections of wood: cross, radial and tangential sections - Sambucus, elderberry, stem with lenticells t.s. - Tilia, lime, one year, stem t.s. - Tilia, two year stem t.s. - Tilia, three year stem t.s. - Elodea, waterweed, t.s. of aquatic stem showing primitive bundle - Piper nigra, pepper, t.s. of dicot stem with scattered bundles - Stem apex and meristematic tissue of Elodea, median l.s. showing leaf origin and growing point.

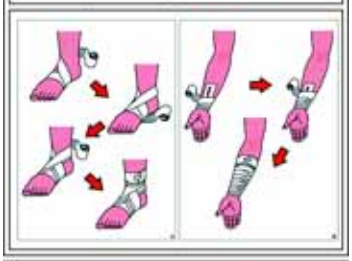
Leaves: - Pinus, leaf (needle), t.s. of gymnosperm leaves - Pinus, leaf (needle), t.s., color graphic design - Elaeagnus, olive tree, scale-like stellate hairs w.m. - Verbascum, mullein, branched leaf hairs w.m. - Tulipa, tulip, leaf epidermis with stomata w.m., showing stomata and guard cells - Stomata of leaf epidermis, surface view and section, color graphic design - Zea mays, corn, monocot gramineous leaf t.s. - Typical monocot leaf, t.s., color graphic design - Syringa, lilac, t.s. of a typical mesophytic dicot leaf for general study - Typical dicot leaf, t.s., color graphic design - Elodea, t.s. of leaf showing the simple structure of an aquatic leaf - Nymphaea, water lily, floating leaf with air chambers t.s. - Nymphaea, water lily, t.s., color graphic design - Nerium, oleander, leaf with sunken stomata, t.s. of a xerophytic leaf - Typical xerophytic leaf, t.s., color graphic design - Agava, xerophytic leaf with thick epidermis t.s. - Coffea arabica, coffee, leaf t.s. - Dionaea, Venus flytrap, t.s. of leaf with digestive glands - Drosera, sundew, leaf with glandular hairs w.m. - Utricularia, bladderwort, w.m. of bladder - Aesculus, chestnut, t.s. of leaf bud showing bud squama and embedded folded leaves - Ficus elastica, India rubber plant, t.s. of leaf with cystoliths - Buxus, box, t.s. of xerophytic leaf with thickened cuticle and several palisade layers.

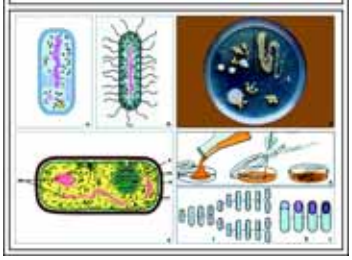
Flowers and Fruits: - Pinus, pine, mature pollen grains w.m. - Pinus, male cone with pollen t.s. (staminate cone) - Pinus, median l.s. of young female cone, megasporophylls with bracts and ovuliferous scales, ovules - Pinus, median l.s. of first year female cone, general view with growing ovules - Pinus, ovule with archegonia, median l.s. - Pinus, embryo and endosperm, median l.s. showing cotyledons - Pinus, embryo and endosperm, t.s. showing cotyledons - Mixed pollen types, showing various forms of many different species - Lilium, anther t.s. showing pollen chambers and pollen grains - Lilium, ovary t.s., showing arrangement of ovules, general view - Lilium, ovary t.s., ovule shows embryosac with the megaspore mother cell, resting stage - Lilium, ovary t.s., embryoac showing the anaphase of the second homeotypic division with two division figures - Lilium, ovary t.s., mature eight nucleate embryosac with egg cell, synergidae, polar nuclei and antipodal cells - Lilium, l.s. of stigma with pollen and pollen tubes - Lilium, l.s. of growing pollen tube, showing the division of the generative cell into two sperm nuclei - Solanum, potato, t.s. of ovary with formation of embryos - Capsella, shepherd's purse, l.s. of ovule with embryos in situ - Monocot flower bud, t.s. shows floral diagram

- Dicot flower bud, t.s. shows floral diagram - Arum maculatum, cuckoopint, l.s. of flower, insect trap - Lycopersicum, tomato, t.s. of flower bud shows floral diagram and axile placentation - Phaseolus, bean, t.s. of pod showing pericarp and seed - Papaver, poppy, t.s. of flower shows parietal placentation - Solanum tuberosum, potato, t.s. flower bud for floral diagram - Taraxacum, dandelion, l.s. of composite flower with tubular and ligulate florets - Taraxacum, dandelion, composite flower, color graphic design - Taraxacum, t.s. of composite flower - Cocos nucifera, coconut, endosperm t.s. - Citrus, lemon, young fruit t.s. - Triticum, wheat, t.s. of seed (grain) showing seed coat, endosperm with stored starch and embryo, entire view - Triticum, l.s. of seed (grain) showing all details, entire view, medium magnification - Triticum, l.s. through the embryo showing growing point of the stem, leaf origin, scutellum, primary root - Triticum, wheat, seed (grain), color graphic design - Zea mays, corn, grain (seed) l.s. embryo and endosperm









NEW!

No. 8253E **Atlas of Oral and Dental Histology**

Atlas of 40 Transparencies size 22 x 28 cm, with over 150 pictures and 20 sketch- and worksheets. With detailed explanatory textbook. - Comprising the following themes: General and foodstuffs. Human mouth, tongue and throat. Human teeth and teeth development. Dental hygiene. Salivary glands, esophagus and stomach. Cells and tissues. Examples of histopathology. Sketch and work-sheets with semidiagrammatic designs and texts

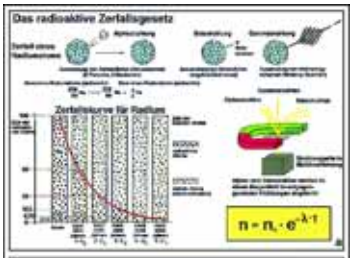
General and Foodstuffs - Human digestive organs - The composition of foodstuffs and the contents of calories - The Food Pyramid –**The Human Head** - Articulations of the skull: skull, atlas, axis - The skull, anterior and lateral view - Skull with separated bones – Mandible and Maxilla, lateral and dorsal view - Sagittal section of human head and neck, respiratory duct. Air passages - Frontal section showing the nasal cavity with its sinuses - The muscles of the head and the neck, front and lateral view – **The Human Mouth, Tongue and Throat** - Lip, t.s. - Internal parts of the mouth - Tongue, t.s. of papilla foliata with taste buds - Human tongue, t.s. - Fungiform and circumvallate papilla - Human tongue with areas of taste - The larynx; front view, dorsal view, l.s. - The processes of swallowing and breathing - Function of the arytenoid cartilages, glottis and vocal cords - Trachea, human l.s. showing cartilage and epithelium - Ciliated epithelium, t.s. of trachea - Human palatine tonsil and pharyngeal tonsil - Development of lymphocytes. Memory cells, plasma cells - Human immune system - **The Human Teeth and the Development of the Human Teeth -** The deciduous and the permanent set of teeth - The types of teeth - Upper and lower jaws - Development of a tooth: Dental lamina and early and late tooth primordium - Dental sack with later tooth differentiation - Apical part of crown - Detail with ameloblasts, enamel, dentin, and odontoblasts - Formation of enamel and dentin - Head of embryo with dental primordia - Diagram of tooth development - Section through the mandible showing deciduous tooth and developing permanent tooth germ - Incisor in the alveolus, median l.s. - Jaw with roots of fully-grown teeth, t.s. - Crown of incisor, ground thin – **Dental Hygiene** - Carious tooth, l.s. with caries-causing bacteria - Bacteria from human dental plaque, smear from human mouth, Gram stained with bacilli, cocci, spirilli, spirochaetes - Bacteria from human intestine - Dental Hygiene by tooth brushing – **The Human Salivary Glands, Esophagus and Stomach** - The position of the salivary glands in the head - Human submaxillary gland, t.s. - Human sublingual gland, t.s. - Human parotid gland, t.s. - Human esophagus, t.s. - Esophagus, color design - Wall of the stomach, t.s. - Intestinal epithelium with goblet cellst.s. and l.s. - Human stomach, l.s. drawing – **Human Cells and Tissues** - Typical Animal Cell. - Simple animal cells showing nuclei, cytoplasm and cell boundaries. - Mitochondria in section of human cells. - Golgi apparatus in section of human cells - Human chromosomes during metaphase (equatorial plate) showing the GTC-and the RBA-bands - General Information of Karyotype analysis. Normal male karyotype with bands: 46,XY,GTG - Types of epithelia, color diagram of 7 different types of epithelium - Squamous epithelium, isolated cells from human mouth - Stratified squamous epithelium - Intercellular bridges - Transitional epithelium Pigment cells in the skin - Endothelium of a small blood vessel cell boundaries revealed by silver impregnation - Sex chromatin: Barr body in mouth epithelial cells and nerve cell of woman - Columnar epithelium in human intestine t.s. photomicrograph - Cuboidal epithelium t.s. photomicrograph - Ciliated epithelium, t.s. of trachea - Ciliated epithelium - Scanning electron micrograph of cilia in upper part of human trachea - Cilia, flagella and their structures, electron micrograph. Transverse section of a group of cilia; three cilia are constructed divergely - Cilia, drawing of an electron micrograph - Human skin from palm, l.s. - Columnar epithelium - Connective tissues, drawings of 6 different types - Mesenchyme or embryonic connective tissue - Embryonic mucous connective tissue, umbilical cord t.s. - Loose connective tissue, stretch preparation of mesentery. - Reticular tissue silver stained - Tendon, l.s. - Yellow elastic connective tissue (Ligamentum nuchae), t.s. - Hyaline cartilage, t.s. - Cartilage, 3 types - Bone tissue, three dimensional color design to demonstrate the structure of the bone - Human bone, t.s. low magnification - Bone of human t.s., compact bone, diagram - Bone of human t.s. and l.s. - Cancellous bone, t.s. shows trabeculae of bone, bone marrow, and fat cells - Primary bone in marrow cavity of a long bone - Osteoblasts (bone forming cells), t.s. - Bone marrow with giant cells - Bone cells with processes - Phalanx of human embryo with beginning endochondral ossification, l.s. - Bone development, l.s. finger of fetus, showing intracartilaginous ossification - Long bone with epiphysis, longitudinal section - Finger joint, l.s, - Structure of a lon g bone - Structure of a skeletal muscle - The sensory and motor innervation of a muscle - Smooth muscles of human, l.s. - Striated muscle of human, l.s. - **Histopathology** - Atheroma capitis, Atheroma of the head - Giant cell sarcoma of the maxilla - Ffibroepitelial mixed tumor of the parotid gland - Melanosarcoma of the skin.

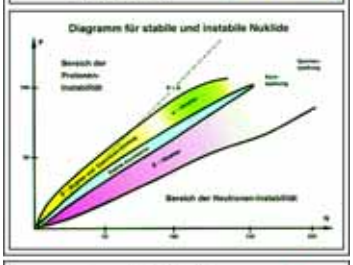
NEW!

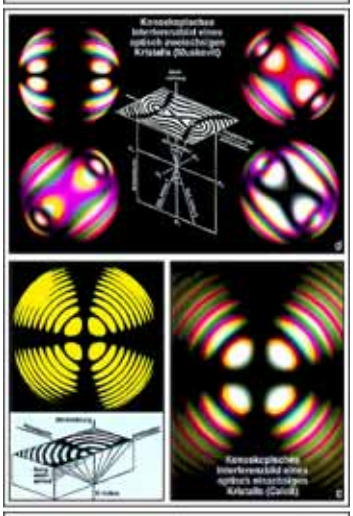
No. 8255E **Basic Medicine and First Aid**

Atlas of 18 Transparencies size 22 x 28 cm, with over 76 pictures and 20 sketch- and worksheets. With detailed explanatory textbook. - Comprising the following themes: The use of the microscope, bacteria and hygiene, medical instruments, first aid and assistance. Sketch and work-sheets with semidiagrammatic designs and texts

Construction of a microscope - Optical path of a microscope (path of rays) - How to prepare a microscopic slide: Blood or bacterial smear, whole mount of a zoological or botanical specimen, section of a zoological or botanical specimen - Working plan to prepare and stain a microscopic slide of a whole mount - Working plan to prepare and doubly stain a microscopic slide of a histological section (Hematoxylin-Eosine) - The different types of Bacteria. Cocci, bacilli, spirilla and spirochaetae. Forms and positions of the flagella and of the spores - Electron micrograph of sections through bacterial cells (E. coli) - Bacteria. Two pictures for comparison, one by scanning electron microscope, one by transmission electron microscope - Non-flagellated and flagellated bacteria - Bacterial culture in a Petri dish showing several different forms of growing - The procedure of preparing a bacterial culture - Bacteria in division, formation of spores in bacteria - Bacteria in smear of plaque of the teeth. – The Gram staining technology - Bacteria from waste-water, smear with many typical forms - Health care no. 1. Equipment for first-aid Part 1 - Different kinds of bandages - Sticking plasters - Spatula for mouth examination - Protection mask - Scissors - Blood pressure measuring equipment - Stethoscope - Thermometer - Health care no. 2. Equipment for first-aid Part 2 - Hypodermic syringe - Pipette - Auriscope for ear examination - Ophthalmoscope for eye examination - Forceps - Equipment for taking an electrocardiogram - Box with first-aid equipment - Health care no. 3. First aid: - Taking the temperature - Taking the blood pressure - Examination of the pulse rate on the wrist, two methods - Examination of the pulse rate by the doctor - Taking a pill and taking a medicine - Making an infusion - Making an injection - Examination of the heart and lungs with the stethoscope - Health care no. 4. First aid - In case of cuts: Cleaning of the wound, control of bleeding by applying a sterile dressing, covering the wound by bandages to keep the wound clean and keep harmful bacteria out - Chemicals in the eye: Clean eyes by flushing the eye with water - Broken arm or leg: any firm object or material will serve as a splint, application of a plaster cast - Slings used to support a fractured forearm - Walking on crutches - Health care no. 5. First aid: - In case of shock

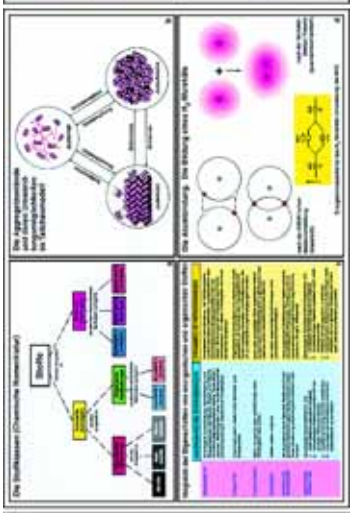


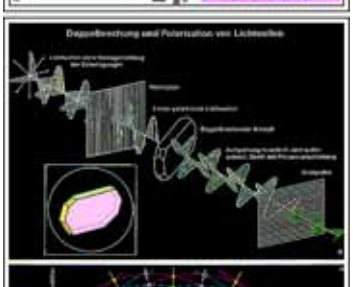




or heart attack: opening the mouth, mouth-to-mouth rescue breathing, artificial respiration by respirator, artificial respiration by chest compression - Choking by a foreign object in the throat: Using the Heimlich maneuver to try to remove the object if the person is having trouble breathing - Health care no. 6. At the docotor and in the hospital - Correct application of a bandage on the foot and on the arm - Examination of the throat - Examination of the eye - Examination of the ear - Checking and stretching the leg in case of luxation - Health care no. 7. At the docotor and in the hospital - Drawing up of a syringe, removing possible air-bubbles - Taking of a blood sample - Checking the blood sample under the microscope - Transportation by the ambulance - Explaining an X-ray by the doctor - Eye test.

No. 8240 E **The Structure of Matter Part I**





Atlas of 35 OHP Transparencies size 22 x 28 cm, comprising 86 color pictures with a great variety of details, mostly with several component figures (drawings, diagrams, tables, schemes, photomicrographs and -macrographs, electron micrographs, X-ray photographs, field emission micrographs, diagrammatic designs, technical photographs, test data and results). - Manual with comprehensive interpretation text, drawings and designs. - Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. – Compilation and text: Dr. rer. nat. Otto J. Lieder.

The structure of matter is the object of world-wide research work. The present atlas contains a systematic survey of the respective research results and is designated for use in secondary schools and in classes of technical, physical and chemical colleges and adult education. Here a selected stock of pictures is placed at disposal, which in usual textbooks and education manuals is contained in a very limited size only.

The composition of the atom, elementary particles, atomic nuclei, structure of the atomic shell. - On the basis of selected examples the development from the ancient idea to the latest findings the fine structure of the matter is illustrated - The ancient idea of the elements as an answer to the question for the primary matter - Postulating of the atomic idea according to LEUKIPPOS and DEMOKRITOS - Conception of particles according to JOHN DALTON (atoms, atom bindings, molecules) - First structured atomic model of THOMSON - Scattering experiment of RUTHERFORD. Exploration of atomic dimensions and definition of the orbital model - Atomic model of NIELS BOHR (Quantization of particle energy) - Atomic model of ARNOLD SOMMERFELD - Matter waves (DE BROGLIE waves) as a proof of the double nature of matter and light - The HEISENBERG uncertainty relation and its consequences to the ideas of atomic structure - The quantum mechanical atomic model according to HEISENBERG and SCHROEDINGER - The atomic spectrum of hydrogen as the expression of electron transition within quantum energy stages of the hydrogen atom - General term diagram and spectral series of the alkali atoms - Term diagram H to -He - The conditions of origin of the three spectrum types - The solar spectrum. The FRAUNHOFER lines and the related chemical elements - The hydrogen isotopes and the atomic structure of the ten lightest elements according to NIELS BOHR - The symmetry of the simplest atomic orbitals and the structure of the atomic shell according to the orbital model

Energy, matter, interactions. - An attempt to give a clear idea of facts being not very vivid about the elementary particles of the matter through the description of possible interactions - The four interactions in elementary particles, their coupling constants - Matter and antimatter: The most important elementary particles and their properties and systematics - Models of the construction of atomic nuclei - The EINSTEIN equivalence principles of energy and matter - Diagram of stable and unstable nuclides - Nuclear fusion, nuclear binding energy and mass defect - Nuclear fission as a simple nuclear reaction - Spontaneous nuclear disintegration by FERMI-interaction - The law of radioactive disintegration - Methods to proof nuclear reactions: WILSON's cloud chamber, GLASER's bubble chamber and the nuclear emulsion technique - Nuclear fission after HAHN, STRASSMANN and MEITNER - Nuclear evaporation by high-energy particles - Symmetry models of elementary particles - Subelementary particles and their hypothetical characteristics - Experiments for the detection of quarks resp. partons - Attempt of a „General field theory" by HEISENBERG

Classes of matter, properties, chemical bonding. - Proceeding from the fundamentals of chemistry, inherent laws and correlations between the physical and chemical properties of the stuffs and the ideas of the atomic composition and chemical bonding are illustrated - The classes of the matter. Chemical nomenclature - The aggregate states and their changes after the particle model - Characteristics of anorganic and organic bonds - The most important general properties of the matter - The characteristic properties of the three types of elements - Possibilities of sigma- and pi-bonds - Atomic bond after the BOHR theory and the molecular orbital theory - Ionic bond. Electrodynamic interaction and electro-negativity of the elements - Metal bond - Polarization, transitional forms and diagrams of the bond types - Co-ordinative bond (semi-polar bond) - VAN DER WAALS forces - Hydrogen bonding - Types of hydrogen bonding - Ionic dissociation of salts, acids and bases - The electrolytic process and its educts - Typical substance with various bond-types - Polymerization and macromolecules

Symmetry of crystals, properties of minerals, research into the structure. - Correlations between arrangement of the particle grating and the macro-symmetry of the crystallized matter are shown. Some macro-physical properties of solids being suitable as criterions for the determination of minerals. The principles of X-ray analysis of the structure. - The macro-symmetry, a visible result of the arrangement of the particle grating - Rational planes and angular constant - Electron micrograph of a metal surface - Electron micrograph of a virus protein crystal - The crystallographic symmetry elements - Survey over the crystal symmetries and the symmetry elements - The crystal symmetries in the crystal grating model - The crystal symmetries and the crystal forms - Transition stages of crystallization: cube, octahedron, rhomboid dodecahedron - The three-dimensional orientation of lattice planes in the crystal grating and the MILLER indices of the crystal faces - The stereographic projection - Perfect crystal and real structure with three-dimensional distortions - Example for crystal twinning - Forms of crystal growth and crystal aggregates - Isotopy and macro-symmetry - Characteristics of the crystalline state - Color, transparency and opacity - MOHS scale of hardness - Typical anisotropic effects on scratch hardness and thermic velocity of propagation - Forms of cleavability - Lattice structure and cleavability - The double refraction - Dichroism and pleochroism - Double refraction and polarization of light waves - Orthoscopic interference figure of zinc selenite - Conoscopic interference figure of an uniaxial crystal - Conoscopic interference figure of a biaxial crystal - Polarization components - Extinguishing obliquities - Color table after Michel-Lévy - Interference of light waves as an attempt for structure analysis of light diffracting matter - Interference of water waves - Conditions of light wave interferences - Diffraction on double slit for light waves - Conditions of X-ray interferences - X-ray diffraction after MAX VON DER LAUE as a method for structure analysis of crystalline matter - Simulated historic experimental set-up after MAX VON DER LAUE - LAUE pattern of a triclinic mineral - LAUE pattern of a monoclinic mineral - LAUE pattern of a rhomboid mineral - LAUE pattern of a trigonal mineral - LAUE pattern of a hexagonal mineral - LAUE pattern of a tetragonal mineral - LAUE pattern of a cubic mineral - Structure of beryllium - Beryllium, tourmaline, dioptase - LAUE pattern of rocksalt - Numbered LAUE pattern of rocksalt - Radiographic method (powder photography) DEBEYE-SCHERRER - Examples of isotypic determination of substances by comparison of their powder photographs - Single crystal photograph after the BUERGER precession technique - Structure analysis by vector analysis of a PATTERSON function - Calculation of electron density by FOURIER analysis - Field emission microscope picture of a platinum peak - Field emission microscope picture of a tungsten peak - Proof of changing of atomic position on the surface of a platinum-iridium single crystal - Principle of field emission microscope

No. 8241 E **The Structure of Matter Part II**

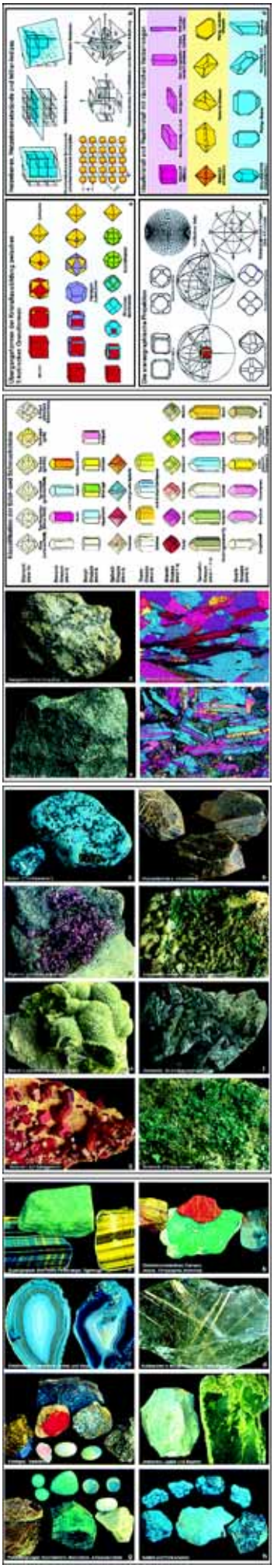
Atlas of 27 OHP Transparencies size 22 x 28 cm, comprising 204 color pictures with a great variety of details, mostly with several component figures (drawings, diagrams, tables, schemes, photomicrographs and -macrographs, electron micrographs, X-ray photographs, diagrammatic designs, test data and results). - Manual with comprehensive interpretation text, drawings and designs. - Sketch and work-sheets with semidiagrammatic designs and texts - In strong plastic file with ring-mechanism. - Compilation and text: Dr. rer. nat. Otto J. Lieder.

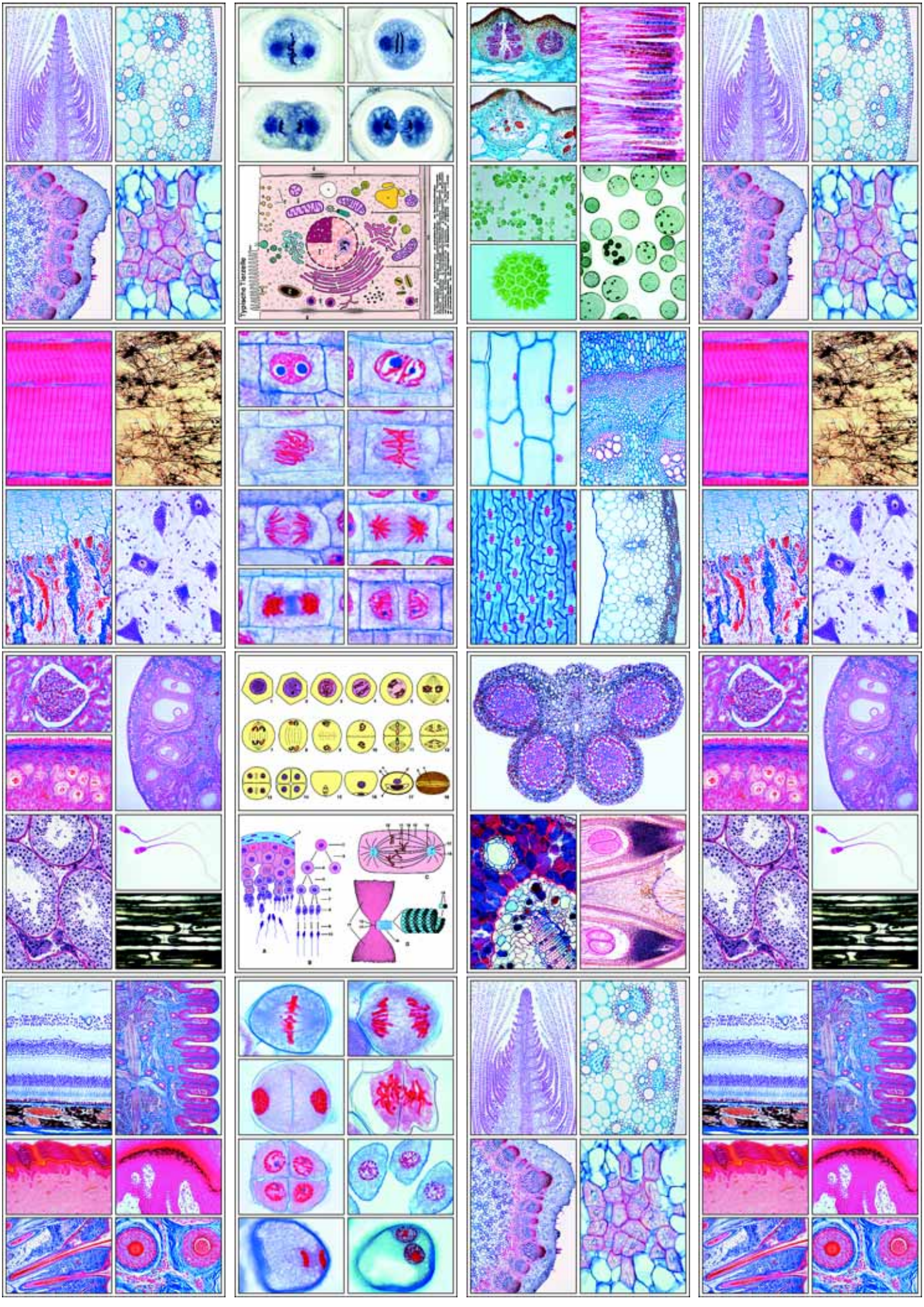
Morphology of the minerals I. Elements and Bonds. - The following series show the most important and well-known minerals in that state, which is for a collector the most common to find in the nature. The specimens for this selected normally are not treated. They show all the typical characteristics and enable therefore a sure identification of finds. From that minerals, which are often subject to variations of their appearance, two or more specimens are shown on one picture. Particular value was set on a correct reproduction of the natural colors and structures of the minerals.
Crystal chemistry systematics of minerals - Classification of silicate minerals - *1. Elements* - Graphite, fine aggregate - Diamond in kimberlite - Sulphur, rhomboid crystals - Native arsenic - Native copper as matrix - Native silver as crystal aggregate - Native gold on matrix quartz - Native bismuth, granular aggregate - *2. Sulphides and arsenides (ores)* - Pyrite (fools gold), typical crystals - Marcasite (white iron pyrite) - Bornite (purple copper ore) - Chalcopyrite (copper pyrite) - Covellite - Chalcocite - Galenite (lead glance) - Sphalerite (false galena, zinc blende) - Wurtzite - Cinnabar, the most important mercury ore - Pyrrhotite (magnetic pyrite) - Stibnite (antimonite) - Niccolite (copper nickel) - Smaltite (scutterudite) - Molybdenite, on quartz - Realgar (natural red arsenic disulphide) - Orpigment (yellow arsenic) - Arsenopyrite (mispickel) - Proustite (light red silver ore) - *3. Halides (salts)* - Halite (rock-salt) - Sylvite (sylvine) - Fluorite crystal (Derbyshire spar) - Carnallite, raw material for production of magnesium - Cryolite (Greenland spar, ice stone), for production of aluminium - *4. Oxides and hydroxides* - Magnetite (magnetic iron ore) - Haematite (red iron-ore) - Corundum, emery and ruby - Rock-crystal (quartz crystal) - Chalcedony and agate - Common and precious opal - Rutile, important titanium ore - Cassiterite (tinstone), in matrix - Pitchblende (nasturan), uranium ore (radioactive) - Chromite (chromium iron ore) - Ilmenite (titaniferous iron ore) - Pyrolusite (manganese ore) - Perovskite, pseudocubic crystals on schist - Spinel, octahedron aggregate - Zincite (red oxide of zinc, spartalite) - Psilomelane - Goethite - Brucite - Bauxite, raw material for the aluminium production - Limonite (brown haematite), weathered iron ore - *5. Carbonates* - Calcite crystal (calcspar) and Iceland spar rhombohedron - Dolomite rock (dolostone) - Siderite (iron spar, white iron ore) - Aragonite, large crystals - Cerussite (white leed ore) - Malachite (green carbonate of copper), cut and polished - Azurite (blue copper ore) crystal aggregate - Smithsonite (dry bone ore, calamine), crusty aggregate - Witherite, crystal aggregate - Magnesite - Rhodochrosite, cut - *6. Borates* - Tincal (borax), crystals - Ulexite (cotton ball), fibrous aggregate, cut and polished - Boracite crystals in gypsum - *7. Sulphates, chromates, molybdates and wolframates* - Gypsum, clear single crystal (spectacle stone) - Anhydrite (cube spar), pale-colored pieces - Barite (barytes, basofor) - Celestine (celestite) - Crocoite (red lead ore) - Wulfenite (yellow lead ore) - Wolframite, crystal - Scheelite (natural calcium tungstate) - *8. Phosphates, arsenates, vanadates* - Apatite, crystals in matrix - Pyromorphite, prismatic crystals - Callaite - Monazite, crystals - Erythrite (cobalt bloom) - Annabergite (nickel bloom) - Wavellite, spherolithic aggregate - Descloizide, vanadium ore, crystals - Vanadinite, on matrix - Torbernite

Morphology of the minerals II. Silicates. - This series presents 56 beautiful color photographs of the most important minerals out of the large group of the silicates.
Olivine in basalt - Garnet in mica-schist - Topaz crystal - Zircon crystal - Andalusite, stem-like aggregate - Disthene (cyanite), solid aggregate - Titanite (sphene), single crystals - Staurolite, twinning crystals - Hemimorphite (natural zinc silicate), crystals on matrix - Epidote, crystals - Zoisite, stem-like aggregate - Beryl, Blue variety 'aquamarine' - Cordierite (iolite), dichroitic crystals - Tourmaline, different color varieties - Dioptase on matrix - Chrysocolla, earthy substance - Diposide,, columnar crystals - Common and basalt augites, rock-forming silicates - Spodumene (triphane), lithium raw material - Jadeite, broken and cut pieces - Enstatite, broken piece - Bronzite, crystal intergrowth, - Hypersthene, broken piece - Tremolite, stem-like aggregate - Actinolite, prismatic crystals in solid talcum - Common hornblende, wide-spread rock-forming silicate - Basalt hornblende, typical crystals - Wollastonite (tubularspar), fibrous crystals - Rhodonite, solid granular concretion - Talcum, pale-colored split piece - Prehnite, pale-colored spherical aggregates - Muscovite (Muscovy glass), split piece - Phlogopite, tabular crystals - Biotite, split piece - Lepidolite, split piece - Fuchsite, flaky aggregate - Chrysotile (Canadian asbestos) - Antigorite - Nepheline (nephelite) in effusive rock - Leucite (white or Vesuvian garner) in basalt - Analcime (analcite) on matrix - Orthoclase and aventurine feldspar (sunstone), split pieces - Microcline, split piece - Amazonite (amazonstone) crystals - Albite (pericline) - Labradorite, split piece with typical coloration - Anorthite, broken surface - Sodalite, broken surface - Hauyne, in porous lave - Lazurite (ultramarine), gem lapis lazuli - Natrolite, crystal bundle in drusy basalt - Harmotome, crystals - Stilbite (desmine), brown bundle on apophyllite (fish-eye stone) - Apophyllite (fish-eye stone), crystals - Tektite, glassy silicate of unknown origin - Moldavite (water-chrysolithe, bottle-stone), glassy silicate originated from meteoric striking

Morphology and microstructure of the rocks. - The macrophotographs give a picture of habit and structure of the surface of the most important rocks. Microphotographs of thin sections of the same sorts in polarized light demonstrate their inner structure in colorful pictures. Review and nomenclature of the types of rocks.
Survey and nomenclature of the rock types - The chemistry of the eruptive rocks (magmatites) - Volcanics: Lave, pumice and obsidian - Intrusive rock granite - Thin section photomicrograph of granite - Intrusive rock granodiorite - Intrusive rock syenite - Thin section photomicrograph of syenite - Intrusive rock diorite - Thin section photomicrograph of diorite - Intrusive rock gabbro - Thin section photomicrograph of gabbro - Matrix rock granite porphyry - Thin section photomicrograph of granite porphyry - Matrix rock diabas - Thin section photomicrograph of diabas - Matrix rock pegmatite - Extrusive rock basalt - Thin section photomicrograph of basalt - Extrusive rock rhyolite (liparite) - Extrusive rock trachyte - Extrusive rock andesite - Clastic sedimentary rock sandstone - Thin section photomicrograph of sandstone - Clastic sedimentary rock greywacke - Clastic sedimentary conglomerate - Clastic sedimentary breccia - Chemical sedimentary rock travertine - Thin section photomicrograph of travertine - Biogenous deposit anthracite coal - Photo micrograph of the biogenous deposit diatomaceous earth - Pelitic metamorphic rock mica-schist (mica-slate) - Thin section photomicrograph of mica-schist - Sialic metamorphic rock gneiss - Thin section photomicrograph of gneiss - Carbonatic metamorphic rock marble - Thin section photomicrograph of marble - Regional metamorphic rock serpentine - Thin section photomicrograph of serpentine - Thin section photomicrograph of lunar rocks (basalt) - Thin section photomicrograph of lunar rocks (breccia and anorthosite) - Lunar rocks with lamellar structure caused by shock waves

Gems and precious stones. - This series also fascinates by the beauty and the great variety of details in its color photographs. There are shown well-known and economically interesting gems and precious stones.
Forms and cuts of precious stones - Classification of gems and precious stones - Corundum group: ruby and sapphire - Beryl group: aquamarine and emerald - Beryl group: emerald - Spinelgroup: pleonaste (ceylonite) and magnesian spinel - Topaz varieties - Garnet group: pyrope, grossular and almadine - Tourmaline varieties - Spodumene group: Hiddenite (lithia emerald) and kunzite - Quartz group I: rock crystal, amethyst, cairngorm (smoky quartz), citrine, rose quartz - Quartz group II: aventurine, hawk's eye, tiger's eye - Chalcedony varieties: carnelian, jasper, chrysoprase, bloodstone - Rutil needles in quartz crystal (Venus hair stone) - Banded chalcedony varieties: agate and onyx - Opal varieties - Jade varieties: jadeite and nephrite - Feldspar group: sunstone (heliolithe), moonstone, amazonstone - Callaite and turquoise matrix



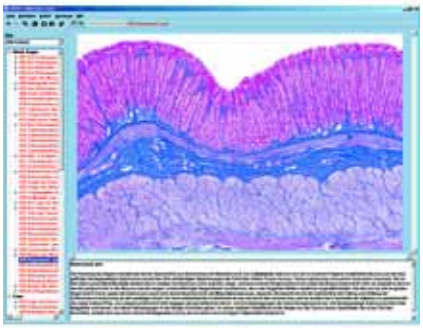


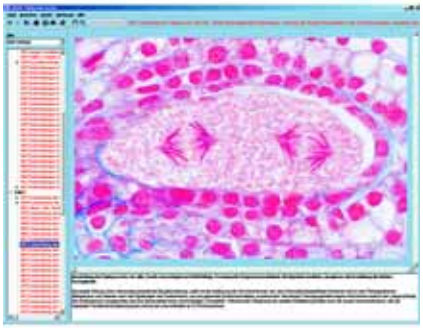
KNOWLEDGE AND EDUCATION ON CD-ROM

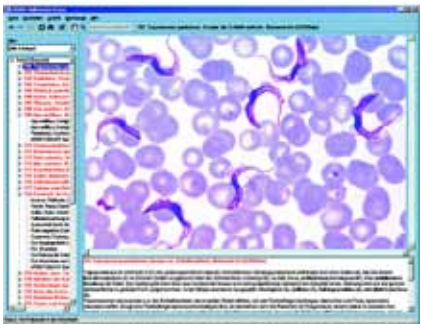
THE NEW LIEDER PROGRAM OF INTERACTIVE CD-ROM

We offer a new range of about 42 CD-ROM for interactive learning and teaching in school and education. All pictures and illustrations are taken from our own stocks to guarantee superior quality. Newly developed programs guarantee easy installation and unproblematic running of the program. Every CD comprises the following topics:

- Comprises a great variety of beautiful **diagrams, color photos, tables, anatomical pictures, electron and X-ray photographs, impressive life cycles, human photographs, landscape photographs, scenes, test data and results**, necessary for teaching the subjects.
- Comprises all necessary **photomicrographs of microscopic slides**, which can be observed by **five different steps of magnification** by using **a „MicroScope"**. The slides can be moved under this microscope and can be observed in all its parts.
- Comprises all necessary **drawings** matching the pictures, with **explanations** of all the parts.
- The same number of comprehensive **explanatory texts** to help understanding the pictures.
- A special **test program** to check the students' knowledge in several levels of difficulty. A variable number of random selected pictures have to be identified. After a successful run the students receive notes about their progress in learning. By repeating the test any success will by revealed by the program.
- A comprehensive **index, a search function** and a comfortable **browser** for all pictures and texts on every CD-ROM.
- All pictures can be shown also in **full-screen size**, just by pressing the ENTER button.
- Special **accompanying material,** which enables evaluation of what has been seen, and creative learning is an important part of the program. **Drawings, sketch- and worksheets** are supplied for many of the pictures on the CD. They are stored in **full printing quality (high resolution** of 300 to 600 dpi). After printing the drawings may be supplemented or colored. In addition, the worksheets – which are allowed to be copied – can be used as **accompanying material for class tests**.
- The novel **demo program** features the functionality to start a self-running demo of the program in sequential or random order. A sophisticated **presentation mode** allows the user to prepare a collection of chosen pictures for an impressive full-screen presentation.
- The complete set of images on this CD can be displayed in **thumbnail view** for a comprehensive overview of all available material. Thus, the user is also able to compile pictures around topics of special interest for the classroom.
- A comprehensive **index**. The entire set of material, that is, pictures, supplemental texts and slides, and drawings, are accessible via the main program's dropdown-menu Tools – „Search picture…" or „Select picture".
- The texts will be provided in **up to five languages** (English, German, French, Spanish and Portuguese) by pre-selection when starting the program. The program surface is adapted to the well-known „WINDOWS™-LOOK".
- All pictures and texts can be **printed** by the user.
- The CD works with all Windows versions (WINDOWS™ 95, 98, NT, 2000, XP, VISTA and Windows7). The resolution is **960 x 640 or higher for superior quality.** Full color representation with **over 1 Million colors** (depending on the screen). Optionally the CD runs also on PowerMac G4 and higher with WINDOWS™ emulation.
- The size of the **desktop** and the **windows for texts and pictures** can be scaled and adapted to the requirements of the user.







INTERACTIVE EDUCATIONAL CD-ROM FOR THE SERIES A, B, C, D.

Our new amazing CD-ROM for the MULTI-MEDIA PROGRAM SCHOOL-SETS A, B, C, D of **BIOLOGY** comprise all necessary **photomicrographs of microscopic slides**, which can be observed by different magnifications by using **a „MicroScope**". Beautiful **color drawings** matching the slides, with detailed **explanations** *(See page 3–14)*.

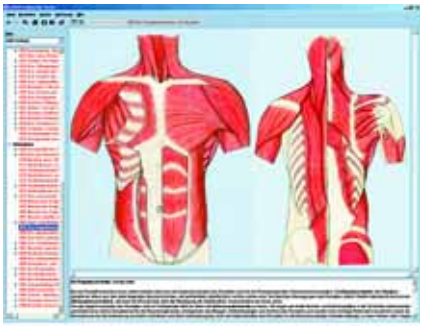
CD050 **MICROSCOPIC BIOLOGY - Set A**
Photomicrographs, diagrams, explanations, test program and teaching material to School Set no. A. *Comprising about 240 pictures and 1175 texts*

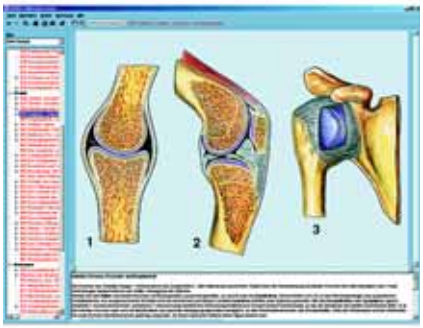
CD060 **MICROSCOPIC BIOLOGY - Set B**
Photomicrographs, diagrams, explanations, test program and teaching material to School Set no. B. *Comprising about 570 pictures and 2835 texts*

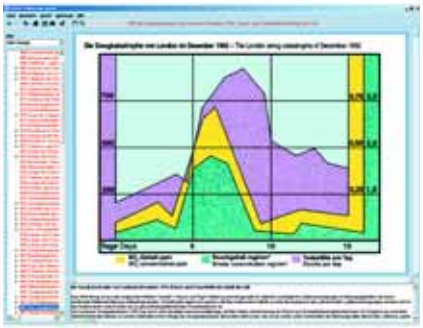
CD070 **MICROSCOPIC BIOLOGY - Set C**
Photomicrographs, diagrams, explanations, test program and teaching material to School Set no. C. *Comprising about 400 pictures and 1960 texts*

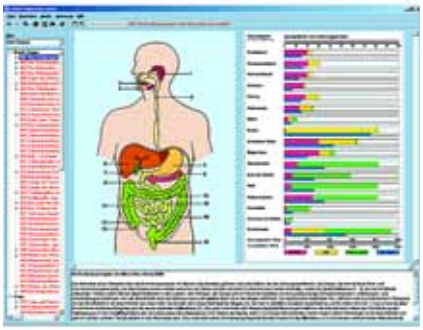
CD075 **MICROSCOPIC BIOLOGY - Set D**
Photomicrographs, diagrams, explanations, test program and teaching material to School Set no. D. *Comprising about 440 pictures and 2125 texts*

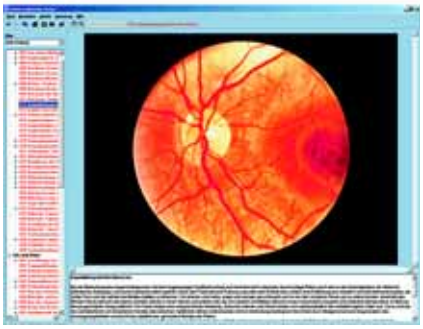
CD085 **MICROSCOPIC BIOLOGY - Set A, B, C and D together.**
All 4 CD-ROM can be copied into one big file during installation, *providing access to more than **2.200 pictures** and **8.100 texts***











THE NEW LIEDER PROGRAM OF INTERACTIVE CD-ROM

CD111 Human Skeleton, Musculature and Apparatus of Movement

The skeleton and musculature make up the body's support and movement apparatus. These two components work both ways: the skeleton is essential for the execution of movements and the muscles equally essential in supporting functions. The skeleton is described as the passive part of the apparatus of movement, while the muscles rank as the active part. Connective and fibrous tissue. Tendons. Cartilage. Bone cells. Haversian lamellae, interstitial lamellae. Bone tissue structure, diagram. Hollow bones. Bone marrow. The skeleton as a whole, its functional arrangement and individual parts. Skeleton, full frontal and rear views. Joints. Vertebral column. Thorax. Pectoral girdle. The limbs. Skeleton of the hand. Pelvis. Knee joint. Menisci. Skeleton of the foot. Ankle joint. The skull, front and side views. Skull dissected in its constituent bones. X-ray pictures of a bone dislocation and of a bone fracture. Full front and rear views of human musculature with twelve partial views of muscles. Fine structure of muscles. Capillary blood vessels in the muscles. The sensory and motor innervation of muscles (muscle spindles and motor end plates). Muscle efficiency. Pronation and supination muscles.

CD112 Feeding Organs and Metabolism in the Human Body

Proteins, carbohydrates and fats as components of our nutrition. Minerals and vitamins. Nutriment entails foodstuff intake, digestion and resorption. Health through a balanced diet. Mouth, gullet and esophagus. Tooth forms. Tooth development. Tooth renewal. Milk-teeth and permanent teeth. Cavity-causing bacteria. Salivary glands: structure, location and function. Human stomach, cardia, fundus, pylorus. Function of the gastric glands. Intestine and digestion process. Location and points of support of the digestive organs. Intestine wall layers, villi, crypts, glands, fine structure of the intestinal villus. Human large intestine (colon). Digestive enzymes as organic catalysts. Constructive metabolism (anabolism) and destructive metabolism (catabolism, conversion to energy) Function of human liver and pancreas. The liver's glandular character and its function. Affections of the pancreas , function of islets of Langerhans. Insulin and diabetes. Function of human urinary organs: kidneys, ureter and urinary bladder. Detoxification of the body by the kidneys as a fundamental, vital process. The human body water and salt budget.

CD113 The Human Respiratory and Circulatory Systems, the Human Heart

The pathways through which oxygen reaches the cells varies from organism to organism. In the case of unicellular beings, oxygen diffuses directly from the environment into the cell. In the case of higher organisms, including humans, a transportation system in the body distributes oxygen taken from the environment by a specialized organ (gills, lungs). Nose and nostrils. The larynx as respiratory and voice organ. Windpipe (trachea). Lung position and structure. Alveoli. Blood irrigation. Gaseous exchange. Volume of air respired. Regulation of breathing. Lung diseases. Damage of the breathing organs caused by environmental factors. Blood as mediator between the cells in the body and the environment. Using the circulatory pathways, blood transports different substances: nutrients, respiratory gases, intermediate and end products of metabolism, active substances and substances of the immune system. Blood components. Blood groups. Blood clotting. Antibodies. Rhesus intolerance. Lymphatic system. The human immune system and its functions. Anatomy of the heart, cardiac valves, heart muscles, functions and impulses. Electrocardiogram. Blood circulation. Arteries, veins and capillaries. Regulation of blood pressure, measuring blood pressure. Exchange of substances between capillaries and tissues.

CD114 Nervous System and Transmission of Information Part I

Introductory CD for the nervous system. View of the entire human nervous system. Occurrence of the typical nerve cells in the human nervous system. Fine structure of a neuron, composition of the nerve, motor end plates, glial cells, nerve cells and nerve tissue. Neuron, ganglion, centers, reflex arcs, automatism. Embryonic development of the human nervous system. Neural plate, neural groove, formation and closure of the neural tube. Description of the development of different nervous systems of invertebrates and vertebrates facilitates understanding of the human nervous system. Formation of the neopallium from concentric growth rings. Phylogenetic tree of mammalian brain convolutions. Connection between brain sensory and motor nerves and various body areas. Development of the thalamus into a relay station. Progressive concentration and differentiation in the brain, component parts and their relation to each other. Increase in organizational complexity.

CD115 Nervous System and Transmission of Information Part II

The human central, peripheral and autonomic nervous system. Spinal cord: structure and function. Function of gray and white matter. Diagram of reflex connections. Examination of human reflexes and of diseases affecting the nervous system: polio, syphilis, sclerosis, paraplegia. Embryonic development and hierarchical structure of the brain. Structure and function of brain stem, cerebrum and cerebellum. Course of typical sensory and motor tracts. Perception, conduction and transmission of information. Conscious and unconscious movement controls. The brain is simultaneously connecting and controlling organ: for that reason, information perception, conduction and transmission are treated in a special section: resting potential at the axon sheath and its change. Transmission of information over the synaptic gap. Types of synapse. Stimulus propagation along the axon. The brain's blood supply: as the controlling organ of our body is the brain the biggest consumer of energy. The blood-brain barrier. Brain stem, hindbrain and cerebellum. Brain lesions (diving accident, stroke). The autonomic nervous system, antagonistic effect between the sympathetic and parasympathetic part. Regulation of body temperature. Control of the emptying of the urinary bladder, transmitter and inhibiting substances at synapses and motor end plates.

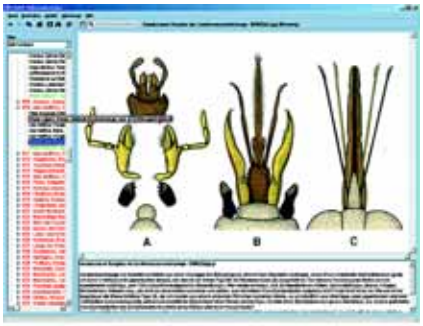
CD116 Sense Organs as a Window to the World

The sense organs have the task of furnishing information to the individual about himself and his environment. The ability to perceive stimuli and react to them is, together with the capacity for movement, nourishing oneself and reproducing, one of the primordial characteristics of living protoplasm. Even amoebae react to touch and light, as well as to chemical and temperature stimuli. Over the course of evolution, first some individual cells and then complex organ systems specialized in perceiving and processing stimuli. The nature of light. Eye and retina structure. Accommodation and adaptation. Image formation, movement vision, spatial vision (depth perception). Connection mechanisms in the retina and the brain. The physiological-psychological components of visual perception. Ocular affections. Optical illusions. Color vision and color blindness. Colors and psyche. Ear and hearing. Formation of sound waves. Development and structure of the human ear. Middle ear, inner ear, cochlea, organ of Corti. Directional hearing, hearing centers. Structure of the labyrinth, perception of rotation and spatial orientation. The chemical senses. The sense of smell. Location of the olfactory region. Nose conchas and olfactory epithelium. The sense of taste. The tongue's tasting areas. Papilla foliata, vallate papilla and fungiform papilla, fine structure. The skin as organ of touch. touch corpuscles, warmth and cold receptors, sense of temperature and thermal receptors. Pressure receptors. Sensitivity differences caused by touch stimulation. Conscious awareness of the position and muscle movements. Muscle spindle and Golgi tendon apparatus. Processing of self-awareness information.

CD117 Reproduction and Sex Instruction

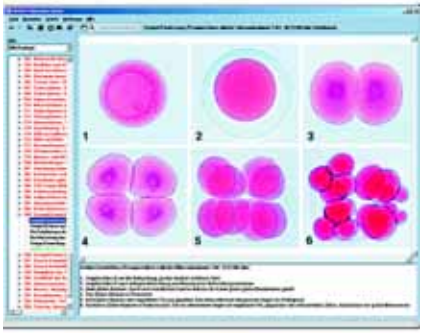
Reproduction serves for the preservation of the species. The number of germ cells must balance losses caused by environmental factors (predators, climate, catastrophes), so that the number of reproductive individuals remains constant within certain parameters. The CD provides a vivid introduction into the biology of reproduction from unicellular organisms through to mammals, providing detailed representations of human reproduction and

furnishing other teaching material for sexual instruction. Sexual and asexual reproduction. Fertilization of the ovum and fusion of both haploid nuclei. The different types of egg cells and the corresponding types of cleavage. Gastrulation, neurulation, formation of germ layers. Examples of organ development. Structure and function of male and female sexual organs. Testis, epididymis, spermatogenesis, spermatozoa. Structure of the uterus wall. Menstruation cycle and fertilization. Changes in uterine lining (endometrium). Ovulation, admission of the ovum into the fallopian tube, fertilization, development in the fallopian tube and embedding in the endometrium. Growth of the foetus in the uterus. Embryonic and maternal circulation. Foetus in the uterus, placenta, umbilical cord, amnion. Developed foetus in the womb. Start of the birth process, entrance of the amniotic sac into the birthing canal and birth are described.



CD118 Hormones, Hormone System and Control

Hormones are substances produced chiefly by the endocrine glands. They are brought by the blood stream to the areas of the body where they exert their effect and influence through ferments the most important vital processes, such as metabolism, development and growth. They adapt the body to different environmental conditions and safeguard the preservation of the species. Alterations of hormone budgets can have serious physical and psychological consequences. Nature and function of hormones. Thyroxin, adrenaline, insulin, sexual hormones, hormones of the hypophysis. Effects of castration. Human dwarfism, gigantism, acromegaly and obesity. The thymus. Development of hormone glands. Control of hormone release. Interaction between releasing and gonadotropic hormone. Feedback control of peripheral hormones. Influence on gene activity, protein synthesis, neurosecretion, second messenger, cascade mechanism. Dovetailed operation of different hormones, inhibiting and stimulating factors. Synthetic hormones. Regulation of blood sugar content. Stress, heart infarct, animal production, anabolica, pills, insect hormones, plant hormones, auxin.

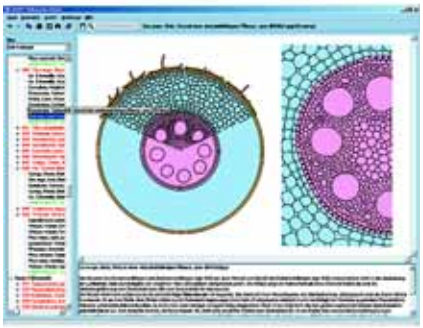


CD120 Cytology and Molecular Biology

In cytology and molecular biology, cell nuclei and chromosomes are conspicuous structures. Their role in cellular activity, their function and importance in heredity and cell division, as well as aspects of molecular biology will all be discussed. This CD offers a wide range of images and text covering the multiple types of nuclei and chromosomes, including images of mitosis and polyploidy. Typical animal cell and typical plant cell. Living nuclei, nuclear forms and functions. Giant chromosomes. Polyploid nuclei. Fine structure of cell nucleus. Structure of chromosomes. Mitosis. Individuality of chromosomes. Chromosome structure, gene location (loci), reduction division, crossover and chiasmata, gene expansion and arrangement, replication. Proving the material structure of the gene. Structural properties of DNA. Identical replication as a cause of hereditary constancy. DNA, RNA and protein synthesis as causes of character formation. Genetic code and molecular mechanisms in mutations. Didactic guiding concepts: relations between structure and function on the molecular level. Explanation of genetic observations through molecular properties and reactions. The findings illustrated through the hypotheses, methods and experiments that led to those findings.

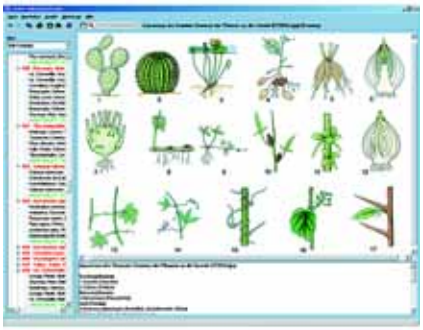
CD124 Cell Division (Mitosis and Meiosis)

A fundamental feature of all living creatures is that their organism grows. The actual growth of multicellular organisms results from the increase in the number of cells. Cell divisions make it possible for a single fertilized egg cell to give rise to millions and billions of cells. In the process, chromatin, as carrier of hereditary information, is duplicated, then halved in a highly accurate manner and then transferred to both daughter cells. The complex process of meiosis, the reduction division. Through meiosis not only is the number of chromosomes halved, but also the utterly important rearrangement of chromosome sets and the exchange of segments („crossing over“ process) both take place. The process of cell division is explained through classical examples of known animals and plants. Fine structure of the cell and its nucleus. The sequence of a normal cell division (mitosis) in chronological steps. Resting nucleus. Contraction, division and separation of the daughter chromosomes. Recombination of hereditary traits and reduction in the number of chromosomes through meiosis. Primordial sex cells. Entering of a sperm in the egg cell (ovum). Prophase, first and second meiosis. Dismissal of the sperm's flagellum (tail). Mixing of male and female chromosome sets. Translation of chromosomes to egg nucleus. Mature egg cell with male and female pronuclei. Fertilization, cleavage, embryo formation. Schematic representation of all phases. The slides, colored by means of a special staining technique, depict the individual cell structures in contrasting colors.



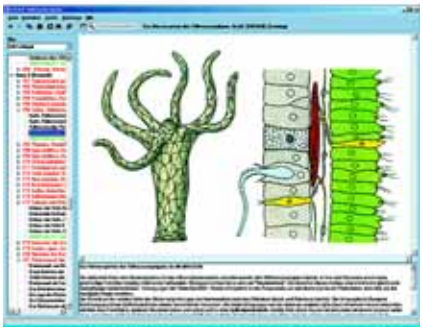
CD125 Mendelian Laws, Modification and Mutation

In order to establish the fact that heredity is governed by laws, it is necessary to mate living beings that exhibit certain differences from each other. The first experiments in this regard were performed by Augustinian priest Gregor Mendel in the 1860's on the garden of his monastery in Brünn. He crossed different strains of peas and kept track of hereditary transmission of particular characteristics in hundreds of plants over a number of generations. He thus found significant number rules and could thereby gain fundamental insights into the nature of heredity. The term „variability“ groups all those alterations in living beings that, on account of not being hereditary, fall within the category of „modificability“. By contrast, alterations that can be passed on through heredity all called mutations. There is no doubt that changes in the hereditary makeup, i.e. mutations, made evolution possible in the first place.



CD126 Heredity and Genetics of Man, Part I

The basis of both CD's in this series is the range of newest findings in the field of human genetics. As an introduction, the basic knowledge on formal genetics is first imparted, illustrated and explained using many examples from medical genetics. Detailed description of hereditary transmission: Autosomal dominant inheritance, autosomal recessive mode of inheritance, X-chromosomal inheritance, multifactorial and mitochondrian inheritance. **Part 2** shows the different types of human tissue cultures, sex chromatin in both normal and pathological numbers of gonosomes through the analysis of Barr bodies, drumsticks and F-bodies. Analysis of metaphase chromosomes by various banding techniques. Chromosomal aberrations and their phenotypic consequences. Secondary chromosomal aberrations following exposure to clastogens and repair defects. Examples from tumour cytogenetics.

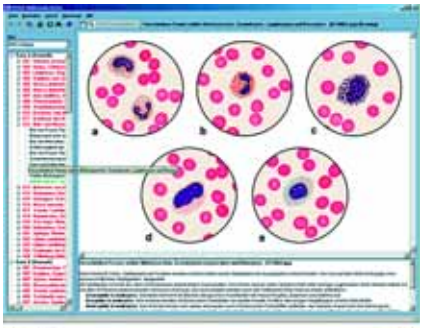


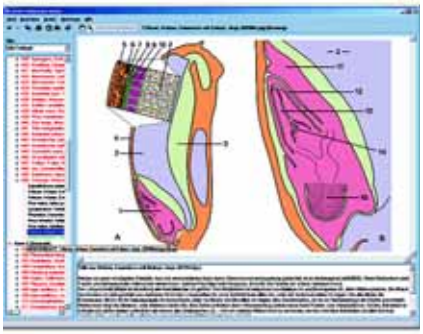
CD127 Heredity and Genetics of Man, Part II

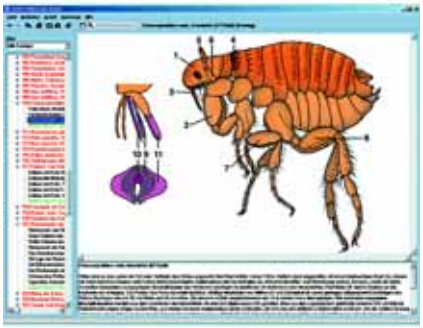
Introduction to the principles of molecular genetics. The focus lies on the application of new techniques in medical genetics and in genetic counseling. Furthermore, subject matters such as population genetics, mutations, imprinting, blood group systems and appearance of tumors will be discussed. Subject matters in the last section include principles of genetic counseling and prenatal diagnostics, biopsy of chorionic villi, amniocentesis (fetal blood sampling). Reasons for seeking genetic counseling, effects of damaging to the fetus, risk calculation, consanguinity, genetics of behavior, and many examples derived from findings in research on twins and the genetic trees of trait bearers. New, extraordinarily high-quality images facilitate visual instruction, while detailed accompanying texts place this series at the highest level of modern teaching standards.

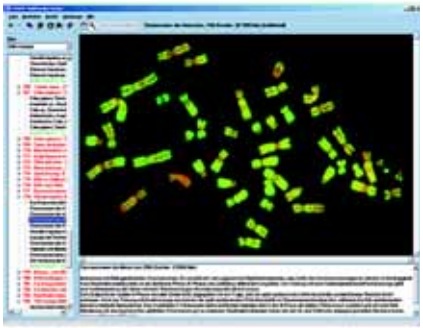
CD128 The Origin of Life and Evolution

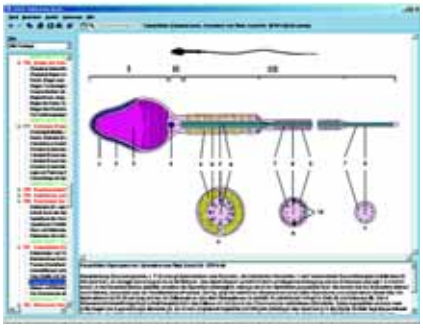
An unique CD of life-science. Evolution's road from „no-life“ to life - stellar, chemical and organic evolution. Temporal course of evolution. Formation of celestial bodies and rise of chemical elements. Apparition of prokaryotes. Abiotic synthesis of amino acids, oligopeptids, polypeptides, purine and pyrimidine bases and nucleic acid sequences. Polynucleotid aggregates. Evolutionary stages of metabolism: fermenting, breathing, photosynthesizing prokaryotes. Primordial soup. Hypercycle according to EIGEN. Precambrian evidences of life. Evolution from prokaryotes to the plant and animal kingdoms. Spontaneous generation theories and findings. Phylogenetic schema for the five organic phyla. Endosymbiont hypothesis. Rise of multicellular organisms. Theory of gas-











traea, notoreunalia-gastroneuralia and coelom. Conquest of land. The saurians. Geological times. The „geologic clock". Foundations, mechanisms and course of the evolution of the plant and animal kingdoms. Evolutionary pointers. Morphological homologies. Bridging species. The Archaeopteryx. Evolution in terms of geography, ontogeny, biochemistry, and animal behavior. Parallel evolution. Biogenetic law according to HAECKEL. The theories of Lamarck and Darwin. Natural selection and selection induced by man. Isolation. Gene shift. Adaptive radiation. Continental drift. Principles of speciation. Ontogenic spirals. Genetic landscape. Cultural development of man, evolution of languages. Tables of geologic formations. Recreation of prehistoric landscapes.

CD129 Evolution in Examples

This CD provides exceptionally instructive graphic material on morphologic and anatomical aspects shedding light on evolution and phylogenetics in the animal kingdom. Three fundamental physical manifestations are covered: stepwise increase in organizational complexity, commonality of basic physical structures and the existence of rudimentary organs. Starting with the work of Charles Darwin, studies of species formation on isolated volcanic archipelagos have become master examples of research in evolution. The fauna in isolated habitats, such as the Galapagos islands, plays a particularly important role as a source of indirect evidence on the workings of evolution. The combined effect of isolation, selection, occupation of niches, gene drift and mutation can be appreciated in a most graphic manner. Taking the unique flora of the Canary islands as an example, such evolutionary events are reviewed as promoter effects, preservation of paleoendemic plants, the effects of separation and isolation, generation of species through adaptive radiation, selection and nestling-down processes, analogy and homology. The Canary islands, together with the Galapagos islands and the Hawaii group, ranks as a „Museum of Evolution".

CD131 Embryology and Development

Those seeking to understand the physical structure of an animal must necessarily become acquainted with the development from egg cell to finished animal first. This CD shows the different stages of ontogenesis through the classical examples of sea urchin, frog and chicken, documenting the development of these animals from the egg through cleavage to germ layers to the finished organism. Precise, clear text and illustrations enable the user to quickly gain an understanding of embryology processes.

CD132 Our Environment, Threats and Protection

The relentless advance of technology in nearly all areas of life, together with consequences that more often than not exert an influence on our natural make-up, represent a steadily increasing threat to the environment. Comprehensive environmental protection is therefore urgently needed. The new school curricula reflect this need, by including chapters on „Environment, Environmental Threats, Environmental Protection". This CD attempts to provide a vivid support to such classroom work. Based on representative examples in the areas of Landscape, Soil, Water and Air, it shows which activities threaten the make-up of our natural environment and how the resulting perils can be confronted.

CD133 Our Waters, Pollution, Protection and Recycling

In these days, it is scarcely possible to bathe safely in lakes, streams and rivers because of the steadily increasing contamination of surface waters with waste and sewage. In addition, technological demands also put a strain on our „aquatic landscape". This entirely revised CD provides useful examples and deals with the resulting perils, as well as with general questions regarding contamination and purification of bodies of open water. The meaning of the analytical controls applied is discussed, together with wastewater purification methods, nature-tailored development of water bodies and lake rehabilitation measures. Bodies of water and streams in the cultural landscape. Water testing and water monitoring. Nature-tailored development. Degrees of water quality. Straightening of river courses. Ground water table decrease. Introduction of wastewater. Saprobic index. Eutrophication. Acidification. Biocide enrichment. Feeding chain. Dying water. Production of drinking water. Lake cleaning and rehabilitation. Water treatment plants: structure and function. Fully biological activated-sludge water clarification plant.

CD134 The Forest as a Habitat

An intact, healthy landscape should boast a forest kept in as nearly a natural state as possible, with the corresponding variety in its moss, herb, shrub and tree layers still intact; this is surely not the case in most forests existing today. Woodlands are rightly dubbed „green lungs" because of their oxygen output through photosynthesis. A forest, with its typical plant cover, is also a habitat for many animals. The importance of woods for man resides mostly in their water storage and air purification capabilities. Damaging a forest, therefore, constitutes a major environmental threat. The forest as an ecosystem, forest animals and plants, forest layers, forests through the seasons, forest functions, forests and residential areas, air exchange cycle, the forests as bulwark against weather, protecting forest animals, rejuvenating the forest, offenses against forest law, consequences of deforestation, threats affecting woodlands, erosion, effects of acid rain, dying forests, bioindicators, and related subjects.

CD135 Crop Pests and Controls

Since man started to practice agriculture, he had to „defend" his crops against damaging organisms. Often, a large part, if not all, of a harvest is lost to harmful plants or pests, mostly caused by different types of fungi. For their multiplication and propagation, these fungi produce colossal amounts of extremely resistant spores. Exact knowledge of the way of life of these harmful plants is necessary to combat them effectively. The pictures, showing crops affected by pests, will be of interest to hobby gardeners and farmers alike. The CD deals also with a very promising aspect of global environmental protection: biologic pest control. Using well-known, easy to follow examples, the subject is explained and its goal made more accessible.

CD138 Biotopes und Ecosystems

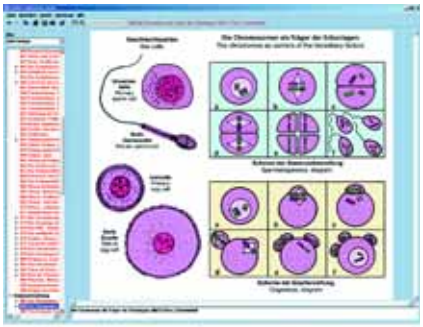
Habitats left in their natural state are becoming increasingly rare. Using selected examples, these habitats' wealth of species, the problems of preserving them and the importance for the overall ecological framework even of small biotopes are documented and discussed. This CD aims at presenting the animal and plant populations of these habitats using typical examples, dealing with their adaptations and their place in the ecosystem. Nearly all photographs were taken in situ, in order to preserve authenticity. The accompanying texts provide detailed explanations on the biology of each species and the emergence and ecology of each habitat. Animal and plant population of a fishpond and a puddle. tarn, moor, timber forest, mountain meadows, shallow coastal waters.

CD151 Histology of Man and Mammals

The body of every animal consists of an array of many organs, each of which must perform certain functions within the organism as a whole. The closer study of these organs calls for the preparation of very thin slices of tissue. These slices, when seen through the microscope, show that organs are made of great numbers of wildly differing cells and tissues which, thanks to special staining techniques, can be told apart by the different colors they adopt. Cells. Epithelial tissue. Support tissue. Teeth. Muscle tissue. Nerve tissue. Digestive organs. Glands. Respiratory organs. Blood and blood vessels. Lymphatic organs. Urinary and excretory organs. Sexual organs. Spermatogenesis. Oogenesis. Endocrine glands. Scalp and hair. Sense organs. Central nervous system.

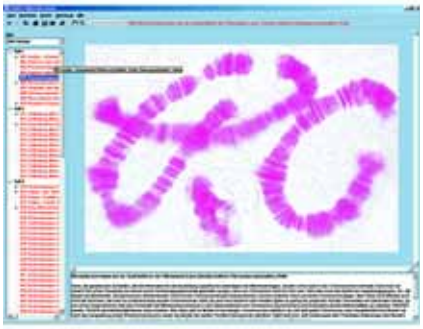
CD152 **Anatomy of Phanerogams**

Most terrestrial plants anchor themselves to the ground using roots that also take up water and nutrients that the plant needs. The shoot above the ground, called stem, serves simultaneously to produce and support leaves and branches and to transport the assimilation products processed in the leaves to the plant's storage organs. Cells and cell organelles. Plastids. Nuclear division and cell division. Vacuole and cell wall. Spherosomes. Storage areas in the cell. Meristem, parenchyma, aerenchyma, epidermis. Trichomes and emergences. Supporting tissue. Conducting tissue. Vascular bundles and their arrangement in the stem. Secondary growth of the stem. Wood and bast secondary tissue. Vegetative apex. Leaf formation. Stomata. Leaf stalk. Leaf formation and habitat. The root. Secondary growth of the root. Symbiosis. Flowers. Meiotic nuclear division in pollen mother cells. Structure of the ovary. Development of the embryo sac. Pollen tube. Double fertilization. Embryo and endosperm. Seed and fruit.



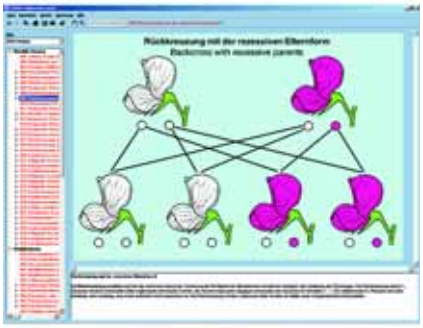
CD153 **Anatomy of Cryptogams**

While flowering plants (Phanerogamae) show many similarities in structure and reproduction, the non-flowering plants (Cryptogamae) constitute an extraordinarily diverse group. Members of this group are bacteria, blue algae, algae, fungi, lichen, moss and ferns. Bacteria and blue algae make up the Schizophyta and exhibit the greatest and deepest differences compared to all other plants: they lack cell organelles enclosed by plasma membranes, such as cellular nuclei, mitochondria or plastids. Furthermore, their cellular wall stands out for its particular structure. Bacteria and blue algae are referred to also as prokaryotes, as against eukaryotes (living beings with real cellular nuclei), to which all other plants and also animals and humans belong. Bacteria. Blue algae (Cyanophyceae). Fire algae (Fire Algae). Euglenophyta flagellates. Green algae (Chlorophyta). Conjugatophyceae. Charophyceae. Yellow-green algae (Xanthophyta). Golden algae. Diatomea. Brown algae (Phaeophyta). Red algae (Rhodophyta). Fungi. Slime mold (Myxomycete). mildew. Ascomycetes. Basidiomycetes. Fungi imperfecti. Lichens. Moss. Liverwort. Musci. Ferns, steles, stem, root, reproduction, sporiangia. Spermatophyta, reproduction.



CD154 **Human Parasites and Diseases**

Animals obtain their nourishment by manifold adaptations. One extreme method is parasitism, whereby the quest for nourishment is left to the host while the parasite, as an uninvited guest, taps its nourishment directly from its host's living body. A great number of animals live as parasites entirely or during a certain stage of their development. Even in our times, the damage caused to humans and animals by pests and parasites is quite significant. The microscopic vectors of the sleeping sickness and malaria turn vast areas in Africa unfit for human settlement. Among us, many common affections caused by parasitic worms in the body diminish notoriously the capacities of those affected. Parasites are highly specialized organisms that are superbly adapted to their way of life; their study is in more than one way of particular interest. Humoral and cellular reactions. Trypanosomes and Leishmanias, multiflagellates. Entamoebae. Toxoplasms and sarcosporidians. Limax amoebas. Malaria parasites. Babesias. Trematodes. Tapeworms. Nematodes. Tongue worms. Ticks and mites. Lice and bedbugs. Mosquitos. Fleas. Helminth eggs and larvae. Protozoan cysts. Many epidemic and infectious diseases have been by now eradicated or are easier to treat than in the past. But there are still disease factors against which nearly all weapons are ineffective. Many types of bacteria, such as pus bacteria, are becoming increasingly resistant against previously effective antibiotics. Microscopic images show the extent of the damage caused to an organ or the degree of bacterial replenishment. The processes followed by an infection and the reaction of the body thereto are many and diverse. The change shown by the organs or the individual cells provide indications regarding the situation of the disease.



CD155 **Zoology in the Classroom** (New enlarged version no. 2.0)

Morphology, the study of the structure of organisms and of the relationship among their constituent organs, together with taxonomy, the science dealing with the relationships among organisms and their classification into a hierarchical system, are closely associated. Without morphology and taxonomy, biology could not be conducted in a meaningful way. When taught separately, both are tedious subjects for nearly every student. But if the teacher puts structure, function and relationship into a meaningful context, analyzes these factors and shows how a taxonomic unit propagates throughout the available habitats, i.e. when radiation takes place, and when it finally becomes evident that a certain „blueprint" has been „invented", these otherwise dry subjects gain life and become interesting. This CD offers some interesting insights into some problems regarding structure and function within the context of animal taxonomy. The CD contains a wealth of color photographs, illustrations and detailed diagrams of basic body structures of the animal classes, as well as micro and macrophotographs that may be enlarged to full-screen size or printed at the touch of a button.

CD156 **Botany in the Classroom** (New enlarged version no. 2.0)

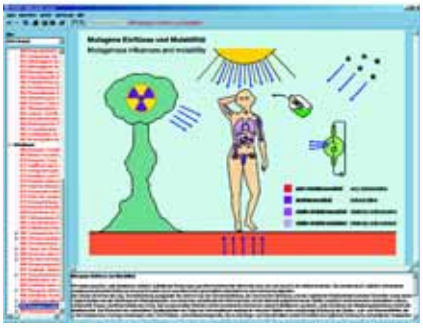
The purpose of this CD is the same as that of CD155, but focused on botany. Plant-derived foodstuffs form the basis of human nourishment. Given that modern students enjoy ever diminishing opportunities to observe or take part in sowing, cultivating, harvesting and utilization of crops, this CD attempts to fill that void. The most important crops are listed, noting their flowering periods. Pictures of plants and data on their provenance, history, cultivation and utilization provide the teacher a wealth of material for a varied and interesting botany lesson.

CD157 **The World of Insects** (New enlarged version no. 2.0)

With over 1 million species, arthropods are by far the largest animal group on this planet. They include insects, spiders, millipedes and crustaceans. They share such characteristics as segmented legs and a hard external skeleton made of chitin, which encloses the entire body like an armor and serves both as protection and support. Many microscope enthusiasts started their hobby observing small insects and insect parts. That is easy to understand, considering that insects are ubiquitous and easy to catch. This CD reveals the enormous variety of insects and their fine structures using selected examples.

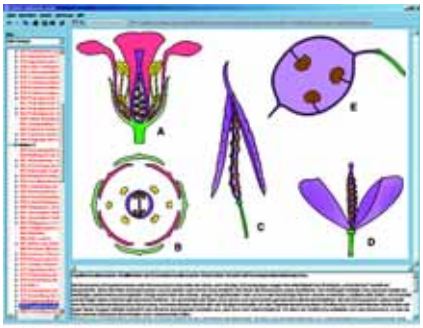
CD158 **The World of Butterflies**

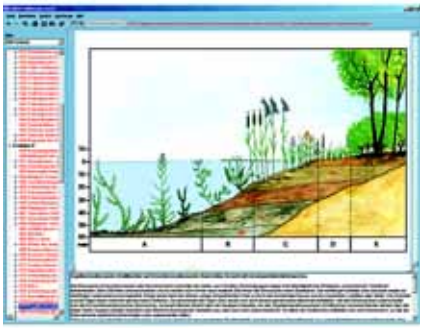
Butterflies (Lepidoptera) constitute, after beetles, hymenopterans and dipterans, the fourth largest insect group, with over 100,000 species. The most conspicuous group is that of the butterflies, which includes the swallowtailed, white, mottled, blue and large-headed butterfly families. The large wings are covered by iridescent chitin scales that often create bright, beautiful patterns. The mouthparts form a sucking trunk that enables the insect to draw flower nectar and other fluid nourishment. Both the occurrence and variety of existing species has decreased markedly in the past 50 years. Among the main reasons are the elimination of many plants that man considers weeds but are a source of nourishment for butterflies, together with the widespread use of insecticides in forestry and agriculture. Insecticides are supposed to target only „damaging" insects, but butterflies are killed along as well. The technologizing and intensification of agriculture and the general burdening of the environment with poisons contribute to the disappearance of our butterfly populations. This CD shows the variety of butterflies still with us, which could be preserved through appropriate protection measures.

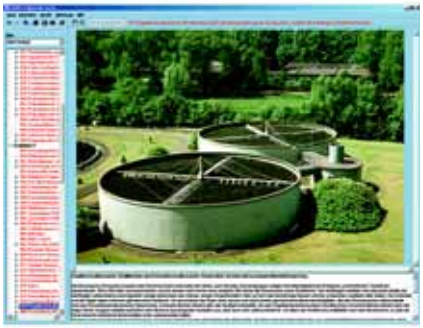


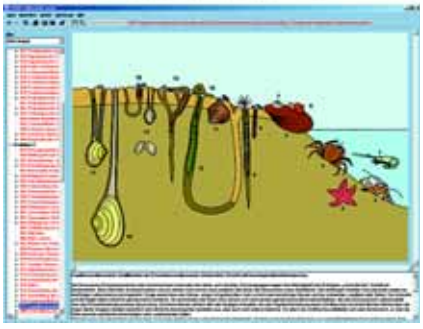
CD159 **Edible and Poisonous Mushrooms**

In order to understand mushrooms better, one must take into consideration that the actual plants grow hidden from view, in a saprophytic or parasitic manner and rarely in a symbiosis (as mycorrhizae) with other plants. The „mushrooms" that we take home with us are only the fruiting bodies that the plants grow in order to preserve the









species. All these fruiting bodies, as different in appearance as they may be, are in essence a more or less clearly manifested hymenium in which spores will be formed. High-quality color pictures show selected samples in situ. In order to facilitate their recognition, all mushrooms were pictured from the side, from above and from underneath. The accompanying interpretation text provides information on their occurrence and possible use, explaining in detail the many aspects that may lead to confusion in their identification.

CD160 **Healing and Poisonous Plants**
Man found early on that certain plants contain substances that reduce pain and help sick people heal. Such healing plants were the first „medicaments" available to man. As pharmacy, chemistry and molecular biology progressed, a wealth of other healing substances were discovered, but healing plants will still hold a firm place in future medicine, homeopathy and folk medicine. The knowledge on the effects and utilization of healing plants has been passed on for generations, and it ought not to stop now. The second part of this CD teaches how to identify plants rich in certain substances that even in very small amounts act as circulatory, nerve or metabolic poisons, i.e., poisonous plants. Poisons have always exerted a powerful fascination on man. In light of the fact that many of these substances act as powerful stimulants before exerting their damaging poisonous effects, they have been also used as magic potions. Soon it was discovered that minute quantities of these poisons had also a healing effect. The CD shows many pictures of both healing and poisonous plants systematically ordered according to their respective families.

CD161 **Biology of Flowers and Fruits**
One of the identifying features of higher plants is the occurrence of flowers and fruits, whose complex structure under the microscope makes for interesting observations. Some plants, such as conifers, build male and female germinal elements in different flowers. The formation of seeds and fruits is determined by the different modes of dispersal, such as by means of edible fruit flesh or of dehydration-resistant grains. Flower biology or ecology examine and describe the interactions occurring in the pollination process between flowers and their non-living and living environment. Among the external forces that make pollen dispersal possible are wind, water and transportation by animals. Of these three, pollination through animals ranks as the uppermost method, being the most effective and common of all.

CD162 **Art Forms in Nature – The Realm of the Infinitesimal**
Sometimes, when looking through the microscope, veritable art forms created by Nature unfold before the eyes. When studying the regular structural organization of many living beings, such as radiolarians or diatomeas, the question arises of how could Nature create such forms without a ruler and a compass. Even the symmetrical structure of an externally unimposing plant stem appears as an aesthetic pattern of cavities. This CD of photographs of the realm of the infinitesimal, selected for their aesthetic appeal, is sure to provide much viewing pleasure.

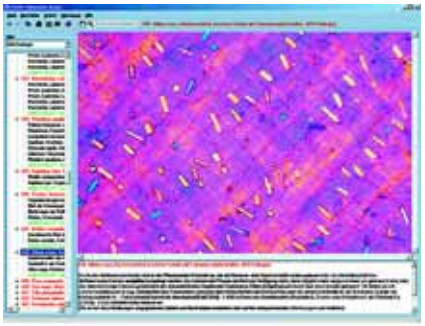
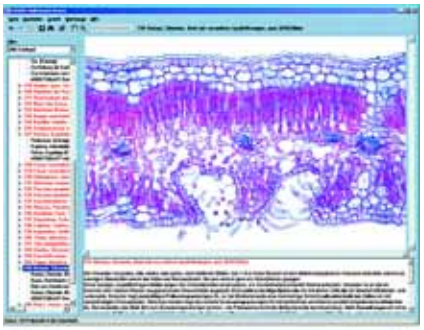
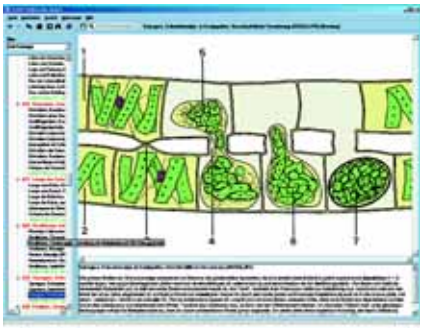
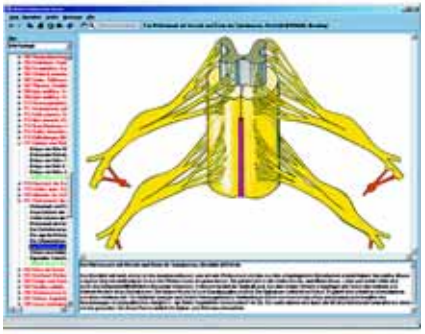
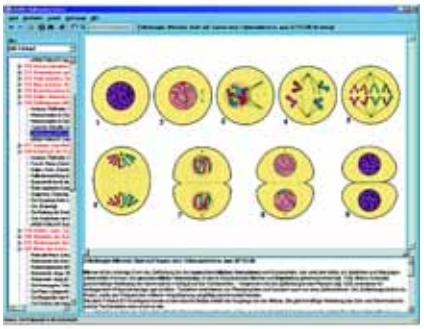
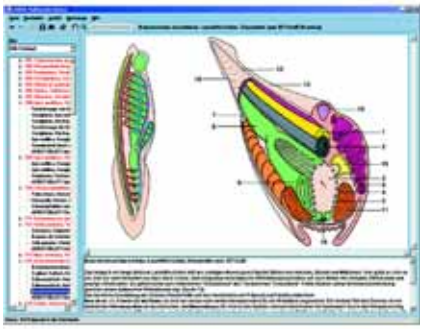
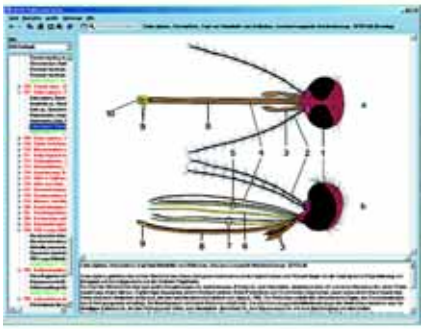
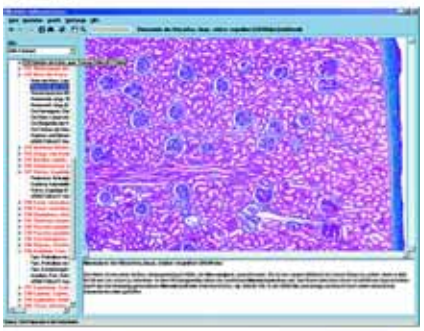
CD163 **Life in Water**
The fascinating underwater world first reveals its diversity when seen under the microscope. The photographs of this CD unveil the multitude of interesting living organisms that can be found in a single drop of water taken from a pond. It is like a window into a new, wonderful world: the fascinating, improbably rich realm of the smallest living beings. The astonishment caused by things invisible to the naked eye and the joy of watching these tiny creations of Nature provide the basis and stimulus for a lively schoolroom teaching experience. Simultaneously, these small creatures constitute the first link in a feeding chain which leads through small crustaceans and ever larger water animals to humans. The interaction between the tiniest organisms and fishes is sensitive even to small habitat alterations, such as changes in water temperature or in oxygen content.

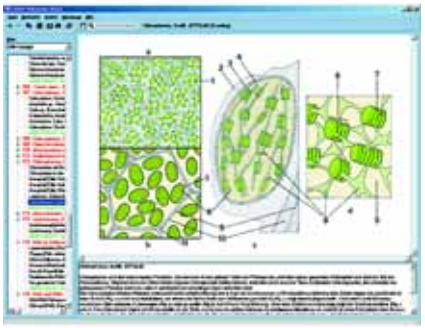
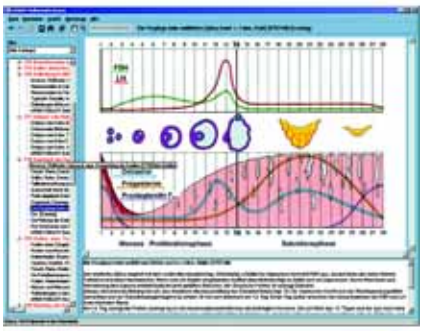
CD164 **The Wonder of the Animal Cell** (New enlarged version no. 2.0)
The cell is the basic element of all living organisms. In unicellular organisms, a single cell performs all those vital processes for which multicellular organisms have developed specialized cells: muscle cells can contract, glandular cells secrete substances, sensory cells perceive stimuli and transform them into impulses, nerve cells conduct impulses, connective tissue cells produce an intercellular substance, red blood cells transport oxygen, white blood cells fight pathogens, sex cells insure reproduction and propagation of species. The multiplication of cells results from their division. To increase their effectiveness, cells form tissues. Different tissues work together to perform certain tasks and thereby form an organ. This CD introduces in a graphically clear manner into the variety of cells and tissues occurring in the animal and human body.

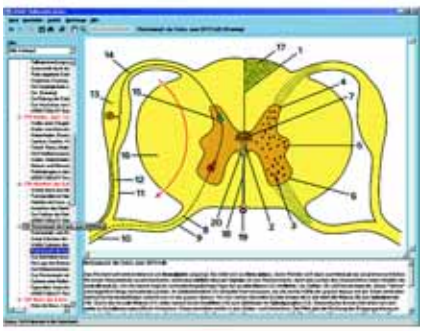
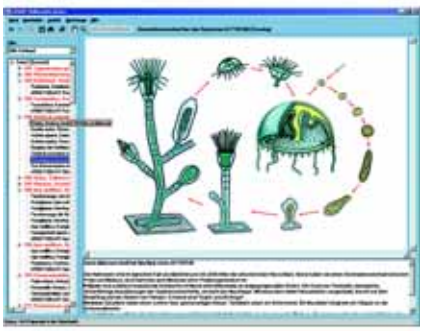
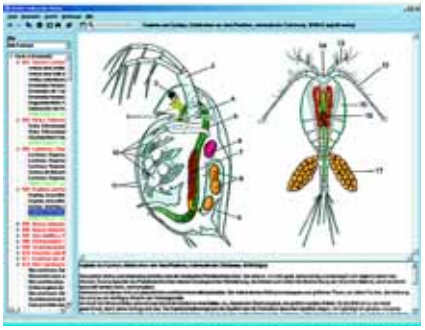
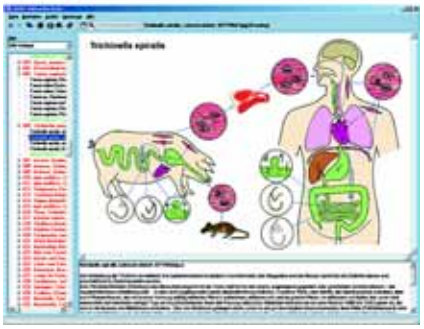
CD165 **The Wonder of the Plant Cell** (New enlarged version no. 2.0)
Few things in living nature are so multifaceted as the forms that plant cells can adopt. Depending on their function, they can be symmetrical and smooth-walled filling cells, repeatedly-branched trichomes, star-shaped, ring-shaped, corkscrew-shaped or reticular vessel cells, shut-off cells, storage cells with substances including crystals, woody cells, pollen cells with superficial features characteristic to each plant, etc. Even the leafless plants stand out for their multiplicity of forms: unicellular and multicellular green algae, blue algae, golden algae, fire algae, and particularly the diatomea, with their wildly varying shell forms possessing a remarkable aesthetic appeal.

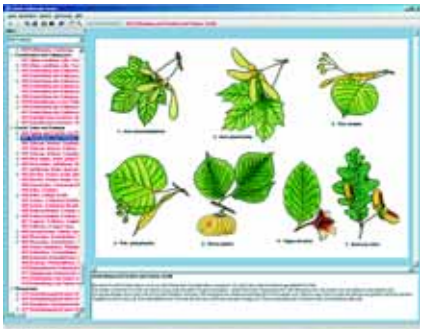
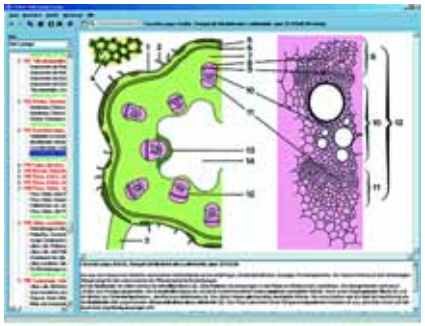
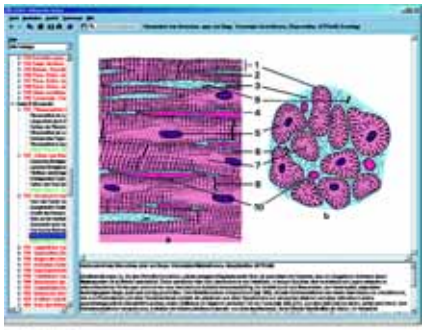
CD140 **The Structure of Matter, Part I: Fundamentals**
„The Structure of Matter" offers an introduction into the fundamentals of chemistry and physics, mineralogy and petrology, crystallography and crystal optics, chemistry of crystals and fundamental structures, quantum mechanics and high-energy physics. The focus of physics research is a fundamental particle hierarchy going from atoms to quarks and leptons. Even the entire cosmos has become a gigantic laboratory; once the laws governing subatomic particle behavior and interactions are understood, the origin of the universe will become that much clearer. This new CD offers students the possibility of bringing the fascination of this research field into the daily school program. A special effort was made to bring home the focal point of these studies in a visual manner. The accompanying texts furnish a wealth of reliable facts and data, the respective contents complementing each another; they have been crafted in a brief, precise language and are not „overloaded" with terminology. Contents: Structure of the atom, elemental particles, atomic nuclei and structure of the atomic mantle. Using selected examples, the evolution from ancient ideas to current findings regarding the fine structure of matter is reviewed. Energy, matter, interactions: an attempt to visualize obscure processes taking place in the domain of elemental components of matter through their possible interactions. Classes of matter, properties of matter, chemical bond. Laws and relationships linking the physical and the chemical properties of matter. Model representations of atomic structure and chemical bonds. Crystal symmetry, properties of minerals, research into structure. Correlation between elemental particle lattice arrangement and macrosymmetry in crystallized matter. Macrophysical properties as criteria for determination of minerals. Principles of X-ray structural analysis and its methods.

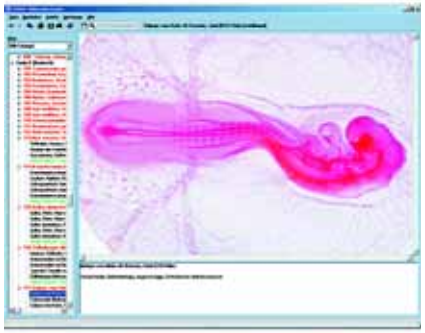
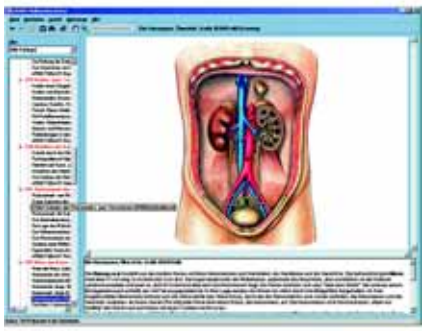
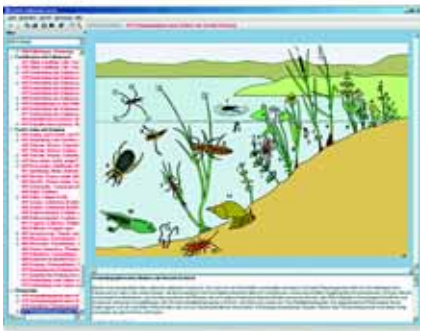
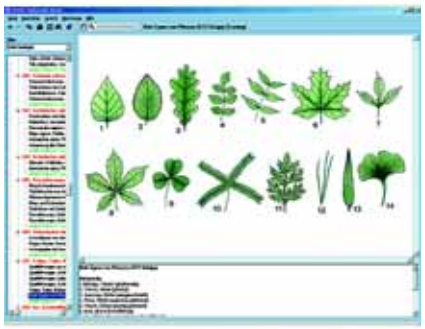
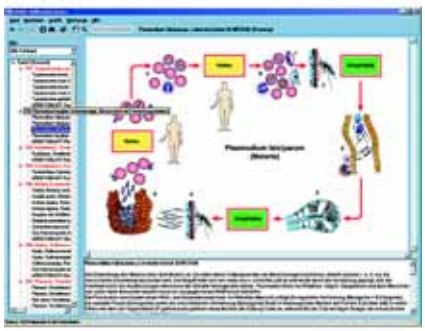
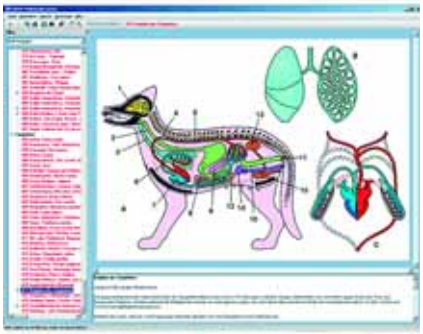
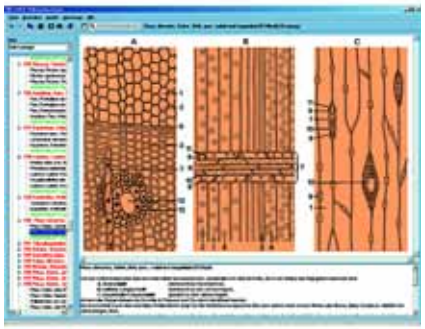
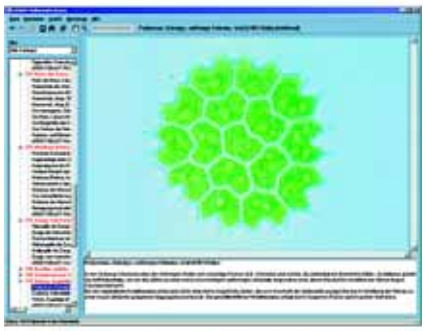
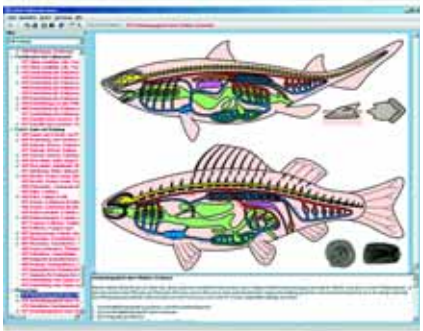
CD141 **The Structure of Matter, Part II: Petrography and Mineralogy**
This second CD deals with the morphology and structure of solids occurring naturally, the world of minerals and stones, divided into four sections: Mineralogy of elements and bonds, mineralogy of silicates, structure of stones and characterization of gems and precious stones. The illustrations and images were selected taking care that only those depicting objects of typical and common occurrence were included. The degree of enlargement was also kept to the minimum, so that the depicted objects appear as close to their natural size as possible; enlargements beyond natural size contain a note to that effect. The accompanying texts are brief and to the point, limiting themselves to the fundamental features of the subjects under discussion. A glossary is also included with the purpose of facilitating the understanding of the extensive terminology and synonyms pertaining to this field of study.

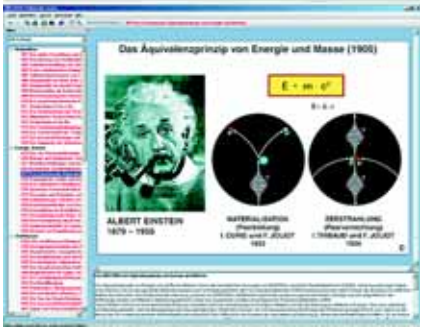
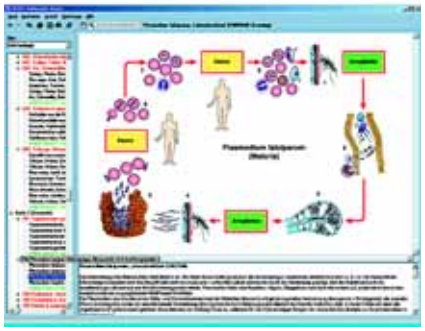









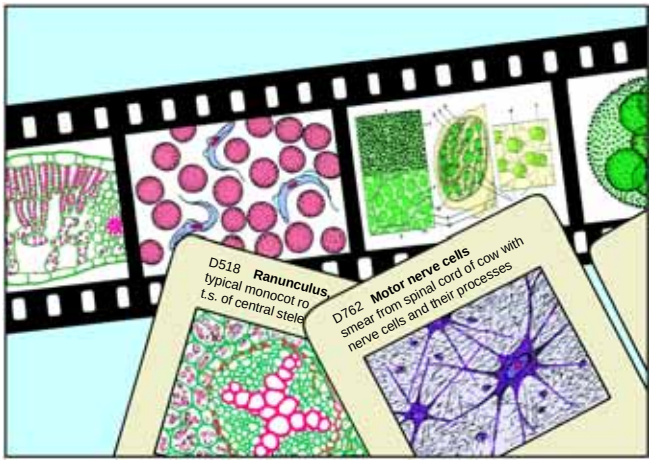





Trichinella spiralis


Das Äquivalenzprinzip von Energie und Masse (1905)
E = m · c²
ALBERT EINSTEIN
1879 – 1955



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PHOTOMICROGRAPHS

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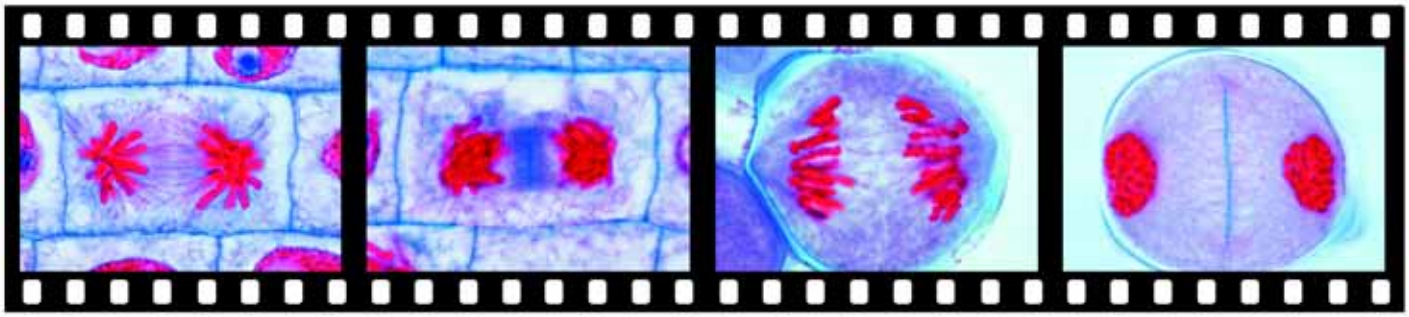


INDEX: COLOR SLIDES and PHOTOMICROGRAPHS 35mm

Human Biology *(Color Slides)*

Cytology *(Color Slides and Photomicrographs)*

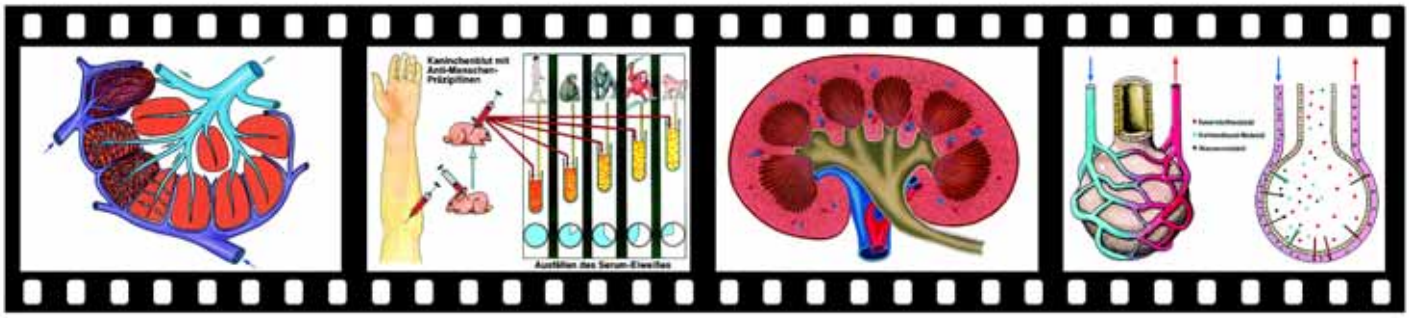
Human Genetics, Hereditism *(Color Slides)*

Evolution *(Color Slides)*

Environment, Pollution Control *(Color Slides)*

Ecosystems *(Color Slides)*

Animals and Plants *(Color Slides)*



School Sets and General Biology *(Photomicrographs)*

Human Histology and Pathology *(Photomicrographs)*

Histology and Physiology of Animals *(Photomicrographs)*

Zoology *(Photomicrographs)*

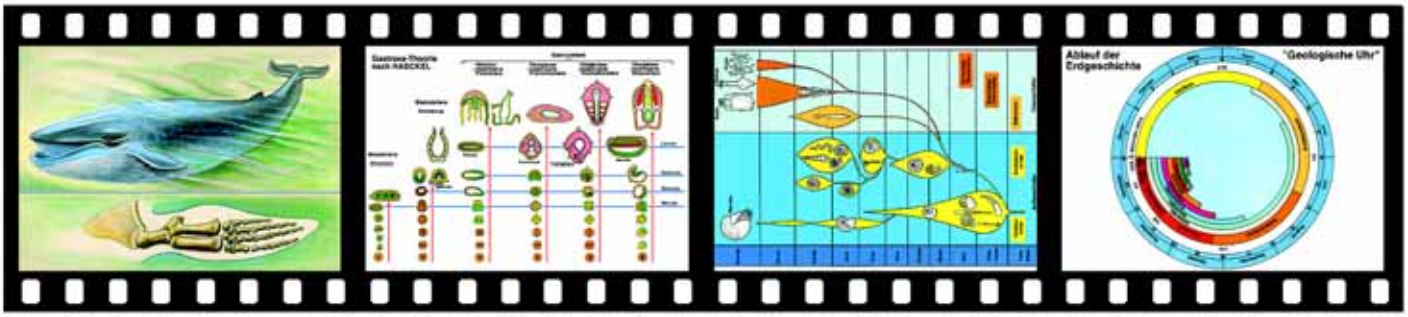
Parasitology *(Photomicrographs)*

Embryology *(Photomicrographs)*

Botany, Cryptogams *(Photomicrographs)*

Botany, Phanerogams *(Photomicrographs)*

Physics and Chemistry *(Color Slides)*



HUMAN BIOLOGY

No. 760. The Human System of Movement, Part I: Connective and Supporting Tissues.
Compilation: Prof. Walter Mergenthaler. 19 Projection Slides
1. Embryonic connective tissue 2. Loose (areolar) connective tissue 3. Dense connective tissue, tendon l.s. 4. Hyaline cartilage 5. Human costal cartilage 6. Yellow elastic cartilage 7. Fibrous cartilage from an intervertebral disc 8. Bone cells with processes 9. Human tibia, t.s. general structure 10. Bone tissue, t.s. systems of lamellae 11. Bone tissue, l.s. Haversian canals 12. Haversian system, t.s. 13. Fine structure of bone, diagram 14. Finger of human embryo l.s. 15. Phalanx of human embryo l.s. 16. Development of bone. Zone of calcification, l.s. 17. Development of bone. Zone of ossification, t.s. 18. Osteoblasts (bone forming cells) 19. Red bone marrow with giant cells

No. 770. The Human System of Movement, Part II: The Skeleton.
Compilation: Prof. Walter Mergenthaler. 20 Projection Slides
1. The human skeleton, front view 2. The human skeleton, rear view 3. Subdivision of the skeleton into its functional parts 4. Joints: diagram, hinge, ball-and-socket joint 5. Finger joint, l.s. 6. Spinal column, cervical and thoracal vertebrae 7. Lumbar vertebrae, sacrum and coccyx 8. Articulations of the skull: skull, atlas, axis 9. Thorax and shoulder girdle, front and back view 10. Structure of a long bone 11. Skeleton of the arm, pronation and supination 12. The elbow joint, surface view and l.s. 13. The skeleton of the hand 14. The pelvic girdle with and without its ligaments 15. The knee joint: long. section, front view, back view, menisci 16. The skeleton of the foot: side view, frontal view, ankle joint 17. The skull: anterior and lateral view 18. Skull with separated bones 19. X-ray photograph of a dislocation 20. X-ray photograph of a fracture

No. 780. The Human System of Movement, Part III: The Muscular System.
Compilation: Prof. Walter Mergenthaler. 23 Projection Slides
1. Human body showing the skeletal muscles, front and rear views 2. The structure of a skeletal muscle, diagram 3. Skeletal (striated) muscle, t.s. 4. Skeletal muscle, l.s. low magnification 5. Skeletal muscle fibres, l.s. high magnification 6. Skeletal muscle fibres, t.s. high magnification 7. Capillaries and arteries of a skeletal muscle 8. The sensory and motor innervation of a muscle 9. Motor end plates on muscle fibres 10. Muscle with muscle spindle, t.s. 11. The muscles of the head and the neck, front and side view 12. The muscles of the trunk, front view 13. The superficial muscles of the back 14. The deeper muscles of the back 15. The muscles of the shoulder 16. The muscles of the arm 17. Pronating and supinating muscles of the forearm 18. The muscles of the hand 19. The muscles of the pelvis 20. The muscles of the leg 21. Flexors and extensors of the leg 22. The muscles of the lower leg and of the foot 23. Example of a complex muscular action

No. 810. The Human Digestive System, Part I: Mouth, Pharynx, Stomach.
Compilation: Prof. Walter Mergenthaler. 24 Projection Slides
1. The deciduous and the permanent set of teeth 2. The types of teeth: incisor, canine, premolar 3. Incisor tooth in the alveolus, l.s. 4. Jaw with dental root, t.s. 5. Head of pig embryo with dental primordia 6. Development of tooth: Dental lamina and early tooth primordium 7. Ditto: Older tooth primordium 8. Ditto: Dental sack with later tooth differentiation 9. Ditto: Apical part of crown 10. Ditto: Detail with ameloblasts, enamel, dentin etc. 11. Human tongue, t.s. 12. The position of the salivary glands in the head 13. Lobules of salivary gland 14. Human submaxillary gland, t.s. 15. Human submaxillary gland, higher magnification 16. The structure of the salivary glands, diagram 17. Human sublingual gland, t.s. 18. Human parotid gland, t.s. 19. Human esophagus, t.s., low magnification 20. Human esophagus, t.s., high magnification 21. Human stomach, l.s. 22. Wall of the stomach, t.s. 23. Gastric mucosa, l.s. 24. Gastric glands, l.s.

No. 820. The Human Digestive System, Part II: Intestine.
Compilation: Prof. Walter Mergenthaler. 16 Projection Slides
1. Position and fixation of the human abdominal digestive organs. 2. Small intestine of a newborn, t.s. total view 3. Small intestine, t.s., detail 4. Human duodenum, l.s. 5. Duodenal fold, l.s. 6. Duodenal wall, l.s. 7. Human jejunum, l.s. 8. Human jejunum, l.s. with villi 9. Intestinal epithelium with goblet cells 10. Intestinal loop with blood vessels 11. Small intestine with injected blood vessels, t.s. 12. Intestinal villi with injected blood vessels, surface view 13. Structure of an intestinal villus, diagram 14. Human colon, l.s. 15. Tubulous glands of the colon, l.s. 16. Tubulous glands of the colon, t.s.

No. 830. The Human Digestive System, Part III: Liver and Pancreas.
Compilation: Prof. Walter Mergenthaler. 14 Projection Slides
1. Liver and pancreas, surface view 2. Liver of pig, t.s. low magnification 3. General structure of a liver lobule, diagram 4. Structure of a hepatic cord, diagram 5. Vascular systems of a liver lobule, diagram 6. Capillaries of the liver, central vein, hepatic vein, diagram 7. The venous system of the liver, diagram 8. Liver of pig, higher magnification 9. Liver lobule, t.s. showing arrangement of the hepatic cords 10. Liver lobule, t.s. with injected bile canaliculi 11. Liver lobule, t.s. with injected blood vessels 12. Glisson's triangle; vein, artery, bile duct 13. Liver cells with glycogen granules 14. Human pancreas, t.s.

No. 840. The Human Excretory System
Compilation: Prof. Walter Mergenthaler. 12 Projection Slides
1. The urinary organs: situs 2. Kidney, l.s., diagram 3. Kidney from human embryo, l.s. 4. The blood vessels of the kidney, diagram 5. Human kidney, l.s., low magnification 6. Human renal cortex, l.s., higher magnification 7. Renal corpuscle (Malpighian corpuscle) 8. Renal cortex, l.s. with injected blood vessels 9. Human renal medulla, l.s. 10. Nephron and glomerulus, diagram 11. Human ureter, t.s. 12. Human urinary bladder, t.s.

No. 743. The Human Respiratory System.
Compilation: OStR Michael Duenckmann. 38 Projection Slides
1. The human respiratory organs 2. Sagittal section through head and neck, air passages 3. Head with nasal cavities 4. Nasal septum and hard palate of human 5. Swallowing and breathing 6. The larynx 7. Function of arytenoid cartilages, glottis and vocal cords 8. Human trachea, l.s. 9. Ciliary epithelium of the trachea, detail 10. Ciliated epithelial cells, electron micrograph 11. Position of lungs in the thorax 12. Inner lining of thorax 13. X-ray of thorax, inspirated and exprated position 14. Thorax showing inspiration and expiration, l.s. 15. Function of intercostal muscles 16. Detailed structure of the lung 17. Human pulmonary tissue 18. Human lung, t.s. bronchioles and alveoli 19. Lung, injected to show the blood vessels 20. The alveolar wall, electron micrograph 21. Lung, t.s. stained for elastic fibres 22. Comparison of inspired and expired air 23. Diagram of gaseous exchange in the alveoli 24. Volume of air respirated, diagram 25. Connection between work and respiration 26. Lung of salamander t.s. 27. Lung of frog t.s. 28. Lung of lizard t.s. 29. Enlargement of pulmonary respiratory surface of various vertebrates 30. Influence of varying composition of the air on respiratory frequency 31. Position and function of the carotid bodies 32. Regulation of respiration, diagram 33. Feedback system of the regulation of respiration 34. Miliary tuberculosis in human lung t.s. 35. Deposition of dust in human lung 36. Dust concentration in different towns 37. Absorption of carbon monoxide and oxygen by hemoglobin 38. The London smog catastrophe of December 1952

No. 747. The Human Circulatory System, Part I: Blood and Lymphatic Organs.
Compilation: OStR Michael Duenckmann. 35 Projection Slides
1. Cylinders with precipitated and clotted blood 2. Composition of the blood 3. Human blood smear, general view 4. Human blood smear, detail of blood corpuscles 5. Shape and size of an erythrocyte 6. Pressure of oxygen and oxygen-saturated hemoglobin, diagram 7. Red bone marrow 8. Erythrocyte and erythroblast, electron micrograph 9. Blood smears of frog and chicken 10. Types of leucocytes 11. Blood smear from leukemic person and normal blood smear 12. The steps of blood clotting, diagram 13. Electophoresis of protein fractions in blood 14. Human leucocytes with phagocyted bacteria 15. Leucocyte, moving through the capillary wall 16. Antibodies with antigen binding sites 17. Serum reactions to show relationship 18. The AB0 blood groups 19. Positive and negative reactions of AB0-blood groups 20. Diagram of agglutination of the AB0-blood groups 21. Diagram of Rh-incompatibility 22. The human lymphatic system 23. Exchange of substances in capillaries 24. Human lymph node, general view 25. Follicle in human lymph node 26. Structure of a lymph node blood and lymph vessels 27. Human immune system, diagram 28. Development of lymphocytes. Memory cells 29. Plasma cell, electron micrograph 30. Human spleen, t.s. 31. The vascular system of human spleen 32. Splenic sinus, electron micrograph 33. Human palatine tonsil, t.s. 34. Thymus gland, t.s. Hassall bodies 35. Human pharyngeal tonsil, t.s.

No. 751. The Human Circulatory System, Part II: Heart and Blood Vessels.
Compilation: OStR Michael Duenckmann. 32 Projection Slides
1. Position of the heart in the human body 2. Front view of heart and big vessels 3. Human heart, l.s. 4. View of the cardiac valvular plane 5. Transection of the two cardiac ventricles 6. Structure of the cardiac muscle l.s. 7. Activity of the heart 8. Cardiac cycle. Diagram 9. Pressure and volume of the left ventricle 10. Human circulatory system 11. Stimulation and coordination of the heart 12. Human electrocardiogram 13. Diagram of human blood circulation 14. Catchment areas of the portal vein 15. Blood share of the different organs 16. Heart and blood circulation of vertebrates 17. Human artery and vein, t.s. low magnification 18.

Artery of muscular type, t.s. 19. Human carotid artery, t.s. 20. Carotid artery wall, t.s. stained for elastic fibres 21. Bagpipe function of the aorta 22. Arrangement for taking the human blood pressure 23. Pulse during reduction of the pressure in the bag 24. Blood capillaries in the mesenteries 25. Ultrastructure of the capillary wall 26. Interchange of substances between capillary and tissue 27. Pressure and volume in human circulation 28. Human vein, t.s. 29. The action of the valves of the veins 30. Position of the main baroreceptors 31. Analysis of manipulated blood pressure. 32. Regulation of arterial blood pressure. Negative feedback system

No. 710. Reproduction.
Compilation: Prof. Walter Mergenthaler. 37 Projection Slides
1. Asexual reproduction of Amoeba by amitotic division 2. Asexual reproduction of Hydra by budding 3. Sexual reproduction of Hydra 4. Reproduction of sea-urchin, life cycle 5. Fertilization of sea-urchin egg 6. Reproduction in fishes 7. Reproduction in salamanders 8. Female reproductive organs of vertebrates 9. The human male reproductive organs, side view 10. The human male reproductive organs, diagram 11. Testis, t.s. 12. Seminiferous tubule with spermatogenesis, t.s. 13. Testis, epididymis, spermatogenesis, diagrams 14. Spermatozoa of bull 15. Human hair, egg, and spermatozoon; comparison of sizes 16. The human female reproductive organs, side view 17. The human female reproductive organs, front view 18. Ovary, t.s. general structure 19. Egg development: primary follicles 20. Ditto. secondary follicle 21. Ditto. Graafian follicle, early stage 22. Ditto. Graafian follicle, mature stage 23. Ditto. mature egg 24. Corpus luteum t.s. 25. Fallopian tube t.s. 26. Ciliated epithelium of fallopian tube. t.s. 27. The yolk sac and the embryonic development of fishes 28. The embryonic membranes of the chicken egg 29. The embryonic membranes of mammals and humans 30. Uterus wall t.s. 31. Menstrual cycle, fertilization, changes of endometrium 32. Oogenesis, ovulation, fertilization, cleavage of fertilized egg, and implantation of blastocyst in the uterine wall 33. Growth of fetus in the uterus 34. Structure and function of the placenta 35. Fetus in uterus 36. Full term baby in maternal abdomen, normal cephalic presentation 37. Beginning of birth, entrance of amniotic sac into the birth canal

No. 755. Embryonic Development of Animals and Human.
Compilation: Dipl. Biol. Christine Himmelein. 36 Projection Slides
1. Fertilization of Ascaris egg, entrance of spermatozoon in the oocyte 2. Mature oocyte with male and female pronuclei 3. Metaphase of the first cleavage of Ascaris 4. Ditto. Telophase 5. Total equal cleavage: 2-, 4-, 8-cell stage, morula 6. Types of eggs and patterns of cleavage I: total-equal, total-inequal, discoidal and superficial up to 8-cell-stage 7. Ditto. II: morula and blastula 8. Blastula of sea urchin, after total equal cleavage 9. Blastula of frog, after total inequal cleavage 10. Insect, blastula after superficial cleavage 11. Gastrulation of sea urchin, diagram 12. Gastrula of sea urchin, photomicrograph 13. Neurulation in Amphioxus, diagram 14. Neurulation in frog, diagram 15. Neurulation in frog, t.s. 16. Neurula of frog, t.s. 17. Neurula of frog, mid-dorsal region, t.s., detail 18. Neurula of chicken, t.s. 19. Chicken embryo 33 hours of incubation, l.s. 20. Frog embryo, tail bud stage, l.s. 21. Ditto. t.s. 22. Frog larva, 3 days after hatching, l.s. 23. Frog larva after hatching, t.s. 24. Frog larva, t.s. of heart region 25. Chicken embryo, 48-hours, t.s. 26. Chicken embryo, 72-hours, l.s. 27. Chicken embryo, 72-hours chick, circular system injected 28. Chicken, older embryo, l.s. 29. Median l.s. through a human embryo 30. Development of the human heart 31. External changes in the human heart 32. Development of human lungs, t.s. of 6 weeks old embryo 33. Stages of human pulmonary development 34. Development of the human eyes 35. Head of mammalian embryo, sagittal section showing eyes 36. Mammalian embryo, sagittal section with primordia of organs

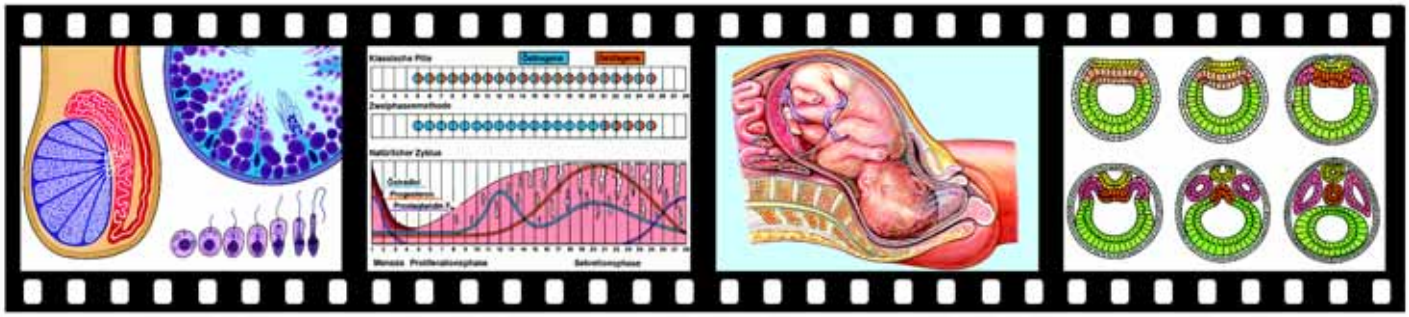
No. 730. Hormones Part I.
Compilation: Prof. Walter Mergenthaler. 25 Projection Slides
1. Effect of thyroxine therapy on a child 2. The human thyroid gland, situs 3. Exocrine and endocrine glands, diagrams 4. The human hormone glands 5. Human Thyroid gland t.s. 6. Effect of thyroxine on Amblystoma 7. Acceleration of tadpole development by thyroxine 8. Inhibition of growth of rabbits, thyroxine deficiency 9. Myxedema before and after thyroxine treatment 10. Cretinism caused by insufficiency of thyroid 11. Cretin with goiter 12. Endemic cretinism 13. Relations between iodine and goiter 14. Control of goiter with iodine salt 15. Basedow's disease 16. The parathyroid glands, situs 17. The pancreas, situs 18. Islet of Langerhans, t.s. 19. Control of blood sugar level by insulin and glucagon 20. Kidney and adrenal gland, l.s. 21. Kidneys and adrenal glands of rabbit, situs 22. Human kidney and adrenal gland 23. Adrenal gland, t.s. 24. Control of blood sugar level by adrenalin 25. Child with „moonface" due to cortical tumor

No. 740. Hormones Part II.
Compilation: Prof. Walter Mergenthaler. 23 Projection Slides
1. Bull and ox, effect of castration 2. Castrated fowl, effect of castration on rooster and hen 3. Castrated rooster before and after treatment with sex hormone 4. Testis of mammal, t.s. 5. Interstitial cells of Leydig, t.s. 6. Human ovary, diagrammatic figure 7. Ovary with follicles t.s. 8. Effect of follicle hormone on growth of uterus 9. Corpus luteum t.s. 10. Location of pituitary gland and pineal body 11. Human pituitary gland, l.s. 12. Human pituitary gland, t.s. of anterior lobe 13. Inhibition of growth of a dog by pituitary removal 14. Pituitary dwarfism in humans 15. Gigantism in humans 16. Acromegaly of human 17. Adiposogenital dystrophy (Froehlich's syndrome) 18. Gonadotrophic pituitary effects on ovary 19. Relations between endocrine glands, diagram 20. Thymus of juvenile and adult person 21. Thymus gland with Hassall bodies t.s. 22. Delayed development of tadpoles caused by feeding thymus 23. Comparison of feeding thyroid with feeding thymus

No. 763. Hormones Part III.
Compilation: OStD Dr. Karl-Heinrich Meyer. 68 Projection Slides
1. Feedback on thyroid hormones, loop scheme 2. Ditto. hierarchic scheme 3. General scheme of feedback circuit 4. Feedback circuit for blood thyroxine level 5. Neurosecretory cells in hypothalamus (TRH) 6. Hypothalamus and pituitary gland l.s. 7. Neurosecretory cells and vessels for TRH and TSH 8. Development of pituitary and thyroid gland 9. Thyroid follicles and functional states 10. Effect of TSH on thyroid gland 11. Biosynthesis, storage, effect of thyroxine 12. Effect of inhibitors on secretion of thyroid 13. Blood calcium level, parathormone, calcitonin 14. Regulation of the blood calcium level 15. Synthesis of human insulin 16. Island of Langerhans 17. Regulation of blood sugar level by A- and B-cells 18. Homeostatic regulating mechanism of the blood glucose 19. Development of the adrenal gland 20. The function of the adrenal medulla 21. Biosynthesis of adrenaline, Beta-receptor blocker 22. Effect of noradrenaline and adrenaline 23. Second messenger and cascade mechanism at glycogenolysis 24. Effect of catecholamines 25. Daily stress and lack of exercise 26. Structure and nomenclature of cortical hormones 27. Effects of renine and aldosterone 28. Feedback mechanism on the secretion of aldosterone 29. Ditto. corticosterone 30. Feedback mechanism in the production of corticosterone 31. Corticosterone affects gene activity 32. Effects of corticosterone 33. Increasing population density inhibits reproduction 34. Stress and animal breeding 35. Effects of nicotine and caffeine 36. Adrenal androgens 37. Development of the gonads 38. Leydig's cells and Sertoli's cells 39. Control of secretory action of male gonads 40. Secondary sex characters in humans 41. Recessive hereditary receptor defect causes female phenotype 42. The effect of anabolica 43. Control of ovarian functions 44. Processes during the menstrual cycle 45. Pregnancy: hormonal control by the blastocyst 46. Ditto. by the placenta 47. The antibaby pill - hormonal contraception 48. Stimulation of milk production 49. Long bones with epiphyseal line 50. Growth in length of a long bone 51. Hormonal control of growth 52. Hormone release in the posterior pituitary 53. Structure and effect of oxytocin 54. Effects of vasopressin 55. Hormone production in an insect 56. Juvenile hormone and moulting hormone 57. The cooperation of hormones during moulting 58. Moulting hormone ecdysone influences pattern of puffs 59. Quantitative analysis of hormones) 60. Gibberellines promote growth 61. Germinating grain (drawing) 62. Germinating grain (photomacrograph) 63. Growth of animal and plant cells 64. Somatotropic hormone indolacetic acid 65. Polar movement of auxin in the coleoptile tip 66. Positive phototropism of coleoptile tip 67. Lateral illumination causes redistribution of auxin 68. Flavoprotein as a photoreceptor

No. 851. The Nervous Tissue.
Compilation: Prof. Walter Mergenthaler. 24 Projection Slides
1. Human nervous system, entire 2. Human cerebellum, l.s. 3. Spinal ganglion, t.s. 4. Spinal cord of cat, t.s. silvered 5. Grey matter of spinal cord, t.s. 6. White matter of spinal cord, t.s. 7. Motor nerve cells from spinal cord 8. Purkinje cells from human cerebellum 9. Pyramidal cells from cerebral cortex 10. Pseudo-unipolar neuron (T-cell) from spinal ganglion 11. Bipolar neurons in the retina of the eye, diagram 12. Various shapes of human neurons 13. Nerve cell showing neurofibrils 14. Nissl granules in nerve cells 15. Diagram of a neuron 16. Neurone types of man 17. Human sciatic nerve, t.s. 18. Bundles of human sciatic nerve t.s. 19. Nerve fibres, t.s. axons and medullary sheaths 20. Nerve fibres, l.s. Ranvier's nodes 21. Structure of myelinated nerve fibre, diagram 22. Neuromuscular junction, motor end plate 23. Motor nerve end plates, diagrams 24. Glial cells from brain

No. 843. The Nervous Systems of the Invertebrates.
Compilation: Dr. K.-H. Meyer. 30 Projection Slides
1. Reactions of single cells to stimuli 2. The nervous system of hydra 3. Reaction of hydra to stimuli 4. The nervous system of jellyfish 5. The nervous system of planaria 6. The nervous system of nemathelminthes 7. The evolution of the nervous system in worms 8. The nervous system of the earthworm 9. Reflex arcs in the earth worm 10. Reactions of the earthworm to stimuli 11. The nervous system of insects 12. Concentration of ganglia in insects 13. Development of the nervous system of a beetle 14. Brain of a worker honey-bee, structure 15. Frontal section of insect brain, diagram 16. Head of a locust, l.s. 17. Head of a blow fly, l.s. 18. Unisegmental reflex arcs in insects 19. Intersegmental reflexes in insects 20. Antenna cleaning reflex of the cricket 21. Shape of body and nervous system



in arthropods 22. Nervous system of Chiton 23. Nervous system of freshwater mussel 24. Nervous system of freshwater snail, lateral view 25. Nervous system of freshwater snail, dorsal view 26. Nervous system of terrestrial snail (Helix pomatia) 27. Nervous system of cuttlefish 28. Brain of the cuttlefish 29. Nervous system of starfish 30. General structure of echinoderms

No. 847. The Nervous System of the Vertebrates.
Compilation: Dr. K.-H. Meyer. 22 Projection Slides
1. Nervous system of amphioxus, frog and human 2. Embryonic development of central nervous system of amphioxus 3. Ditto. of frog 4. Ditto. of frog, transverse sections 5. Ditto. of humans, transverse sections 6. Development of neural tube in humans, external appearance 7. Development of neural tube into brain 8. Median section through a mammalian embryo 9. Spinal cord of Branchiostoma, lamprey, and bony fish, t.s. 10. Spinal cord of salamander larva, t.s. 11. Spinal cord of the cow, t.s. 12. Comparison of the masses of brain and spinal cord in amphioxus, frog, rabbit, monkey, human 13. Brains of vertebrates (shark, bony fish, amphibian, reptile, bird, mammal), dorsal view 14. Brains of vertebrates, sagittal sections 15. Shift of the optic pathways to the endbrain 16. Formation of the neopallium from concentric growth rings 17. Pattern of mammalian cerebral convolutions, phylogenetic tree 18. Cranial nerves of frog and sheep 19. Human brain, ventral view with cranial nerves 20. Innervation of body regions by cranial nerves 21. Proportion between brain and head in vertebrates 22. Proportion between brain and head in mammals

No. 853. The Spinal Cord.
Compilation: Dr. K.-H. Meyer. 28 Projection Slides
1. The human nervous system. Central, peripheral, vegetative systems 2. Development of spinal cord of frog and man 3. Human vertebrae 4. Human central nervous system, lateral view. 5. Human spinal cord in the spinal canal, lateral view 6. Human spinal cord and medulla oblongata 7. The membranes of the brain and spinal cord 8. Position of spinal cord in spinal canal 9. Spinal cord of cow, t.s. 10. The grey matter 11. The white matter 12. Evolution of the spinal cord 13. Proportion of gray to white matter 14. Entrance of dorsal root into spinal cord 15. Dorsal root ganglion, l.s. 16. Roots and branches of spinal nerves, diagram 17. Simple reflex arc, diagram 18. Knee jerk reflex 19. Stepping on a nail, not stimulated organ responds 20. Somatic dermatoms supplied by segments of the spinal cord 21. Polio: syndrome of the ventral gray matter 22. Tabes: tertiary syphilis: syndrome of the dorsal white matter 23. Sclerosis of the pyramidal tract 24. Hemisection of the spinal cord 25. Where do the tracts of somatic sensibility cross? 26. Complete section of the spinal cord 27. Course of typical sensory tracts 28. Course of typical motor tracts

No. 856. The Human Brain. An introduction to the reception, conduction and transmission of information.
Compilation: Dr. Karl-Heinrich Meyer. 45 Projection Slides
A. External structure of the brain 1. The human brain, side view 2. The human brain, sagittal section 3. The human brain, frontal section 4. Visible and in fissures hidden *B. Development of the brain* 5. Hierarchic structure of brain, embryonic development 6. Ditto., its segmentation *C. Reception, conduction and transmission of information* 7. Resting and action potential 8. Sensory input and transduction into action potentials 9. Intensity of stimulus and impulse frequency 10. Propagation of action potential 11. The myelin sheath 12. Fine structure of a Ranvier's node 13. Myelin and conduction of excitation in the axon 14. The myeline sheath in the brain 15. Fine structure of the myeline sheath 16. Diagram of nerve cell of cerebrum 17. Exciting and inhibiting synapses 18. Synapsis, spatial picture 19. Synaptic transmission, diagram *D. Blood supply of the brain* 20. The blood supply of the brain 21. The blood-vascular system, side view 22. Meninges and glia, spatial diagram 23. The blood-brain-barrier 24. The drainage of the brain 25. The reflections of the dura mater 26. The ventricles (liquor spaces) of the brain *E. Structure and function of the brain parts 1. Brain stem* 27. Brain stem, ventral and dorsal view *a. Myelencephalon* 28. Lesion caused by diving accident 29. Lesion caused by hemorrhage (stroke) 30. The course of sensory tracts through medulla oblongata 31. The course of motor tracts ditto. *b. Pons* 32. The course of sensory tracts through the pons 33. The course of motor tracts ditto. *c. Mesencephalon and diencephalon* 34. The course of sensory tracts through mid- and interbrain 35. The course of motor tracts ditto. *2. Cerebrum* 36. Pyramidal cell of the cerebral cortex 37. Areas and tracts of the cerebrum 38. Lobes and areas of the left hemisphere 39. Sensomotor homunculus 40. Intersection of the corpus callosum cerebri: Different function of the cerebral hemispheres *3. Cerebellum* 41. Cerebellum, views from various sides, sagittal section 42. Purkinje cell of cerebellar cortex 43. Cerebellar cortex and neuronal connections 44. Neuronal arcs of the cerebellar cortex 45. Connection tracts between cerebrum and cerebellum, scheme

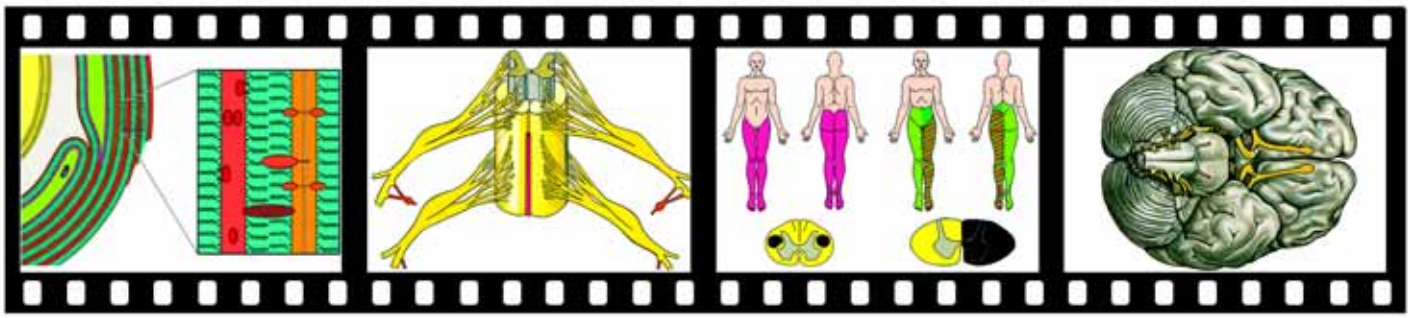
No. 842. The Autonomic Nervous System.
Compilation: Dr. K.-H. Meyer. 9 Projection Slides
1. Effect of atropine on one eye 2. Innervation of the iris muscles. Antagonism of sympathetic and parasympathetic system 3. Control of urinary bladder 4. Antagonistic effect on glands and involuntary muscles 5. Tracts of somatic and autonomic nervous system 6. Transmitter and inhibiting substances of synapses and motor end plates 7. Location in relation to the vertebral column 8. Sensory and motor tracts of the autonomic nervous system 9. Regulation of the body temperature.

No. 785. Eye and Vision.
Compilation: Dr. Bernd Zucht. 34 Projection Slides
1. Range of visible light in the electromagnetic spectrum 2. The human eye 3. Sagittal section of the human eye 4. Front region of the human eye 5. Cornea of the human eye, t.s. detail 6. Wall of the human eye ball, t.s. detail 7. Human retina, t.s. detail 8. Human retina, diagram 9. Retina, rods l.s., electron micrograph 10. Central fovea of retina 11. Papilla of optic nerve 12. Retina seen through the ophthalmoscope 13. Developing eyes of young mammalian embryo, section 14. Ditto. older stage 15. Orbital muscles of the eyeball 16. Optic pathways, optic chiasm, diagram 17. Accommodation 18. Mechanism of pupillary light reflex 19. Vision of moving objects 20. Vision of motion explained by the principle of reafference 21. Formation of an image in a normal eye. The eye as a camera 22. Defects of vision: short-sighted and far-sighted eye 23. Image produced by an astigmatic cornea 24. Image produced by „normal" and astigmatic glasses 25. Pathological turbidity of the lens (cataract) 26. Physiological contrast, simultaneous contrast 27. Optical illusions due to ambiguous information 28. Optical illusions due to surrounding area 29. Converging and diverging lines cause optical illusions 30. Nonconformity of rational interpretation and optical perception 31. Trichromatic triangle. Color vision 32. Spectral sensitivity of rods and cones 33. Tests for color-blindness. Red-green deficiency and blue weakness 34. Color perception and emotion, color test

No. 790. Ear and Auditory Mechanism, Sense of Equilibrium.
Compilation: Dr. Bernd Zucht. 25 Projection Slides
1. The formation of sound waves 2. Eardrum of the frog 3. Auditory ossicles at the skull of a frog 4. Auditory ossicles of human and cat compared with the size of a pin 5. Transformation of auditory ossicles during evolution 6. Development of the internal ear 7. Morphology of the human ear 8. Ear drum with healed up fissure 9. Middle ear and inner ear 10. Auditory canal, eardrum and cochlea, l.s. 11. Cochlea, l.s. showing organ of Corti 12. Organ of Corti, detail 13. Organ of Corti, diagram 14. Movement of Reissner's and basilar membrane 15. Broadening of the basilar membrane 16. Formation of damped waves in the membraneous labyrinth 17. Displacement of the membraneous labyrinth 18. Amplitude pattern of vibration for high and low frequencies 19. Detection of sound direction 20. Diagram of main auditory pathways 21. Relationship of the two sets of the semicircular canals 22. Semicircular canals, section 23. Ampullar crista, t-s- 24. Otolithic organ (macula), t.s. 25. Function of the vestibular system

No. 795. Sensory perception: Smell, Taste, Touch, Perception of Temperature and Movement.
Compilation: Dr. Bernd Zucht. 24 Projection Slides
1. Nasal and pharyngeal cavity. Airstream of the breath 2. Olfactory and respiratory mucous membrane t.s. 3. Olfactory mucous membrane, t.s. detail of sensory cilia 4. Olfactory epithelium, electron micrograph 5. Nasal conchae of human and deer 6. Human tongue with taste buds 7. Tongue of rabbit, t.s. of papilla foliata 8. Papilla foliata t.s., taste buds 9. Vallate papilla t.s., taste buds 10. Fungiform papilla of the tongue t.s., detail 11. Human skin with receptors of touch, pressure and thermal sensation 12. Sinus hair of mouse, l.s. 13. Sinus hair of mouse, t.s. 14. Pacinian corpuscle from the pancreas 15. Meissner's corpuscle from human finger 16. Eimer's corpuscle from the mouth of mole 17. Grandry's and Herbst's touch corpuscles from beak of duck 18. Sensitivity differences caused by touch-stimulation 19. Ruffini's warmth receptor 20. Krause's corpuscle, cold receptor 21. Back of human hand marked with warmth and cold spots 22. Thermoreceptors of a infrared detector of rattle snake 23. Proprioceptors: muscle spindle and tendon apparatus 24. Muscle spindle in muscle, t.s.

No. 1858. Nerve Tissue and Organs of Sense (short set).
Compilation: Dr. K.-H. Meyer, B.S. 15 Projection Slides
1. Ganglion cell 2. Cerebellum with Purkinje cells 3. Cerebrum with pyramid cells 4. Spinal cord with motor nerve cells 5. Nerve fibres 6. Motor nerve end plates 7. Tactile corpuscles 8. Wallate papilla of tongue 9. Taste buds 10. Olfactory epithelium 11. Eye, l.s. 12. Entrance of optic nerve 13. Retina 14. Internal ear, Cochlea 15. Organ of Corti



No. 1850. Human Skin.
Compilation: Dr. K.-H. Meyer, B.S. 22 Projection Slides
1. Human skin from palm, diagram 2. Human skin from palm, t.s. 3. Zone of keratinization 4. Germinative zone 5. Blood vessels in the skin 6. Pigmented cells in the skin 7. Human scalp, diagram 8. Human scalp, l.s. of hair 9. Human scalp, t.s. of hair follicles 10. Hair bulb with hair papilla, l.s. 11. Hair papilla, diagram 12. Hair papillae, t.s. 13. Hair shaft with arrector pili muscle and sebaceous gland 14. Sweat gland 15. Sebaceous gland 16. Pacinian corpuscle 17. Tactile organs in skin 18. Nail development, l.s. of fetal finger tip 19. Skin of fetus, sec. showing developing body skin 20. Eyelid, l.s. of eyelash and Meibomian gland 21. Mucous membrane of mouth 22. Mucous membrane of tongue

No. 1854. Ectoparasites of Man.
Compilation: Dr. Bernd Zucht. 29 Projection Slides
1. Stable fly, Stomoxys calcitrans, mouth parts 2. Tse-Tse fly, Glossina brevipalpis, sucking specimen on skin 3. Gadfly, Tabanus, head with eyes 4. Gadfly, Chrysozona, head with mouth parts 5. Malaria mosquito, Anopheles, sucking specimen, male and female 6. Common mosquito, Culex, male and female 7. Malaria mosquito, Anopheles, and Common mosquito, Culex, both mouth parts for comparison 8. Common mosquito, Culex, life cycle 9. Gnat, Simulium damnosum, adult 10. Onchocercosis, infected eye and leg of human 11. Human flea, Pulex irritans, adult and lesions on human skin 12. Rat flea, Xenopsylla cheopis, w.m. of specimen, living adult and larva 13. Dog flea, Ctenocephalides canis, adult female and rat flea, Nosopsyllus fasciatus, adult male 14. Sand flea, Tunga penetrans, fully engorged specimen 15. Head louse, Pediculus capitis, adult 16. Head louse, adult sitting on woollen texture, and eggs attached to the hair 17. Body louse, Pediculus corporis, adult 18. Crab louse, Phthirius pubis, adult 19. Cone nose bug, Rhodnius prolixus, living adult. Carrier of trypanosomes 20. Bed bug, Cimex lectularius, adult sucking on human skin and photomicrograph 21. Tick, Ixodes ricinus, female with eggs and fully engorged specimen attached to skin 22. Tick, , mouth parts and larva 23. Ticks, Dermacentor andersoni and Argas persicus, adult specimens 24. Mite, life cycle of a three host type 25. Harvest mite (autumnal chigger), Neotrombicula, causes trombidosis 26. Itch mite, Sarcoptes scabiei, w.m. of adult specimen and t.s. of human skin with parasites 27. Follicle mite, Demodex folliculorum, w.m. of adult specimen and t.s. of infested human skin 28. Leech, Hirudo medicinalis, lesions on human skin caused by sucking leeches 29. Furcocercaria of Schistosoma mansoni

No. 715N. Anatomical Color Picture Plates, Diagrams and Life Cycles in Zoology, Parasitology and Botany.
122 Color Projection Slides 35 mm. Excellently drawn anatomical color plates serve as models for this series. For description purposes they are furnished with indication lines and a detailed legend.

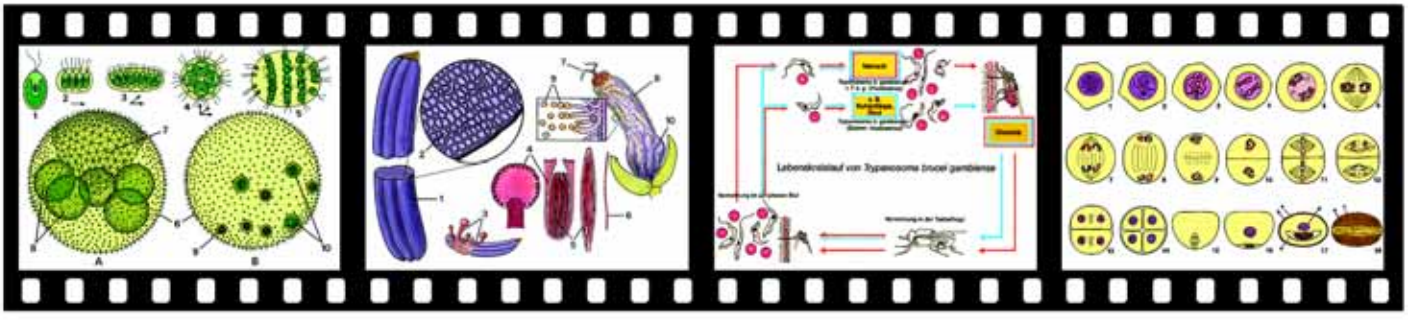
Zoology, Histology, Parasitology. 1. Typical animal cell, all details 2. Cell division, nine stages 3. Amoeba proteus, life cycle 4. Euglena, life cycle 5. Noctiluca, marine flagellate, anatomy 6. Paramaecium, common ciliate, anatomy 7. Foraminifera, many species 8. Radiolaria, many species 9. Parasitic Protozoa, 12 species 10. Sponge of the sycon type 11. Sponge of the ascon type 12. Hydra, anatomy and life cycle 13. Hydra, t.s., nematocysts 14. Polyp and medusa (Obelia), life cycle 15. Polyp (Obelia), polyps 16. Dicrocoelium lanceolatum, anatomy 17. Fasciola hepatica, anatomy 18. Taenia saginata (tapeworm), life history 19. Taenia solium, life history 20. Ascaris lumbricoides, structure and life history 21. Ascaris, schematic t.s. 22. Ascaris, reproductive, excretory system 23. Trichinella spiralis, structure and life history 24. Lumbricus, earthworm, schematic t.s. 25. Lumbricus, circulatory and digestive system 26. Lumbricus, reproductive system 27. Daphnia and Cyclops, small crustaceans, anatomy 28. Astacus (crayfish), habit and structure 29. Astacus, circulatory system 30. Rotatoria (rotifers) 31. Blatta (cockroach), habit, mouth parts 32. Blatta, adult female, dorsal view 33. Blatta, male and female sex organs 34. Blatta, circulatory, respiratory system 35. Blatta, digestive, nervous system 36. Stigma of insect 37. Compound eye of an insect, histology 38. Sting of honey bee, anatomy and function 39. Incomplete metamorphosis of insect, grasshopper 40. Complete metamorphosis of insect, butterfly 41. Bombyx mori (silk moth), habit, development 42. Helix (snail), reproduction 43. Pecten (mussel), simple lens eye 44. Asterias (starfish), habit, water vascular system, feeding 45. Asterias, schematic t.s. of arm (ray) 46. Asterias, life cycle 47. Amphioxus (Branchiostoma) lanceolatum, block diagram 48. Amphioxus, circulatory system 49. Amphioxus, embryonic development 50. Amphioxus, young embryo, t.s. and l.s. 51. Scyllium (dogfish), circulatory system, diagram 52. Scyllium, digestive, reproductive system 53. Perca (perch), habit, internal organs, circulatory system, head and gills 54. Fish scales, the different types 55. Coelome types in fishes, reptiles, birds and mammals 56. Rana (frog), diagram of circulatory system 57. Rana, heart, respiratory organs 58. Rana, digestive organs 59. Rana, brain in dorsal and ventral view 60. Rana, male and female urogenital system 61. Rana, skeleton 62. Turtle (Testudo), digestive system 63. Turtle, male and female reproductive organs 64. Turtle, shield and bones 65. Bird (Columba), arterial and venous system 66. Bird, digestive system 67. Bird, male and female reproductive systems 68. Bird, brain dorsal and ventral view 69. Bird, construction of egg 70. Bird, the different feather types 71. Bird, skeleton 72. Mammal (rabbit), circulatory system 73. Mammal, respiratory, digestive system 74. Mammal, brain, dorsal and ventral view 75. Mammal, skeleton of rabbit 76. Epithelium, 7 different types 77. Connective tissue, 6 different types 78. Adipose tissue, histology, development 79. Smooth (involuntary) muscles, histology 80. Striated muscles, histology and function 81. Red blood cells (erythrocytes) of 12 species for comparison 82. Retina from eye, diagram and t.s. 83. Skin with hairs from scalp, l.s.

Botany. 1. Typical Plant Cell, all details 2. Maturation divisions in pollen mother cells of Lilium, 18 stages 3. Chlamydomonas, sexual and asexual reproduction 4. Volvox, structure, reproduction 5. Cladophora, life cycle 6. Spirogyra, fine structure 7. Diatomeae, marine and fresh water species 8. Fucus (brown alga), habit, reproduction 9. Physcia (lichen), apothecium 10. Mushroom, habit and fine structure 11. Mushroom, life cycle, + and -spores 12. Rhizopus (mold), sexual reproduction, zygospores 13. Saccharomyces (yeast), sexual and asexual reproduction 14. Claviceps purpurea, (ergot), life cycle 15. Puccinia graminis, development of spores 16. Liverwort (Marchantia) life cycle 17. Moss (Mnium) life cycle 18. Horse tail (Equisetum) life cycle 19. Fern life cycle 20. Pinus life cycle 21. Monocot root, diagram of Zea mays 22. Dicot root, diagram of Ranunculus 23. Monocot stem, diagram of Zea mays 24. Dicot stem, diagram of Helianthus 25. Vascular bundle of Cucurbita, diagram of l.s. 26. Coniferous wood, diagrams of three sections 27. Deciduous wood, diagrams of three sections 28. Plant adaptation, 20 figures showing adaptations in roots, stems, leaves, flowers and fruits 29. Stem adaptation, 17 figures show adaptation of stems 30. Leaf types of four plants, sections 31. Stomata of leaf, surface view and section 32. Leaf types, venation of 14 plant leaves 33. Pollination in different plants, 7 figures 34. Seeds and fruits, 24 figures 35. Ricinus plant, cotyledons and embryo 36. Hypogeal germination in wheat, 5 stages 37. Epigeal germination in castor bean, 6 stages 38. Growth of bean, from semen to adult plant, 5 stages 39. Growth of wheat, from semen to adult plant, 6 stages

CYTOLOGY

No. 905. Cell Nucleus and Chromosomes.
Compilation: Dr. Heinz Streble. 32 Projection Slides
1. Nuclei of Spirogyra and amoeba, live 2. Position of nucleus in plant cell, live 3. Onion epidermis: fixed and stained nucleus 4. Metabolically active nucleus of Vicia faba 5. Lampbrush chromosomes in living egg cell of salamander 6. Polytene giant chromosomes from salivary gland of Chironomus, live 7. Sex chromosomes: spermatozoa without and with X-chromosomes 8. Arrangement and shape of nuclei due to tissue functions 9. Nuclear volume due to activity 10. Nuclear size due to synthesizing activity 11. Nuclear shape in cancer cells not due to function 12. Polynucleate cells: giant cells of Langerhans and macrophages 13. Position of nuclei in animal cells, classes of nuclear size 14. Polyploid nuclei of an insect 15. Polyploid chromosome sets of cultivated plants 16. Enlargement of nuclear surface 17. Fine structure of the nucleus, electron micrograph: nuclear membrane, nuclear content, nucleoli, 18. Ditto: nuclear membrane and RNA exit 19. Ditto: fibrillar structure of chromosomes 20. Rearrangement of nuclei in spermatozoa, electron micrograph 21. Mitosis: root tip of Allium cepa; all stages in one picture 22. Mitosis: root tip of Hyacinth; metabolically active nucleus and early prophase 23. Ditto. prophase and early metaphase 24. Ditto. equatorial plate and early anaphase 25. Ditto. telophase and reconstruction 26. Ditto. chromatid bridges with fragment during anaphase 27. Centrioles, centrospheres, spindle fibres 28. Mitosis: spindle apparatus and chromosomes, electron micrograph 29. Haploid and diploid chromosome sets of various plants and animals 30. Human chromosomes during metaphase 31. Individuality of chromosomes (Ascaris) I. Male and female pronucleus, chromosomes of pronuclei 32. Ditto. II. First cleavage spindle, first cleavage.

No. 910. Chromosomes and Genes.
Compilation: Dr. Heinz Streble. 26 Projection Slides
1. Diagram of a chromosome 2. Loop complex of a chromosomal puff 3. Giant chromosomes of Chironomus, DNA-RNA-staining 4. Inheritance of two linked genes in Drosophila 5. Gene exchange in Drosophila, chromosomal interpretation 6. Map of gene locations on chromosomes of Drosophila 7. Meiosis: section of mammalian testis 8. Meiosis: squash preparation of mammalian testis. Phases of reduction division 9. Meiosis: lily, pollen development; leptotene stage 10. Meiosis ditto. zygotene stage 11. Meiosis ditto. pachytene stage 12. Meiosis ditto. diplotene stage 13. Meiosis ditto. diakinesis stage 14. Meiosis ditto. metaphase stage 15. Meiosis ditto. anaphase stage 16. Causal relations between crossing-over and chiasmata 17. The crossing-over: breakages, healing 18. Fine structure of genes: crosses of mutants of the coli phage T4 19. Localization of genes, chromosome



aberrations 20. Chromosome mutations: ring-chromosomes, deletions, duplications, deletion of terminal segments, inversions, translocations 21. Extra chromosomes: karyotype of a human with Down's syndrome (trisomy 21, mongolism) 22. Sex chromatin: Barr body of woman 23. Replication: macronucleus before division 24. Replication of chromosomes: introduction of radioactively labelled thymidine 25. Ditto.: distribution of radioactively labelled thymidine by mitoses 26. Germ plasm, somatic cells: chromosome diminuition in Ascaris

No. 915. Gene and Molecule.
Compilation: Dr. Horst Boehnke. 46 Projection Slides
I. DNA, the hereditary substance 1. Transformation in Streptococcus pneumoniae 2. DNA-content of various cells 3. Hereditary substances of bacteriophages (phages) 4. Electron micrograph of T2 phages 5. Reproduction of the phage T2 6. Transmission of DNA into human cells *II. Structure of DNA* 7. Nucleotides and their components 8. Relative components of bases in various DNA 9. Hydrogen bonding between bases 10. Structure of the double helix 11. Electron micrograph of phage-DNA 12. Electron micrograph of sections through bacterial cells (E. coli) *III. Replication of DNA* 13. Models of replication 14. Prediction of density of replicated DNA 15. Density gradient centrifugation 16. Replicating DNA molecule I. 17. Replicating DNA molecule II. *IV. DNA and RNA* 18. Differences between DNA and RNA 19. Fractionation of cell components by centrifugation 20. Synthesizing ability of components 21. Function of ribosomes 22. Structure of ribosomes 23. Amino acid-tRNA-complexes 24. Specifity of tRNA 25. Kinds of RNA in the cell 26. Experiments with artificial messengers 27. Polysomes on bacterial DNA 28. Electron micrograph of RNA-phages 29. Coat protein-gene of an RNA-phage 30. Summary: replication, transcription, translation *V. Genetic code and mutation* 31. Colinearity between nucleotide- and amino-acid sequence 32. Frame shift mutations 33. Triplet-binding test 34. The genetic code 35. Relations between codon and anticodon 36. Begin of protein synthesis 37. Section of phage RNA 38. Chemical mutagenesis 39. Effect of mutations *VI. Synthesis, structure, and function of proteins* 40. Protein-synthesizing complex I 41. Protein-synthesizing complex II 42. Secondary structure of proteins: a-helix 43. Secondary structure of proteins: b-pleated sheath 44. Tertiary structure of a protein: beta-chain of hemoglobin 45. Sickle cell anemia, erythrocytes 46. Molecular interpretation

No. 890. Electron Micrographs of Animal Cells and Tissues.
Compilation: Dr. Heinz Streble. 29 Projection Slides
1. Production of ultra-thin sections for electron microscopy 2. Electron microscope: composition and function 3. Liver cell: distinctive marks of fine structure 4. Fine structure of an animal cell 5. Cell organelles and endoplasmatic reticulum 6. Skin: desmosomes, tonofilaments 7. Ciliated epithelium: t.s. and l.s. 8. Cilia, flagella and their structures 9. Secretory cells: exocrine cells of pancreas 10. Ribosomes: fixed on membranes or free floating 11. Resorption: epithelium of intestine with microvilli 12. Resorption: active cells of kidney with long microvilli 13. Glomerulus of kidney, details 14. Lung: epithelial layer 15. Collagenous connective tissue 16. Cartilage: cells in matrix 17. Bone, osteocytes 18. Smooth muscle 19. Skeletal muscle, striated 20. Cardiac muscle, striated: intercalated discs 21. Nervous tissue: t.s. of axons 22. Nervous tissue: l.s. of axon, node of Ranvier 23. Neuromuscular synapses in skeletal muscle 24. Blood: erythrocytes and erythroblast 25. Blood: granular leukocytes, eosinophils 26. Olfactory epithelium: sensory cells with cilia 27. Retina: rod cells in longitudinal view 28. Ovary: details of ovum 29. Testicles: spermatogenic epithelium

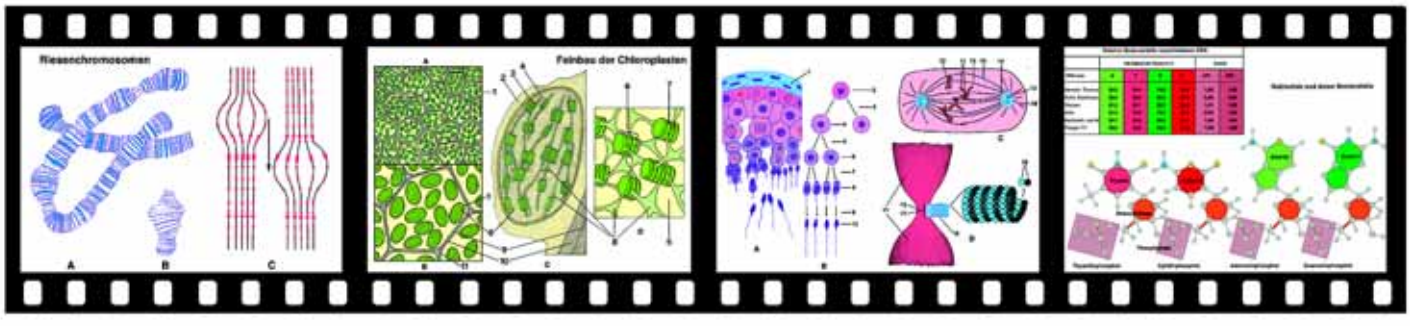
No. 895. Electron Micrographs of Plant Cells and Tissues.
Compilation: Dr. Heinz Streble. 29 Projection Slides
1. Typical plant cells: electron micrograph of low magnification 2. Meristematic plant cell: membrane systems 3. Plant cell: three dimensional reconstruction 4. Meristematic plant cell: organelles; high magnified 5. Cell of root tip: high magnified 6. Plasmodesmata 7. Cytokinesis and mitosis in early telophase 8. Mesophyll cell: cell walls, chloroplasts, starch 9. Mesophyll cell: chloroplast, grana, thylakoids 10. Mesophyll cell: details of grana 11. Epidermal cuticle of petiole 12. Leaf stoma: section parallel to surface of a leaf 13. Leaf stoma: transverse sections of stoma cells 14. Gland cells: from leaf of privet 15. Root: central cylinder, transverse section 16. Root: Casparian strip, detail 17. Primary xylem: l.s. 18. Vascular cambium: t.s. of a woody stem 19. Vascular cambium, detail: cambial initial cells 20. Primary phloem: l.s. with sieve plate 21. Fibres: t.s. of fibres 22. Secondary xylem: tracheids 23. Bordered pit: high magnified section 24. Pit membrane and torus: surface relief 25. Angular collenchyma 26. Stone cell: with plasmodesmata 27. Raphid cell: with raphidosomes and crystals 28. Sporogenous cells of anther: meiotic chromosomes 29. Pollen grain: exine, intine, vegetative and sperm nucleus

No. 681. Scanning Electron Micrographs (SEM) of Animals and Plants, Cells and Tissues. NEW!
Compilation: Dr. Heinz Streble. 70 Projection Slides containing 177 pictures
1. Optical axis of scanning electron microscope 2. The scanning electron microscope (SEM) 3. Bacteria: spirillum. Two pictures for comparison 4. Diatoms, different species 5. Green alga, Oedogonium: Antheridium 6. Cell budding of yeast (Saccharomyces) 7. Molds (Aspergillus and Penicillium) 8. Capsule of moss with peristome and teeth 9. Leaf of corn (Zea Mays) 10. Surface of upper epidermis of maple leaf (Acer) 11. Stigma and pollen germination 12. Leaf hair of clover (Trifolium) 13. Surface of lower epidermis of maple leaf (Acer) 14. Flower of dandelion (Taraxacum) 15. Stellate hairs of Elaeagnus and Tillandsia 16. Glandular hairs of marijuana leaf (Cannabis sativa) 17. Glandular hairs of Drosophyllum 18. Digestive glands of Venus flytrap (Dionaea) 19. Monocot and dicot herbaceous stems for comparison 20. Wood cells of fir (Abies) 21. Bordered pits of fir (Abies) 22. Wood of lime (Tilia), tangential section 23. Wood of lime (Tilia), radial section 24. Male flower of corn (Zea mays), seven stages 25. Pollen grains of various plants 26. Development of a slime mold (Dictyostelium) I: amoebae, pseudoplasmodium 27. Ditto. II: basal disc, sporangium, stalk 28. Amoeba (Pelomyxa carolinensis) 29. Foraminifera, various species 30. Didinium nasutum, parasite of paramaecium 31. Paramaecium: the ciliary movement 32. Paramaecium: the trichocysts 33. Stentor, large ciliate 34. Euplotes, ciliate. Morphology, binary fission, pellicle 35. Vorticella, stalked ciliate 36. Hydra, morphology, nematocysts 37. Planaria, structure 38. Schistosoma mansoni (Bilharzia), morphology 39. Nereis, marine polychaete, head and segments 40. Earthworm (Lumbricus), external anatomy 41. Nauplius larva of Artemia (brine-shrimp) 42. Centipede, head and segments 43. Ant, head and mouth parts 44. Ant, leg 45. Compound insect eye of the honey bee 46. Antenna and wing of a mosquito (Culex) 47. Head and thorax of a male gnat (Chironomus) 48. Frontal view of a moth fly 49. House fly: antenna, haltere, labellum 50. Sucking tube of a blowfly (Brachycera) 51. House fly (Musca domestica), leg and eye with facets 52. Mite (Acarina): total view, mouth parts and leg 53. Radula of snail, radula teeth 54. Cell division of cancer cells, six stages 55. Cell organelles: from KB-cells 56. White blood cells (leucocytes) 57. Red blood cells (erythrocytes) in thrombus 58. Human tongue, surface view with papillae 59. Ciliated epithelium in human trachea 60. Epithelium of fallopian tube with cilia and microvilli 61. Large intestine (colon), epithelial and goblet cells 62. Glomeruli of kidney 63. Striated cardiac muscles, intercalated discs 64. Ear (organ of Corti), with sensory hair cells 65. Ear (organ of Corti), detailed view of hair cells 66. Lens of the eye with lens fibres 67. Tooth, dentinal tubules, enamel prisms, canaliculi 68. Human hair, normal and damaged hair cuticle 69. Embryology of frog (Rana) I: egg to thirty-two-cells 70. Embryology of frog II: blastula to tailbud stage

No. 3300. Maturation and Cleavage of Ascaris megalocephala bivalens. 17 Color Photomicrographs
1. Primary germ cells in oviduct 2. Entrance of spermatozoon in the oocyte 3. Oocyte before beginning of reduction divisions 4. First maturation division in the oocyte 5. Formation of the first polar body 6. Second maturation division of the oocyte 7. Formation of the second polar body 8. Mature oocyte with male and female pronuclei 9. Fertilization of maternal and paternal chromosomes 10. Metaphase of first cleavage, frontal view 11. Metaphase, equatorial plate in side view 12. Anaphase, movement of the daughter chromosomes 13. Early telophase, constriction of cell body 14. Telophase, further division of cell body 15. Late telophase, complete division of the cell body 16. Second cleavage with two division figures 17. Later stage of development showing young embryo

No. 3610. Cell Division (Mitosis) in the Root Tip of the Hyacinth.
10 Color Photomicrographs
1. Interphase 2. Early prophase, chromosomes as fine threads 3. Late prophase, chromosomes shorten 4. Early metaphase, daughter chromosomes are formed 5. Metaphase, equatorial plate 6. Early anaphase, chromatids separate 7. Late anaphase, chromosomes reach the cell poles 8. Early telophase, chromosomes form daughter nuclei 9. Late telophase, new cell wall is formed 10. Reconstruction of interphase nuclei

No. 3620. Development of the Microspore Mother Cells of Lilium.
24 Color Photomicrographs
1. Young anther of lily. t.s. for general study 2. Microspore mother cells, resting stage 3. Leptotene, chromosomes as fine threads 4. Zygotene, homologous chromosomes associate in pairs 5. Pachytene, complete pairing 6. Diplotene, bivalent chromosomes split 7. Diakinesis, contraction of bivalents 8. Metaphase of the first (heterotypic) division 9. Equatorial plate, surface view 10. Metaphase, side view 11. Anaphase, side view 12. Telophase, new cell wall between daughter cells 13. Prophase of the second (homeotypic) division 14. Metaphase of the second division 15. Pollen tetrads 16. Uninuclear microspores 17. Prophase of third division 18. Metaphase of third division 19. Anaphase of third division 20. Telophase of third division 21. Mature two-nucleate pollen grain 22. Pollen grain, w.m. structure of cell wall 23. Growing pollen grain showing pollen tube 24. Growing pollen tube, l.s. division of generative cell



HUMAN GENETICS, HEREDITISM

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No. 900. The Mendelian Laws.
Compilation: Prof. Walter Mergenthaler. 33 Projection Slides
1. Johann Gregor Mendel 2. Similarity of father and son 3. Identical (uniovular) twins 4. Intermediary inheritance in Mirabilis jalapa (Marvel of Peru) 5. Backcross in Mirabilis jalapa 6. Intermediary inheritance in chicken 7. Dominant inheritance of color in pea flowers 8. Ditto. in pea seeds 9. Yields of Mendel's monohybrid crosses of peas 10. Dominant inheritance in stinging nettles 11. Ditto. in corn (Zea mays) 12. Ditto. in the snail Cepaea hortensis 13. Ditto. in guinea pigs 14. Backcross of F1 in dominant inheritance 15. Backcross of F2 in dominant inheritance 16. Yields of pea crosses performed by various scientists 17. Dihybrid cross of peas 18. Distribution of characters in dihybrid cross of peas 19. Punnett square for dihybrid cross of peas 20. Backcross of dihybrid peas 21. Dihybrid inheritance in the snail Cepaea hortensis 22. Ditto. in guinea pigs 23. Ditto. in snapdragons 24. Punnett square for dihybrid cross 25. Distribution of characters in trihybrid crosses 26. Ratio of numbers in polyhybrid crosses 27. Distributing of parental genetic makeup to children 28. Genetic makeup common to a family 29. Additive factors 30. Supplementary factors in Lathyrus odoratus (Spanish vetch) 31. Polygeny in mammalian fur color 32. Lethal factor in canary (Serinus canaria) 33. Lethal factor in yellow mice

No. 920. Variability Part I: Modifications.
Compilation: OStR Heribert Schmid. 30 Projection Slides
1. Development of dandelion in mountains and lowlands (experiments of Bonnier) 2. Different shape of plantain growing on field and on forest margin 3. Different shape of pine growing singly and within the forest 4. Modifications of leaves on one branch 5. Modifications of leaves of a ginkgo tree 6. Gentiana plants from various sea levels 7. Stimulating and inhibiting effects on plants 8. Table of binomials and Pascal's triangle 9. Binomial distribution or normal curve of variation 10. Variation curve for number of tail fin rays and lateral scales in fish 11. Variation curve of the size of a single Paramaecium 12. Unsuccessful selection in culturing Paramaecia 13. Fingerprints of identical twins 14. Starvation and mast form in sheep 15. Length of tadpole intestine depending on type of food 16. Growth speed of plaice depending on population density 17. Queen and worker bee, nutritional modifications 18. Changing modifications: biastrepsic and normal plants 19. Spring and summer form (seasonal dimorphism) 20. Cooling the pupa effects the color of butterfly wings 21. Change of temperature modifies color and size 22. Temperature and light modify the color of petunia flowers 23. Acromelany (temperature modification) in Russian rabbit 24. Forms transitional between submersed and floating 25. Leaves of young and old English ivy 26. Sex change depending on body length 27. Phenotypic sex determination in the worm Bonellia 28. Transplantation of frog tissue to salamander tadpole 29. Mossy rose gall 30. Pine galls produced by aphids

No. 925. Variability Part II: Mutations.
Compilation: OStR Heribert Schmid. 30 Projection Slides
1. Normal celandine and its laciniate mutant 2. Leaves of various plants and their laciniate mutant 3. Wild-type sheep and short-legged ancon mutant 4. Goldfish and its mutant 5. Wild-type carp and its mutants 6. Shape and skeleton of a normal and a brachydactylous human hand 7. Wild-type moth and its carbonaria mutant. Protective color 8. Industry melanism of Biston betularia in Great Britain 9. Tailless mutant of domestic cat 10. Beetle with duplicated legs 11. Biastrepsis and fasciation 12. Normal corn plants and gravitation-blind mutants 13. Normal snapdragon and its cupuliformic mutant 14. Factor mutation of snapdragon 15. Progressive reduction of wings in Drosophila 16. Fur color of guinea-pig 17. Diagram showing various types of gene mutations 18. Chromosome mutation in a female Drosophila 19. Relation between mutated chromosomes and eye size of Drosophila 20. Types of chromosome mutations. Diagrams 21. Inversion of chromosome segment in Drosophila 22. Chromosome mutations in two varieties of peas. Karyograms 23. Chromosome sets of haploid, diploid, and triploid salamander larvae 24. Haploid, diploid, triploid, and tetraploid plants of Solanum (nightshade) 25. Genome mutations in Drosophila. Diagram 26. Leaf shape due to various surplus chromosomes 27. Proof of development of a chimera and of somatic mutation 28. Mutagenic effect of nitrous acid on DNA 29. Selection of deficiency mutants in bacteria 30. Metabolic block and accumulation of products. Tracing of metabolic chains.

No. 1900. Human Genetics Part I. Modes of inheritance.
Compilation: Dr. med. Klaus Zerres, Prof. Dr. Tiemo Grimm. 43 Projection Slides
1. Autosomal dominant inheritance 2. Clinical appearance of neurofibromatosis I: multiple fibromas 3. Ditto. II: Cafe au lait spots 4. Pedigree of a family with neurofibromatosis 5. Clinical appearance of cleft hand 6. Pedigree of a family with cleft hand 7. Pedigree with achondroplasia 8. Codominant mode of inheritance (AB0 blood groups) 9. Autosomal recessive mode of inheritance 10. Probability of being heterozygous for the relatives of a homzygous 11. Clinical appearance of albinism 12. Albinism in animals 13. Pedigree of a family with albinism 14. The decomposition of phenylalanine 15. Pedigree with phenylketonuria 16. Pedigree with deafmutism 17. Examples of heterozygosity-effects 18. X-chromosomal recessive inheritance 19. Color plate for testing red-green-blindness 20. Pedigree of a family with red-green-blindness 21. Clinical appearance of muscular dystrophy of Duchenne type 22. The gene of muscular dystrophy of Duchenne type 23. Changes on deletions in the dystrophin gene 24. Pedigree of families with muscular dystrophy 25. Clinical appearance of hemophilia 26. Hemophilia A in the European aristocracy 27. X-chromosomal dominant inheritance 28. Clinical appearance of incontinentia pigmenti 29. Pedigree with incontinentia pigmenti 30. Multifactorial inheritance 31. Recurrence risks of multifactorial inheritance 32. Clinical appearance of harelip and cleft palate 33. Harelip and cleft palate due to amniotic bands 34. Different causes of harelip and cleft palate 35. Clinical appearance of the van der Woude syndrome 36. Pedigree with van der Woude syndrome 37. Clinical appearance of neural tube defects: spina bifida 38. Ditto.: anencephalus 39. Clinical appearance of clubfoot 40. Clinical appearance of psoriasis 41. Example of pyloric stenosis illustrating the „Carter-effect" 42. Mitochondrial inheritance 43. Pedigree of a family with Leber's optic atrophy

No. 1905. Human Genetics Part II. Cytogenetics.
Compilation: Dipl.-Biol. U. Lukas, Prof. Dr. Gesa Schwanitz. 45 Projection Slides
1. Lymphocyte culture 2. Tissue culture 3. Clones in tissue culture 4. Mitotic activity in tissue culture 5. Barr bodies in cells of the hair bulb 6. Drumstick in a segmented granulocyte 7. Two Barr bodies; karyotype 47,XXX 8. F-body in a human lymphocyte 9. Two F-bodies; karyotype 47,XYY 10. Uniform staining 11. GTG-banding pattern 12. QFQ-banding pattern 13. RBA-banding pattern 14. C-banding pattern 15. SCE (sister-chromatid-exchange) 16. Nucleolus organizing region (NOR), silver staining 17. Normal karyotype with GAG banding pattern 18. Paris nomenclature of chromosomes 19. Trisomy 21; karyotype 20. Boy with Down's syndrome 21. Simian crease in a boy with Down's syndrome 22. Karyotype of a patient with translocation trisomy 21 23. Trisomy 13; karyotype 24. Trisomy 18; karyotype 25. Ring chromosome 18; karyotype 26. Isochromosome X; karyotype 27. Inversion 2; karyotype 28. Karyotype of a girl with „cri-du-chat" syndrome 29. Child with „cri-du-chat" syndrome 30. Pedigree of a family showing segregation of a reciprocal translocation 31. Monosomy X; karyotype 32. Patient with Turner's syndrome (monosomy X) 33. Klinefelter's syndrome; karyotype 34. Risk for the birth of a child with chromosome aneuploidy as a function of maternal age 35. Chromosomal findings in spontaneous abortions 36. Triploidy; karyotype 37. Typical alterations of chorionic villi due to triploidy 38. Increased SCE rate 39. Mitosis with multiple aberrations 40. Diagram of aberration types 41. Micronuclei 42. Unspecific chromosome aberrations 43. Table of chromosome breakage syndromes 44. Philadelphia chromosome in chronic myeloic leukemia 45. Marker chromosomes in solid tumors

No. 1910. Human Genetics Part III. Molecular genetics, statistic genetics, population genetics, mutations, blood groups.
Compilation: Dr. med. Klaus Zerres, Prof. Dr. Tiemo Grimm. 52 Projection Slides
1. From DNA to chromosomes 2. Genetic code 3. Restriction enzymes 4. Evidence of DNA sequences by Southern-blots 5. Polymorphisms of restriction fragments (RFLP) in Southern-blots 6. Ditto. and CA-repeats as molecular markers 7. Polymerase chain reaction (PCR) 8. Indirect diagnosis of genotypes, muscular dystrophy of Duchenne type 9. Direct diagnosis of genotypes, muscular dystrophy 10. Erythrocytes in sickle cell anemia 11. Indirect diagnosis of genotypes, sickle cell anemia 12. Ditto., spinal muscular atrophy 13. Direct diagnosis of genotypes, mucoviscidosis 14. Gene map of the X-chromosome 15. Diagram of fluorescence-in-situ-hybridization 16. Proof of a deletion in the elastin-gene on Williams-Beuren-Syndrom by FISH 17. Mode of operation and therapy of hereditary diseases 18. Therapy of mucoviscidosis 19. Germ line therapy and somatic gene therapy 20.

Problems and risks on gene transfer 21. Principles of somatic gene therapy 22. Crossing over 23. Linkage analysis, segregation of two loci with independent inheritance 24. Ditto. with dependent inheritance 25. Ditto. with possible crossing-over 26. Calculation of lodscore-data for linkage analysis 27. Linkage analysis, example Chorea Huntington 28. Law of Hardy and Weinberg 29. IQ of couples, an example of assortative mating 30. Rate of frequency of homozygotes and heterozygotes 31. Types of mutation 32. Mutation rates 33. Role of paternal age in case of new mutations 34. Newborn with Apert's syndrome 35. Pedigree with autosomal dominant mutation (aniridia) 36. Congenital lack of the iris (aniridia) 37. Diagram of oogenesis 38. Diagram of spermatogenesis 39. Molecular genetic evidence for germ cell mosaicism 40. Unstable trinucleotid-mutations, a new type of mutations 41. Imprinting, parent-specific loss of gene function causing hereditary diseases 42. Origin of tumors according to Knudson's two hit model 43. Determination of AB0 blood groups 44. Positive and negative reactions 45. Genotypes and phenotypes in AB0 blood groups 46. Inheritance of AB0 blood groups 47. Exclusion of paternity by AB0 blood groups 48. DNA fingerprints as evidence of paternity 49. Importance of Rh-incompatibility 50. The HLA gene complex on chromosome 6 51. HLA linkage with the adreno-genital syndrome (AGS) in a family 52. HLA associations in various diseases

No. 1920. Human Genetics Part IV. Genetic counselling and prenatal diagnosis, teratogenous injury of fetus, estimated risk, behaviour genetics, twin research.
Compilation: Dr. med. Klaus Zerres, Prof. Dr. Tiemo Grimm. 64 Projection Slides
1. Indications for genetic counselling 2. Concepts of genetic counselling 3. Recurrence risk in a family 4. Potential consequences after genetic counselling 5. Neural tube defect as seen with ultrasound 6. Maternal serum-AFP-level during normal pregnancy and with a neural tube defect 7. Indications for prenatal diagnosis 8. Biopsy of chorionic villi 9. Amniocentesis, fetal blood sampling 10. Diagram of germ cell development of a balanced 14;21 translocation 11. Ditto. of a balanced 12;21 translocation 12. Appearance of alcohol embryopathy 13. Characteristics of alcohol embryopathy 14. Appearance of hydantoin-barbiturate embryopathy 15. Appearance of thalidomide embryopathy 16. Influence of maternal PKU to the fetus 17. Appearance of rubella embryopathy 18. Time-table of teratogens 19. Everyday risks 20. Bayes' theorem 21. Balance between mutation and selection in case of lethal X-chromosomal inheritance 22. Ditto. estimated risk 23. Consanguinity (inbreeding coefficient) 24. Frequency of homozygotes and heterozygotes in autosomal-recessive inheritance 25. Ditto. estimated risk 26. Pedigree of the Bach family 27. Pedigree of the Darwin-Galton family 28. What is intelligence? 29. Frequency distribution of I.Q. values 30. I.Q. values in siblings of persons with mental defects 31. Cytogenetics and clinical appearance of the fragile-X-syndrome 32. Correlation of I.Q. depending on the degree of relationship 33. Heritability 34. I.Q. test data of identical twins 35. Twin data depending on school performance 36. I.Q. test data of female twins above 60 years of age 37. Position of twins in the uterus 38. Typical adult identical (monozygotic) twins, front view 39. Ditto., profile 40. Oral aspect of the identical twins 41. Atypical adult identical twins, front view 42. Ditto., profile 43. Eye regions of identical twins 44. Structure of the iris of identical twins 45. Noses of identical twins, view from the bottom 46. Siamese twins 47. Incomplete conjoined twins 48. Experimental production of complete and incomplete uniovular twins in amphibians 49. Fraternal (dizygotic) twins, front view 50. Ditto., profile 51. Eye regions of fraternal twins 52. Structure of the iris of fraternal twins 53. Ears of fraternal twins 54. Hands of fraternal twins 55. Dermatoglyphics of identical and fraternal twins 56. DNA-fingerprints of identical and fraternal twins 57. Identical (monozygotic) triplets 58. Eye regions of the identical triplets 59. Ears of identical triplets 60. Twin findings in endogenous psychosis 61. Family findings in schizophrenia 62. Concordance rates in manic-depressive twins 63. Family findings in manic-depressive psychosis 64. Reasons for and frequency of twin pregnancy.

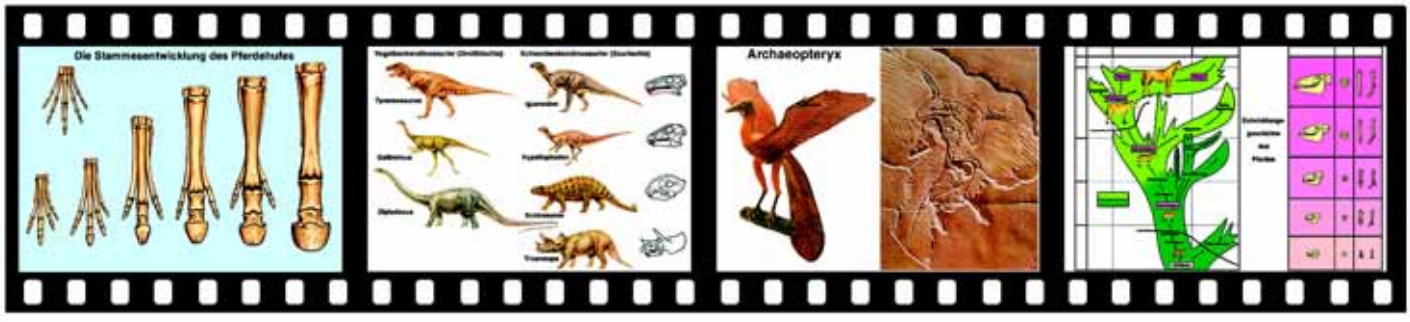
EVOLUTION AND ORIGIN OF LIFE

The new slide series present current facts and ideas in order to acquaint the student with the most important views and models of evolution. The arrangement of the series is based on a general conception. The order in principle corresponds to the description of three fundamental subjects of evolution:
1. Problem of the self-organisation of bio-systems (stellar, chemical and organic evolution and development of the procaryotes)
2. Problem of the reconstruction of phylogenesis (biological evolution of the procaryotes up to the plant- and animal kingdom)
3. Problem of species variation (elements, mechanisms and ways of evolution in the plant- and animal kingdom)

No. 1411. Origin and Evolution of Life, Part I. Stellar, Chemical and Organic Evolution. Formation of Procaryonts.
Compilation: Dr. Bernd Zucht. 48 Projection Slides
1. Nomenclature 2. Events, periods 3. Origin of the celestial bodies 4. Origin of the solar system 5. Origin of the lighter chemical elements 6. Origin of the heavy chemical elements 7. Landscape in primeval times of the earth 8. Primeval times of the earth as a chemical cooking pot 9. Apparatus of MILLER for synthesis of amino acids 10. Molecular structure of the primary atmospheres 11. Synthesis of organic compounds in simulated primary atmospheres 12. Possible abiotic synthesis of amino acids 13. Ditto. of oligopeptides 14. Ditto. of polypeptides (proteinoides) 15. Ditto. of purine- and pyrimidine-bases 16. Ditto. of important bio-molecules 17. Simulated polycondensation of amino acids to proteinoids I: Hot lava and amino acids 18. Ditto. II: Melting, generation of steam 19. Ditto. III: Condensation reaction 20. Ditto. IV: Removal of the polymers 21. Abiogenic production of proteinoid-microspheres 22. Origination and primitive metabolism of coacervate droplets 23. Origination of lipoid double-films 24. Synthesis of longer nucleic acid frequencies 25. Polynucleotides 26. Polynucleotide aggregates 27. Specific polynucleotide aggregates 28. Net of catalytic protein reactions 29. Reproduction and evolution of nucleic acids 30. Hypercycle of EIGEN 31. Protobionts originated from random proteins 32. Hypothetic propagation of protobionts 33. Hypothetic evolutionary stages of reproduction of protobionts 34. Early metabolic processes of eobionts 35. Basic functions of the life of eobionts 36. Evolutionary stages of metabolism I: Primeval mud to protobionts 37. Ditto. II: Protobionts to procaryotes 38. Ditto. III: Fermenting, breathing, and photosynthesizing procaryotes 39. Metabolic processes of a cell 40. Precambrian evidences of life 41. Itabirite. Sedimentation under reducing atmosphere 42. Precambrian microfossils from the South African Precambrian 43. Ditto. from the North American Gunflint-formation and from the Australian Bitterspring-formation 44. Precambrian stromatolite blue-green alga 45. Stromatolite algal reefs 46. Primitive modern organisms: Blue-green algae 47. Ditto. : Bacteria 48. The course of evolution of the organisms, diagram

No. 1418. Origin and Evolution of Life, Part II. The Biological Evolution from the Procaryonts to the Vegetable and Animal Kingdom. Compilation: Dr. Bernd Zucht. 45 Projection Slides
1. Abiogenetic theories and knowledge 2. Christian Genesis 3. Descent of the five phyla of organisms 4. Theory of endosymbiosis 5. Bacterial endosymbiosis in Amoeba 6. Development of flagellate eucytes to algae 7. Colonial forms of unicellular organisms 8. Development from aquatic to terrestrial forms 9. Reconstruction of Rhynia 10. Evolutionary lines of spore-plants 11. The telome hypothesis 12. Phylogeny of leaves 13. Positions of sporangia after telome hypothesis I 14. Ditto. II 15. The stelar hypothesis 16. Fossil siphonostele 17. Psilotum, a modern primeval fern 18. Selaginella, a moss-fern 19. Ginkgo tree, leaves 20. Dicyema (Mesozoa) 21. Gastraea theory after HAECKEL 22. Notoneuralia and gastroneuralia theory after HEIDER 23. Coelom theory after REMANE 24. Phylogenetic tree of Deuterostomia 25. Development of the coelome 26. Evolution of Chordata I: worm-like to lancet-like animal 27. Amphioxus, Branchiostoma, habit 28. Evolution of Chordata II: vertebrates 29. Ramifications in evolution of vertebrates 30. Morphological variety: cephalopoda 31. Saurians: Ornithischia and Saurischia 32. Establishing saurian relationships 33. Comparison of numbers of species of animals 34. Life history of the earth (life clock) 35. Earth history. Table of rock formations 36. Cambrian period: Scene of landscape with typical animals and plants 37. Silurian period: ditto. 38. Devonian period: ditto. 39. Carboniferous period: ditto. 40. Permian period: ditto. 41. Triassic period: ditto. 42. Jurassic period: ditto. 43. Cretaceous period: ditto. 44. Tertiary period: ditto. 45. Quaternary period: ditto.

No. 1424. Origin and Evolution of Life, Part III. Basis, Mechanisms and Ways of Evolution of the Vegetable and Animal Kingdom. Compilation: Dr. Bernd Zucht. 56 Projection Slides
1. Courses of evolution 2. Morphological homologies I: Cellular structures 3. Ditto. II: Construction plans 4. Ditto. III: Notochord and vertebrae 5. Ditto. IV: Vertebrate brains 6. Homologies in metabolism I: Adenosine triphosphate (ATP) 7. Ditto. II: Photosynthesis and chemosynthesis 8. Homologous basic processes of life: Mitosis 9. Petrified tree-trunks (Arizona) 10. Fossilized horseshoe crab (Xiphosura) 11. Extinct intermediate animals: Ichthyostega and Archaeopteryx 12. Archaeopteryx: Reconstruction and fossil 13. Living fossil: horseshoe crab Limulus 14. Living fossils in animals and plants 15. Parallel evolution of the African and South American fauna 16. Nauplius larvae 17. Embryonic stages of vertebrate classes 18. Biogenetic law after HAECKEL 19. Pelvic rudiments of a whale 20. Irregular dewclaw of a horse (atavism) 21. Behavioural phylogenetic tree of ducks 22. Biochemic relationship of serum albumins 23. Catastrophe theory of CUVIER 24. Lamarckism (inheritance of acquired characters) and Darwinism (natural selection) 25. Modification: Curves of modification 26. Experiment by Bonnier and unsuccessful selection in culturing paramaecia 27. Modification and mutation 28. Mutagenous effects and mutability 29. Types of mutation 30. Frequency of gen mutations („hot spots") 31. Mutagenic effect by nitrous acid on DNA 32.



Recombination in budgerigars 33. Allopolyploidy of wheat 34. Forms of selection 35. Natural selection and selection by humans 36. Cryptic appearance, warning coloration, mimicry 37. Quick selection by preadaptation. Industrial melanism 38. Extinction of whole animal groups by extreme selection 39. Isolation. The continental drift theory 40. Geographical and ecological isolation 41. Reproductive isolation among frogs 42. Speciation by geographic separation 43. Speed of evolution. Gene drift 44. Adaptive radiation of marsupials and mammals 45. Synthetic theory of evolution. Genetic landscape 46. Transspecific evolution 47. Forming principles I: Perfection 48. Forming principles II: Gigantism 49. Forming principles III: Hypertely of a l beetle 50. Ontogenic spirals 51. Evolution of the horse 52. Structural relationship of cytochrome C 53. Moss (Bryophytes). Life cycle 54. Fern (Pteridophytes). Life cycle 55. Pine (Gymnospermae). Life cycle 56. The evolution of languages

No. 880. Evolution in examples: Evidence from morphology.
Compilation: Prof. Walter Mergenthaler. 30 Projection Slides
1. Ancestral development of vertebrates *I. Gradations of organ development* 2. Graduation of Spinal column 3. Spinal region of salamander larva t.s. 4. Graduation of vertebrate heart 5. Graduation of vertebrate lung 6. Graduation of middle and outer ear 7. Graduation of inner ear 8. Graduation of vertebrate brain 9. Graduation of mammalian uterus 10. Graduation of snail eye 11. Graduation of intestines of platyhelminthes 12. Graduation of sponges *II. Common structure plans* 13. Echinodermata species 14. Structure plan of echinodermata 15. Coelenterate species 16. Structure plan of coelenterata 17. Jelly-fish pattern 18. Gonophores of jelly-fishes 19. Arm skeleton of blue whale 20. Arm skeleton of sea-turtle 21. Common structure plan of vertebrate limbs 22. Common structure plan of insect mouth parts *III. Rudiments* 23. Pelvis rudiments of a whale 24. Notochord rudiments of vertebrates 25. Arm skeleton of archaeopteryx and pigeon 26. Leg skeletons of horse 27. The ancestral development of the horse's foot 28. Foot skeletons of artiodactyla 29. Premolar teeth of the polar-bear 30. Wing rudiments of female night winter-moths

No. 885. Evolution in examples: Evidence from Embryology.
Compilation: Prof. Walter Mergenthaler. 26 Projection Slides
I. Repetition of ancestral history in individual development 1. Upper jaw of ox and ox embryo 2. Whale embryo with primordia of teeth 3. Whale embryo with primordia of posterior limbs 4. Chicken embryo with branchial clefts 5. Human embryo with branchial clefts 6. Frog larva with gills 7. European salamander with gills 8. Development of plaice 9. Development of eel 10. Development of spinal column in fish and reptile 11. Development of pharyngeal arch vessels in vertebrates 12. Development of vertebrate kidneys 13. Development of wing skeleton of birds 14. Embryonic and complete leg of birds 15. Retrogression of tail in bird embryo 16. Irregular dew-claw of a horse 17. Development of stag's antlers 18. Young seal with wool fur 19. Development of nerve system of beetles 20. Development of intestine in liver fluke 21. Sea-lily and its settled juvenile form *II. Common larva forms of related animal groups* 22. Worm-shaped larvae of various insect orders 23. From worm to insect 24. Trochophora larvae 25. Nauplius larvae 26. Embryonic stages of vertebrate classes

No. 1990. Evolution in examples: Evolutionary Model Galapagos Islands.
Compilation: Juergen Grueneberg. 30 Projection Slides
1. Galapagos Islands geographic 2. Insular vulcanism 3. Vegetation 4. Giant Galapagos tortoise; habitus, mode of life, insular endemics, fig. 1 5. Ditto. fig. 2 6. Tropidurine lizard, ethospecies and insular endemics, fig. 1 7. Ditto. fig. 2 8. Land iguana, habitus, co-evolution, fig. 1 9. Land iguana, search for food, fig. 2 10. Land iguana, insular endemics 11. Marine iguana, habitus, adaptations 12. Marine iguana, detail view 13. Marine iguana, insular variety 14. Small ground finch, ecological niches 15. Medium ground finch, ecological niches 16. Cactus finch, ecological niches 17. Woodpecker finch, ecological niches 18. Charles Darwin, biography 19. Species of Darwin's finches, the various bills 20. Swallow-tailed gull, competitive exclusion principle 21. Lava gull, ditto. 22. Galapagos hawk, insular tameness 23. Galapagos penguin, Bergmann's law 24. Albatros, ethogram, courtship behaviour, fig. 1 25. Ditto. fig. 2 26. Ditto. fig. 3 27. Galapagos sea lion, habitus, life and social behaviour, fig. 1 28. Ditto. fig. 2 29. Ditto. fig. 3 30. Ditto. 4

No. 1996. Evolution in examples: Plants of the Canary Islands.
Compilation: Dr. Bernd Zucht. 31 Projection Slides
1. Canary Islands; plant regions 2. Origin by vulcanism 3. Climatic zones 4. Regions of botanical interest and national parks 5. Pioneer plants on young lave 6. Ecological niche I: sandy costal zone, rocky coast 7. Refuge biotop 8. Ecological niche II: arid zone 9. Homology: Euphorbia canariense and E. regis-jubae 10. Convergence: Euphorbia obtusifolia and Kleinia neriifolia 11. Related species, Ceropegia fusca, and C. dichotoma 12. Ecological niche III: Laurel forest (living paleoflora) 13. Laurel forest and laurel species 14. Tree heath (Erica arborea) 15. Endemites of moist regions 16. Ecological niche IV: Pine forest, natural monoculture 17. Old Canary pine (Pinus canariensis); drip water 18. Rock rose (Cistus symphytifolius) 19. Ecological niche V: Subalpine region 20. Endemites of small areas 21. Adaptation to extreme habitats: Teide Violet 22. Tenerife, a starting point of endemics 23. Adaptive radiation of Aeonium 24. Different ways of reproduction: Aeonium holochrysum and A. canariense 25. Various species of Aeonium 26. The Dragon Tree, a living fossil 27. Canary Date Palm, beginning species-differentiation 28. Canary Islands, centre of adaptation of cultivated plants 29. Canary plants as mother plants of ornamental plants: 30. Influence of animals to the flora 31. Influence of man to the flora

ENVIRONMENT, POLLUTION CONTROL

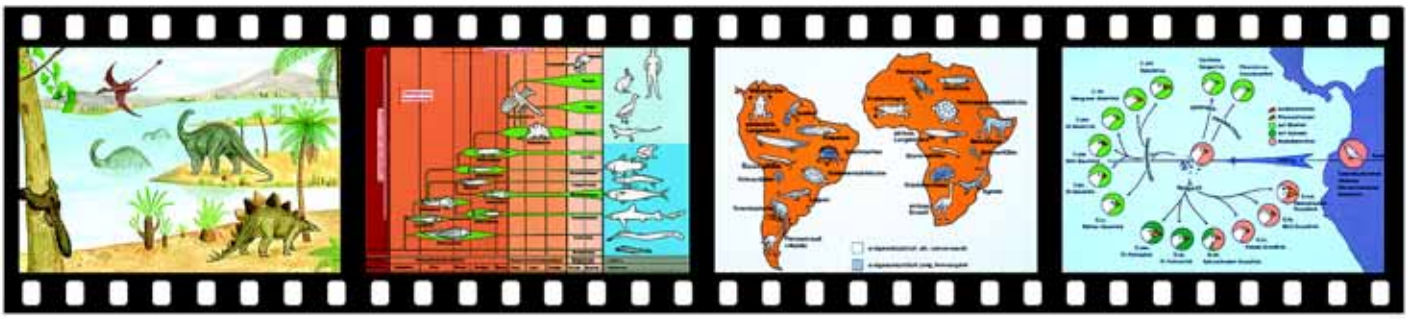
No. 1820. Our Environment - Threats and Protection
The newly curricula of all types of schools provide instruction of the subject complex „Environment - threats to environment - protection of environment". This series of Projection Slides offers visual aids to improve this instruction. Typical examples show which processes are changing the natural structure of our environment and how the dangers arising from this can be counteracted.
Compilation: Dr. Joachim Mueller. 74 Projection Slides . *The complete set consists of 3 partial series which can be delivered individually also.*

No. 1821. The Landscape. 21 Projection Slides
1. Old type of land cultivated by humans 2. Monoculture 3. Culture steppe 4. Woodland 5. Healthy trees 6. Sick forest 7. Distinctive marks of damaged trees 8. Stages of damaged tree 9. Natural course of a running water 10. Straightened course of a running water 11. Recultivation of a closed waste disposal site, general view 12. Ditto. diagram 13. Stag heap 14. Incorporation of stag heap into the landscape 15. Nature reserves 16. Water reservation 17. Drinking water dams 18. Animals extinct in the 20th century 19. Heavily endangered animals 20. Plants extinct in the 20th century 21. Heavily endangered plants

No. 1823. Soil and Water. 31 Projection Slides
1. Average number of small animals in the top layer of soil 2. Unsightly open dumping 3. Controlled waste disposal site, general vie of site 4. Ditto., detail view 5. Ditto., diagram 6. Compostable and non-compostable components of waste (graph) 7. Composting of waste 8. Wild burning of waste in the open country 9. Incinerating plant, function 10. Introduction of sewage into a flowing water 11. Change of oxygen content by introduction of sewage 12. Full biological sewage plant 13. Primary, mechanical treatment in a sewage plant: grit, sand catch 14. Ditto.: primary sludge basin 15. Ditto.: function (diagram) 16. Biological treatment in a sewage plant: activated sludge basin 17. Ditto.: activated sludge basin 18. Ditto.: function of activated sludge 19. Ditto.: organisms of the activated sludge 20. Ditto.: drip towers 21. Ditto.: drip towers, function 22. Basin for secondary clarification 23. Chemical clarification of sewage 24. Causes for salting of surface- and ground water 25. Dangerous concentrations of harmful substances in the water 26. Chemical pest control 27. Biological chain of pesticides 28. Biological pest control, pests and their natural enemies 29. Biological pest control by plants 30. Contamination of the environment with heavy metals 31. Accumulation of heavy metals in the food chain

No. 1827. The Air. 22 Projection Slides
1. Structure of the terrestrial atmosphere 2. Importance of the ozone layer 3. Exposure to natural and human-made radiation 4. Half-life of radioactive isotopes 5. Main storage organs for radioactive isotopes 6. Various radiations 7. Sensitivity to radiation 8. Types of smog 9. Development of smog 10. Effect of smog on humans 11. Consumption of air and oxygen by humans and motor vehicles 12. Dangerous substances in exhausts from combustion motors 13. CO-concentration in the air of a main thoroughfare 14. Effect of CO on humans 15. Plants damaged by polluted air 16. Buildings damaged by polluted air 17. Lichens indicate air pollution 18. Harmful substances in tobacco smoke and their effect on humans 19. Mortality by lung cancer of cigarette-smokers and non-smokers 20. Power of various noises 21. Noise map of a big town 22. Effect of noise on humans

No. 1800. Our Waters, Problems of Pollution, Methods of Protection and Recycling.
This series of Projection Slides provides examples and explains the dangers resulting from water pollution. It deals with general aspects of pollution and water purification. The importance of analytical control is demonstrated and the various methods of water purification are described.
Compilation: Prof. Dr. Otto Klee. 121 Projection Slides. *The complete set consists of 10 partial series which can be delivered individually also.*



No. 1801. Running and standing waters in land developed and cultivated by humans. 8 Projection Slides
1. Dynamic hydrosphere 2. Natural water cycle 3. Natural dynamic of water: waterfall 4. Clear mountain creek. Natural oxygenation 5. Big stones on the banks of mountain creek 6. Creeks and rivers coming from wooded areas ensure steady flow and deep temperature 7. Consequences of correcting of the course of a river 8. Cutting down trees and shrubs on river banks, a wrong step

No. 1802. Natural structure of a running water. 12 Projection Slides
1. Subdivision of a running water, diagram 2. Morphology of a running 3. Protecting from high water 4. Line of water-level duration and profile of bank vegetation 5. Change of the transverse profile shade the water and lower its temperature 6. Installation of small steps on the bed to raise the water-level 7. Protected by trees and shrubs, the water runs a natural course 8. Fish ladders improve biotope 9. Measures to protect flat and steep coasts 10. Active cliff 11. Marram grass Ammophila fixes shores 12. Marram grass fixes dunes

No. 1804. Water tests and survey. 5 Projection Slides
1. Test of water quality: temperature 2. Test of water quality: oxygen content, conductivity, and pH 3. Taking water samples 4. Analysis of water in the laboratory 5. Fully automatic testing of water in laboratory

No. 1805. Grades of waters. 13 Projection Slides
1. Grade I: pure water zone (oligosaprobic zone) 2. Organisms of grade I 3. Grade II: moderately polluted water (beta-mesosaprobic zone) 4. Organisms of grade II 5. Grade III: heavily, critically polluted water (alpha-mesosaprobic zone) 6. Organisms of grade III 7. Grade IV: extremely polluted water (polysaprobic zone) 8. Organisms of grade IV 9. Extremely polluted water (grade IV) of an oasis 10. Water grades between source and mouth of a river 11. Subdivision of a running water according to degree of organic pollution 12. Chemical criteria for grades of pollution 13. Classification of according to bacteriological findings

No. 1807. Pollution of waters by introduction of sewage. 17 Projection Slides
1. Cycle of organic substances in the water 2. Sewage drain on the Mediterranean shore 3. Same place of shore with bathing persons. Extreme danger of infection 4. Introduction of sewage of a town with 100 000 inhabitants into a river 5. Introduction of dairy sewage 6. Introduction of dyes 7. Creek, totally destroyed by hot effluents containing stains 8. Creek, extremely polluted 9. Effluents of an iron factory color the water 10. Destruction of natural biocoenosis by metal sludge 11. Use of wood for poison dump killed trees 12. Introduction of liquid manure causes scum 13. Highly polluted effluents drawing out of cellulose plant 14. Cellulose effluents colors creek dark 15. Consequence of introducing cellulose effluents 16. Oil floating on water 17. Physical, chemical, and biological processes decompose oil floating on water

No. 1809. Eutrophication of lakes and running water. 9 Projection Slides
1. Eutrophication by introduction of phosphates and nitrates 2. Eutrophication and pollution cause death of fish 3. Completely eutrophicated lake 4. Odours caused by microorganisms forming alga bloom 5. Mass reproduction of algae I: Euglena 6. Ditto. II: Asterionella 7. Production of methane and hydrogen sulphide in an eutrophicated lake 8. Mass reproduction indicates unbalanced biological equilibrium 9. Jellyfish

No. 1810. Redevelopment and restoration of lakes. 13 Projection Slides
1. Unspoiled oligotrophic mountain lake 2. Polysaprobic lake with extreme alga growth 3. Phosphorus cycle in a lake 4. The lake, a phosphate trap 5. Reoligotrophication of lakes, reduction of nutrient spiral 6. Reoligotrophication I 7. Installation of deep water drain 8. Biomass of alga groups after deep water drainage 9. Reoligotrophication II: addition of oxygen 10. Reoligotrophication III: injection of nitrates 11. Manipulation of the food chain, fishing of zooplankton-eating fish 12. Increasing number of predaceous fish 13. Fishing manipulates food chain

No. 1812. Purification and protection of waters, methods. 32 Projection Slides
1. Removal of organic substances in sewage plants 2. Function of a sewage plant 3. Retention of coarse particles by the grit 4. Size of particles in sewage 5. Fluctuations of urban sewage quantity during 24 hours 6. Long sand catch 7. Basin for primary sedimentation 8. Drip tower 9. Section through a drip tower 10. Decrease of biochemical oxygen while trickling through the drip tower 11. Biological clarification with diving cylinders 12. Drip towers to clear effluents from a paper mill 13. Drip tower with water circulation 14. General view of a modern full biological activated sludge plant 15. Turbines swirl and aerate 16. Aeration of activated sludge by bubbles 17. Ditto. by tubes 18. Organisms in the activated sludge basin 19. Organisms: Vorticella microstoma 20. Organisms: Rotaria rotatoria 21. Clarification of sewage with pure oxygen 22. Supply with pure oxygen in closed system (Detroit, USA) 23. Mass reproduction of Carchesium in activated sludge 24. Biocoenosis of activated sludge: Vorticella 25. Basin for secondary sludge in sewage plant (Detroit, USA) 26. Flow-over of the purified water 27. Function test 28. Phosphate elimination by chemical precipitation 29. Denitrification eliminates nitrogen 30. Fermentation of sludge in fermentation towers 31. Fermentation in separate towers 32. Efficiency of various clarification steps

No. 1816. Acidification of surface waters - Biocides in waters. 6 Projection Slides
1. Effects of sour rain on aquatic ecosystems 2. Lake in Sweden with high acidification 3. Toxic pH-limit in acid and basic range 4. Summary of contacts of biocides with water 5. Accumulation of biocides in the food chain 6. Direct entry of biocide sprays into the water

No. 1817. Drinking water - Summary. 6 Projection Slides
1. Future demand of water (industrial, domestic) 2. Introduction of surface water into a drinking water plant 3. Precipitation of unwelcome substances 4. Filtration with sand 5. Inconsiderate exploitation of water 6. Good use and processing of water

No. 1310. The Forest - Essential to Life.

The forest as an ecological system. Plants and animals of the wood. The multifarious functions of the forest.
Compilation: Hartmut Dietle. 80 Projection Slides. *The complete set consists of 5 partial series which can be delivered individually also.*

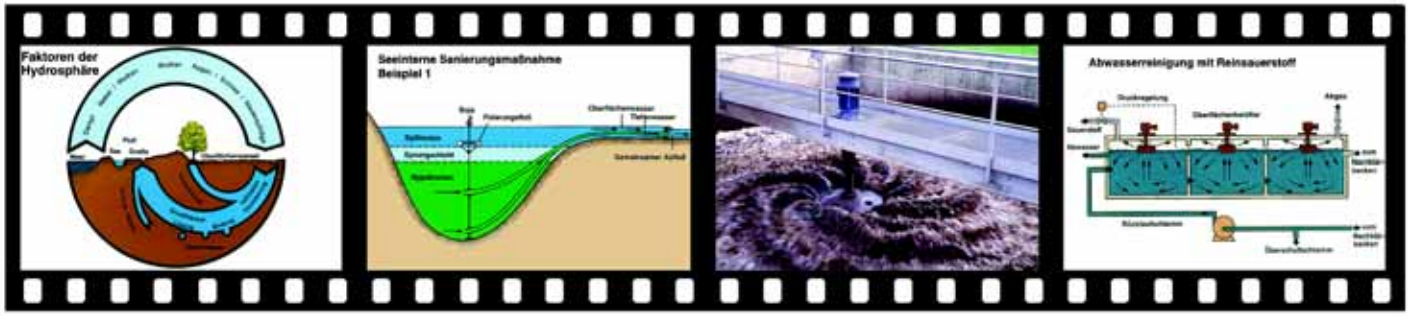
No. 1311. Trees of the forest. 15 Projection Slides
1. Mixed deciduous forest 2. Spruce (Picea excelsa) monoculture 3. Silver fir (Abies alba) 4. Spruce (Picea excelsa) 5. Pine (Pinus silvestris) 6. Douglas fir (Pseudotsuga taxifolia) 7. European larch (Larix decidua) 8. Common beech (Fagus) 9. Stone oak (Quercus sessilis) 10. Winter lime (Tilia ulmifolia) 11. Black alder (Alnus glutinosa) 12. Ash (Fraxinus excelsior) 13. Mountain ash (Sorbus aucuparia) 14. White or canoe birch (Betula pendula) 15. European mountain maple (Acer platanoides)

No. 1313. The layers of the forest. 19 Projection Slides
1. Moss cushion (Polytrichum) 2. Moss (Mnium) with capsules 3. Horsetail (Equisetum) 4. Horsetail, spores with hapters 5. Shield fern (Aspidium), leaflets with sori 6. Fern gametophyte (Prothallium) with antheridia and archegonia 7. Mushroom (Xerocomus) 8. Mushroom: basidia of ink-cap (Coprinus) 9. Flowering plants: anemones (Anemone) and woodruff (Asperula) 10. Wood sorrel (Oxalis): soil indicator 11. Mezereum (Daphne): soil indicator 12. Arum (Arum maculatum) 13. Blueberry (Vaccinium myrtillus) 14. Shrub layer: blackthorn (Prunus spinosa), whitethorn (Crataegus) 15. Shrub layer: hazel (Corylus avellana), wild rose (Rosa) 16. Step-shaped forest margin 17. Layers of the forest, graph 18. Flat and deep rooting plants, graph 19. Ladies tresses (Neottia), root with mycorrhiza, t.s.

No. 1315. The forest during the seasons. 14 Projection Slides
1. Opening bud 2. Beech seedling 3. Maple seedling (Acer platanoides) 4. Seedling of silver fir (Abies) and pine (Pinus) 5. Male flower of pine 6. Female flowers of pine 7. Cones of silver fir and spruce 8. Natural regeneration of forest 9. Summer aspect of forest 10. Sun- and shade-leaf of beech, t.s. 11. Annual rings, t.s. of oak stem 12. Coloring of leaves in autumn 13. Dispersal of fruits and seeds 14. Forest in winter: protection of animals

No. 1317. Animals of the forest. 16 Projection Slides
1. Life on and in the forest floor 2. Red wood ant (Formica rufa) 3. Wood snipe (Scolopax rusticola) 4. European fir titmouse (Parus ater) 5. Black woodpecker (Dryocopus martius) 6. Crossbill (Loxia curvirostra) 7. Pellets of an owl (Strix aluco) 8. Spruce engraver-beetle (Cryphalus picea) 9. Engraving pattern of spruce engraver-beetle 10. Gypsi moth (Lymantria monacha), imago (pest) 11. Roebuck and roe (Capreolus) 12. Fraying roebuck 13. Silver fir damaged by roes 14. Red fox (Vulpes vulpes) 15. European squirrel (Sciurus vulgaris) 16. Tree marten (Martes martes)

No. 1319. Functions and endangering of the forest. 17 Projection Slides
1. Erosion caused by deforestation 2. Fireweed (Epilobium angustifolium) growing on clearings 3. Forest holds the soil on steep slopes 4. Forest stores water: wood brook 5. Filter effect of forest, graph 6. Forest and residential areas, exchange of air 7. Forests are sound absorbents 8. Forest improves climate 9. Forest, a recovering resort 10. Wild waste disposal at forest margin 11. Wilful destruction of tree bark 12. Offence against forest law 13. Destruction of forest by ski-lifts 14. Effects of environmental pollution: yellowed needles 15. Effects of sour rain: dying spruces 16. Dying forest („waldsterben") due to air pollution 17. Lichens on trees are bioindicators for air pollution



No. 1320. Protection of Plants and Pest Control.
Compilation: Hartmut Dietle, 78 Projection Slides *The complete series consists of 5 partial series which can be delivered individually also.*

No. 1321. Economically important diseases of plants 14 Projection Slides
1. Powdery mildew of grain (Erysiphe) 2. Breaking stem of grain (Pseudocercosporella) 3. Brown spelt of grain (Septoria nodorum) 4. Bunt of wheat (Tilletia tritici) 5. Ergot on rye (Claviceps purpurea) 6. Reduction disease of potato (viruses) 7. Rottenness of potato (Phytophthora infestans) 8. False mildew on vegetables (Peronospora) 9. Mildew of cucumber (Erysiphe) 10. Bean rust (Uromyces appendiculatus) 11. Scab on fruit (Venturia inaequalis) 12. Gray mold on fruit (Botrytis cinerea) 13. Fungus, a heterotrophic plant 14. Polynucleate sprout of Botrytis spore allows gen combination

No. 1322. Vegetable pests: weeds 13 Projection Slides
1. Table of weeds 2. Some common weeds 3. Four grasses competing with cultivated plants 4. Chalky soil loving plant: Charlock (Sinapis arvensis) 5. Acid soil loving plant: Wild radish (Raphanus) 6. Nitrogen loving plant: Common chickweed (Stellaria) 7. Indicator of wetness: Horsetail (Equisetum) 8. Weed in meadowland: Common dandelion (Taraxacum) 9. Weed germinating in spring (Avena fatua) 10. Weeds germinating in summer: many seeded goosefoot (Chenopodium) 11. Weed germinating in autumn: chamomile (Matricaria chamomilla) 12. Weeds damage by deprivation of light, water, nutrients, space 13. Erosion

No. 1324. Economically important animal pests 22 Projection Slides
1. Piercing-sucking mouth parts of a bug 2. Red spiders, Tetranychidae, on leaf of fruit tree 3. Codlin moth (Laspeyresia) 4. Apple weevil (Anthonomus pomorum), snout beetle 5. White fly (Trialeurodes) 6. Scale insect (Coccidae) on salad 7. Grain aphid (Sitobium) 8. Biting-chewing mouth parts of cockroach (Periplaneta) 9. Radish-root maggot (Phorbia) 10. Beet leaf-miner (Pegomyia betae) 11. Rape beetle (Meligethes aeneus) 12. Flea-beetle (Phyllotreta vittata) 13. European corn-borer (Ostrinia nubilalis) 14. Frit-fly (Oscinella frit) 15. Caterpillar of Pieris brassicae 16. Colorado potato beetle (Leptinotarsa decemlineata) 17. Radula of the slug Deroceras 18. Common garden slug (Deroceras agreste) 19. Field mouse (Microtus arvalis) 20. Vole (Arvicola terrestris) 21. Sparrow, pheasant 22. Muskrat (Ondrata cibethica)

No. 1327. Measures and methods of plant protection 20 Projection Slides
1. Cultivating the soil (plowing, harrowing) 2. Preparation of the seed bed 3. Selection of type 4. Disinfection, treatment of seed 5. Rotation of crops: sugar beets, winter wheat, summer grain, corn, field forage 6. Physical method of weeding 7. Mechanical method of weeding 8. Chemical methods of weeding 9. Steaming of the soil 10. Chemical measures 11. Law of plant protection; procedure of authorization 12. Permissible consumer level 13. Importance of plant protection for business management and work 14. What happens with pesticides in nature? 15. Protection of environment and bees 16. Research on metabolites, gas chromatography 17. Biological measures: Ichneumon fly in greenhouse 18. Biological measures: Predative mites in greenhouse 19. Biological measures: Ladybird beetles against aphids 20. Biotechnical methods: Frightening by bang

No. 1329. Integrated protection of plants 9 Projection Slides
1. What is integrated protection of plants? 2. Integrated protection of plants in apple plantations 3. Economic damage limit 4. Light trap 5. Knocking method 6. Pheromone trap 7. Electronic scab warning instrument 8. Conventional method: Mills'table 9. Protection of useful animals

No. 1840. Useful Insects and Biological Pest Control.
The series presents color macrophotographs of insects, mites, nematodes and fungi, which are able to control, reduce or kill destructive animals and pests. The advantage of biological pest control consists in saving considerable amounts of chemicals, insecticides and fungicides..
Compilation: Rolf Buehl and Dr. Bernd Zucht 27 Projection Slides
1. Ground beetle (Carabus sp.) 2. Ladybird (Coccinella septempunctata) 3. Clutch of eggs and larva of ladybird with plant lice (Aphididae) 4. Green lacewings (Chrysopa carnea) 5. Eggs, larva of green lacewings and plant lice 6. Gall midge (Aphidoletes) and plant louse 7. Larva of gall midge on plant louse 8. Eggs of gall midge between plant lice 9. Ichneumon fly (Aphidius sp.) on eggs of butterfly 10. Larva of cabbage butterfly (Pieris brassicae) with pupae of an ichneumon fly 11. Plant louse parasitized by ichneumon flies 12. Woolly apple aphids parasitized by ichneumon flies 13. Leaf with larval galleries of leaf miners (Phytomiza sp.) 14. Ichneumon fly and larva of leaf miner with larva of ichneumon fly as an ectoparasite 15. Ichneumon fly laying eggs on mealy wings (Aleurodes) 16. Larva of mealy wings parasitized by ichneumon flies 17. Distribution of ichneumon fly larvae versus mealy wings 18. Hover flies (Syrphus sp.) on flower 19. Larva of hover fly on plant louse and eggs 20. Chigger sucking on mite 21. Chigger sucking on thrips 22. Larva of Weevil killed by threadworms (nematodes) 23. Mailing package of threadworms 24. Plant lice (aphids) infested by fungus (Verticillium lecanii) 25. Caterpillar infested by fungus (Metarhizium anisopliae) 26. Dead of caterpillars, caused by Bacterium thuringiensis 27. Control of snails by domestic ducks

ECOSYSTEMS

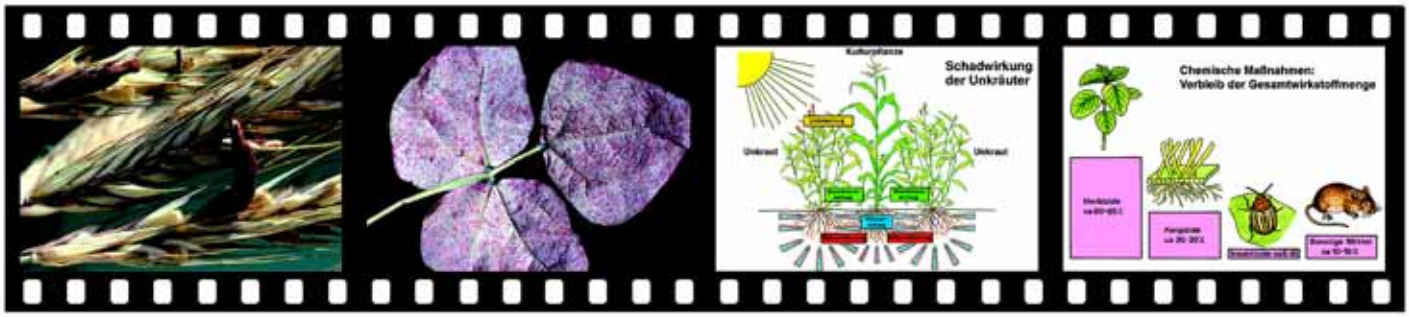
Natural biological communities become rarer and rarer. Their abundance of species, the problems of their preservation as well as their importance for the whole ecological structure, even for inconspicuous microbiotopes, are treated in these series on hand and documented by characteristic examples. Almost all of the details are photographed in their natural site to secure the greatest possible autencity.

No. 1843. Ecosystem Forest.
Compilation: Dr. R. Ertel and Dr. B. Zucht 35 Projection Slides
1. Schematic figure of the sections of the wood 2. Moss, Polytrichum (soil protection) 3. Clubmoss, Lycopodium (soil protection) 4. Fern, Aspidium, (soil protection) 5. Blueberry, Vaccinium myrtillus, (soil protection) 6. Privet, Ligustrum 7. Whitethorn, Crataegus oxyacantha 8. Holly, Ilex 9. Spruce, Picea 10. Beech, Fagus 11. Red Ant, Formica rufa 12. Shepherd Spider, Opilio sp. 13. Crab Spider, Thomisus sp. 14. Camberwell beauty (butterfly), Nymphalis antiopa 15. Common Yellow Underwing (butterfly), Noctua pronuba 16. Long Horned Beetle, Cerambyx cerdo 17. Stag Beetle, Lucanus cervus 18. Scolytid Beetle, Ips typographus, gallery design 19. Grass Frog, Rana temporaria 20. Toad, Bufo bufo 21. Common Lizard, Lacerta vivipara 22. Heron, Ardea cinerea 23. Goosander, Mergus merganser, breeding place 24. Goshawk, Accipiter gentilis 25. Capercaillie, Tetrao urogallus 26. European Woodcock, Scolopax rusticola 27. Tengmalm's Owl, Aegolius funereus 28. Black Woodpecker, Dryocopus martius 29. Crossbill, Loxia curvirostra 30. Common Shrew, Sorex araneus 31. Bank Vole, Clethrionomys glareolus 32. Yellow-necked Field Mouse, Apodemus flavicollis 33. Red Squirrel, Sciurus vulgaris 34. Beach Marten, Martes foina 35. Red Deer, Cervus elaphus

No. 1847. Ecosystem Alpine Meadows. Plants.
Compilation: Dr. R. Ertel and Dr. B. Zucht 22 Projection Slides
1. Alpine meadow zone, graph 2. Alpine meadow zone, landscape 3. Flora destroyed by winter sports 4. Crustose lichen, Rhizocarpon geographicum 5. Foliose lichen, Haematomma sp. 6. Alpine meadow grass, Poa alpina 7. Grassland, Nardus stricta 8. Fern, Botrychium lunaria 9. Alpine birch, Betula nana 10. Gentian, Gentiana verna 11. Gentian, Gentiana punctata 12. Alpine Rose, Rhododendron ferrugineum 13. Alpine Soldanel, Soldanella sp. 14. Biscutella laevigata, an Alpine crucifere 15. Rampion, Phyteuma sp. 16. Pasqueflower, Anemona pulsatilla 17. Mountain Avens, Dryas octopetala 18. Lion's Foot, (edelweiss), Leontopodium alpinum 19. Lilium martagon, an alpine lily 20. Nigritella nigra 21. Orchis globosus, an alpine orchid 22. Dwarf Pine, Pinus mugo

No. 1860. Ecosystem Alpine Meadows. Animals.
Compilation: Dr. R. Ertel and Dr. B. Zucht 20 Projection Slides
1. Ecological niches for the animals of the high mountain region 2. Alpine Blue Butterfly, Lycaena sp. 3. Painted Lady, Vanessa cardui 4. Gaurotes virginea 5. Alpine Carabid Beetle, Carabus sp. 6. Siberian Grasshopper, Gomphocerus sibiricus 7. European Black Salamander, Salamandra atra 8. Mountain Lizard, Lacerta vivipara 9. Golden Eagle, Aquila chrysaetos 10. Alpine Ptarmigan, Lagopus mutus 11. Water Pipit, Anthus spinoletta 12. Alpine Accentor, Prunella collaris 13. Wheatear, Oenanthe oenanthe 14. Snow Finch, Montifringilla nivalis 15. Alpine Chough, Pyrrhocorax graculus 16. Raven, Corvus corax 17. Snow Vole, Microtus nivalis 18. Blue Hare, Lepus timidus 19. Marmot, Marmota marmota 20. Ibex (Steinbock), Capra ibex

No. 1835. Ecosystem Pond. Plant Society.
Compilation: Dr. R. Ertel and Dr. B. Zucht 24 Projection Slides
1. Pond on working days 2. Pond on weekends 3. Zone of warping (picture) 4. Zone of warping (diagram) 5. Plant living submerged: Chara sp. 6. Plant with submersed leaves: water buttercup (Ranunculus aquatilis) 7. Ditto.: water milfoil (Myriophyllum sp.) 8. Ditto.: water pest (Elodea canadensis) 9. Plant with floating leaves: yellow and white pond lily (Nuphar sp.) 10. Ditto.: water aloe (Stratiotes aloides) 11. Reed bed: reed (Phragmites communis) 12. Reed bed: cat-tail (Typha latifolia) 13. Reed bed: bur-reed (Sparganium erectum) 14. Shallow water: water plantain (Alisma) and duck weed (Lemna) 15. Shallow water: arrow head (Sagittaria) 16. Shallow water: iris (Iris sibirica) 17. Shallow water: marsh trefoil (Menyanthes trifoliata) 18. Shallow water: horsetail (Equisetum fluviatile) 19. Shallow water: mare's tail (Hippuris vulgaris) 20. Sedge belt: swamp-rush (Heleocharis sp.) 21. Forest peat 22. Village pond 23. Artificial scenery with ponds 24. School pond



No. 1875. Ecosystem Pond. Animal Society.
Compilation: Dr. R. Ertel and Dr. B. Zucht. 24 Projection Slides
1. Zone of warping of a pond with animals 2. Fresh-water yellyfish, Craspedacusta sp. 3. Moss animal (Bryozoa) 4. Fresh water Snail, Planorbis 5. Fresh water Snail, Puccinea 6. Fresh water Mussel, Unio 7. Reed Spider, Aranea cornuta 8. Malaria Mosquito, Anopheles 9. Alder Fly (Drone Fly), Sialis lutaris 10. Damselfly, Coenagrion 11. Dragonfly, Aeschna cyanea 12. Water Strider (Skipper), Gerris 13. Carp, Cyprinus carpio 14. Pike, Esox lucius 15. Frog, Rana esculenta 16. Frog spawn, Rana esculenta 17. Ring Snake (Common Grass Snake), Natrix 18. Great Reed Warbler, Acrocephalus 19. Little Bittern, Ixobrychus minutus 20. Coot, Fulica atra 21. Gadwall, Anas strepera 22. Great Crested Grebe, Podiceps cristatus 23. Muskrat, Ondatra zibethica 24. Water Shrew, Neomys fodiens

No. 1830. Ecosystem Moor.
Compilation: Dr. R. Ertel and Dr. B. Zucht. 28 Projection Slides
1. Formation of an upland moor I: zones of warping of ponds (diagram) 2. Ditto. II: low moor and forest peat (diagram) 3. Ditto. III: raised bog (diagram) 4. Bog with wool grass, Eriophorum 5. Forest peat 6. Upland moor (Raised bog) 7. Marginal slope of an upland moor 8. Peat Moss, Sphagnum, habitus 9. Leaf of peat moss, Sphagnum, with water-storage cells 10. Dying wood at the edge of a moor 11. Protection against suffocation by peat moss Sphagnum 12. Hummoks and hollows 13. Fenberry, Vaccinium oxycoccus 14. Blueberry, Vaccinium myrtillus 15. Cranberry, Vaccinium vitis-idaea 16. Heather, Erica. Ling, Calluna 17. Black Crowberry, Empetrum nigrum 18. Star Moos, Mnium 19. Sedge Grass, Carex pauciflora 20. Sundew, Drosera 21. Butterwort, Pinguicula 22. White Birch, Betula pubescens 23. Moor pine, Pinus montana 24. Peat cut 25. Back-swimmers, Notonecta glauca 26. Moor Frog, Rana arvalis 27. Common Viper, Vipera berus 28. Black Crouse, Lyrurus tetrix

No. 1838. Ecosystem Puddle.
Compilation: Dr. R. Ertel and Dr. B. Zucht. 13 Projection Slides
1. Melt-water puddle in the mountains 2. Frogs in snow-puddle 3. Red colored puddle, caused by flagellates 4. Euglena sanguinea, red flagellate 5. Lowland puddle 6. Branchipus 7. Water-flea, Daphnia and Ephippium with winter eggs 8. Cartwheel trace with toads, Bombina 9. Fire-bellied Toad, Bombina variegata 10. Wood puddle 11. Molge in wood puddle, Triturus alpestris 12. Small puddle in root region of fallen tree 13. Water Striders in a puddle, Gerris sp.

No. 1888. Ecosystem Mud-flats (Shallows).
Compilation: Dr. R. Ertel and Dr. B. Zucht. 28 Projection Slides
1. Shallow coast, schematic figure 2. Shallow coast, photograph 3. Shoal sand 4. Shoal mud 5. Animals, living in the shoal sand and mud 6. Lugworm, Arenicola marina 7. Sea Annelid, Nereis diversicolor 8. Annelid, Lanice conchilega 9. Annelid, Heteromastus filiformis 10. Sea Mussel, Mytilus edulis 11. Mussels, Scrobicularia plana (Hen) and Solenidae sp. 12. Soft-shelled Clam, Mya arenaria 13. Common Periwinkle, Littorina littorea 14. Shallow Snail, Hydrobia ulvae 15. Common Cockle, Cardium edule 16. Shore Crab, Carcinus maenas 17. Shrimp, Crangon crangon 18. Shrimp fishing-boat 19. Plaice, Pleuronectes platessa 20. Marine Polychaete, Nereis diversicolor 21. Common Shelduck, Tadorna tadorna 22. Ringed Plover, Charadrius hiaticula 23. Dunlin, Calidris alpina 24. Oystercatcher, Haematopus ostralegus 25. Avocet, Recurvirostra avosetta 26. Curlew Sandpiper, Calidris ferruginea 27. Seal, Phoca vitulina 28. Baby-seal, Phoca vitulina, juv.

ANIMALS AND PLANTS

No. 1994. The Structure of Animals.
Compilation: Dr. K.-H. Meyer, B.S. 30 Projection Slides with 75 pictures.
A. Color schematic figures: 1. Structure of a coelenterate, hydra 2. Structure of a flatworm, liver fluke 3. Structure of a roundworm, ascaris 4. Structure of an annelid, earthworm 5. Structure of a mollusc, snail 6. Structure of a crustacean, crayfish 7. Structure of an arachnid , spider 8. Structure of an insect, cockroach 9. Structure of an echinoderm, starfish 10. Structure of a cartilaginous fish, shark 11. Structure of a bony fish, carp 12. Structure of a amphibian, frog 13. Structure of a reptile, lizard 14. Structure of a bird, pigeon 15. Structure of a mammal, dog
B. Color photographs from nature 16. Coelenterates, 4 color photographs 17. Flatworms, 4 color photographs 18. Roundworms, 4 color photographs 19. Annelids, 4 color photographs 20. Molluscs, 4 color photographs 21. Crustaceans, 4 color photographs 22. Arachnids, 4 color photographs 23. Insects, 4 color photographs 24. Echinoderms, 4 color photographs 25. Bony fishes, 4 color photographs 26. Cartilaginous fishes, 4 color photographs 27. Amphibians, 4 color photographs 28. Reptiles, 4 color photographs 29. Birds, 4 color photographs 30. Mammals, 4 color photographs

No. 1933. Birds in Gardens, Parks, and Towns.
Compilation: Dr. R. Ertel and Dr. B. Zucht. 25 Projection Slides
1. Blackbird, Turdus merula 2. Sing Thrush, Turdus philomelos 3. Oxeye-tit, Parus major 4. Blue Titmouse, Parus caeruleus 5. Chaffinch, Fringilla coeleps 6. Greenfinch, Chloris chloris 7. Bullfinch, Pyrrhula pyrrhula 8. House Sparrow, Passer domesticus 9. Blackcap, Sylvia atricapilla 10. Starling, Sturnus vulgaris 11. Robin, Erithacus rubecula 12. Black Redstart, Phoenicurus ochruros 13. Hawfinch, Coccothraustes coccothraustes 14. House Martin, Dilichon urbica 15. Common Swallow, Hirundo rustica 16. Phylloscopus collybita 17. White Wagtail, Motacilla alba 18. Nuthatch, Sitta europaea 19. Great spotted Woodpecker, Picoides major 20. Green Woodpecker, Picus viridis 21. Collared Turtle-dove, Streptopelia decaocto 22. Magpie, Pica pica 23. Carrion Crow, Corvus corone corone 24. Old World Kestrel, Falco tinnunculus 25. Tawny Owl, Strix aluco

No. 1937. Ecological Importance of Insects.
Compilation: Dr. K.-H. Meyer B.S. 17 Projection Slides
1. Structure of an insect (schematic figure) 2. Honey Bee, Apis mellifica 3. Bumble Bee, Bombus terrestris 4. Wasp, Paravespula sp. 5. Hornet, Vespa crabro 6. Ichneumon Fly, Rhyssa persuasoria, gallnut and imago 7. Brimstone, Gonepteryx rhamni 8. Small Tortoiseshell, Aglais urticae 9. Peacock, Inachis io 10. Hover Fly, Syrphidae sp., 11. Green Lacewing, Chrysopa perla 12. Lady Bird, Coccinella septempunctata 13. Carrion Beetle, Necrophorus sp. 14. Colorado Beetle, Leptinotarsa decemlineata 15. Red Ant, Formica rufa 16. Earwig, Forficula auricularia 17. Aphids (plant lice), Aphis fabae

No. 1979. Butterflies (Lepidoptera).
Compilation: Dr. R. Ertel and Dr. B. Zucht. 22 Projection Slides
1. Common Swallowtail, Papilio machaon 2. Iphiclides (Papilio) podalirius 3. Apollo, Parnassius apollo 4. Marbled White, Melanargia galathea 5. Meadow Browns, Hipparchia (Erebia) sp. 6. Silver-washed Fritillary, Argynnis paphia 7. Small Tortoiseshell, Vanessa (Aglais) urticae 8. Red Admiral, Vanessa atalanta 9. Camberwell Beauty, Nymphalis (Vanessa) antiopa 10. Peacock, Vanessa (Inachis) io 11. Comma, Polygonia c-album 12. Small Viceroy, Limenitis rivularis 13. Brimstone, Gonepteryx rhamni 14. Anthocharis cardamines 15. Blue, male (blue colored), Lycaenidae 16. Blue, female (brown colored), Lycaenidae 17. Painted Lady, Vanessa cardui 18. Hair-streaks, Zephyrus (Thecla) sp. 19. Skipper, Hesperia sp. 20. Cabbage White, Pieris brassicae 21. Green-veined White, Pieris napi 22. Burnet, Zygaena sp.

No. 1943. Useful Herbs and Grasses (Cereals).
Compilation: Dr. K.-H. Meyer B.S. 14 Projection Slides
1. Fodder Beet, Beta vulgaris var. crassa 2. Sugar Beet, Beta vulgaris var. altissima 3. Buckwheat, Fagopyrum esculentum 4. Rape, Brassica napus var. oleifera 5. Swede (trunip, rutabaga), Brassica napus 6. Potato, Solanum tuberosum 7. Sunflower, Helianthus annuus 8. Corn (maize), Zea mays 9. Millet, Panicum miliaceum 10. Oats, Avena sativa 11. Spelt, Triticum spelta 12. Wheat, Triticum aestivum 13. Rye, Secale cereale 14. Barley, Hordeum vulgare

No. 1945. Medical plants.
Compilation: Dr. K.-H. Meyer B.S. 27 Projection Slides
1. Hawthorn, Crataegus oxyacantha 2. Agrimony, Agrimonia eupatoria 3. Restharrow, Ononis spinosa 4. Mistletoe, Viscum album 5. Fennel, Foeniculum vulgare 6. St.-John's wort, Hypericum perforatum 7. Indian cress, nasturtium, Tropaeolum maius 8. Linden (Lime), Tilia platyphyllos 9. Bearberry, Arctostaphylos uva-ursi 10. Elder, Sambucus nigra 11. Valerian, Valeriana officinalis 12. Lesser centaury, Centaurium erythraea 13. Comfrey, Symphytum officinale 14. Mullein, Verbascum thapsus 15. Ribwort, Plantago lanceolata 16. Lavender, Lavandula angustifolia 17. Sage, Salvia officinalis 18. Balm-mint, Melissa officinalis 19. Thyme, Thymus vulgaris 20. Peppermint, Mentha piperita 21. Milfoil (Yarrow), Achillea millefolium 22. Camomile, Matricaria chamomilla 23. Tansy, Tanacetum vulgare 24. Coltsfoot, Tussilago farfara 25. Arnica, Arnica montana 26. Marigold, Calendula officinalis 27. Dandelion, Taraxacum officinale

No. 1949. Poisonous Plants.
Compilation: Dr. K.-H. Meyer B.S. 13 Projection Slides
1. Yew, Taxus baccata 2. Monkshood, Aconitum napellus 3. Yellow Wolf's Bane, Aconitum vulparia 4. Golden Chain, Laburnum vulgare (Cytisus laburnum) 5. Mezereon (spurge olive), Daphne mezereum 6. Deadly Nightshade, Atropa belladonna 7. Black Henbane, Hyoscyamus niger 8. Bittersweet (Woody Nightshade), Solanum dulcamara 9. Thorn apple, stramonium, Datura stramonium 10. Purple Foxglove, Digitalis purpurea 11. Meadow Saffron, Colchicum autumnale 12. Lily of the Valley, Convallaria majalis 13. Herb Paris, oneberry, Paris quadrifolia

Compilation: Dr. K.-H. Meyer B.S. 18 Projection Slides
A. Schematic figures (diagrams): 1. Wind pollination (Hazel flower, Corylus) 2. Typical flower (Cherry blossom, Prunus) 3. Insect pollination 4. Flower of Cruciferae (Cuckoo flower, Cardamine) 5. Flower of Labiatae (Sage, Salivia), lever mechanism of stamens 6. Flower of Leguminosae (Pea, Pisum), style brush 7. Flower of Broom, (Sarothamnus), catapult mechanism before and after pollination 8. Flower of Orchis (with Bumble bee), adhesion mechanism *B. Structure of Flowers. Photographs from nature* 9. Hazel, Corylus avellana 10. Great sallow, Salix caprea 11. Dog Rose, Rosa canina 12. Rape, Brassica napus 13. Cherry, Prunus avium 14. Apple, Malus domestica 15. Poppy, Papaver sp. 16. Primula, Primula officinalis 17. Sunflower, Helianthus annuus 18. Cuckoopint, Arum maculatum, (slippery-trap flower)

No. 1954. Biology of Flowers II (Insect Flowers).
Compilation: Dr. K.-H. Meyer B.S. 29 Projection Slides
A. Beetle flowers: 1. Magnolia, Magnolia sp. 2. Cow Parsnip, Heracleum sphondylium 3. Cornelian cherry, Cornus mas 4. Viburnum, Viburnum opulus *B. Fly flowers:* 5. Fennel, Foeniculum vulgare 6. Cleavers (goose grass), Galium aparine 7. Bittersweet (woody nightshade), Solanum dulcamara 8. Birthwort, Aristolochia clematis 9. Birthwort, schematic design of the flower 10. Cuckoopint, Arum maculatum 11. Cuckoopint, schematic design of the flower *C. Bee and bumble bee flowers:* 12. Cowslip, Caltha palustris 13. Columbine, Aquilegia vulgaris 14. Broom Flower, Sarothamnus scoparius 15. Bird's-foot trefoil, Lotus corniculatus 16. Lime (Linden), Tilia platyphyllos 17. Bindweed, Convolvulus arvensis 18. Purple Foxglove, Digitalis purpurea 19. Blind nettle, Lamium maculatum 20. Sage, Salvia glutinosa 21. Sage, Salvia glutinosa, diagram of the pollination *D. Butterfly flowers:* 22. Cartusian Pink, Dianthus carthusianorum 23. Summer Lilac, Buddleja 24. Stork's-bill, Geranium pratense 25. Horse thistle, Cirsium arvense *E. Moth flowers:* 26. Evening primrose, Oenothera biennis 27. Catchfly, Silene nutans (night moth flower) 28. Honeysuckle, Lonicera periclymenum (night moth flower) 29. Thorn apple, stramonium, Datura stramonium

No. 1957. From Flower to Fruit.
Compilation: Dr. K.-H. Meyer B.S. 14 Projection Slides
1. Cherry, Prunus avium, flower and fruit, photographs 2. Ditto., graphic figures 3. Apple, Malus domestica, flower and fruit, photographs 4. Ditto., graphic figures 5. Dandelion, Taraxacum officinale, flower and fruit, photographs 6. Burdock, Arctium lappa, flower and fruit, photographs 7. Touch me not, Impatiens glandulifera, flower and fruit, photographs 8. Legume, photograph 9. Legume, graphic figure 10. Siliqua, photograph 11. Siliqua, graphic figure 12. Crane's-bill, Erodium cicutarium, flower and fruit, photographs 13. Ditto., fruit, graphic figures 14. Water lily, Nuphar lutea, fruit and floating seed, photographs

No. 1330. The Most Important Mushrooms and Toadstools.
Color photographs of an outstanding quality illustrate typical specimens in theirs habitat. To make determination easier all mushrooms are shown in side and top view and from the bottom side.
Compilation: G. Woelfel. 30 Projection Slides
1. Boletus edulis, yellow boletus 2. Tylopilus felleus 3. Boletus erythropus 4. Suillus grevillei 5. Suillus bovinus 6. Suillus luteus 7. Suillus variegatus 8. Xerocomus badius 9. Leccinum scabrum 10. Leccinum quercinum 11. Paxillus involutus 12. Tricholoma auratum 13. Tricholoma sulphureum 14. Calocybe gambosa 15. Inocybe patouillardi 16. Amanita phalloides, death cup (green) 17. Amanita ritrina, death cup (yellow) 18. Amanita muscaria, fly agaric 19. Amanita pantherina 20. Amanita rubescens 21. Macrolepiota procera 22. Agaricus campester, champignon 23. Agaricus xanthoderma 24. Coprinus comatus, ink cup 25. Lactarius deliciosus 26. Cantharellus cibarius, chanterelle 27. Hygrophoropsis aurantiaca 28. Hydnum rapandum 29. Morchella esculenta, morel 30. Gyromitra esculenta

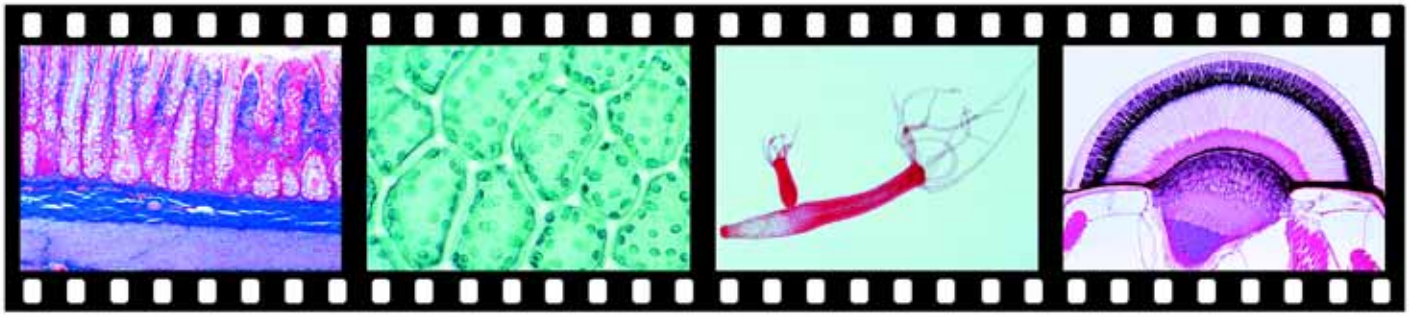
SCHOOL SETS OF GENERAL BIOLOGY

School Sets I, II, III
The color photomicrographs of our school sets I, II, and III have been selected in cooperation with experienced teachers and scientists. These collections follow the subject matter of well-known textbooks of biology and thereby represent a valuable biological training aid. Each slide has been carefully examined for instructional relevance. The highest technical and scientific standards were applied to the specimens used in the production of the photomicrographs. The sharpness and brilliance of color which distinguish the images on the projection screen are due to the high quality of the original photomicrographs.

No. 100. School Set I. Zoology and Botany. 42 Color Photomicrographs
1. Musca domestica, house fly, sucking mouth parts 2. Periplaneta, cockroach, chewing mouth parts 3. Apis mellifica, honey bee, mouth parts of worker 4. Culex pipiens, common mosquito, piercing sucking mouth parts of adult female 5. Periplaneta, cockroach, typical insect leg 6. Apis mellifica, honey bee, hind leg of worker 7. Apis mellifica, wings 8. Pieris, butterfly, wing with scales 9. Apis mellifica, sting and poison sac 10. Daphnia, water flea 11. Araneus, spider, cephalothorax with mouth parts 12. Araneus, spinneret 13. Ixodes, tick, piercing sucking mouth parts 14. Radula of snail 15. Lumbricus, earthworm, t.s. of body 16. Taenia saginata, tapeworm, w.m. of gravid proglottid 17. Distomum lanceolatum, liver fluke, w.m. 18. Planaria, t.s. 19. Trichinella, muscle with encysted larvae 20. Hydra, w.m. of extended specimen with bud 21. Hydra, t.s. through the body. Ectoderm, entoderm 22. Paramecium, macro- and micronucleus 23. Amoeba proteus, nucleus, pseudopodia, food vacuoles 24. Typical animal cell in t.s. of salamander liver 25. Bacteria, mixed. Cocci, bacilli, spirilla and spirochaetae 26. Mucor, pin mold. Mycelium and sporangia 27. Coprinus, mushroom, section with basidia and spores 28. Spirogyra, vegetative with spiral chloroplasts 29. Mnium, moss, w.m. of leaf with cloroplasts 30. Diatoms, different species 31. Physcia, lichen, t.s. of thallus showing symbiosis 32. Aspidium, fern, t.s. of rachis with bundles 33. Fern prothallium, w.m. with young sporophyte 34. Aspidium, fern, t.s. of frond with sori 35. Pinus, pine, young female cone, l.s. 36. Pinus, male cone, l.s. 37. Zea mays, corn, t.s. typical monocot stem 38. Aristolochia, t.s. of one-year dicot stem 39. Aristolochia, t.s. of older stem. Secondary growth 40. Aristolochia, l.s. of older stem with vessels 41. Syringa, lilac, t.s. of leaf 42. Triticum, wheat, sagittal l.s. of embryo

No. 110. School Set II. Histology. 32 Color Photomicrographs
1. Areolar connective tissue 2. Hyaline cartilage t.s. 3. Compact bone t.s. Haversian canals 4. Striated muscle l.s. detailed structures 5. Smooth muscle l.s. detailed structures 6. Cardiac (heart) muscles, intercalated discs 7. Artery t.s. stained for elastic fibres 8. Vein t.s. stained for elastic fibres 9. Human blood smear 10. Lung t.s. alveoli, bronchial tubes 11. Esophagus t.s. 12. Stomach, fundic region t.s. 13. Small intestine, t.s. showing villi 14. Small intestine, t.s. injected to show blood vessels 15. Large intestine (colon) t.s., with goblet cells 16. Vermiform appendix, t.s. 17. Liver of pig, t.s. 18. Pancreas t.s. islets of Langerhans 19. Kidney of mouse, l.s. complete organ 20. Malpighian corpuscle of kidney, detail view 21. Testis t.s. to show spermatogenesis 22. Ovary t.s. Graafian follicle, corpus luteum 23. Cerebrum, t.s. pyramidal cells 24. Cerebellum, t.s. Purkinje cells 25. Spinal cord t.s. motor nerve cells 26. Eye, median sag.s. with entrance of optic nerve 27. Internal ear, median l.s. of cochlea organ of Corti 28. Thyroid gland t.s. with colloid 29. Human scalp l.s. of hair follicles, sebaceous glands 30. Human skin from finger tip, l.s. 31. Nail development from human embryo, l.s. 32. Tooth development, l.s.

No. 120. School Set III. General Biology. 68 Color Photomicrographs
1. Euglena, green flagellate 2. Paramecium in binary fission 3. Trypanosoma gambiense, sleeping sickness, blood smear 4. Plasmodium falciparum, tertian malaria, ring stages and gametocytes 5. Plasmodium, infected mosquito stomach with oocysts 6. Plasmodium, salivary gland of mosquito with sporozoites 7. Obelia hydroid, colony 8. Obelia medusa 9. Nephrostome of nephridium from earthworm 10. Asterias, starfish, arm t.s. 11. Branchiostoma (Amphioxus), t.s. 12. Rana, frog, blood smear 13. Capillary vessels in mesentery 14. Gills of fish, t.s. 15. Lung of frog, t.s. 16. Lung of lizard, t.s. 17. Eyespot of Planaria l.s. 18. Eye of Helix, snail l.s. 19. Compound eye of an insect, l.s. 20. Retina from monkey, l.s. detail view 21. Statocyst of a crustacean 22. Organ of Corti, detail view 23. Olfactory epithelium 24. Organ of taste, sec. foliate papilla of rabbit tongue 25. Motor nerve endings in striated muscle 26. Spinal cord, t.s. 27. Motor nerve cell, from spinal cord 28. Purkinje cells, silver stain 29. Medullated nerve fibres, l.s. Ranvier's nodes 30. Mitochondria in sec. of Amphibian liver 31. Eudorina, small colonies of flagellates 32. Volvox, daughter colonies and gametes 33. Fucus vesiculosus, brown alga, conceptacle with oogonia 34. Fucus vesiculosus, conceptacle with antheridia 35. Marchantia, liverwort, median l.s. of archegonium 36. Marchantia, median l.s. of antheridium 37. Stone cells with pit canals 38. Stem apex of Elodea, median l.s. 39. Helianthus, sunflower, t.s. of typical herbaceous dicot stem 40. Cucurbita, pumpkin, t.s. of vascular bundle 41. Cucurbita, l.s. of a vascular bundle 42. Leaf epidermis with stomata and guard cells 43. Nerium, oleander, leaf t.s. with sunken stomata 44. Convallaria, t.s. typical monocot root 45. Ranunculus, buttercup, t.s. typical dicot root 46. Neottia, orchid, t.s. root with endotrophic mycorrhiza 47. Cuscuta, dodder, host with parasitic haustoria, sec. 48. Ascaris megalocephala, ovum in early cleavage 49. Ditto. ovum in later cleavage 50. Hyacinthus, l.s. of root tips showing mitosis, prophase 51. Ditto. mitosis, anaphase 52. Ditto. mitosis, telophase 53. Lilium, ovary t.s., embryosac with megaspore mother cell 54. Ditto. embryosac with anaphase of second division 55. Ditto. mature eight nucleate embryosac 56. Lilium, anther t.s. microspore mother cells in early prophase 57. Ditto. diplotene stage 58. Ditto. metaphase of first (heterotypic) division 59. Ditto. metaphase of second (homeotypic) division 60. Ditto. pollen tetrad 61. Psammechinus, sea urchin, embryology, two-cell stage



62. Ditto. four-cell stage 63. Ditto. eight-cell stage 64. Ditto. morula 65. Ditto. blastula 66. Ditto. gastrula 67. Giant chromosomes from Chironomus, genes and puffs 68. Human chromosomes in stage of metaphase

No. 130. General Biology College Set.
The selection of 75 color photomicrographs contained herein corresponds to primary and secondary school syllabuses. The series is intended to help the teacher design modern biology teaching programmes and it serves as a means of both visual and practical teaching. 75 Color Photomicrographs
1. Typical animal cells 2. Amoeba proteus 3. Paramaecium 4. Hydra w.m. 5. Hydra t.s. of body 6. Trypanosoma gambiense, blood smear 7. Taenia, tapeworm, mature proglottid 8. Trichinella, larvae in muscle l.s. 9. Lumbricus, earthworm, t.s. back of clitellum 10. Apis, mouth parts 11. Apis, hind leg with pollen basket 12. Apis, sting and poison sac 13. Musca, house fly, mouth parts 14. Spider, mouth parts 15. Spider, spinneret 16. Snail, radula 17. Bacteria, mixed species 18. Volvox 19. Coprinus, mushroom, typical basidia and spores t.s. 20. Aspidium, fern, leaf with sori t.s. 21. Fern prothallium 22. Lichen, thallus with symbiotic algae t.s. 23. Moss, archegonium l.s. 24. Moss, antheridium l.s. 25. Lupinus, root nodules with symbiotic bacteria t.s. 26. Pinus, pine, ovulate cone l.s. 27. Pinus, staminate cone l.s. 28. Triticum, wheat, embryo median l.s. 29. Helianthus, sunflower, dicot stem t.s. 30. Cucurbita, pumpkin, vascular bundle t.s. 31. Epidermis of leaf with stomata and guard cells 32. Syringa, lilac, leaf t.s. 33. Elodea, stem apex l.s. 34. Hyaline cartilage t.s. 35. Compact bone t.s. 36. Smooth muscle l.s. 37. Striated muscle l.s. 38. Heart muscle l.s. 39. Artery t.s. 40. Vein t.s. 41. Human blood smear 42. Lung t.s. 43. Esophagus t.s. 44. Stomach t.s. 45. Small intestine t.s. 46. Small intestine injected to show blood vessels 47. Large intestine t.s. 48. Pancreas t.s. 49. Kidney t.s. 50. Malpighian corpuscle from kidney 51. Ovary with follicles t.s. 52. Testis with spermatogenesis t.s. 53. Thyroid gland t.s. 54. Human scalp l.s. of hair follicles 55. Human finger tip sagittal l.s. 56. Spinal cord t.s. 57. Purkinje cells in t.s. of cerebellum 58. Motor nerve cells 59. Isolated nerve fibres, osmic acid 60. Motor end plates in muscle 61. Insect compound eye, median l.s. 62. Snail, eye l.s. 63. Mammal, eye median sagittal l.s. 64. Retina, t.s. for fine detail 65. Cochlea, median l.s. 66. Taste buds of tongue t.s. 67. Fish, gills t.s. 68. Animal mitosis, various stages 69. Ascaris embryology, cleavage early stage 70. Ascaris embryology, cleavage later stage 71. Sea urchin embryology, two cell stage 72. Sea urchin, four cell stage 73. Sea urchin, morula 74. Sea urchin, blastula 75. Giant chromosomes

HUMAN HISTOLOGY AND PATHOLOGY

No. 3280. Normal Human Histology.
Our series No. 3150 and 100 supply fundamental knowledge of general histology and of the minute structure of the organs of the mammal organism. This series is designed to meet the often expressed demand for an illustration of special human conditions. 58 Color Photomicrographs.
Skeleton: 1. Femur (thigh-bone), t.s. of entire 2. Fibula (calf-bone), t.s. of entire 3. Upper end of tibia (shin-bone), l.s. 4. Joint of finger with joint-capsule, l.s. *Respiratory, circulatory, and lymphatic systems, endocrine glands* 5. Bronchus of lung, l.s. 6. Lung showing alveoli t.s. 7. Blood smear 8. Aorta t.s. shows muscular layers 9. Spleen, t.s. 10. Thymus gland from child, t.s. with Hassall bodies 11. Thyroid gland, t.s. shows colloid 12. Parathyroid gland t.s. 13. Adrenal gland, t.s. cortex and medulla 14. Pituitary gland (Hypophysis), l.s. 15. Pineal body (Epiphysis), t.s. 16. Islets of Langerhans in t.s. of pancreas *Digestive system* 17. Lip, t.s. 18. Incisor tooth, median l.s. 19. Tongue, t.s. showing various papillae 20. Tongue, t.s. showing lingual follicles 21. Parotid gland t.s. 22. Pancreas t.s. 23. Esophagus, t.s. 24. Stomach, fundic region t.s. 25. Duodenum, t.s. with Brunner's glands 26. Jejunum, t.s. 27. Colon t.s. 28. Liver, t.s. for hepatic lobes *Urogenital system* 29. Kidney, t.s. cortex and medulla 30. Ureter t.s. 31. Ovary with follicles t.s. 32. Ovary with Corpus luteum t.s. 33. Fallopian tube t.s. 34. Uterus, secretory phase t.s. 35. Uterus, menstrual phase t.s. 36. Uterus, early post-menstrual phase t.s. 37. Uterus, two weeks post-menstrual phase t.s. 38. Uterus, pregnant t.s. 39. Vagina t.s. 40. Testis, t.s. seminal canals 41. Sperm smear 42. Spermatic duct t.s. *Nervous system and organs of sense* 43. Nervus ischiadicus, t.s. 44. Motor nerve cell with processes 45. Spinal cord, t.s. cervical region 46. Spinal cord, t.s. thoracal region 47. Spinal cord, t.s. lumbar region 48. Ganglion semilunare l.s. 49. Cerebral cortex t.s. 50. Cerebellum t.s. 51. Papilla circumvallata, l.s. to show taste buds 52. Taste buds, t.s. for fine detail 53. Retina with entrance of optic nerve, l.s. *Integument* 54. Skin of finger tip, t.s. 55. Tactile corpuscles in skin of finger l.s. 56. Scalp, showing l.s. of hair follicles 57. Scalp, showing t.s. of hair follicles 58. Mammary gland, active, t.s.

No. 3290. Human Pathology.
Detail and microscopic enlargement of the individual photomicrographs of this series have been selected so as to optimally illustrate the pathological changes in diseased cells, tissues and organs. 50 Color Photomicrographs.
Abnormal alterations of cells and tissues 1. Parenchymatous and fatty degeneration of liver 2. Hemosiderosis of liver 3. Glycogenosis of liver 4. Pigmentary cirrhosis of liver 5. Necrotic esophagitis 6. Foreign body granulome 7. Tonsillitis 8. Liver cirrhosis *Injury of circulatory organs and blood-forming organs* 9. Adiposis of heart 10. Cardiac callosity 11. Myocarditis chronica acute recidivans 12. Organized venous thrombosis 13. Infarct of spleen 14. Chronic myeloid leukemia of spleen 15. Malarial melanemia of spleen *Pathologic alterations of lung and liver, tuberculosis, pneumonia* 16. Anthracosis of lung 17. Hemorrhagic infarct of lung 18. Influenzal pneumonia 19. Croupous pneumonia 20. Chronic pneumonia 21. Necrotic (cheesy) pneumonia 22. Miliary tuberculosis of lung 23. Chronic tuberculous pulmonary cavity with bacteria 24. Icterus hepatis *Reactions or kidney after arteriosclerosis, disturbance of metabolism, and inflammation, colitis* 25. Glomerularatrophy of kidney 26. Amyloid degeneration of kidney 27. Acute hemorrhagic nephritis 28. Chronic glomerulonephritis 29. Septic embolic nephritis 30. Colitis dysenterica Shiga-Kruse Specific inflammations after infection with syphilis spirochaetes 31. Congenital syphilis of liver, spirochaetes silvered 32. Congenital syphilis of liver (Feuerstein liver), routine stained 33. Gumma of testicle *Progressive alteration of injured tissues and organs (Hypertrophy and hyperplasia)* 34. Atheroma of head 35. Struma colloides 36. Undescended testicle, hyperplasia of Leydig's cells 37. Hypertrophy of the prostate 38. Giant cell sarcoma of maxilla *Benignant and malignant tumors* 39. Chondroma of pubic bone 40. Myoma of uterus 41. Fibroadenoma of breast 42. Fibroepithelial mixed tumor of parotid 43. Melanosarcoma of skin 44. Spindle cell sarcoma 45. Carcinoma cervicis uteri 46. Sarcoma of testicle 47. Cystadenoma papilliferum of ovary 48. Gelatinous carcinoma of rectum 49. Lymphosarcoma mediastini 50. Metastatic carcinoma of liver.

HISTOLOGY AND PHYSIOLOGY OF ANIMALS

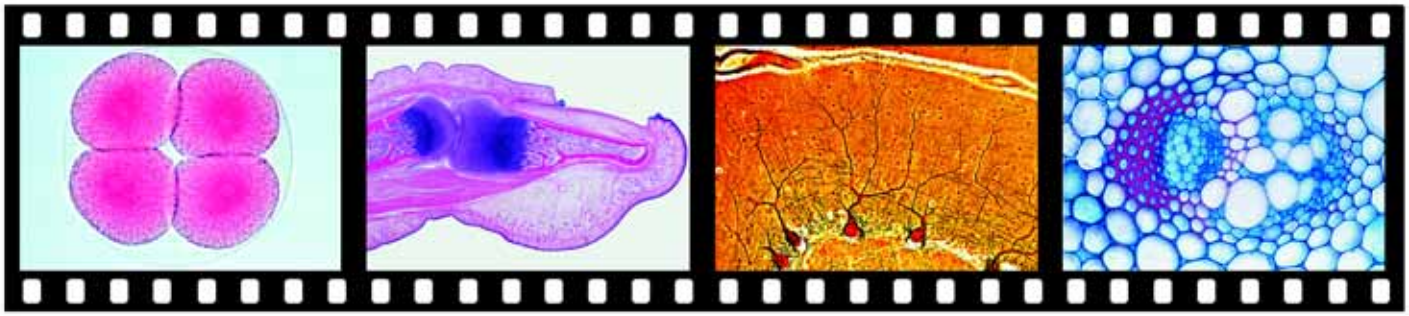
No. 3150. Comparative Histology and Physiology of Animals.
260 Color Photomicrographs. *The complete series consists of 16 partial series which can be delivered individually also.*

No. 3151. Animal cell and cell division. 18 Color Photomicrographs
1. Simple animal cells in salamander liver 2. Giant chromosomes from salivary gland of Chironomus 3. Human chromosomes in stage of metaphase 4. Barr bodies 5. Large oocytes in sec. of crayfish liver 6. Yolk granules in eggs of salamander 7. Mature egg cell of mammal 8. Pigment cells in skin of salamander 9. Mitochondria in thin sec. of amphibian liver 10. Golgi apparatus in epithelial cells 11. Metaphase of first cleavage of Ascaris 12. Nuclear spindles in side-view, Astacus 13. Whitefish mitosis, anaphase and telophase 14. Two-cell stage of sea urchin egg 15. Amitosis (direct division) t.s. of liver cell 16. Amoeba proteus, showing amitotic division 17. Syncytium 18. Plasma cells

No. 3152. Epithelial tissues. 9 Color Photomicrographs
1. Squamous epithelium, isolated 2. Stratified squamous epithelium 3. Intercellular bridges 4. Cuboidal epithelium 5. Simple columnar epithelium 6. Transitional epithelium 7. Ciliated epithelium 8. Endothelial cells, cell walls silver stained 9. Glandular epithelium showing goblet cells

No. 3153. Connective and supporting tissues. 20 Color Photomicrographs
1. Embryonic connective tissue 2. Mucous tissue 3. Reticular tissue, silver stained 4. Areolar connective tissue 5. Lattice fibres, sec. silver stained 6. White fibrous tissue, l.s. of tendon 7. Yellow elastic fibrous tissue 8. Adipose tissue, fat in situ 9. Vesicular tissue 10. Hyaline cartilage, t.s. 11. Yellow elastic cartilage, elastic fibres 12. Fibrocartilage l.s. 13. Compact bone, t.s. Haversian canals 14. Compact bone, l.s. 15. Cancellous bone, t.s. 16. Long hollow bone, entire t.s. 17. Long hollow bone, entire epiphysis l.s. 18. Intracartilaginous ossification 19. Intermembraneous ossification 20. Exoskeleton of arthropods, t.s.

No. 3155. Muscular tissues. 7 Color Photomicrographs
1. Striated muscle, l.s. detail view 2. Striated muscle, t.s. detail view 3. Capillary blood vessels in striated muscle 4. Smooth muscle l.s. detail view 5. Cardiac (heart) muscle l.s. detail view 6. Epithelio-muscular cells of Ascaris 7. Primitive muscle fibres of Hydra



No. 3156. Respiratory system. 17 Color Photomicrographs
1. Gill lamellae of Gammarus 2. Tracheal tubes of insect 3. Spiracle from insect 4. Clam gill, t.s. of gill filaments 5. Air chamber of snail (Helix) 6. Book or trachea lung of spider, l.s. 7. Gill of Branchiostoma, t.s. 8. Gill of fish t.s. 9. Lung of frog (Rana), t.s. sac-like lung 10. Lung of frog, t.s. detail of vessels and epithelium 11. Lung of mammal (cat) t.s. for general study 12. Alveolus of mammalian lung 13. Lung of mammal, elastic fibres 14. Bronchiole, cartilage and artery t.s. 15. Trachea of cat, t.s. general study 16. Wall of trachea, t.s. detail view 17. Larynx of mammal, l.s.

No. 3158. Circulatory and lymphatic systems. 17 Color Photomicrographs
1. Heart of snail, t.s. 2. Vein of mammal, t.s. elastic fibres 3. Artery of mammal, t.s. elastic fibres 4. Artery and vein, t.s. routine stained 5. Human blood smear, high magnification 6. Blood platelets (thrombocytes) in human blood 7. Eosinophilic granulocyte in human blood 8. Frog blood smear 9. Amphiuma blood smear, extra large red blood cells 10. Heart of fish (Cyprinus), l.s. 11. Heart of frog (Rana). l.s. 12. Heart of mouse (Mus), l.s. 13. Spleen of cat, t.s. 14. Malpighian body of spleen 15. Lymph node of mammal, t.s. 16. Red bone marrow with 17. Tonsil, human l.s.

No. 3161. Endocrine glands. 14 color photo micrographs
1. Thyroid gland of mammal, t.s. 2. Parathyroid gland of mammal, t.s. 3. Thymus gland of young cat, t.s. Hassall bodies 4. Pituitary body (hypophysis), human l.s. 5. Adenohypophysis, t.s. for cell types 6. Pineal body (epiphysis), t.s. 7. Adrenal gland of monkey, t.s. general study 8. Adrenal gland of monkey, t.s. detail 9. Islet of Langerhans, t.s. cellular detail 10. Corpus luteum, t.s. 11. Pronephros (head kidney) of fish, t.s. endocrine organ 12. Neurosecretory cells in cerebral ganglion of spider 13. Corpora cardiaca of insect, t.s. storing neurosecretes 14. Corpora allata of insect, t.s. neuroendocrine glands

No. 3162. Digestive system. 32 Color Photomicrographs
1. Amoeba proteus, digesting within food vacuoles 2. Paramaecium, food vacuoles stained 3. Hydra, l.s. hypostome and gastrovascular cavity 4. Hydra, l.s. with food 5. Intestinal wall of earthworm 6. Intestine of crayfish, t.s. folds increase surface 7. Intestinal gland of crayfish, t.s. Reabsorption of food 8. Gizzard of cockroach with chitinous teeth 9. Chylus of cockroach, l.s. reabsorption of food 10. Radula of snail, organ of mastication 11. Small intestine of frog, t.s. general view 12. Tongue of cat, l.s. rasping off food material 13. Esophagus of mammal t.s. 14. Stomach of mammal t.s. general view 15. Mucous membrane of stomach, fundic glands 16. Stomach of mammal, injected blood vessels 17. Small intestine, t.s. general view 18. Intestinal villus of duodenum, t.s. detail view 19. Large intestine of mammal, t.s. goblet cells 20. Vermiform appendix, t.s. lymphoid tissue 21. Recto-anal junction, l.s. 22. Liver of pig, t.s. general study 23. Kupffer's star cells with phagocytosis 24. Storage of glycogen in liver cells 25. Submandibulary gland 26. Pancreas, t.s. serous gland 27. Small intestine of dog, injected blood vessels 28. Tooth development, l.s. 29. Human tooth in gum, l.s. 30. Human tooth (molar), l.s. 31. Human tooth, ground 32. Gum with root of tooth, t.s.

No. 3165. Excretory system. 13 Color Photomicrographs
1. Nephrostome of nephridium from earthworm 2. Kidney of snail, t.s. 3. Malpighian tubules of insect t.s. 4. Kidney of newt, primordial kidney, t.s. 5. Nephrostome with ciliated funnel in kidney of frog 6. Kidney of mouse, l.s. complete organ 7. Malpighian corpuscle of mammalian kidney 8. Kidney of mammal, t.s. of cortex 9. Ditto. t.s. of marrow 10. Ditto. t.s. injected blood vessels 11. Ditto. t.s. to show storage 12. Urinary bladder of rabbit, t.s. 13. Ureter of rabbit, t.s.

No. 3167. Reproductive system. 24 Color Photomicrographs
1. Paramaecium in binary fission 2. Paramecium in conjugation 3. Hydra with bud, w.m. Asexual reproduction 4. Regeneration of Hydra 5. Hermaphrodite gland of snail 6. Uterus of Ascaris, t.s. stages of embryology 7. Ovary of mammal, t.s. primary follicles 8. Ditto. t.s. developing follicle 9. Ditto. t.s. mature Graafian follicle 10. Ditto. t.s. ruptured Graafian follicle 11. Testis of mammal, t.s. general view 12. Ditto. t.s. spermatogenesis 13. Epididymis of mammal, t.s. 14. Mature spermatozoa of bull 15. Fallopian tube of mammal t.s. 16. Uterus of mammal, resting stage t.s. 17. Placenta of pig, t.s. 18. Uterus of mouse with embryo, t.s. general view 19. Ditto. l.s. of navel string 20. Navel string of calf, t.s. 21. Prostate gland of monkey, t.s. 22. Seminal vesicle of mammal, t.s. 23. Penis of pig, t.s. 24. Vagina of pig, t.s.

No. 3171. Nervous system. 25 Color Photomicrographs
1. Paramecium neuromotor system 2. Ventral nerve cord of earthworm, t.s. 3. Brain of insect, frontal section. 4. Giant nerve fibres of Sepia 5. Brain of frog, t.s. 6. Motor nerve cell 7. Nerve cells, t.s. Nissl's granules 8. Sympathetic ganglion, t.s. 9. Medullated nerve fibres, l.s. of Ranvier's nodes 10. Peripheral nerve, t.s. 11. Cerebrum of mammal, t.s. of cortex 12. Pyramidal cells silvered 13. Cerebellum of mammal, t.s. 14. Purkinje cells silvered 15. Brain of mouse, sagittal section 16. Brain of mouse, horizontal section 17. Spinal cord of mammal, t.s. 18. Spinal cord, t.s. nerve cells silvered 19. Spinal cord with ganglia 20. Optic nerve of monkey, t.s. 21. Neuroglia, silvered 22. Motor innervation of muscle, general survey 23. Motor nerve endings in striated muscle 24. Muscle spindle, t.s. 25. Corpuscle of Herbst, l.s.

No. 3172. Light-perceptive organs. 23 Color Photomicrographs
1. Eyespot of Planaria 2. Eyespot of leech 3. Eye and brain of Nereis l.s. 4. Eye of clam (Pecten), l.s. 5. Compound eye of an insect, l.s. 6. Eye of May fly, l.s. superposed eye 7. Ommatidia of insect l.s. 8. Cornea of insect eye, w.m. facets 9. Ocelli of insect, l.s. 10. Eye of spider (Salticus), l.s. 11. Camera eye of cephalopode (Sepia), l.s. 12. Retina of cephalopode, t.s detail 13. Simple eye of marine snail (Patella), l.s. 14. Pinhole camera eye of marine snail (Haliotis), l.s. 15. Eye of snail (Helix), l.s. 16. Eyespots of Branchiostoma t.s. 17. Eye of mammal, median sagittal l.s. 18. Retina of monkey, t.s. 19. Retina of mammal, horizontal section 20. Cornea of mammal, t.s. 21. Developing eyes of mammal, l.s. 22. Yellow spot in human retina, t.s. 23. Parietal or pineal eye, l.s. head of lizard

No. 3174. Organs of hearing and equilibration. 9 Color Photomicrographs
1. Johnston's organ, l.s. insect auditory organ 2. Antenna of fly (Brachycera), speed indicator 3. Leg of locust with organ of hearing 4. Chordotonal organ in l.s. leg of insect 5. Internal ear of mammal l.s. 6. Organ of Corti, t.s. 7. Statocyst of a crustacean 8. Organ of balance from frog, macula 9. Lateral-line organ of fish, t.s.

No. 3175. Tactile organs. 4 Color Photomicrographs
1. Pacinian corpuscle l.s. 2. Corpuscles of Herbst and Grandry 3. Tactile hair, l.s. mammalian mouth 4. Corpuscle of Eimer in mouth of mole, l.s.

No. 3176. Organs of taste and smell. 8 Color Photomicrographs
1. Olfactory organs of insect antenna 2. Organ of Jakobson in l.s. head of lizard 3. Nasal region of mouse, t.s. 4. Olfactory region of mammal, t.s. 5. Tongue of rabbit, t.s. papilla foliata 6. Taste bud, detail 7. Wallate papilla of human tongue, l.s. 8. Barbel of fish, t.s.

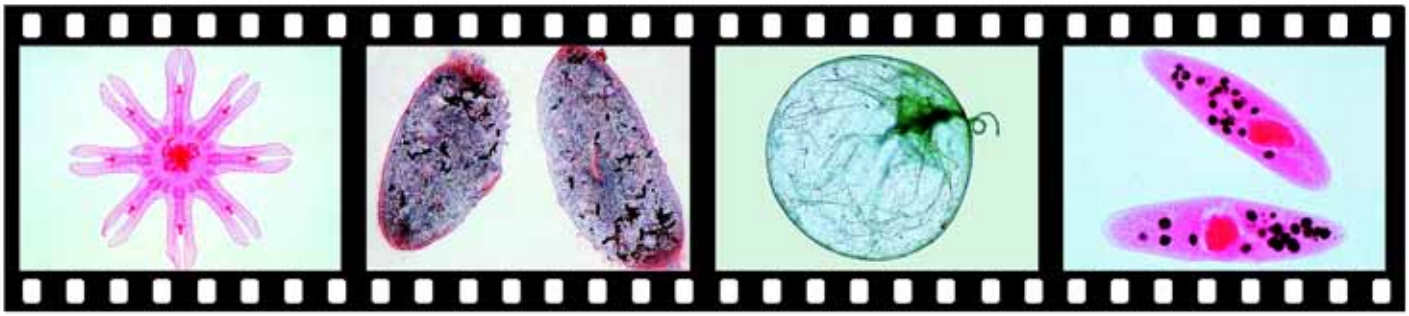
No. 3177. Integument (skin). 20 Color Photomicrographs
1. Skin of dogfish, t.s. placoid scales 2. Skin of frog, t.s. 3. Skin of salamander, t.s. 4. Skin of lizard, t.s. scales 5. Skin of bird, t.s. feather development 6. Human skin from finger tip, t.s. general view 7. Ditto. t.s. of zone of keratinization 8. Human skin from body, negro, t.s. 9. Human skin from body, t.s. injected blood vessels 10. Human scalp, l.s. of a hair follicle 11. Human scalp, l.s. hair shaft 12. Human scalp, l.s. hair bulb 13. Human scalp, t.s. of hair bulbs, general view 14. Human scalp, t.s. hair follicle, detail 15. Human scalp, l.s. injected blood vessels 16. Scalp from human fetus l.s. hair development 17. Nail development of human embryo, l.s. 18. Eyelid, l.s. 19. Hoof development, l.s. calf embryo 20. Mammary gland, t.s.

ZOOLOGY

No. 3200. The Characteristic Structure and Histology of Animals.
This collection is designed to illustrate zoological classification by using typical representatives from each phylum. 314 Color Photomicrographs. *The complete series consists of 17 partial series which can be delivered individually also.*

No. 3201. Protozoa. 17 Color Photomicrographs
1. Amoeba proteus 2. Arcella, shelled ameba 3. Radiolaria, different forms 4. Foraminifera, different forms 5. Noctiluca miliaris, marine phosphorescence 6. Ceratium hirundinella, dinoflagellate 7. Trypanosoma lewisi, blood flagellates, smear 8. Plasmodium berghei, blood parasite, smear 9. Gregarina from mealworm intestine, l.s. 10. Paramaecium, general structure 11. Paramecium, pellicle structures 12. Paramaecium, discharged trichocysts 13. Opalina ranarum, in frog intestine 14. Spirostomum, ciliate with large nucleus 15. Stylonychia, ciliate from hay infusions 16. Euplotes, stained for cilia 17. Vorticella, stalked ciliate

No. 3203. Porifera and Coelenterata. 22 Color Photomicrographs
1. Sycon, marine sponge, l.s. 2. Sycon, t.s. 3. Sycon, calcareous spicules 4. Sycon, development 5. Euspongia, skeleton 6. Spongilla, winter bodies (gemmulae) 7. Hydra, w.m. 8. Hydra, t.s. 9. Hydra, male with testis t.s. 10. Hydra, female with ovary t.s. 11. Hydra, w.m. of male and female 12. Obelia hydroid, colony 13. Obelia medusa 14. Aurelia, ephyra 15. Actinia, sea anemone, t.s. 16. Actinia, l.s. 17. Nematocysts and zoochlorellae of sea anemone 18. Sertularia cupressina 19. Plumularia setacea 20. Campanularia johnstoni 21. Tubularia larynx, l.s. of polyp 22. Dicyema, simple from Sepia



No. 3205. Platyhelminthes and Aschelminthes. 8 Color Photomicrographs
1. Planaria, w.m. 2. Planaria, t.s. region of pharynx 3. Planaria, t.s. region of gonads 4. Dicrocoelium lanceolatum, sheep liver fluke, w.m. 5. Fasciola hepatica, beef liver fluke, w.m. excretory system 6. Ascaris megalocephala, t.s. female 7. Ascaris megalocephala, t.s. region of esophagus 8. Taenia saginata, tapeworm, t.s. of proglottid

No. 3206. Annelida and various species. 20 Color Photomicrographs
1. Nereis, polychaete worm, t.s. 2. Nereis, parapodium 3. Hirudo, leech, t.s. 4. Hirudo, l.s. oral sucker 5. Hirudo, l.s. posterior sucker 6. Lumbricus, earthworm, t.s. typhlosole 7. Lumbricus, l.s. of setae 8. Lumbricus, mouth region with pharynx t.s. 9. Lumbricus, sec. ovary 10. Lumbricus, sec. testis 11. Lumbricus, sec. seminal vesicles 12. Lumbricus, t.s. clitellum 13. Lumbricus, l.s. 1st to 9th segment 14. Lumbricus, l.s. 9th to 16th segment 15. Lumbricus, l.s. 16th to 23rd segment 16. Lumbricus, sperm smear 17. Plumatella, moss animal 18. Plumatella, statoblasts 19. Membraniphora, marine moss animals 20. Peripatus, body t.s.

No. 3209. Crustacea. 22 Color Photomicrographs
1. Daphnia, water flea 2. Daphnia, ephippia 3. Cyclops, copepod with egg sacs 4. Cyclops, nauplius larva 5. Caprella, marine amphipod 6. Leptodora, cladoceran 7. Bythotrephes, cladoceran 8. Polyphemus, predaceous cladoceran 9. Gammarus, fresh water amphipod 10. Carcinus, crab, zoea 11. Carcinus, megalopa 12. Astacus, crayfish, l.s. compound eye 13. Astacus, gills t.s. 14. Astacus, antenna t.s. 15. Astacus, green gland t.s. 16. Astacus, stomach t.s. 17. Astacus, ovary t.s. large oocytes 18. Astacus, testis t.s. spermatogenesis 19. Astacus, liver t.s. 20. Astacus, intestine t.s. 21. Balanus, barnacle, nauplius larva 22. Balanus, cypris

No. 3212. Arachnida and Myriapoda. 22 Color Photomicrographs
1. Spider, young specimen 2. Spider, leg 3. Spider, comb of leg 4. Spider, spinneret 5. Spider, l.s. of spinneret 6. Spider, l.s. of spinning gland 7. Spider, l.s. abdomen 8. Spider, mouth parts with chelicerae 9. Spider, pedipalpus of male 10. Spider, epigyne of female 11. Spider, t.s. of nervous system 12. Scorpion, young specimen 13. Scorpion, l.s. young specimen 14. Scorpion, poison gland 15. Ixodes, tick, mouth parts 16. Tyroglyphus, mite from meal 17. Chelifer, book scorpion, adult 18. Scolopendra, centipede, t.s. body 19. Lithobius, head with poison fangs 20. Julus, millipede, t.s. body 21. Julus, head with mouth parts 22. Julus, diplosegment with legs

No. 3214. Insecta, head and mouth parts. 19 Color Photomicrographs
1. Musca domestica, house fly, head with sucking tube 2. Pieris brassicae, butterfly, proboscis 3. Culex pipiens, mosquito, mouth parts of female 4. Pyrrhocoris, bug, mouth parts 5. Vespa, wasp, mouth parts of carnivore 6. Blatta, cockroach, mouth parts of herbivore 7. Melolontha, cockchafer, mouth parts dissected 8. Bombyx mori, silkworm moth, mouth parts 9. Pieris brassicae, mouth parts of larva 10. Apis mellifica, honey bee, mouth parts of worker 11. Apis mellifica, t.s. mouth parts 12. Apis mellifica, mouth parts of drone 13. Stomoxys calcitrans, stable fly, mouth parts 14. Chrysozona, gadfly, mouth parts 15. Pulex, flea, mouth parts with stylets 16. Carabus, beetle, mouth parts of carnivore 17. Curculionidae, weevil, head with mouth parts 18. Odonata. dragonfly, mouth parts of larva 19. Corethra, gnat, mouth parts of larva

No. 3215. Insecta, antennae, legs, wings, internal organs.
41 Color Photomicrographs
1. Carabus. beetle, filiform antenna 2. Melolontha, cockchafer, laminate antenna 3. Pieris brassicae, butterfly, clubbed antenna 4. Chironomus, gnat, antenna with Johnston's organ 5. Gyrinus, whirling beetle, antenna 6. Bombyx mori, silkworm moth, feathered antenna 7. Apis mellifica, honey bee, foreleg 8. Apis mellifica, hind leg 9. Melolontha, cockchafer, digging leg 10. Mantis religiosa, praying mantis, grasping leg 11. Reduviidae, bug, raptatorial leg 12. Corixa, aquatic insect, swimming leg 13. Grasshopper, leg with stridulary organ 14. Musca domestica, leg with pulvilli 15. Apis mellifica, wings 16. Musca domestica, wing with halters 17. Odonata, dragonfly, wings 18. Chrysopa, neuroptera wing 19. Forficula, earwig, folded wing 20. Periplaneta, cockroach, chitinous and membranous wings 21. Pieris, butterfly, wing with scales 22. Butterfly, wing showing frenulum 23. Apis, sting with poison sac 24. Apis, wax plate 25. Periplaneta, gizzard 26. Carabus, beetle, t.s. of gizzard 27. Trachea in insect intestine 28. Apis, head eyes and brain, t.s. 29. Apis, eye with optic ganglion, l.s. 30. Apis, ocelli 31. Melolontha, l.s. compound eye, ommatidia 32. Carausius, t.s. abdomen 33. Insect Malpighian tubules, l.s. 34. Insect rectum with ampulli, t.s. 35. Grasshopper, t.s. of testis spermatogenesis 36. Insect striated muscle, l.s. 37. Apis, t.s. abdomen of queen with ovaries 38. Apis, t.s. abdomen of drone with testis 39. Ovary of insect with panoistic egg tubes l.s. 40. Ditto. telotrophic egg tubes l.s. 41. Ditto. polytrophic egg tubes l.s.

No. 3216. Insecta, whole mounts of entire insects. 13 Color Photomicrographs
1. Drosophila, fruit fly, adult 2. Drosophila, l.s. of adult 3. Drosophila, larva 4. Ephemeroptera, May fly, adult 5. Ephemeroptera, nymph 6. Ephemeroptera. larva 7. Embia sp., adult 8. Nemura, stone-fly, adult 9. Isoptera, termite, worker 10. Isoptera, termite, soldier 11. Formicidae, ant, worker 12. Colembola, springtail, adult 13. Thysanoptera, thrips, adult

No. 3218. Mollusca. 20 Color Photomicrographs
1. Chiton, marine mollusc, t.s. 2. Snail, t.s. through body of small specimen 3. Snail, l.s. through head 4. Alloteuthis, cuttlefish, young specimen w.m 5. Alloteuthis, horizontal sec. young specimen 6. Alloteuthis, t.s. of suctorial disc 7. Helix pomatia, snail, foot t.s. 8. Helix, stomach with glands t.s. 9. Helix, liver t.s. 10. Helix, hermaphrodite gland t.s. 11. Helix, flagellum t.s. 12. Helix, spermoviduct t.s. 13. Helix, dart 14. Helix, eye l.s. 15. Anodonta, fresh water mussel, glochidia larva 16. Dreissena, mussel, veliger larva 17. Pisidium, fresh water mussel, t.s. with embryos 18. Pisidium, t.s. formation of shell 19. Shell of mussel ground thin, prismatic calcareous layer 20. Dreissena, mussel, t.s.

No. 3220. Echinodermata. 10 Color Photomicrographs
1. Asterias, starfish, small specimen w.m. 2. Asterias, t.s. of arm 3. Asterias, bipinnaria larva 4. Asterias, pedicellaria 5. Asterias, horizontal section young specimen 6. Asterias, regeneration 7. Psammechinus, sea urchin, l.s. 8. Psammechinus, pluteus larva 9. Balanoglossus, acorn worm, t.s. 10. Balanoglossus, tornaria larva

No. 3222. Acrania and Tunicata. 14 Color Photomicrographs
1. Branchiostoma lanceolatum (Amphioxus), w.m. adult 2. Ditto. w.m. young larva 3. Ditto. anterior end of adult l.s. 4. Ditto. mouth region t.s. 5. Ditto. anterior pharynx t.s. 6. Ditto. t.s. of male 7. Ditto. t.s. of female 8. Ditto. region of intestine t.s. 9. Ditto. typical t.s. through midbody 10. Ditto. t.s. of endostyle, detail 11. Ascidia, sea squirt, region of gills t.s. 12. Ascidia, general body plan 13. Salpa, asexual form 14. Salpa, sexual form

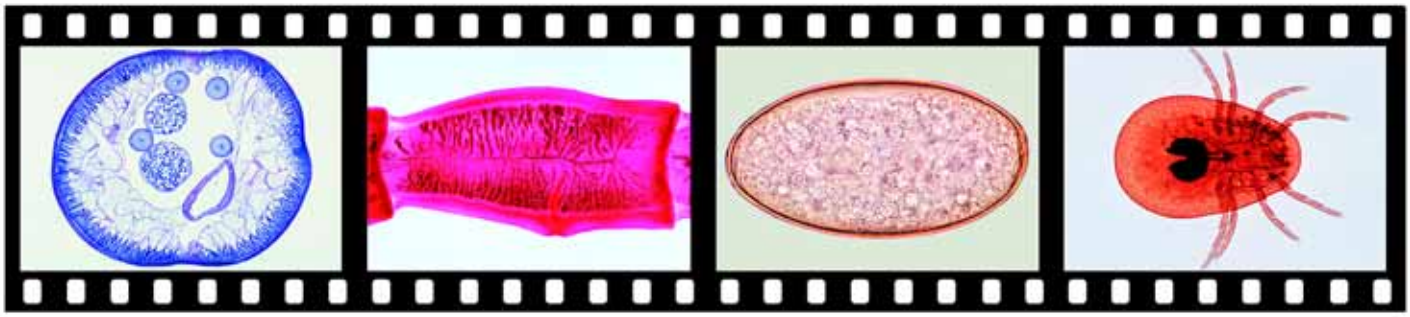
No. 3224. Pisces. 27 Color Photomicrographs
1. Petromyzon, lamprey, region of gills t.s. 2. Petromyzon, lamprey, region of abdomen t.s. 3. Scyllium, dogfish, t.s. young in region of gills 4. Scyllium, t.s. young in region of spiral intestine 5. Fresh water fish (small specimen), region of mouth t.s. 6. Ditto. sec. tooth development 7. Ditto. t.s. head and eyes 8. Ditto. l.s. through head 9. Ditto. region of gills t.s. 10. Ditto. region of abdomen t.s. 11. Cyprinus, carp, skin t.s. 12. Cyprinus, liver t.s. 13. Cyprinus, small intestine t.s. 14. Cyprinus, testis with spermatozoa t.s. 15. Cyprinus, ovary with ova t.s. 16. Cyprinus, kidney t.s. 17. Cyprinus, air bladder t.s. 18. Cyprinus. brain, t.s. 19. Cyprinus, gill arch t.s. 20. Cyprinus, blood smear 21. Torpedo marmorata, t.s. electric organ 22. Hippocampus, sea horse, aglomerulous kidney t.s. 23. Elasmobranchii, cartilaginous fish, horizontal sec. of head 24. Teleostei, bony fish, horizontal sec. of head 25. Cycloid scale 26. Ctenoid scale 27. Placoid scale

No. 3227. Amphibia. 24 Color Photomicrographs
1. Salamandra larva, head and eyes t.s. 2. Salamandra larva, external gills t.s. 3. Salamandra larva, abdomen t.s. 4. Salamandra, adult, ovary t.s. 5. Salamandra, testis t.s. spermatogenesis 6. Salamandra, blood smear large erythrocytes 7. Rana, frog, blood smear 8. Rana, tongue l.s. 9. Rana, esophagus t.s. 10. Rana, stomach t.s. 11. Rana, small intestine t.s. 12. Rana, large intestine t.s. 13. Rana, liver t.s. bile ducts 14. Rana, pancreas t.s. 15. Rana, spleen t.s. 16. Rana, lung t.s., sac-like 17. Rana, kidney t.s. 18. Rana, ovary t.s. follicles 19. Rana, fallopian tube t.s. 20. Rana, testis t.s. spermatogenesis 21. Rana, spinal cord t.s. 22. Rana, brain l.s. 23. Rana, retina t.s. 24. Rana, skin t.s.

No. 3231. Reptilia. 7 Color Photomicrographs
1. Lacerta, lizard, skin, l.s. 2. Lacerta, t.s. young specimen 3. Lacerta, t.s. of jaw, changing of teeth 4. Lacerta, l.s. of brain 5. Lacerta, l.s. of heart 6. Lacerta, gland pore on femur of male, l.s. 7. Lacerta, blood smear

No. 3233. Aves. 20 Color Photomicrographs
1. Gallus, chicken, blood smear 2. Gallus, lung t.s. parabronchi 3. Gallus, glandular stomach t.s. 4. Gallus, gizzard t.s. 5. Gallus, ovary t.s. 6. Gallus, liver t.s. 7. Gallus, kidney t.s. 8. Gallus, tongue t.s. 9. Gallus, retina t.s. pecten 10. Gallus, skin of foot, t.s. 11. Gallus, skin of body, l.s. feather development 12. Gallus, skin of body, t.s. feather quills 13. Gallus, vane feather 14. Gallus, down feather 15. Gallus, plume feather 16. Gallus, chick embryo t.s. 24 hour 17. Gallus, chick embryo t.s. 72 hour 18. Bird brain, l.s. of 19. Young bird, l.s. of head and bill 20. Singing bird, l.s. of syrinx

No. 3236. Mammalia. 8 Color Photomicrographs
1. Young mouse, median sagittal l.s. entire specimen 2. Young mouse, horizontal l.s. entire specimen 3. Young mouse, median sagittal l.s. of head 4. Young mouse, thorax t.s. 5. Young mouse, abdomen t.s. 6. Young mouse, leg t.s. 7. Young mouse, l.s. through female gonads 8. Young mouse, l.s. through male gonads



PARASITOLOGY

No. 3250. Parasites and Pathogenic Bacteria.
164 Color Photomicrographs. *The complete series consists of 4 partial series which can be delivered individually also.*

No. 3251. Protozoa. 35 Color Photomicrographs
1. Entamoeba histolytica, vegetative 2. Entamoeba histolytica, infected intestine t.s. 3. Entamoeba histolytica, diseased liver t.s. 4. Entamoeba coli, smear from faeces 5. Lamblia (Giardia) intestinalis, vegetative 6. Trichomonas, smear 7. Trypanosoma gambiense, blood smear 8. Trypanosoma cruzi, Chagas disease, blood smear 9. Trypanosoma cruzi, t.s. of infected heart muscle 10. Trypanosoma brucei, nagana, blood smear 11. Trypanosoma equiperdum, dourine, blood smear 12. Leishmania donovani, Kala-azar, smear from spleen 13. Plasmodium falciparum, malaria, ring stages 14. Plasmodium falciparum, gametocytes 15. Plasmodium vivax, malaria, ring stages and merozoites 16. Plasmodium malariae, malaria, blood smear 17. Plasmodium berghei, schizogony stages 18. Plasmodium, exflagellation of microgametes 19. Plasmodium, mosquito stomach with oocysts 20. Plasmodium, salivary gland of mosquito with sporozoites 21. Plasmodium, exo-erythrocytic stages 22. Plasmodium gallinaceum, chicken malaria, blood smear 23. Plasmodium cathemerium, bird malaria, blood smear 24. Leucocytozoon, bird malaria, infected lymphocytes 25. Haemoproteus columbae, pigeon malaria, blood smear 26. Nosema apis, honey bee dysentery 27. Monocystis lumbrici, from seminal vesicles of earthworm 28. Gregarina, from mealworm intestine 29. Eimeria stiedae, coccidiosis, section of liver 30. Babesia canis, piroplasmosis, blood smear 31. Toxoplasma gondii, smear from tissue 32. Toxoplasma gondii, t.s. with parasite cysts 33. Sarcocystis tenella, section of Miescher's tubes 34. Trichodina domerguei, ciliate on fish gills 35. Balantidium coli, in human colon

No. 3255. Platyhelminthes. 44 Color Photomicrographs
1. Dicroceolium lanceolatum, sheep liver fluke, w.m. 2. Fasciola hepatica, beef liver fluke, w.m. 3. Ditto. l.s. of anterior end 4. Ditto. t.s. of body 5. Ditto. ova 6. Ditto. miracidium 7. Ditto. t.s. of snail liver with sporocysts 8. Ditto. sporocyst with redia 9. Ditto. redia with cercaria 10. Ditto. cercaria 11. Clonorchis sinensis, Chinese liver fluke, w.m. 12. Opistorchis felineus, cat liver fluke, w.m. 13. Schistosoma mansoni, bilharzia, male w.m. 14. Ditto. female w.m. 15. Ditto. male and female in copula w.m. 16. Ditto. t.s. of vein with parasites 17. Ditto. cercaria 18. Ditto. infected intestine with ova t.s. 19. Ditto. ova with subterminal spine 20. Schistosoma haematobium. ova with terminal spine 21. Schistosoma japonicum, ova without spine 22. Heterophyes heterophyes, w.m. 23. Pseudamphistomum truncatum, fluke found in cats, w.m. 24. Ditto. ova in faeces 25. Taenia saginata, tapeworm, scolex without hooklets 26. Ditto. mature proglottid w.m. 27. Ditto. proglottid t.s. 28. Taenia solium, tapeworm, scolex with hooklets 29. Taenia solium cysticercus, bladderworm 30. Taenia saginata, ova embryos 31. Taenia pisiformis, dog tapeworm, scolex 32. Ditto. immature proglottid w.m. 33. Ditto. mature proglottid w.m. 34. Ditto. gravid proglottid w.m. 35. Cysticercus pisiformis, bladderworm, section 36. Dipylidium caninum, scolex w.m. 37. Ditto. proglottid w.m. 38. Hymenolepis nana, dwarf tapeworm, scolex w.m. 39. Ditto. proglottids w.m. 40. Echinococcus granulosus, dog tapeworm, w.m. 41. Ditto. t.s. of hydatid cyst 42. Ditto. ova from faeces of dog 43. Diphyllobothrium latum, broad tapeworm, proglottid w.m. 44. Moniezia expansa, sheep tapeworm, proglottid w.m.

No. 3261. Nemathelminthes. 23 Color Photomicrographs
1. Ascaris lumbricoides, roundworm, t.s. of female 2. Ditto. t.s. of male 3. Ditto. ova 4. Enterobius vermicularis (Oxyuris), pin worm, female w.m. 5. Ditto., ovum 6. Trichuris trichiura, whip worm, w.m. 7. Ditto. intestine of dog with worms, t.s. 8. Ditto. ovum 9. Trichinella spiralis, adult female w.m. 10. Ditto. adult male w.m. 11. Ditto. muscle with encysted larvae l.s. 12. Ditto. infected muscle piece w.m. 13. Ditto. t.s. passing the intestinal wall 14. Ancylostoma duodenale, hookworm, posterior end of male w.m. 15. Ditto. female w.m. 16. Ditto. male and female in copula w.m. 17. Ditto. t.s. of female 18. Ditto. ovum 19. Necator americanus, American hookworm, male w.m. 20. Ditto. female w.m. 21. Strongyloides, roundworm, larvae 22. Onchocerca volvulus, sec. of tumor 23. Heterakis spumosa, intestinal worm of chicken, w.m.

No. 3265. Arthropoda. 38 Color Photomicrographs
1. Argas persicus, fowl tick, adult 2. Argas persicus, six legged larva 3. Ixodes, tick, mouth parts of larva 4. Dermacentor andersoni, tick 5. Demodex folliculorum, follicle mite, sec. of skin 6. Dermanyssus gallinae, chicken mite 7. Sarcoptes scabiei, itch mite, sec. of skin 8. Lipoptena cervi, louse fly 9. Pediculus capitis, head louse 10. Haematopinus suis, pig louse 11. Phthirus pubis, crab louse 12. Phthirus pubis, eggs attached to hair 13. Cimex lectularius, bed bug 14. Culex pipiens, common mosquito, female 15. Ditto. head and mouth parts of female 16. Ditto. male 17. Ditto. head and mouth parts of male 18. Ditto. t.s. mouth parts of female 19. Ditto. pupa 20. Ditto. posterior end of larva 21. Ditto. eggs 22. Anopheles, malaria mosquito, female 23. Ditto. head and mouth parts of female 24. Ditto. male 25. Ditto. head and mouth parts of male 26. Ditto. pupa 27. Ditto. posterior end of larva 28. Ditto. eggs 29. Pulex irritans, human flea, female 30. Ditto. male 31. Xenopsylla cheopis, rat flea, female 32. Ditto. male 33. Ctenocephalus canis, dog flea, female 34. Ditto. male 35. Nosopsyllus fasciatus, rat flea, female 36. Ditto. male 37. Ceratophyllus gallinulae, chicken flea, female 38. male

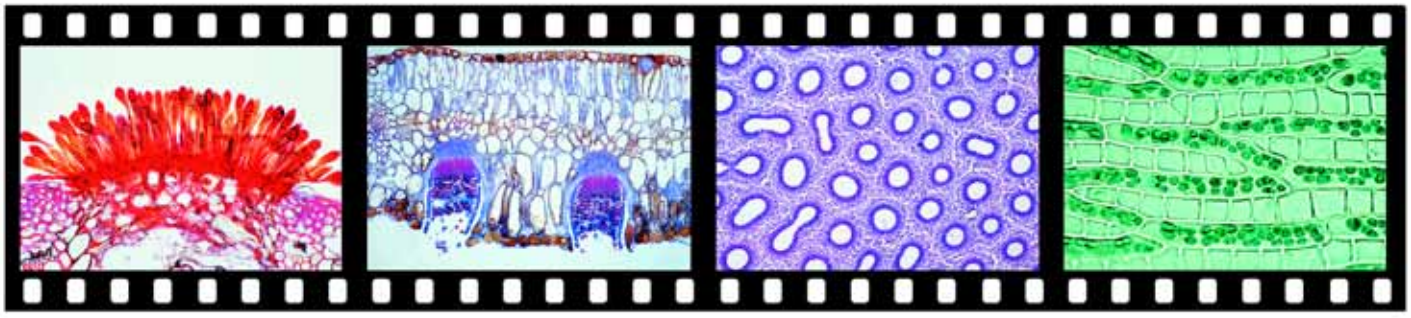
No. 3271. Pathogenic Bacteria. 24 Color Photomicrographs
1. Neisseria gonorrhoeae, gonorrhoea 2. Staphylococcus aureus, pus organism 3. Streptococcus pyogenes, smear from pus 4. Gaffkya tetragena, meningitis 5. Bacillus anthracis, wool sorters disease 6. Bacillus anthracis, spores stained 7. Clostridium septicum, spores stained 8. Clostridium tetani, lockjaw, terminal spores 9. Clostridium perfringens, central spores 10. Mycobacterium tuberculosis, smear from positive sputum 11. Mycobacterium leprae, leprosy, smear from lesion 12. Corynebacterium diphtheriae 13. Bacterium erysipelatos, erysipelas 14. Eberthella typhi, typhoid fever 15. Salmonella paratyphi, paratyphoid fever 16. Salmonella enteritidis, meat poisoning 17. Vibrio comma, Asiatic cholera 18. Klebsiella pneumoniae, pneumonia, capsules 19. Pasteurella pestis, plague 20. Hemophilus influenzae, smear 21. Bacteria of caries l.s. of diseased human tooth 22. Actinomyces, lumpy jaw 23. Spirochaeta duttoni, relapsing fever, blood smear 24. Treponema pallidum, sec. of syphilitic lesion, silver staining

EMBRYOLOGY OF ANIMALS

No. 3310. The Sea Urchin Embryology (Psammechinus miliaris).
25 Color Photomicrographs
1. Uncleaved egg, early stage 2. Uncleaved egg, before fertilization 3. Uncleaved egg, after fertilization 4. Two-cell stage 5. Telophase of the second cleavage 6. Four-cell stage, polar view 7. Telophase of the third cleavage 8. Eight-cell stage, vegetal pole view 9. Fourth cleavage 10. Sixteen-cell stage 11. Ditto. side view 12. Ditto. animal polar view 13. Fifth cleavage 14. Thirtytwo-cell stage, polar view 15. Sixtyfour-cell stage, side view 16. Later morula stage 17. Blastula stage, side view 18. Later blastula 19. Beginning gastrulation 20. Later gastrula 21. Later gastrula, details of cilia 22. Late gastrula, secondary mesenchyma 23. Young pluteus larva, oral pit 24. Young pluteus larva, intestinal system 25. Pluteus larva, side view

No. 733. Embryonic Development of the Newt (Triturus).
Compilation: Martin Kuohn. 60 Projection Slides
1. Uncleaved egg, view to animal pole 2. Uncleaved egg, view to vegetative pole 3. Two-cell stage 4. The cleavage divisions, schematic design 5. Two-cell stage 6. Four-cell stage 7. Eight-cell stage l.s. 8. Sixteen-cell stage l.s. 9. Thirty-two-cell stage 10. Sixty-four-cell stage, darkfield view 11. Morula, darkfield view 12. Morula, l.s. 13. Blastula, darkfield view 14. Ditto. l.s. 15. The gastrulation. Schematic designs of stages 16. Early gastrula 17. Ditto. l.s. 18. Ditto. blastopore sickle-shaped 19. Middle gastrula, blastopore semicircular 20. Ditto. yolk plug 21. Ditto. frontal sec. 22. Late gastrula, blastopore slit-shaped 23. Ditto. l.s. 24. The neurulation. Schematic designs of stages 25. Early neurula, neural plate in abdominal region 26. Ditto. neural plate in region of head 27. Ditto. l.s. 28. Middle neurula 29. Ditto. detail view t.s. neural plate 30. Ditto. neural folds get closer 31. Late neurula, neural folds nearly closed 32. Ditto. neural folds are closed 33. Ditto. detail view t.s. neural tube 34. Schematic design of the early gastrula 35. Early tail bud stage, head and tailbud 36. Ditto. darkfield view 37. Ditto. primordia of eyes 38. Ditto. eye cleft, darkfield view 39. Middle tail bud stage, primordia of gills 40. Ditto. leg bud 41. Late tail bud stage, ventral view 42. Ditto. early gills and leg bud 43. Early larva 44. Ditto. t.s. in region of eyes 45. Ditto. t.s. in region of ears 46. Ditto. t.s. in region of leg buds 47. One toed larva, side view 48. Ditto. ventral view 49. Ditto. t.s. region of eyes 50. Ditto. t.s. region of ears 51. Ditto. t.s. region of heart 52. Ditto. t.s. region of stomach 53. Ditto. t.s. region of leg buds 54. Ditto. t.s. middle of trunk 55. Ditto. t.s. anal region 56. Ditto. t.s. tail 57. Two toed larva, pigmentation adapted to light 58. Two toed larva, frontal sec. eye region 59. Four toed larva, total view 60. Three toed larva, frontal sec. of intestinal tract

No. 3320. The Frog Embryology (Rana sp.). 20 Color Photomicrographs
1. Egg, two-cell stage t.s. 2. Egg, four-cell stage t.s. 3. Egg, eight-cell stage l.s. 4. Morula l.s. 5. Blastula l.s. 6. Early gastrula l.s. 7. Late gastrula l.s. 8. Early neurula t.s. 9. Late neurula t.s. neural tube 10. Tail bud stage, t.s. 11. Ditto. l.s. 12. Ditto. parasagittal l.s. 13. Hatching stage of embryo, t.s. head 14. Ditto. t.s. region of heart 15. Ditto. t.s. region of abdomen 16. Newly hatched larva, l.s. 17. Ditto. parasagittal l.s. 18. Young tadpole, t.s. of head 19. Ditto. t.s. region of gills 20. Ditto. t.s. of abdomen



No. 3330. The Chicken Embryology (Gallus domesticus).
20 Color Photomicrographs
1. 6 hour, l.s. 2. 18 hour, w.m. 3. 24 hour, w.m. 4. 24 hour, t.s. primitive groove 5. 24 hour, t.s. neural plate 6. 28 hour, w.m. 10 somites 7. 36 hour, t.s. posterior region of abdomen 8. 36 hour, t.s. of anterior region of abdomen 9. 36 hour, t.s. region of heart 10. 40 hour, w.m. 15 somites 11. 45 hour, l.s. 12. 48 hour, t.s. of abdomen 13. 50 hour, w.m. 14. 72 hour, w.m. blood vascular system injected 15. 72 hour, t.s. posterior region of abdomen 16. 72 hour, t.s. region of head 17. 96 hour, t.s. anterior region of abdomen 18. 96 hour, t.s. region of heart 19. 5 day, w.m. 20. 8 day, l.s.

No. 3360. Development of Follicles in Mammalian Ovary.
12 Color Photomicrographs
1. Ovary t.s. for general study 2. Young primary follicles t.s. 3. Older primary follicle t.s. 4. Secondary follicle t.s. 5. Young Graafian follicle, l.s. 6. Older Graafian follicle, l.s. 7. Mature Graafian follicle, l.s. 8. Mature oocyte t.s. 9. Ruptured Graafian follicle l.s. 10. Fallopian tube with embedded oocyte, t.s. low magnification 11. Ditto. t.s. detail 12. Ovary with Corpus luteum, t.s.

No. 3340. The Eye Development in Vertebrates (Frog).
10 Color Photomicrographs
1. Early neurula, t.s. two pigmented grooves 2. Medium neurula, t.s. later stage 3. Later neurula, t.s. optic vesicles 4. Ditto. growing optic vesicles 5. Tail bud stage, t.s. formation of lens plate 6. Formation of the optic cup 7. Hatching larva, t.s. optic cup, optic stalk, brain 8. Fetal eye, l.s. entrance of mesenchyma and artery 9. Eye of young tadpole, l.s. differentiation of lens and retina 10. Eye of older tadpole, l.s. of fully developed eye

No. 3350. The Tooth Development. 10 Color Photomicrographs
1. Early stage showing dental ridge l.s. 2. Young dental sac with bell-shaped enamel organ l.s. 3. Ditto. before formation of dentine and enamel 4. Later dental sac, formation of dentine l.s. 5. Ditto. formation of enamel l.s. 6. Formation of dentine and enamel, detail l.s. 7. Tooth shortly before dentition, detail l.s. 8. Gum with milk tooth and permanent tooth, l.s. 9. Gum with mature permanent tooth l.s. 10. Gum with root of tooth, t.s.

No. 725. Healing of Wounds and Regeneration. From the Wilhelm Roux Institute for Developmental Mechanics and Inheritance.
Compilation: Dr. Hanns Koch. 18 Projection Slides
1. Earthworm. Regeneration of the 4 anterior segments, one week after the operation 2. Ditto. after 4 weeks 3. Ditto. after 5 weeks 4. Frog tadpole. Regeneration of the tail after incision, after 2 weeks 5. Ditto. 4 weeks after the operation 6. Salamander. Regeneration of the right foreleg, after 1 week 7. Ditto. after 2 weeks 8. Ditto. after 3 weeks 9. Salamander. Regeneration of foreleg, diagrams 10. Frog. Transplantation of a hindleg bud of a tadpole under the skin of the back of another tadpole. after 1 month 11. Salamander. Origin of the optic cup and lenses, diagrams 12. Ditto. Head l.s. 21 days after the cataract operation 13. Ditto. Left eye: retina deformed after 21 days 14. Ditto. Right eye: retina normal after 21 days 15. Ditto. Left eye, new lens, after 24 days 16. Ditto. Progressive formation of the new lens, after 30 days 17. Ditto. New lens free from the iris, after 35 days 18. Ditto. New lens in the right place, end of regeneration after 50 days

BOTANY - CRYPTOGAMS

No. 3510. Morphology of Thallophyta and Archegoniatae (Cryptogamae).
148 Color Photomicrographs. *The complete series consists of 5 partial series which can be delivered individually also.*

No. 3511. Non-pathogenic Bacteria. 22 Color Photomicrographs
1. Streptococcus lactis, milk souring 2. Sarcina lutea, Gram stained 3. Gaffkya tetragena, occurring in tetrads 4. Bacillus subtilis, hay bacillus, bacilli and spores 5. Bacillus mycoides, large soil organisms 6. Bacillus mesentericus, smear Gram stained 7. Rhizobium radicicola, t.s. root nodules of lupin 8. Rhizobium radicicola, smear 9. Azotobacter, soil organisms 10. Bacterium prodigiosum (Serratia), chromogenic 11. Escherichia coli, colon bacillus 12. Aerobacter aerogenes, intestinal bacteria 13. Proteus vulgaris, putrefaction 14. Acetobacter aceti, manufacture of vinegar 15. Rhodospirillum rubrum, chromogenic rods 16. Spirillum volutans, flagella stained 17. Bacteria from mouth 18. Bacteria from human intestine 19. Bacteria from bread 20. Bacteria from yoghurt 21. Streptomyces griseus, branched organisms 22. Sphaerotilus natans, putrid water

No. 3513. Fungi and Lichenes 41 Color Photomicrographs
1. Stemonitis, slime mold 2. Synchytrium endobioticum, potato black scab, t.s 3. Plasmodiophora brassicae, clubroot, t.s. with young plasmodia 4. Ditto. t.s. with spores 5. Plasmopara viticola, downy mildew of grapes 6. Saprolegnia, water mold, sexual stages 7. Empusa muscae, l.s. of infected house fly 8. Peronospora parasitica, downy mildew of cruzifers 9. Albugo candida, white rust of cruzifers, t.s. 10. Mucor mucedo, black mold, sporangia 11. Rhizopus, bread mold, zygospores 12. Taphrina pruni, plum pockets, t.s. 13. Venturia pirinum (Fusicladium), pears-cab, t.s. 14. Pilobolus 15. Claviceps purpurea, ergot, l.s. stroma with perithecia 16. Ditto. t.s. of sclerotium 17. Peziza, t.s. apothecium 18. Podosphaera leucotricha, apple mildew, t.s. 19. Sclerotinia fructigena (Monilia), plum rot, t.s. 20. Morchella, morel, fruiting body, t.s. 21. Morchella, asci with ascospores, detail 22. Penicillium, blue mold 23. Aspergillus, brown mold 24. Tuber rufum, truffle, t.s. 25. Botrytis allii, grey mold of onions, t.s. 26. Rhytisma, tar-spot of maple, t.s. 27. Saccharomyces, yeast, formation of spores 28. Ustilago zeae, corn-smut, t.s. of pustule 29. Puccinia graminis, wheat rust, t.s. uredinia on wheat 30. Ditto. t.s. of telia on wheat 31. Ditto. l.s. of aecidia 32. Gymnosporangium sabinae, pear rust, t.s. teleutospores 33. Ditto. t.s. aecidia 34. Ditto. t.s. pycnidia 35. Psalliota, mushroom, l.s. pileus 36. Boletus edulis, mushroom. t.s. pileus 37. Coprinus, ink cap, t.s. of pileus 38. Coprinus, detail of basidia and spores 39. Scleroderma vulgare, puff-ball, t.s. 40. Physcia, lichen, t.s. thallus 41. Physcia, t.s. apothecium

No. 3518. Algae. 43 Color Photomicrographs
1. Oscillatoria, thin section 2. Nostoc 3. Anabaena 4. Scytonema 5. Rivularia 6. Chroococcus 7. Gloeocapsa small colonies 8. Diatoms, different forms 9. Pleurosigma angulatum, surface of shell 10. Pleurosigma angulatum, chromatophores 11. Surirella gemma, surface of shell 12. Spirogyra, vegetative 13. Spirogyra, in conjugation 14. Spirogyra, zygotes 15. Zygnema 16. Mougeotia 17. Cosmarium 18. Closterium 19. Micrasterias 20. Chlamydomonas 21. Haematococcus 22. Chlorella 23. Eudorina 24. Microcystis 25. Pleurococcus, growing on bark 26. Hydrodictyon, water net 27. Scenedesmus 28. Pediastrum 29. Volvox, with daughter colonies 30. Ulothrix 31. Cladophora 32. Draparnaldia 33. Enteromorpha, seaweed 34. Oedogonium, macrandrous with oogonia 35. Oedogonium, nannandrous with dwarf males 36. Chara, stonewort, antheridium and oogonium 37. Fucus vesiculosus, brown alga, conceptacle with antheridia, t.s. 38. Fucus vesiculosus, conceptacle with oogonia t.s. 39. Laminaria saccharina, kelp, t.s. of thallus 40. Batrachospermum, fresh water red alga 41. Polysiphonia, marine red alga, antheridia 42. Polysiphonia, cystocarps 43. Polysiphonia, tetraspores

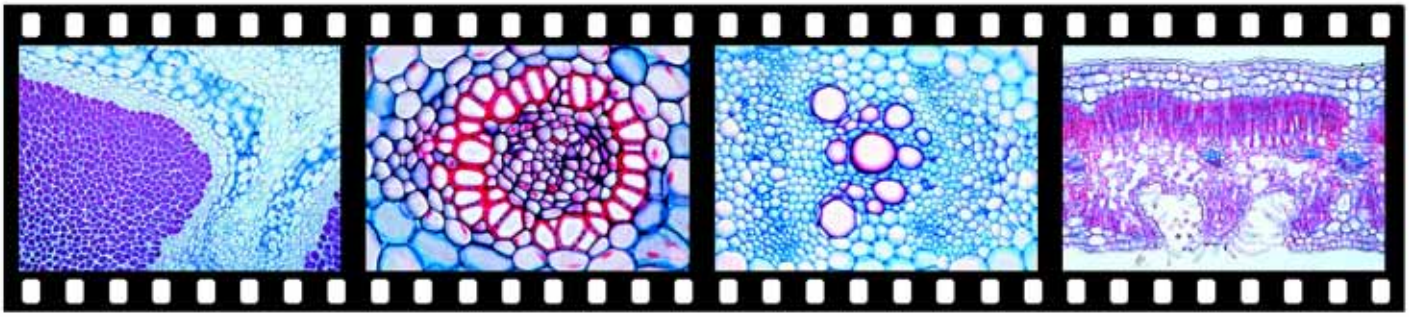
No. 3523. Bryophyta. 18 Color Photomicrographs
1. Marchantia, liverwort, t.s. of thallus 2. Marchantia, rhizoids 3. Marchantia, l.s. of young archegonium 4. Marchantia, l.s. of mature archegonium 5. Marchantia, l.s. of antheridium 6. Marchantia, l.s. of sporophyte 7. Marchantia, l.s. of cupule with gemmae 8. Polytrichum, moss, t.s. of stem 9. Polytrichum, t.s. of leaf 10. Mnium, moss, archegonium, median l.s. 11. Mnium, antheridium, median l.s. 12. Mnium, sporophyte, t.s. 13. Mnium, sporophyte, l.s. 14. Mnium, protonema 15. Mnium, w.m. of leaf, surface view 16. Tortula, moss, w.m. of entire plant 17. Tortula, sporophyte with peristome teeth 18. Sphagnum, peat moss, surface view of leaf

No. 3527. Pteridophyta. 24 Color Photomicrographs
1. Psilotum, t.s. of three-lobed sporangium 2. Isoetes, quillwort, l.s. of entire plant 3. Lycopodium, club moss, t.s. of stem 4. Lycopodium, t.s. plectostele 5. Lycopodium, l.s. stem 6. Lycopodium, l.s. of mature strobilus 7. Selaginella, l.s. micro- and macrosporangia 8. Equisetum, horse tail, t.s. of stem 9. Equisetum, l.s. of stem apex 10. Equisetum, t.s. of strobilus 11. Equisetum, l.s. of strobilus 12. Equisetum, spores with elaters 13. Equisetum, growing spores 14. Aspidium, fern, t.s. of rhachis 15. Aspidium, t.s. of frond with sori 16. Pteridium, braken fern, t.s. of rhizome 17. Pteridium, t.s. of root 18. Fern prothallium, young filamentous stage w.m. 19. Ditto. older stage w.m. general structure 20. Ditto. antheridia and archegonia, detail 21. Ditto. l.s. of antheridium 22. Ditto. l.s. of archegonium 23. Ditto. w.m. with young sporophyte 24. Phyllitis, hart's tongue, t.s. of leaflet

BOTANY - PHANEROGAMS

No. 3550. Microscopic Anatomy of Spermatophyta (Phanerogamae).
173 Color Photomicrographs. *The complete series consists of 5 partial series which can be delivered individually also.*

No. 3551. Cytology and Tissues. 35 Color Photomicrographs
1. Typical plant cells w.m. of Allium epidermis 2. Nuclear membrane and nucleoli in megaspore mother cell 3. Cell division in l.s. root tip of Allium 4. Chromosomes during mitosis, squash preparation DNA stained 5. Prophase of reduction division 6. Metaphase reduction division, equatorial plate 7. Two mitotic figures with spindles



t.s. Lilium embryosac 8. Mitochondria in plant cells 9. Plasmolysis in plant cells 10. Cork cells 11. Pitted cell walls 12. Aleurone grains 13. Fat cells 14. Lysigenous oil glands 15. Starch grains, t.s. of Solanum tuber 16. Starch grains, isolated 17. Inulin crystals 18. Acid tannic 19. Calcium oxalate crystals 20. Crystal sand 21. Raphid cells with growing raphides 22. Lactiferous vessels, l.s. 23. Stone cells, t.s. fruit of pear 24. Stone cells, t.s. shell of walnut 25. Palisade sclereids 26. Sclerenchyma fibres, l.s. 27. Reserve cellulose 28. Chromoplasts 29. Chloroplasts 30. Annular vessels 31. Spiral vessels 32. Reticulate vessels 33. Scalariform vessels 34. Tracheid with bordered pits 35. Sieve tubes and sieve plates

No. 3554. Roots. 22 Color Photomicrographs
1. Root hairs and rhizodermis 2. Root tip and root cap of Lemna w.m. 3. Root tip and root cap l.s. 4. Starch granules in root tip of Zea mays 5. Zea mays, corn, typical monocot root, t.s. 6. Convallaria, t.s. of root 7. Ranunculus, buttercup, t.s. typical dicot root 8. Ranunculus, t.s. protoxylem 9. Quercus, oak, older woody root t.s. 10. Smilax, t.s. of root 11. Medicago, alfalfa, t.s. root 12. Beta, beet, t.s. of root 13. Taraxacum, t.s. of taproot 14. Lupinus, t.s. root nodules with bacteria 15. Alnus, alder, t.s. root nodules with actinomycetes 16. Neottia, orchid, t.s. root with endotrophic mycorrhiza 17. Monstera, philodendron, t.s. aerial root 18. Dendrobium, orchid, t.s. aerial root with velamen 19. Pinus, older woody root t.s. 20. Cuscuta, dodder, t.s. host tissue with haustoria 21. Cuscuta, haustoria detail 22. Salix, willow, l.s. origin of lateral roots

No. 3558. Stems. 34 Color Photomicrographs
1. Zea mays, corn, typical monocot stem t.s. 2. Zea mays, t.s. vascular bundle 3. Juncus, bulrush, t.s. stem 4. Triticum, wheat, t.s. stem 5. Convallaria, t.s. concentric vascular bundle 6. Convallaria, t.s. rhizome 7. Aristolochia, t.s. one-year stem 8. Aristolochia, t.s. older stem 9. Helianthus, sunflower, t.s. herbaceous stem 10. Ranunculus, buttercup, t.s. open vascular bundle 11. Cucurbita, t.s. stem 12. Cucurbita, t.s. vascular bundle, sieve plates 13. Cucurbita pepo, l.s. of stem, sieve vessels 14. Tilia, lime, t.s. cortex 15. Fagus, beech, rad. and tang.s. of wood 16. Fagus, t.s. of wood 17. Quercus, oak, rad. and tang.s. of wood 18. Quercus, t.s. of wood 19. Pinus, rad. and tang.s. of wood 20. Pinus, t.s. of wood 21. Sambucus, t.s. stem with lenticels 22. Pelargonium, t.s. young stem 23. Piper nigra, pepper, t.s. dicot stem with scattered bundles 24. Arctium lappa, burdock, stem t.s. 25. Coleus, t.s. of square stem 26. Salvia, sage, t.s. of a square stem 27. Clematis, t.s. young hexagonal stem 28. Clematis. t.s. older stem 29. Nymphaea, water lily, t.s. of aquatic stem 30. Rosa, rose, l.s. of stem and spine 31. Stem apex of Elodea, l.s. 32. Stem apex of Hippuris, l.s. 33. Stem apex of Asparagus, l.s. 34. Pinus, pine, t.s. older woody stem

No. 3563. Leaves. 37 Color Photomicrographs
1. Leaf epidermis of Tulipa, surface view of stomata 2. Stomata, l.s. of Iris 3. Stomata, l.s. of Zea mays 4. Iris, t.s. of isobilateral leaf 5. Allium schoenoprasium, chive, t.s. folding leaf 6. Zea mays, corn, t.s. typical monocot leaf 7. Elodea, waterweed, t.s. of aquatic leaf 8. Galanthus, snowdrop, t.s. of leaf 9. Aesculus, chestnut, t.s. of leaf bud 10. Aesculus, chestnut, l.s. of leaf bud 11. Syringa, lilac, t.s. of typical dicot leaf 12. Fagus, beech, t.s. sun and shadow leaves 13. Nerium, oleander, leaf of xerophyte plant t.s. 14. Nerium, t.s. of sunken stomata 15. Solanum, potato, t.s. leaf, raised stomata 16. Ficus elastica, t.s. leaf, cystoliths 17. Buxus, box, t.s. xerophytic leaf 18. Rosa, rose, t.s. of leaf 19. Nymphaea, water lily, t.s. of floating leaf 20. Calluna, ling, revolute leaf t.s. 21. Drosera, sundew, leaf of insectivorous plant 22. Utricularia, bladderwort, w.m. of bladder 23. Dionaea, Venus flytrap, t.s. leaf, digestive glands 24. Pinguicula, butterwort, insectivorous plant, t.s. of leaf 25. Verbascum, mullein, branched leaf hairs 26. Elaeagnus, olive tree, stellate hairs 27. Humulus, hop, hooked hairs 28. Tillandsia, absorbent hairs 29. Urtica, nettle, stinging hairs 30. Aesculus, chestnut, t.s. petiole 31. Mimosa pudica, sensitive plant, l.s. of leaf joint 32. Juglans, leaf base with leaf scar l.s. 33. Ginkgo biloba, t.s. of leaf 34. Pinus, leaf t.s. 35. Pinus, vascular bundle of leaf t.s. 36. Abies, fir, leaf t.s. 37. Picea, spruce, leaf t.s.

No. 3567. Flowers and Fruits. 45 Color Photomicrographs
1. Lilium, t.s. of flower bud, floral diagram 2. Lilium, l.s. of flower bud 3. Lilium, anthers t.s. 4. Lilium, ovary, t.s. 5. Lilium, stigma with pollen tubes l.s. 6. Lilium, t.s. of trilocular stigma 7. Triticum, wheat, t.s. of seed 8. Triticum, l.s. of seed 9. Triticum, l.s. embryo 10. Solanum, potato, t.s. of flower 11. Pyrus malus, apple, hypogynous ovary, l.s. 12. Prunus avium, cherry, perigynous ovary, l.s. 13. Anthurium, flamingo plant, pedicel t.s. 14. Arum maculatum, l.s. of flower 15. Papaver, poppy, t.s. of flower 16. Corylus, hazel, female flower, l.s. 17. Corylus, male flower l.s. 18. Ranunculus, l.s. flower 19. Ranunculus, l.s. fruit 20. Capsella l.s. embryo 21. Taraxacum, l.s. composite flower 22. Taraxacum, t.s. composite flower 23. Viola, t.s. petal 24. Fritillaria, nectary l.s. 25. Epipactis, orchid, t.s. ovary 26. Monotropa, Indian pipe, t.s. ovary, developing embryosacs 27. Helianthus, sunflower, t.s. seed 28. Phaseolus, bean, t.s. pod 29. Ribes, currant, berry fruit t.s. 30. Rubus idaeus, raspberry, aggregate fruit, l.s. 31. Fragaria, strawberry, aggregate fruit, l.s. 32. Corylus, hazel, stone fruit t.s. 33. Prunus, plum, stone fruit t.s. 34. Pyrus malus, apple, young pome t.s. 35. Lycopersicum, tomato, t.s. berry fruit 36. Pinus, pine, l.s. male cone 37. Pinus, mature pollen 38. Pinus, l.s. young female cone 39. Pinus, l.s. first year female cone 40. Pinus, ovule with archegonia, l.s. 41. Pinus, embryo and endosperm, l.s. cotyledons 42. Pinus, embryo and endosperm, t.s. cotyledons 43. Zamia, male cone t.s. 44. Zamia, young female cone l.s. 45. Zamia, young embryo t.s.

No. 3645. Vascular Bundle types. 16 Color Photomicrographs
1. Psilotum, stem t.s. protostele 2. Lycopodium, stem t.s. actinostele 3. Pteridium, rhizome t.s. polystele 4. Osmunda, rhizome t.s. ectophloic siphonostele 5. Adiantum, rhizome t.s. amphiphloic siphonostele 6. Polypodium, rhizome t.s. dictyostele 7. Ranunculus, stem t.s. eustele 8. Lamium, stem t.s. eustele 9. Zea mays, stem t.s. atactostele 10. Podophyllum, t.s. stem, bundles similar to atactostele 11. Ranunculus, t.s. stem, open collateral bundle 12. Zea mays, corn, t.s. stem, closed collateral bundle 13. Cucurbita, t.s. stem, bicollateral bundle 14. Pteridium, t.s. rhizome, concentric bundle, inner xylem 15. Convallaria, t.s. rhizome, concentric bundle, outer xylem 16. Ranunculus, t.s. root, radial concentric bundle

No. 3630. Development of the Megaspore Mother Cells of Lilium (Embryosac). 23 Color Photomicrographs
1. Ovary of lily, t.s. general study 2. Very young ovary 3. Developing embryosac mother cell 4. Megaspore mother cell, pachytene 5. Anaphase of first division 6. Telophase of first division 7. Two-nucleate embryosac 8. Anaphase of second division 9. Telophase of second division 10. First four-nucleate stage 11. Ditto., migration of nuclei 12. Prophase of the third division 13. Metaphase of third division 14. Telophase of third division 15. Second four-nucleate stage 16. Metaphase of fourth division 17. Anaphase of fourth division 18. Eight-nucleate stage, the mature embryosac 19. Double fertilization 20. Formation of embryo, early stage 21. Formation of embryo, later stage 22. Young embryo, suspensor cells, l.s. 23. Older embryo, l.s. cotyledons

No. 3635. Development of the Female Gametophyte of Pinus.
15 Color Photomicrographs
1. Young female cone, l.s. general view 2. Bract scale, ovuliferous scale and ovule 3. Young ovule before pollination 4. Growing ovule at free nuclear stage 5. Growing ovule, later stage with macroprothallium 6. Mature archegonium 7. Fertilization of archegonium 8. First division of fertilized egg nucleus 9. Four-nucleate stage, nuclei in centre of archegonium 10. Four-nucleate stage, nuclei migrate to the base 11. Sixteen-nucleate stage, nuclei lie in four tiers 12. Young proembryo, short suspensor cells 13. Older proembryo, elongated suspensor cells, four young embryos 14. Embryo with endosperm, l.s. of cotyledons 15. Ditto. t.s. showing eight cotyledons

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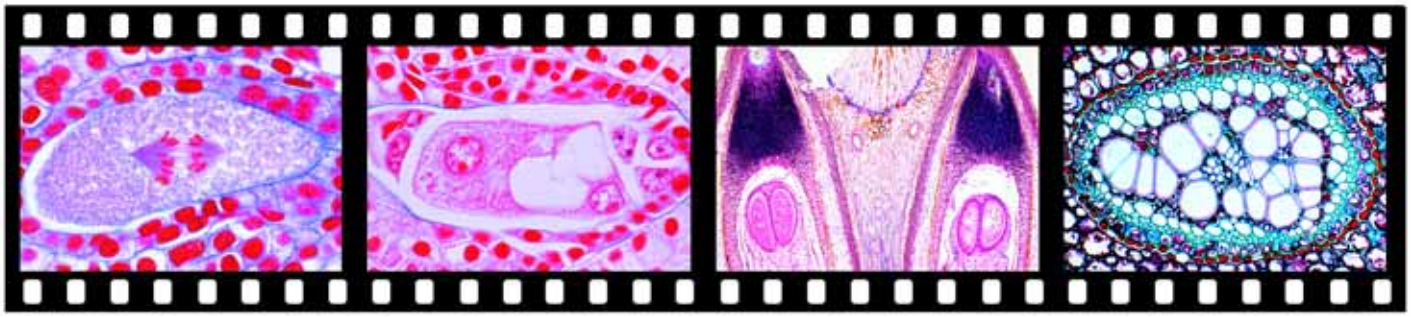

of construction of atomic nuclei 4. The Einstein equivalence principles of energy and matter 5. Nuclear fusion 6. Nuclear fission 7. Spontaneous nuclear disintegration by Fermi-interaction 8. The law of radioactive disintegration 9. Methods to prove nuclear reactions 10. Nuclear fission after Hahn, Strassmann and Meitner 11. Nuclear evaporation by high-energy particles 12. Symmetry models of elementary particles 13. Subelementary particles and their hypothetic characteristics 14. Experiments for the detection of quarks 15. Attempt of a 'general field theory' by Heisenberg

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1. The classes of the matter. Chemical nomenclature 2. The aggregate states 3. The general properties of the matter 4. The characteristic properties of the three types of elements 5. Atomic bond 6. Ionic bond 7. Metal bond 8. Polarization, bond types 9. Co-ordinative bond 10. VAN DER WAALS forces 11. Hydrogen bonding 12. Ionic dissociation of salts, acids and bases 13. The electrolytic process and its educts 14. Typical substance with various bond-types 15. Polymerization and macromolecules

No. 656. Symmetry of Crystals, Properties of Minerals, Research into the Structure. 40 Projection Slides. Correlations between arrangement of the particle grating and the macro-symmetry of the crystallized matter are shown. Some macro-physical properties of solids being suitable as criterions for the determination of minerals. The principles of X-ray analysis of the structure.
1. The macro-symmetry 2. Electron micrograph of metal surface 3. Electron micrograph of virus protein crystal 4. The crystallographic symmetry elements 5. The crystal symmetries elements 6. The crystal grating model 7. The crystal forms 8. Transition stages of crystallization 9. The three-dimensional orientation of lattice planes 10. The stereographic projection 11. Perfect crystal and real structure with distortions 12. Example for crystal twinning 13. Forms of crystal growth and crystal aggregates 14. Isotopy and macro-symmetry 15. Characteristics of the crystalline state 16. Color, transparency and opacity 17. Mohs scale of hardness 18. Typical anisotropic effects 19. Forms of cleavability 20. The double refraction 21. Dichroism and pleochroism 22. Double refraction and polarization of light waves 23. Orthoscopic interference figure of zinc selenite 24. Conoscopic interference figure of an uniaxial crystal 25. Ditto. of a biaxial crystal 26. Structure analysis of light diffracting matter 27. X-ray diffraction after Max von der Laue 28. Historic experimental set-up after Max von der Laue 29. Laue pattern of a triclinic mineral 30. Ditto. monoclinic mineral 31. Ditto. rhomboid mineral 32. Ditto. trigonal mineral 33. Ditto. hexagonal mineral 34. Ditto. tetragonal mineral 35. Ditto. cubic mineral 36. Radiographical method Debeye-Scherrer 37. Comparison of powder photographs 38. Single crystal photograph, Buerger precession technique 39. Vector analysis of a Patterson function 40. Electron density by Fourier analysis

No. 660. Morphology of the Most Important Minerals, Part I. Elements and Bonds. 82 Projection Slides. The series show the most important and well-known minerals in that state, which is for a collector the most common to find in the nature. The specimens show all the typical characteristics and enable therefore a sure identification of finds. From that minerals, which are often subject to variations of their appearance, two or more specimens are shown on one picture.
1. *Elements 1.* Graphite 2. Diamond in kimberlite 3. Sulphur 4. Native arsenic 5. Native copper 6. Native silver 7. Native gold 8. Native bismuth *2. Sulphides and arsenides (ores)* 9. Pyrite (fools gold) 10. Marcasite (white iron pyrite) 11. Bornite (purple copper ore) 12. Chalcopyrite (copper pyrite) 13. Covellite 14. Chalcocite 15. Galenite (lead glance) 16. Sphalerite (false galena) 17. Wurtzite 18. Cinnabar 19. Pyrrhotite (magnetic pyrite) 20. Stibnite (antimonite) 21. Niccolite (copper nickel) 22. Smaltite (scutterudite) 23. Molybdenite 24. Realgar 25. Orpigment (yellow arsenic) 26. Arsenopyrite (mispickel) 27. Proustite (light red silver ore) *3. Halides (salts)* 28. Halite (rock-salt) 29. Sylvite (sylvine) 30. Fluorite crystal (Derbyshire spar) 31. Carnallite 32. Cryolite (Greenland spar) *4. Oxides and hydroxides* 33. Magnetite (magneticiron-ore) 34. Haematite (red iron-ore) 35. Corundum, emery and ruby 36. Rock-crystal (quartz crystal) 37. Chalcedony and agate 38. Common and precious opal 39. Rutile 40. Cassiterite (tinstone) 41. Pitchblende (nasturan) 42. Chromite (chromium iron ore) 43. Ilmenite (titaniferous iron ore) 44. Pyrolusite (manganese ore) 45. Perovskite 46. Spinel 47. Zincite (red oxide of zinc, spartalite) 48. Psilomelane 49. Goethite 50. Brucite 51. Bauxite 52. Limonite (brown haematite) *5. Carbonates* 53. Calcite crystal (calcspar) 54. Dolomite rock (dolostone) 55. Siderite (iron spar) 56. Aragonite 57. Cerussite (white leed ore) 58. Malachite (green carbonate of copper) 59. Azurite (blue copper ore) 60. Smithsonite (dry bone ore, calamine) 61. Witherite 62. Magnesite 63. Rhodochrosite *6. Borates* 64. Tincal (borax) 65. Ulexite (cotton ball) *7. Sulphates, chromates, molybdates and wolframates* 66. Gypsum 67. Anhydrite (cube spar) 68. Barite 69. Celestine 70. Crocoite (red lead ore) 71. Wulfenite (yellow lead ore) 72. Wolframtite 73. Scheelite *8. Phosphates, arsenates, vanadates* 74. Apatite 75. Pyromorphite 76. Callaite 77. Monazite 78. Erythrite (cobalt bloom) 79. Annabergite (nickel bloom) 80. Wavellite 81. Descloizide, vanadium ore 82. Vanadinite

No. 669. Morphology of the Most Important Minerals, Part II. Silicates.
56 Projection Slides. This series presents beautiful color photographs of the most important minerals out of the large group of the silicates.
1. Olivine in basalt 2. Garnet in mica-schist 3. Topaz crystal 4. Zircon crystal 5. Andalusite 6. Disthene (cyanite) 7. Titanite (sphene) 8. Staurolite 9. Hemimorphite (natural zinc silicate) 10. Epidote 11. Zoisite 12. Beryl, Blue variety 'aquamarine' 13. Cordierrte (iolite) 14. Tourmaline 15. Dioptase 16. Chrysocolla 17. Diposide 18. Common and basalt augites 19. Spodumene (triphane) 20. Jadeite 21. Enstatite 22. Bronzite 23. Hypersthene 24. Tremolite 25. Actinolite 26. Common hornblende 27. Basalt hornblende 28. Wollastonite (tubularspar) 29. Rhodonite 30. Talcum 31. Prehnite 32. Muscovite (Muscovy glass) 33. Phlogopite 34. Biotite 35. Lepidolite 36. Fuchsite 37. Chrysotile 38. Antigorite 39. Nepheline (nephelite) 40. Leucite (Vesuvian garner) 41. Analcime (analcite) 42. Orthoclase and aventurine feldspar (sunstone) 43. Microcline 44. Amazonite (amazonstone) 45. Albite (pericline) 46. Labradorite 47. Anorthite 48. Sodalite 49. Hauyne, in porous lave 50. Lazurite (ultramarine), gem lapis lazuli 51. Natrolite 52. Harmotome 53. Stilbite (desmine) 54. Apophyllite (fish-eye stone) 55. Tektite, glassy silicate 56. Moldavite (water-chrysolithe), from meteoric striking

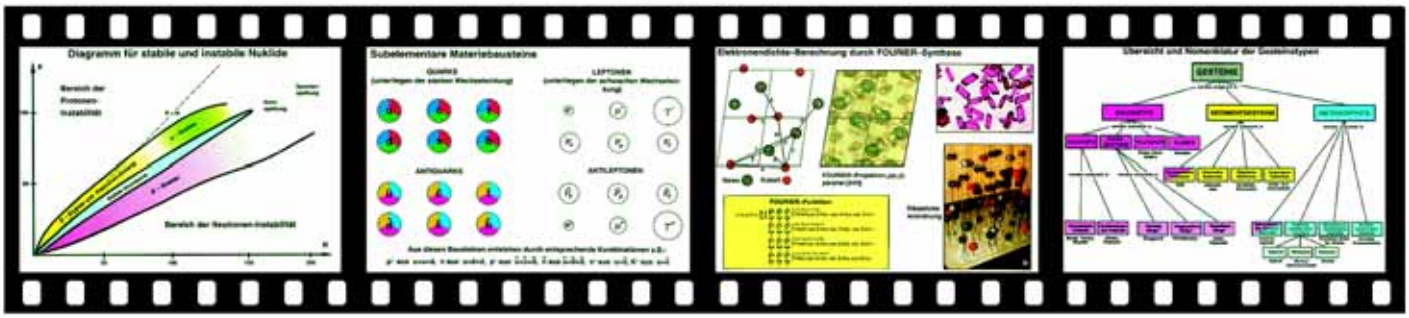
No. 675. Morphology and Microstructure of the Most Important Sorts of Rocks.
39 Projection Slides. The macrophotographs give a picture of habit and structure of the surface of the most important rocks. Microphotographs of thin sections of the same sorts in polarized light demonstrate their inner structure in colorful pictures.
1. Survey and nomenclature of rock types 2. Chemistry of eruptive rocks 3. Volcanics: Lave, pumice and obsidian 4. Intrusive rock granite 5. Thin section of granite 6. Intrusive rock granodiorite 7. Intrusive rock syenite 8. Thin section of syenite 9. Intrusive rock diorite 10. Thin section of diorite 11. Intrusive rock gabbro 12. Thin section of gabbro 13. Matrix rock granite porphyry 14. Thin section of granite porphyry 15. Matrix rock diabas 16. Thin section of diabas 17. Matrix rock pegmatite 18. Extrusive rock basalt 19. Thin section of basalt 20. Extrusive rock rhyolite 21. Extrusive rock trachyte 22. Extrusive rock andesite 23. Clastic sedimentary rock sandstone 24. Thin section of sandstone 25. Clastic sedimentary rock greywacke 26. Clastic sedimentary conglomerate 27. Clastic sedimentary breccia 28. Chemical sedimentary rock travertine 29. Thin section of travertine 30. Biogenous deposit anthracite coal 31. Biogenous deposit diatomaceous earth 32. Peltic metamorphic rock mica-schist 33. Thin section of mica-schist 34. Sialic metamorphic rock gneiss 35. Thin section of gneiss 36. Carbonatic metamorphic rock marble 37. Thin section of marble 38. Regional metamorphic rock serpentine 39. Thin section of serpentine

No. 679. Gems and Precious Stones. 17 Projection Slides. This series also fascinates by the beauty and the great variety of details in its color photographs. There are shown well-known and economically interesting gems and precious stones.
1. Forms and cuts of precious stones 2. Classification of gems and precious stones 3. Corundum group: ruby and sapphire 4. Beryl group: aquamarine and emerald 5. Spinelgroup: pleonaste and magnesian spinel 6. Topaz varieties 7. Garnet group: pyrope, grossular and almadine 8. Tourmaline varieties 9. Spodumene group: hiddenite and kunzite 10. Quartz group I: rock crystal, amethyst, cairngorm, citrine, rose quartz 11. Quartz group II: aventurine, hawk's eye, tiger's eye 12. Chalcedony varieties: carnelian, jasper, chrysoprase, bloodstone 13. Banded chalcedony varieties: agate and onyx 14. Opal varieties 15. Jade varieties: jadeite and nephrite 16. Feldspar group: sunstone, moonstone, amazonstone 17. Callaite and turquoise matrix

No. 3690. Rocks and Minerals. This series shows 15 important and typical rocks and minerals ground thin. In the polarised light, the components of the specimens appear in various colors. 15 Color Photomicrographs
1. Red marble 2. Diatomic earth 3. Chalkstone 4. Travertine 5. Serpentine 6. Diabase 7. Basalt 8. Syenite 9. Sandstone 10. Diorite 11. Gneiss 12. Red porphyry 13. Limestone 14. Granite 15. Gabbro

PHYSICS AND CHEMISTRY
ELECTRICITY AND MAGNETISM

NNo. 1340. Electricity and Magnetism.
The total series consists of 255 excellently drawn, instructive color plates with a great variety of details. It presents an extensive description of the subject and valuable illustrative material for lessons in secondary schools, vocational training schools and schools of engineering. 255 Projection Slides. *The complete series consists of 12 partial sets which can be delivered individually also.*



1. The electricity atome, Fig 1. Struture of matter, elements 2. Fig 2. Structure of atom 3. Electric potentials. Elementary potential 4. Definition of the eletric current 5. C.R.Tolman's experiment 6. Electric tension and potential, Fig 1. Primary voltage 7. Fig 2. Potential difference 8. The electric circuit. Amperage and voltage 9. Ohm's law, Fig 1. Electric conductance and resistance 10. Fig 2. Linear resistors 11. Electric resistance of metallic conductors 12. Temperature dependence of the specific resistance, Fig 1. Evidence by experiment 13. Fig 2. Derivation of the relation 14. The first law of Kirchhoff. Currents in the closed circuit 15. The first law of Kirchhoff. Primary voltage and voltage drop 16. What is primary voltage? 17. The internal resistance 18. Loading of voltage sources, Fig 1. short circuit and idling ratio 19. Fig 2. Adaptation of power 20. Joule's heat 21. The electric power, Fig 1. Work of the electric current 22. Fig 2. Wattage and wattmeter 23. Transformation of energy and efficiency, Fig 1. Input and output of energy 24. Fig 2. Transforming of current into heat 25. Fig 3. Rentability

No. 1344. The Electric Field. 21 Projection Slides
1. Phenomenons of atomic charge 2. Energy of resting charges, Fig 1. Frictional electricity 3. Fig 2. The electric charge 4. Fig 3. Effects between carriers 5. Transfer of charge 6. The electric influence, Fig 1. Collection of charge 7. Fig 2. Recharge by influence 8. Properties of electric field lines, Fig 1. Proof 9. Fig 2. Electric field lines between uni- and bipolar charges 10. Fig 3. Ditto. between bipolar charges 11. Fig 4. Ditto. of a plate capacitor 12. Matter in the electric field, Fig 1. Metal in electric field 13. Fig 2. Isolator in electric field 14. Distribution of charges on surfaces, Fig 1. Free mobility of electrons 15. Fig 2. Faraday's cage experiment 16. Faraday's cup experiment, Fig 1. Invariability of charges 17. Fig 2. Ditto. by touch contact 18. Peak effect, Fig 1. Distribution of charge on edges 19. Fig 2. Breaktrough charge 20. Van-de Graaff-Generator 21. Dust filters

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1. The electric field strength E, Fig 1. Proof 2. Fig 2. Derivation 3. Surface density 4. Displacement density 5. Correlations Fig 1. Dielectric and influence constants 6. Fig 2. Field strenght on the surface of a charged sphere 7. Fig 3. Field strenght and radius of curvature 8. The law of Coulomb 9. Force effect between charged plates 10. Energy and potential of the electric field, Fig 1. Performance 11. Fig 2. Difference 12. Fig 3. Equipotential surface 13. Fig 4. Electric potential field 14. The condenser 15. Charge and discharge of a condenser, Fig 1. The discharged condenser 16. Fig 2. Charging of a condenser 17. Fig 3. Discharging of a condenser. Direction of flux 18. Fig 4. Charging and discharging 19. The capacity of a condenser, Fig 1. Derivation 20. Fig 2. Correlation of units 21. Fig 3. Experiment to change capacity 22. The coated condenser 23. Influence of insulators to the capacity 24. The multilayer insulator 25. Energy of a charged condenser

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1. The principle of magnetic poles, Fig 1. The earth's magnetism 2. Fig 2. Force effects 3. Fig 3. Definition 4. The magnetic influence 5. Molecular magnetism, Fig 1. Continual division of a magnet 6. Fig 2. Molecular magnets 7. Fig 3. Weis's domains 8. Properties of magnetic force lines, Fig 1. Proof 9. Fig 2. Direction 10. Fig 3. Three dimensional field of a bar magnet 11. Pictures of field lines, Fig 1. Bar magnet 12. Fig 2. Horseshoe magnet 13. Fig 3. Force lines between bipolar poles 14. Fig 4. Ditto. unipolar 15. Iron in the magnetic field, Fig 1. Force lines 16. Fig 2. Screening of magnetic fields 17. Magnetic field of a charged conductor 18. The cork-shrew principle 19. Direction of current 20. Field lines caused by conductors, Fig 1. Field lines of rectified parallel currents 21. Fig 2. Field lines of non-rectified parallel currents 22. Fig 3. Field lines of a current-carrying loop 23. Magnetic field of live coils, Fig 1. Cylinder coil 24. Fig 2. Poles 25. Fig 3. Toroidal coil

No. 1353. Quantities of the magnetic Field. 19 Projection Slides
1. The magnetic field strength H 2. Primary magnetic tension 3. Magnetic field strength H 4. Homogene and inhomogene fields 5. Field strength and distance from the conductor 6. The magnetic induction B 7. Unit 8. The magnetic flux, Fig 1. Definition 9. Fig 2. Unit 10. Field strength and flux density, Fig 1. Induction constant 11. Fig 2. Permeability 12. Para- and diamagnetic stuffs 13. Magnetic induction B and field strength H 14. Field strength H and induction B 15. Relative permeability and field strength H 16. Magnetization and demagnetization of soft iron 17. Magnetization curve of steal 18. Magnetic resistance 19. Magnetic circle

No. 1355. The Electromagnetic Induction. 23 Projection Slides
1. Faraday's induction experiment, Fig 1 2. Ditto. Fig 2 3. Induction in moving conductors 4. Direction of flux 5. The right hand rule 6. Moving of a conductor loop parallel with the field lines 7. Induction by approaching or removing of a magnet 8. Principle of the transformer 9. The clock hand rule 10. Induction 11. Principle of the generator 12. Derivation of induction law 13. Changing of induced voltage U1 14. The rule of Lenz 15. Experiment 16. Eddy currents 17. Self-induction of a coil Fig 1 18. Self-induction of a coil by switching on and off the current 19. Ditto. fig. 2 20. The transformer principle 21. Coupling factor 22. The magnetic ignition system 23. Magnetic tape and tape recorder

No. 1358. Force Effects in the Magnetic Field. 18 Projection Slides
1. The left hand rule 2. Phasor diagram of force effects of magnetic field 3. Calculation of the force effect 4. Attraction and repulsion of movable conductors 5. Equal direction of the current 6. Inverse direction of the current 7. Parallel streaming electrons 8. Derivation of force between parallel conductors 9. Definition 10. Force effect between live coils, Fig 1. Attraction 11. Fig 2. Repulsion 12. Fig 3. Rotation 13. The principle of the direct-current motor 14. Life-coil torque in the magnetic field 15. Moving-coil instrument 16. Energy of the magnetic field 17. The tractive force of a magnet 18. The electromagnetic relay

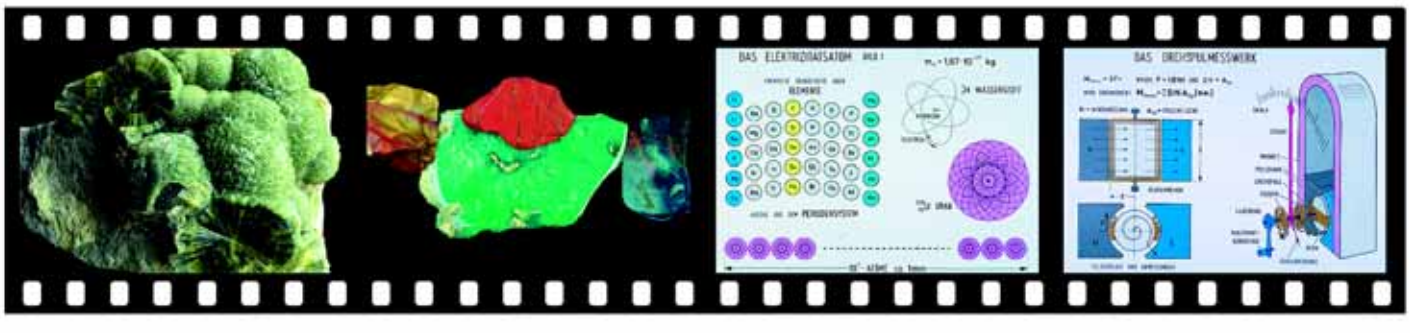
No. 1360. Chemical Effects of the Electric Current. 21 Projection Slides
1. Conduction of current in liquids, Fig 1. Distilled water, electrolytes 2. Fig 2. Electrolytic dissociation 3. The Electrolysis, Fig 1. Copper sulphate as an electrolyte 4. Fig 2. Diluted sulphuric acid as an electrolyte. Reduction and oxidation 5. The first electrolytic law of Faraday, Fig 1. Experiment 6. Fig 2. Derivation 7. The second electrolytic law of Faraday, Fig 1. Experiment 8. Fig 2. Derivation. Faraday's constant 9. Transition of electrons between metals 10. Charge of metals in electrolytes 11. Base metals and noble metals 12. Deposit of noble metals 13. The electrochemical voltage row, Fig 1. Potential jump on double layers 14. Fig 2. Voltage values corresponding to hydrogen 15. Galvanic cells, Fig 1. Voltage characteristics 16. Fig 2. Construction and function 17. Fig 3. Leclanché cell 18. The accumulator 19. Discharging of a charged accumulator 20. Charging of a discharged accumulator 21. Cell voltage and acid density of accumulators

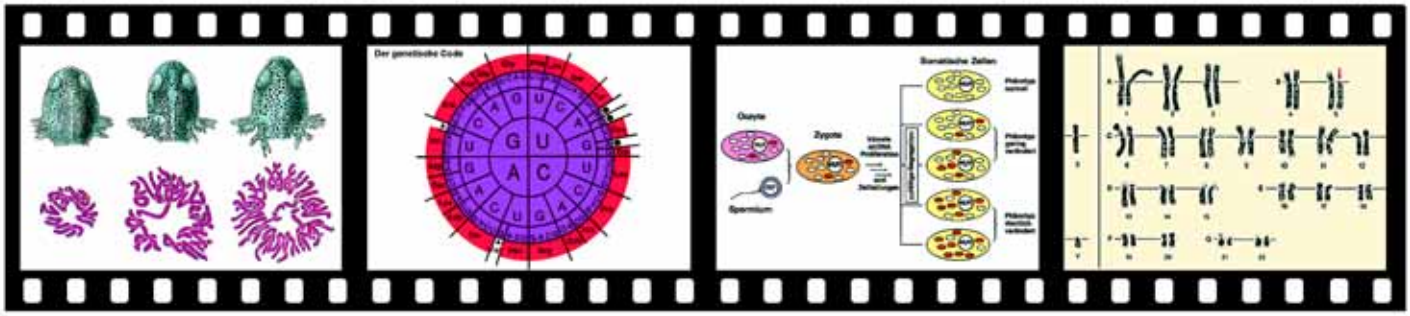
No. 1363. Basic Properties of the Alternating Current. 17 Projection Slides
1. Formation of the alternating voltage. Sinusoidal tension 2. Cycle periods. Angular velocity. Phase angle. Phasor diagram 3. Units of sinusoidal voltage 4. Advantages of the alternating current 5. Determination of the induced alternating voltage 6. Arithmetic mean 7. Effective power. Derivation from Joule's law 8. Construction of a three-phase A.C. generator 9. Phase displacement of amperages and voltages 10. The star circuit. Linkage of voltages 11. The delta connection. Linkage of amperages 12. The three-phase current mains, Fig 1. Phasor diagram 13. Fig 2. Unbalanced load of three-phase current mains 14. Fig 3. Short-circuit 15. Fig 4. The star circuit delta connection 16. The magnetic rotating field, Fig 1. Generation 17. Fig 2. The three-phase A.C. generator

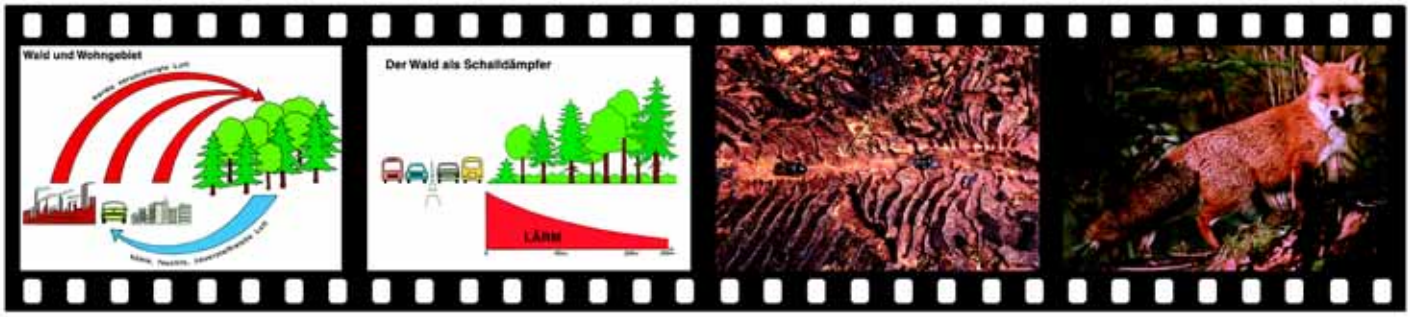
No. 1365. The Alternating Current Circuit, Part I. 24 Projection Slides
1. Generation of phase displaced voltages 2. The sum of the phase displaced voltages 3. Characteristics 4. The Resistors R, L and C 5. The D.C. current (ohmic) resistance 6. The inductive resistance 7. The capacitive resistance 8. The effective resistance R 9. Coil in the A.C. circuit 10. Inductive resistance in the direct current circuit 11. Coil in the alternating current circuit 12. Condenser in the alternating current circuit 13. The capacitive resistance in the direct current circuit 14. Condenser in the alternating current circuit 15. R and L in series circuit 16. The impedance. The phase angle 17. The loss angle 18. R, L and C in series circuit 19. The impedance. The phase angle 20. R and C in parallel (shunt) circuit. The currents 21. The impedance. The phase angle 22. The loss angle 23. R, L and C in parallel (shunt) circuit. Currents 24. Fig 2. The impedance. The phase angle

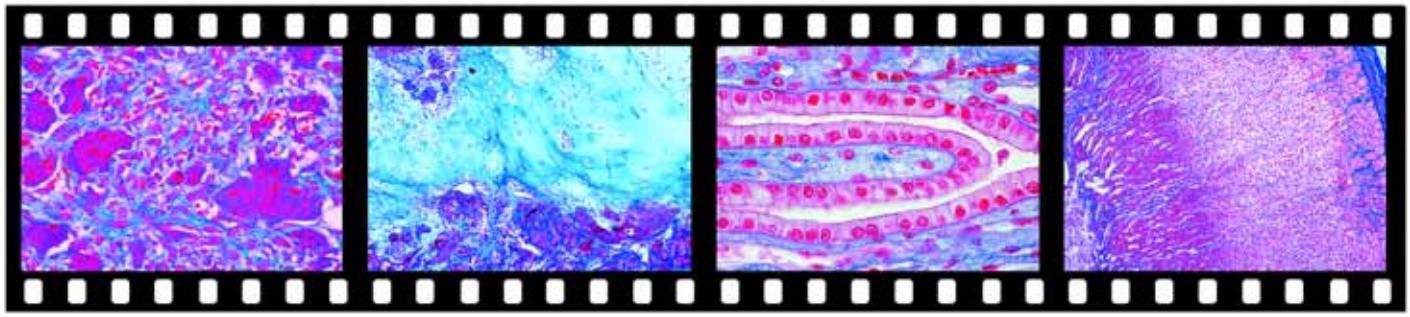
No. 1368. The Alternating Current Circuit, Part II. 18 Projection Slides
1. The series resonance, Fig 1. in series resonance circuit 2. Fig 2. The impedance 3. Fig 3. The series resonance circuit 4. Fig 4. The resonance frequency. Thomson's equation of oscillation 5. The parallel resonance, Fig 1. in parallel resonance circuit 6. Fig 2. The impedance 7. Fig 3. The parallel resonance circuit 8. Fig 4. The resonance frequency 9. Efficiency and power of the A.C. circuit, Fig 1. value of amperage and voltage 10. Fig 2. Efficiency diagram of D.C. current (ohmic) resistors 11. Fig 3. Ditto. of inductive resistors 12. Fig 4. Ditto. of capacitive resistors 13. Fig 5. Ditto. of reactances and effective resistances 14. Fig 6. Reactive and apparent power 15. Fig 7. Active power, measuring 16. Compensation of reactive current, Fig 1. Loading of alternating current by reactances. Compensation 17. Fig 2. Compensation of reactive current, phase diagram 18. Fig 3. Ditto. in alternators

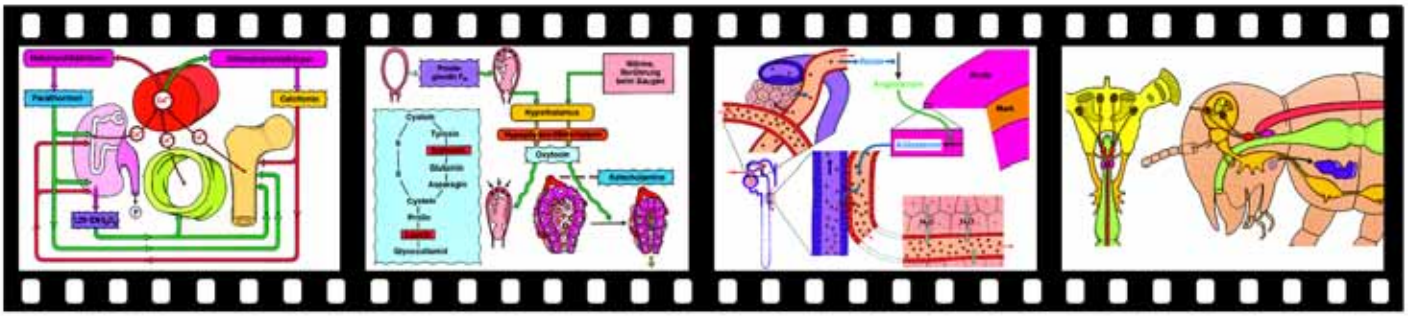
No. 1370. Electromagnetic Oscillations and Waves. 19 Projection Slides
1. The first equitation of Maxwell 2. The second equitation of Maxwell 3. The electromagnetic resonant circuit 4. Analogy to the spring pendulum 5. Reversal energy exchange 6. Losses in the resonant circuit 7. Deduction of Thomson's equation of oscillation 8. Undamped oscillations of the pendulum 9. Ditto. in the resonant circuit by feedback 10. Open resonant circuit 11. The electric dipole. Magnetic and electric field lines 12. The electromagnetic field near the dipole 13. Field vectors of the electromagnetic waves 14. Propagation of electric and magnetic fields by dipole antenna 15. Wave velocity. Calculation 16. Ground waves and space waves. The blind area 17. Long waves 18. Short waves and ultra-short waves 19. The electromagnetic wave range

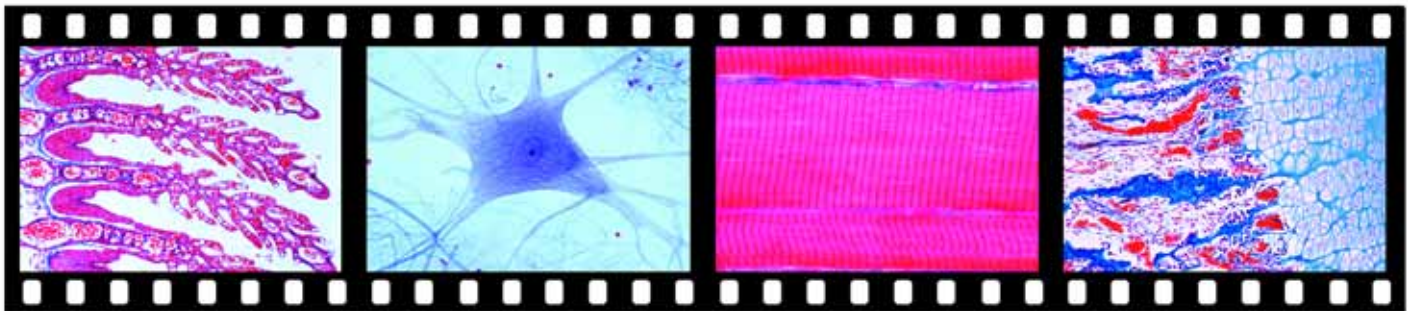


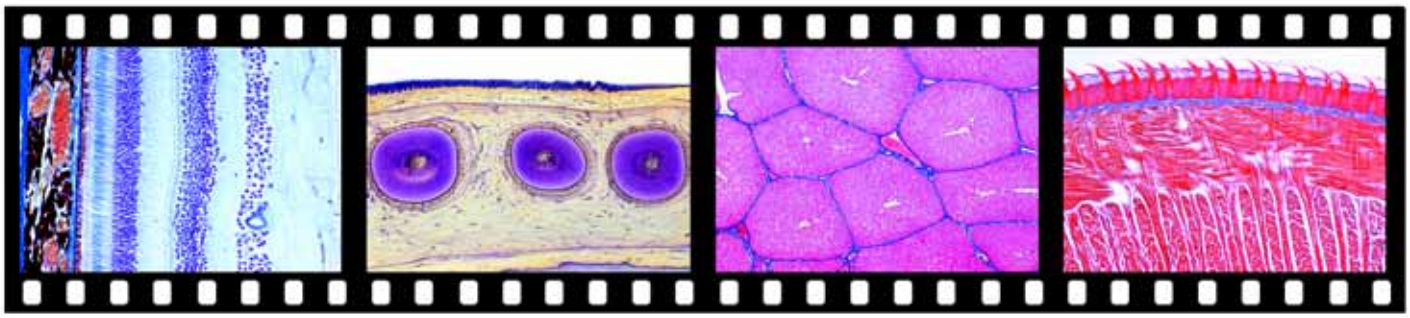


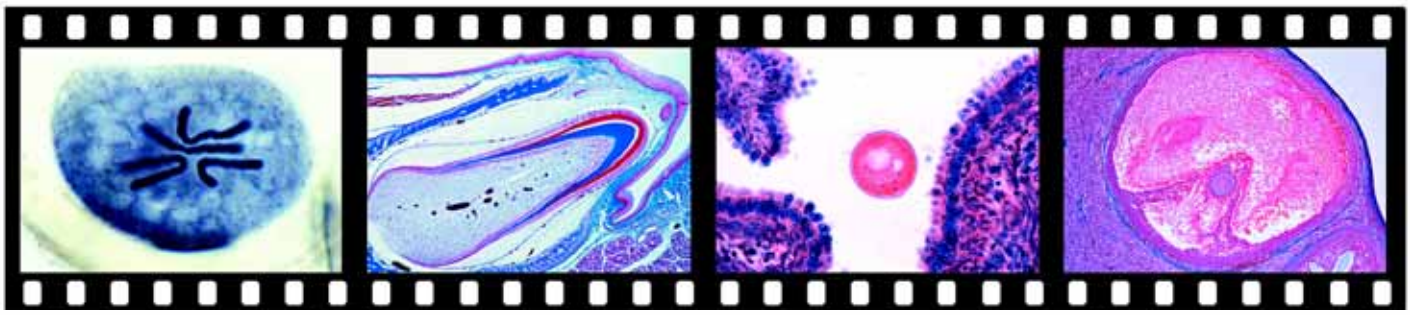

Wald und Wohngebiet
Der Wald als Schalldämpfer
LÄRM

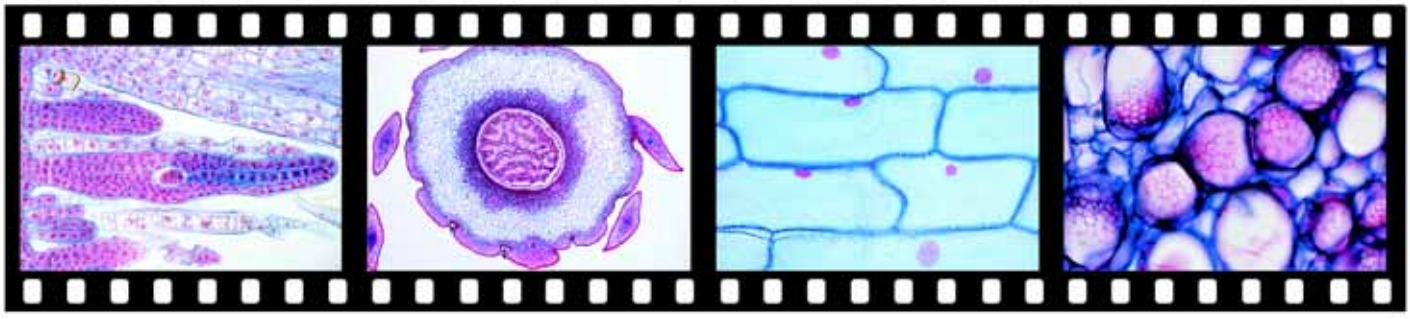


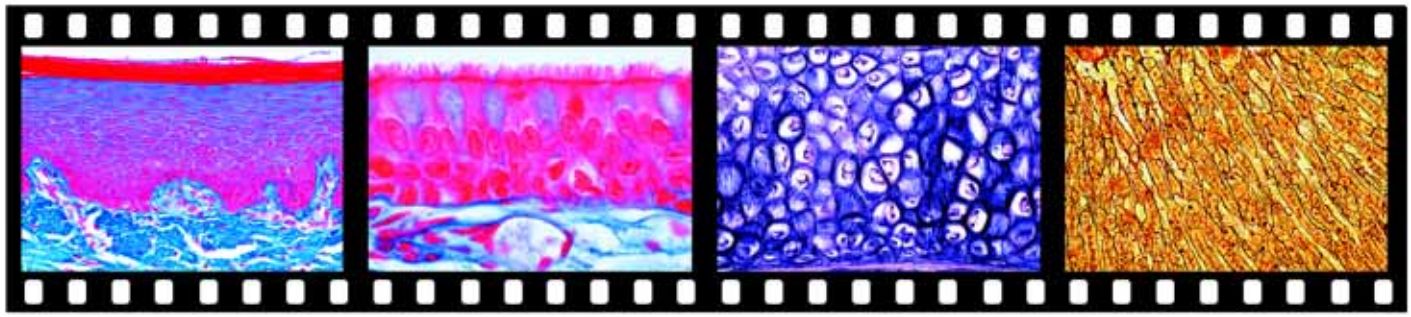


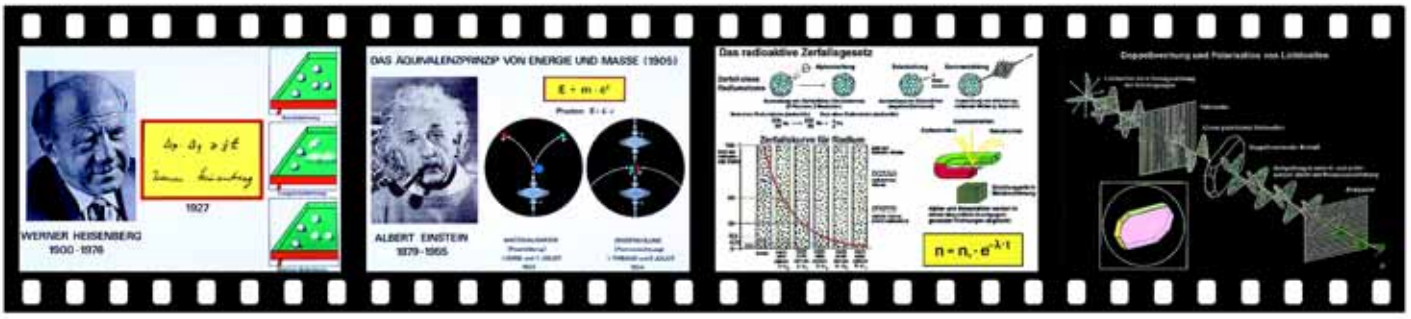


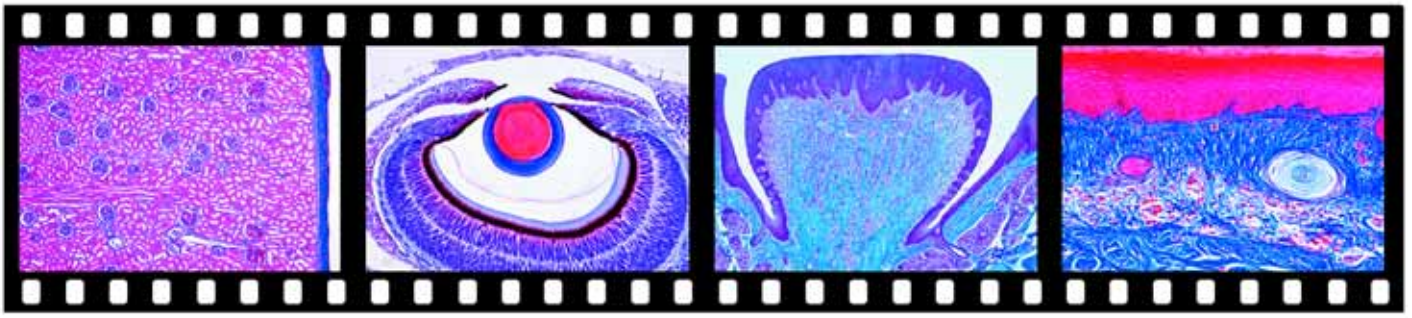


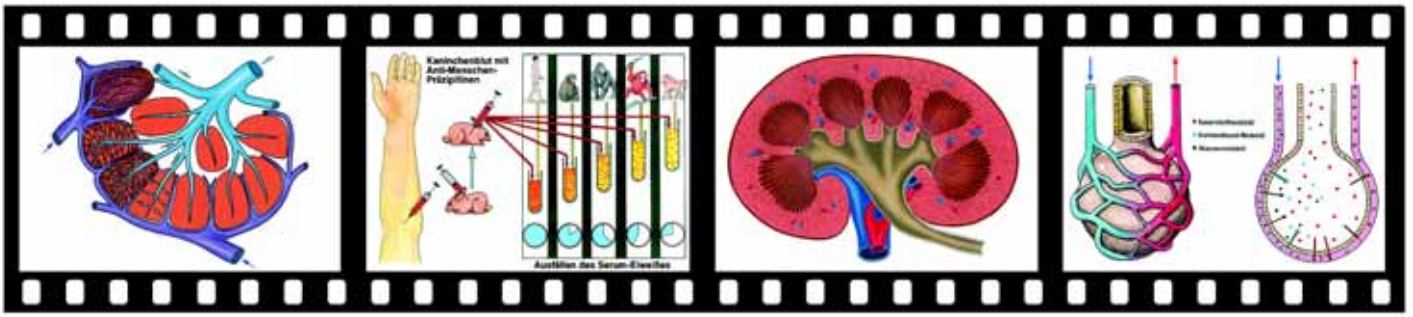


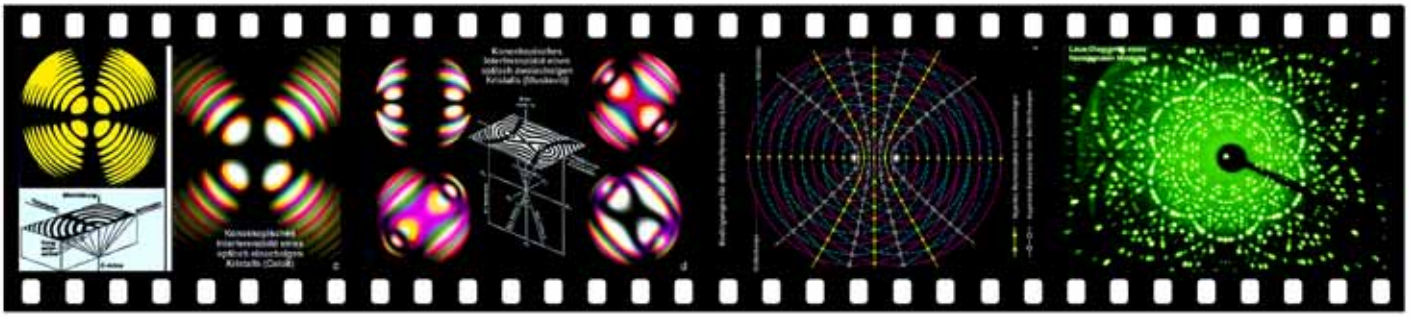





WERNER HEISENBERG
1900 - 1976
1927
DAS ÄQUIVALENZPRINZIP VON ENERGIE UND MASSE (1905)
ALBERT EINSTEIN
1879 - 1955
Das radioaktive Zerfallsgesetz
Zerfallskurve für Radium




Kaninchenblut mit
Anti-Menschen-
Präzipitinen
Ausfällen des Serum-Eiweißes



DRAWING SHEETS FOR HUMAN BIOLOGY

with transparencies and explanatory comments for the teacher

Compilation: Prof. Walter Mergenthaler, OStD Heribert Schmid, Gym. Prof. Eberhard Weismann

Part I	**Motion:** Skeleton, Muscular System, Apparatus of Motion	12 sheets
Part II	**Metabolism:** Nutrition, Respiration, Circulatory System, Excretion	20 sheets
Part III	**Control System:** Sense Organs, Nervous System, Hormones, Information	19 sheets
Part IV	**Genetics:** Reproduction, Embryonic Development, Transmission	24 sheets

Drawing is an essential part of the biology lessons. It calls forth clear ideas and records the observed. But during the lessons there is usually no time for the students to make complete sketches.
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- outstanding layout of the drawings by university illustrators
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- are furnished as loose leaves in a file for an independant programming of the lesson by individual selection.

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- in its contents identical with the drawing sheets of the students
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- keeping in a stable plastic file with ring mechanism
- every single transparency is kept in a clear-view wrap, therefore taking out of transparencies is very easy without opening of the ring mechanism.

Explanatory Comments

- bring off a general introduction into the different subjects
- comprehensive description of each drawing sheets and transparencies
- ideas and impulses for creation of vivid lessons
- reproductions of all drawing sheets, but completely drawn and supplied with legends as pattern for the making of the drawing sheets
- instruction for the working out of the sheets by the students

The reproductions of the drawing sheets in this catalogue are strongly reduced. The original size of the drawing sheets and overhead transparencies is 21 x 29 cm.

Our media offer „Drawing sheets for human biology“ is supplied in two versions.

Version A: Explanatory comment with pictures for the teacher and a set of drawing sheets in a file.

Version B: Media package, consisting of explanatory comment with pictures for the teacher and a set of drawing sheets and transparencies, each in a stable plastic file with ring mechanism. Drawing sheets and transparencies are kept single in clear-view wraps for a simple taking out of the file.

Part I MOTION: Skeleton, Muscular System, Apparatus of Motion

1. The skeleton, entire view
2. The vertebral column
3. The joints
4. The hip joint
5. The skeleton of the foot
6. The skull
7. The skeleton muscles, front side
8 The skeleton muscles, back side
9. The muscles of head and neck
10. The muscles of arm and shoulder
11. The muscles of the leg
12. Examples for movement

Part I, version A: Catalog No. M1A
Part I, version B (Media Package): Catalog No. M1B

Part II METABOLISM: Nutrition, Respiration, Circulatory System, Excretion

1. Nutritive substances
2. Organs of the digestive system
3. The teeth
4. Salivary glands, esophagus
5. The stomach
6. The intestine
7. The digestion
8. The liver
9. The nose
10. The larynx
11. Trachea and lungs
12. The respiratory mechanism
13. The blood circulation
14. The heart
15. The blood vessels
16. The blood
17. The circulatory functions
18. The urinary organs
19. Fine structure of the kidney
20. The skin. Metabolism scheme

Part II, version A: Catalog No. M2A
Part II, version B (Media Package): Catalog No. M2B

Part III CONTROL SYSTEM: Sensitive Organs, Nervous System, Hormones, Information

1. The eye
2. The accomodation
3. Auxiliary organs of the eye
4. Ear and hearing
5. The senses of equilibrium
6. The senses of smell and taste
7. The nervous tissue
8. The nervous system
9. The spinal cord
10. Paths of the spinal cord
11. The patellar reflex
12. One’s own reflexes, foreign reflexes
13. Paths of central nervous system
14. The brain
15. Brain stem and cerebellum
16. The cerebrum
17. The autonomous nervous system
18. Autonomic reflexes
19. The hormonal glands

Part III, version A: Catalog No. M3A
Part III, version B (Media Package): Catalog No. M3B

Part IV GENETICS: Reproduction, Embryonic Development, Hereditary Transmission

1. The reproductive organs of the man
2. The formation of sperm cells (spermatogenesis)
3. The reproductive organs of the woman
4. The maturation of oocyte (oogenesis)
5. The menstrual cycle of the woman
6. The fertilization of the egg, first development in the fallopian tube and imbedding in the uterus
7. The embryonic development until the 15th day
8. The embryonic development until the end of the 4th week
9. The embryonic development until the birth
10. The placenta
11. The process of birth
12. The coming about of twins
13. The intermediate inheritance of marvel of Peru
14. The dominant-recessive inheritance in pea-races
15. Dihybrid crossing of two pea-races
16. Other dihybrid crossings
17. Genetic distribution of numerous characteristics
18. Common family inheritance
19. The chromosomes as carriers of the hereditary factors
20. Hereditary transmission of the sex and sex-linked inheritance
21. Courses of inheritance of dominant characteristics of man
22. Courses of inheritance of recessive characteristics of man
23. Mutations with men
24. Chromosomes and genes

Part IV, version A: Catalog No. M4A
Part IV, version B (Media Package): Catalog No. M4B

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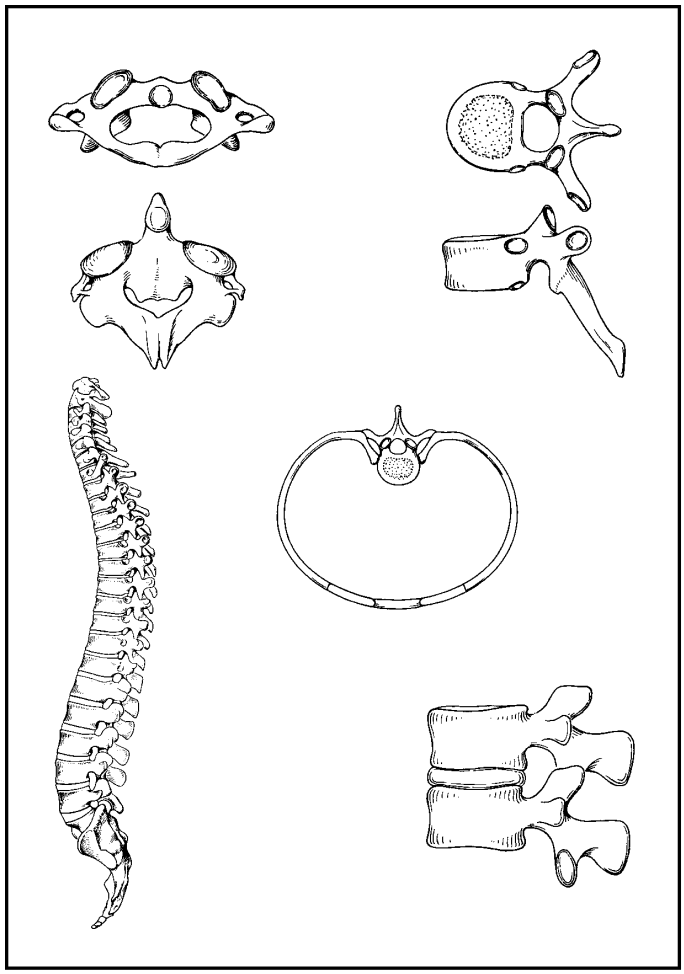

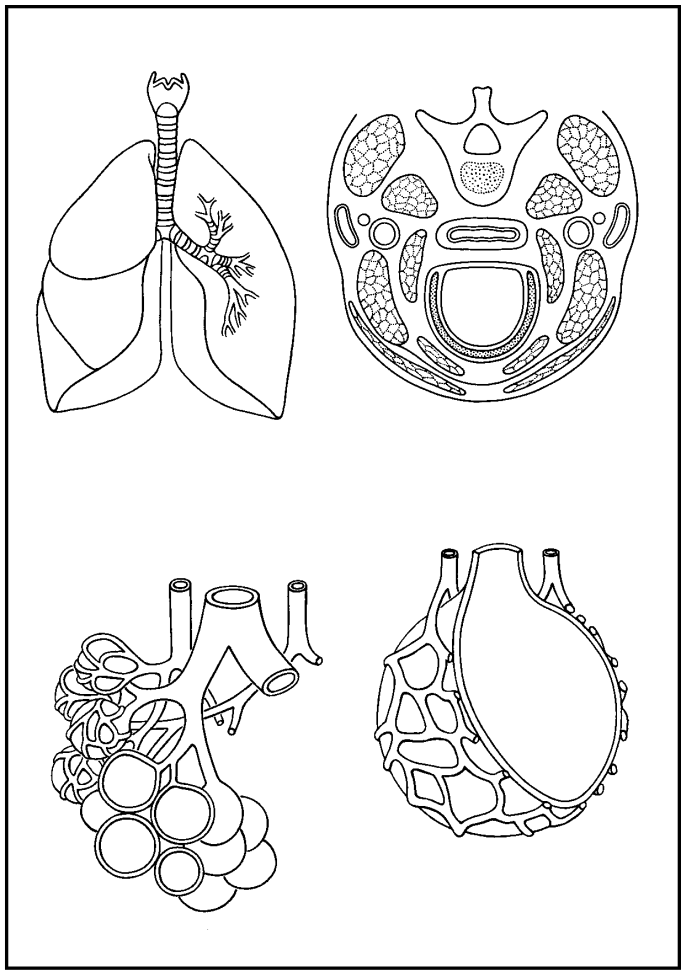

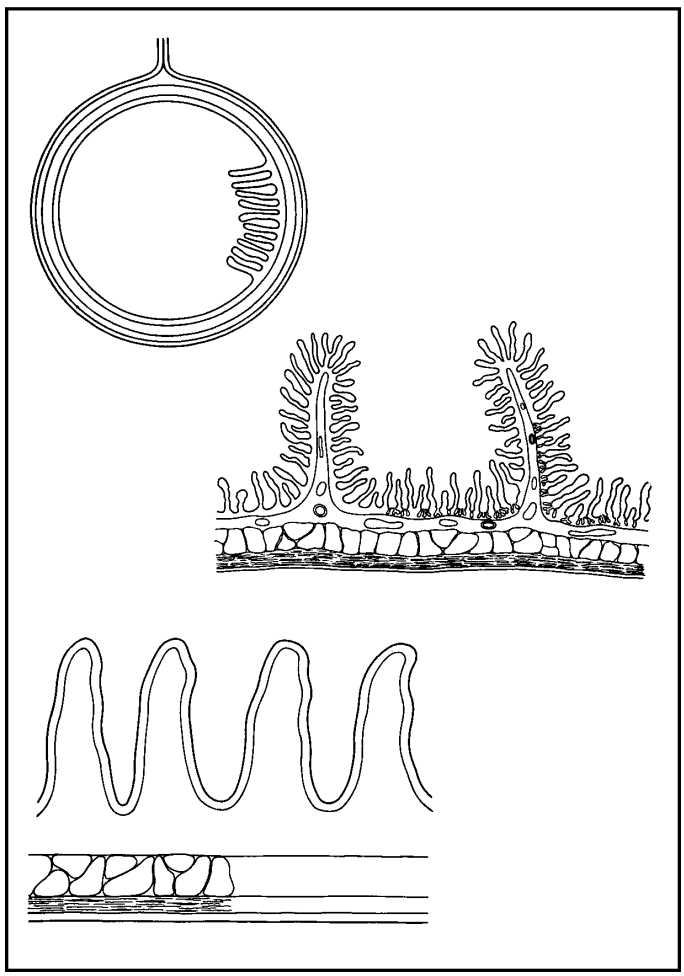

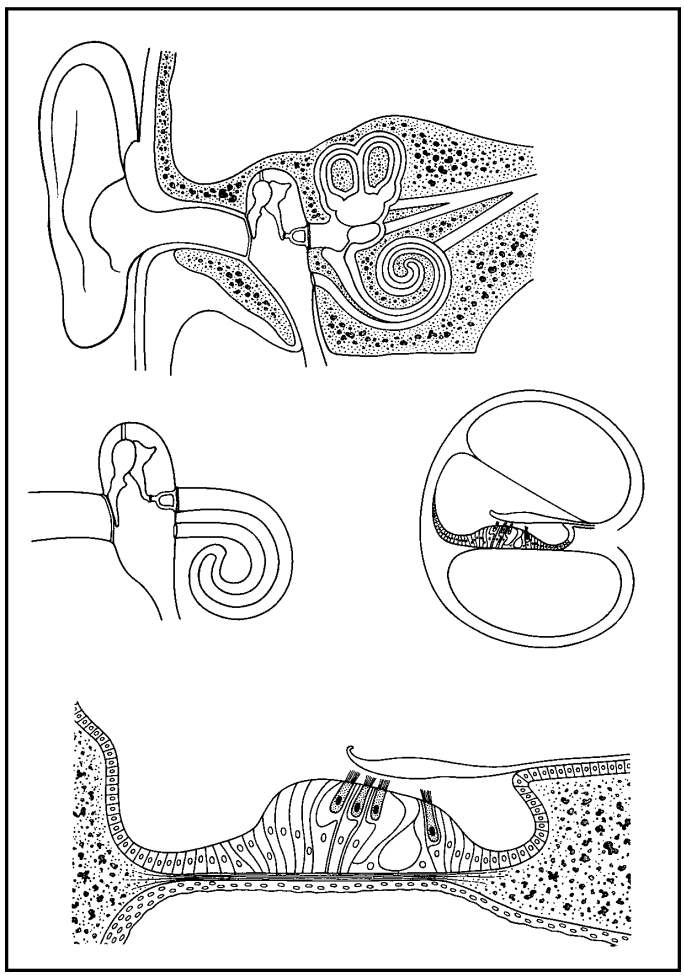

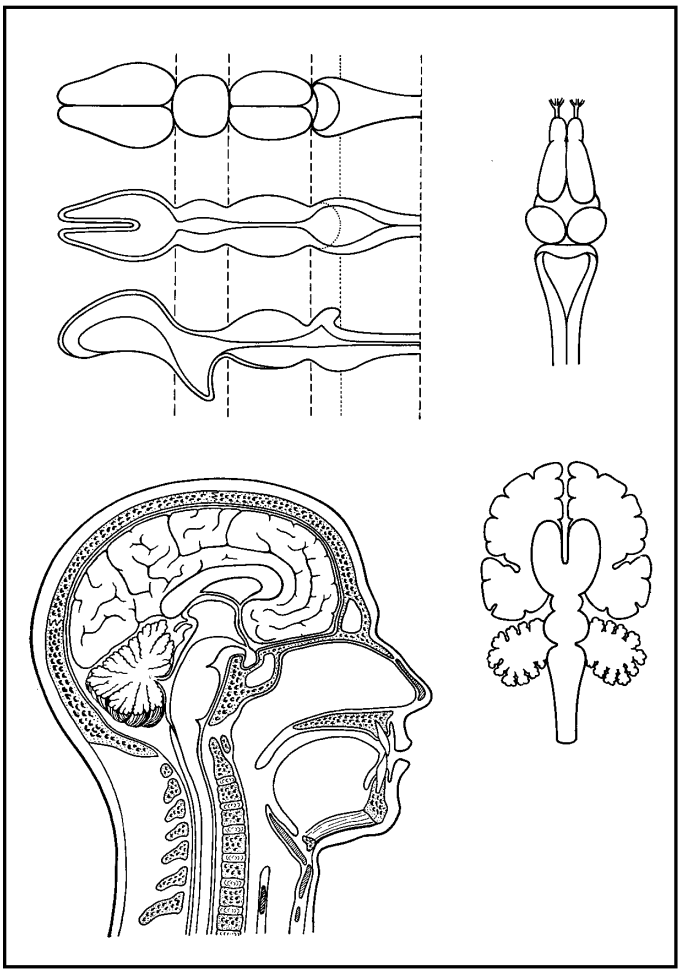

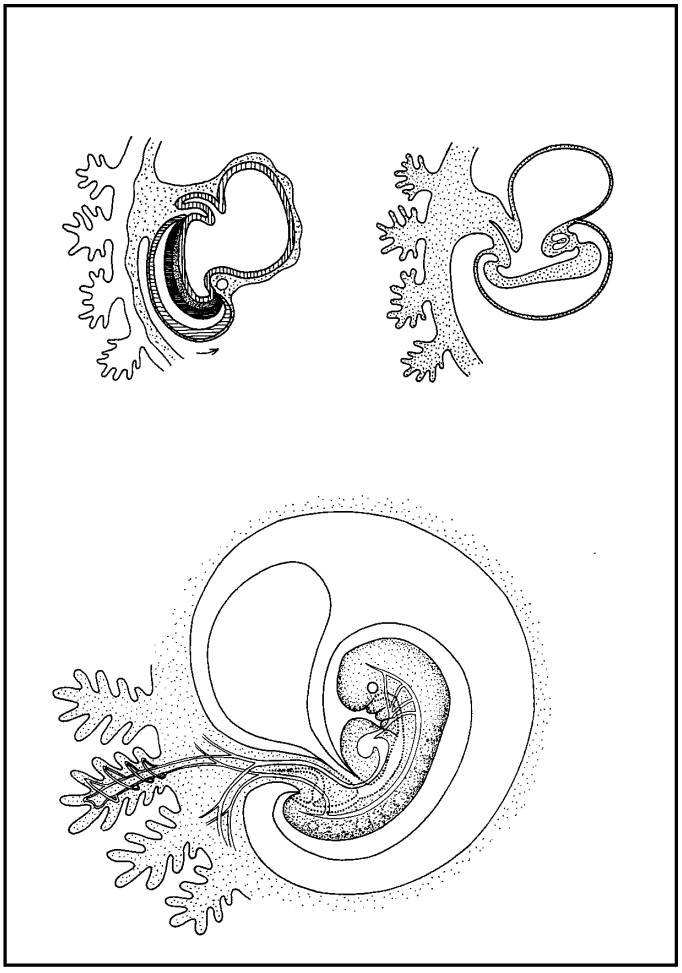

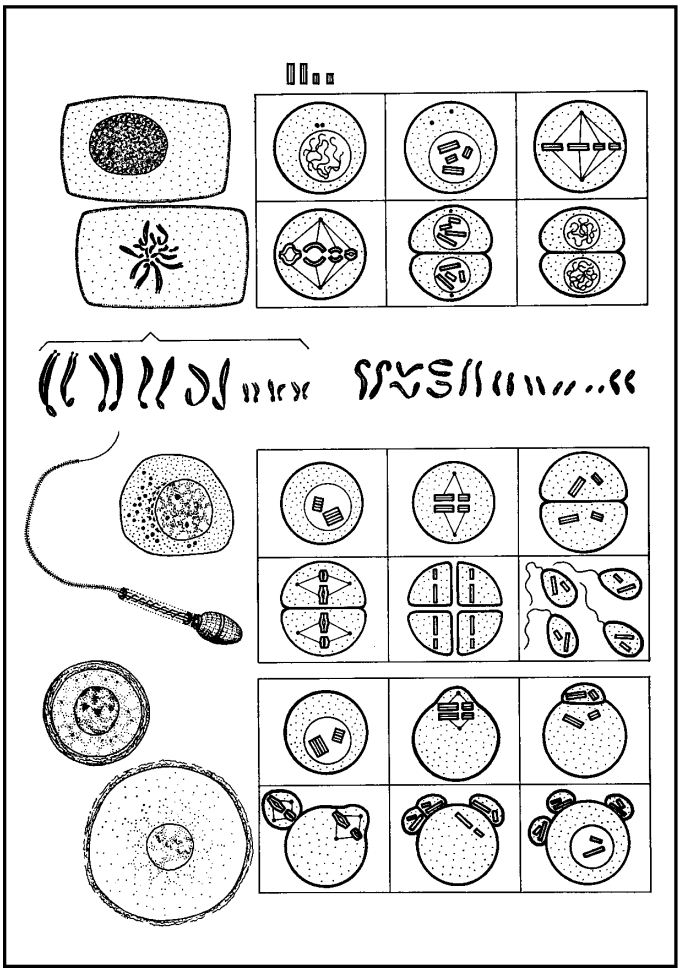

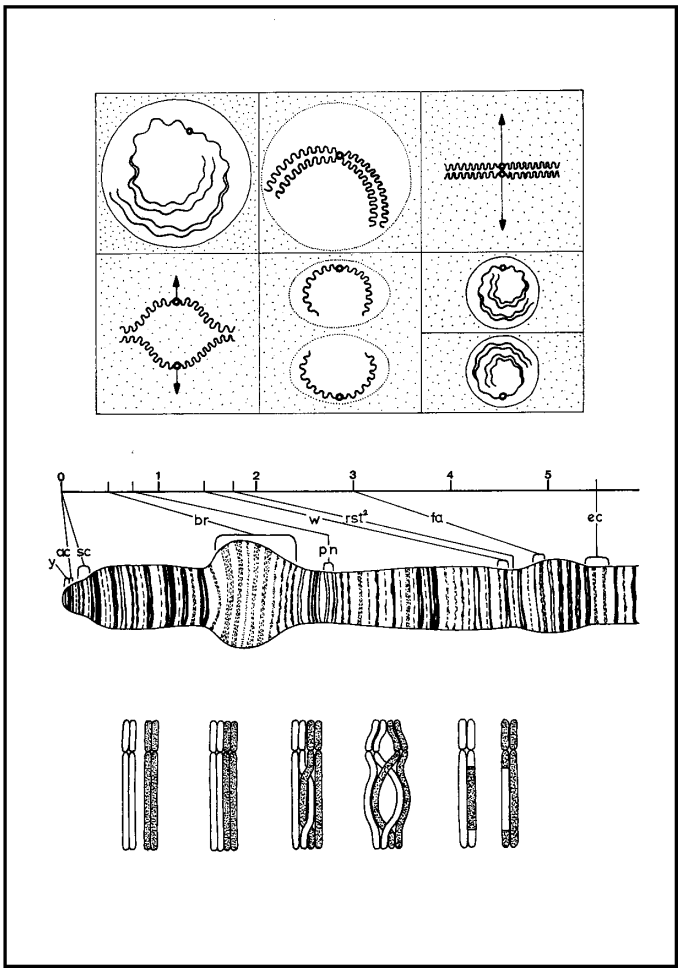
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- All prepared microscope slides, color slides, photomicrographs and transparencies **are manufactured in Premium Quality in our laboratories in Ludwigsburg / Germany.** They can be purchased **as complete sets and as individual slides**.
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- Please mention the **required mode of dispatch**, e.g. airmail parcel, SAL parcel, airfreight, special courier (DHL). Without your forwarding instructions we will use our best judgement. We will not dispatch the consignments via surface or sea mail unless expressly required.
- When ordering prepared microscope slides, please specify the **required slide boxes**. Without your specification we supply standard type boxes of suitable size for our microscope slide sets and individual slides.
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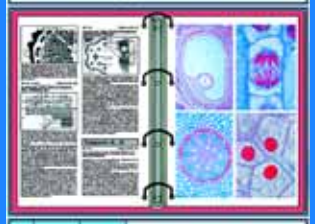

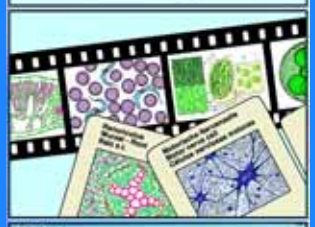

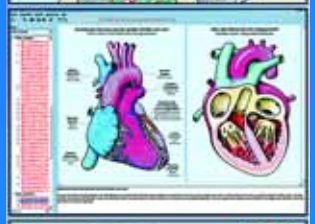

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