# 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 I.s. longitudinal section w.m. whole mount or entire specimen

## 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 with trophozoites (asexual forms) *
Pr1142h Entamoeba histolytica, smear showing cysts *
Pr115g Entamoeba histolytica, section through diseased colon showing the parasites in situ
$\operatorname{Pr} 116 \mathrm{~g}$ - 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
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
Pr 221 h Giardia lamblia intestinalis, human parasite, smear with trophozoites*
Pr2212h Giardia lamblia intestinalis, smear with 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 leptomonad forms *
Leishmania donovani, promastigotes, smear from culture *
Leishmania donovani, amastigotes, smear from tissue *
Leishmania mexicana, promastigotes, smear from culture *
Leishmania enrietti, section through nasal abscess from Guinea pig. Very heavy infection
Crithidia fasciculata, smear from intestine of Anopheles mosquito with typical crithidia forms *
Pr2378g
Pr251d

Pr311f
Pr3112g
Pr312f
Pr313h
Pr3132h
Pr3145h Pr315f

Pr320h
Pr321i
Pr322h
Pr323h
Pr3235g
Pr326f
Pr327f
Pr328f
Pr3285s
Trypanosoma rhodesiense, causes South African sleeping disease, blood smear with parasites

- Trypanosoma evansi, causes surra in cattle, blood smear
- Trypanosoma brucei, causes nagana, blood smear

Trypanosoma congolense, pathogenic to domestic animals, blood smear

- Trypanosoma equiperdum, dourine in horses, blood smear
- Trypanosoma cruzi (Schizotrypanum), causes Chagas disease of man, blood smear showing trypanosomes
- Trypanosoma cruzi, section through infected heart muscle shows Leishmania forms in tissue *
Trypanosoma cruzi. Smear from culture showing cultured forms * Trypanosoma cruzi. Leishmania forms in sec. of mouse brain * Trypanosoma cruzi. Leishmania forms in sec. of mouse liver * Trypanosoma cruzi. Leishmania forms in sec. of mouse heart muscle fibres*
Trypanosoma cruzi. Leishmania forms in sec. of mouse spleen Trypanosoma lewisi, a large species living in rats and mice, blood smear with parasite, heavy infection
- Trypanosoma lewisi, blood smear, early stages of infection with division stages
Trypanosoma lewisi, blood smear, later stages of infection, large forms*
- Leishmania donovani, causes Kala-Azar, smear from the infected spleen showing the typical Leishman-Donovan bodies

Pr2392t
Pr2395h
Pr2396h
Pr2397h
Pr240f
Pr2405g

- Silicie Flagellates. W.m., showing large forms *
- Silicoflagellates, various species


## Sporozoa

- Plasmodium falciparum, malignant tertian malaria of man, blood smear with typical ring stages
Plasmodium falciparum, blood smear with more gametocytes * Plasmodium falciparum, thick diagnostic smear *
Plasmodium vivax, benign tertian malaria of man, blood smear * Plasmodium vivax, thick diagnostic blood smear * Plasmodium malariae, causing quartan malaria, blood smear *
- Plasmodium berghei, blood smear from experimentally infected mouse. Very heavy infection shows abundant parasites in different stages of development
Plasmodium sp., section through infected mosquito stomach with oocysts containing sporozoites *
Plasmodium sp., section through the salivary gland of infected mosquito with sporozoites *
Plasmodium sp., exoerythrocytic stages in sec. of brain * Plasmodium sp., exoerythrocytic stages in sec. of liver *
Malaria melanemia in human spleen, sec. showing pigment granules in endothelium and Kupffer's cells
Plasmodium praecox, avian malaria, blood smear
- Plasmodium gallinaceum (Proteosoma), fowl malaria, blood smear from chicken *
Plasmodium cathemerium, avian malaria, blood smear *
Plasmodium circumflexum, smear from lung or brain of bird show- ing exoerythrocytic schizogony *



## Amoeba proteus

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
Sarcocystis tenella in heart muscle, sec.
$\begin{array}{ll}\text { Pr3392f } & \begin{array}{l}\text { Sarcocystis tenelia in heart muscle, } \\ \text { Pr3365s } \\ \text { Myxosoma, parasite on fish gill, sec. * }\end{array} \text {. }\end{array}$

## Ciliata (Infusoria)

Pr411d

Pr412e
Pr413e
Pr414e

Pr415e
Pr416f
Pr417g
Pr418e
Pr418e
Pr419f
Pr4194e
Pr4195e Paramaecium aurelia, w.m. nuclei stained. This species containing
Pr4196e Paramaecium 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
Pr 428 g 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 Paramaecium *
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

## We will gladly make special offers for any slides or sets which are not listed in

 our catalogue. Please ask for further information.MESOZOA

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

## PORIFERA -SPONGES

Po111d
Po112f
Po113d
Po114d
Po115b
Po116f
Po1165e
Po117d
Po118f
Po119d
Po1192e
Po1193d
Po1194e

Po1194e Grantia, thick t.s. with calcareous spicules in situ
Po121d - Spongilla, fresh water sponge, t.s. showing choanocytes, incurrent and excurrent channels

- Spongilla, gemmulae (winter bodies) w.m.

Spongilla, siliceous spicules isolated and w.m.

- Leucosolenia, a simple marine sponge of the ascon type, stained and w.m.
Leucosolenia, t.s. through the body
- Euspongia, a commercial sponge, macerated skeleton shows horny fibres, w.m.
Euspongia, typical t.s. through the body
Sponge spicules, strewn slide of mixed species w.m.


## COELENTERATA

- Sycon, a small marine sponge of the sycon type, t.s. through the body
- Sycon, near med. long. sec. through body and osculum

Sycon, tangential long. sec.
Sycon, thick t.s. with calcareous spicules in situ

- Sycon, spicules isolated, w.m.

Sycon, sec. showing stages of development *
Sycon, l.s. and t.s. on one slide
Grantia, a marine sponge of the sycon type, t.s. through the body
Grantia, near median long. sec. through body and osculum
Grantia, tangential long. sec
Grantia. t.s. and I.s. on one slide
Grantia, calcareous spicules, isolated and w.m.
Grantia, thick t.s. with calcareous spicules in situ

Spired

- Hydra, extended specimen carefully stained for general body study, w.m. showing all details
- Hydra with bud, w.m. *

Hydra with bud, I.s.
Hydra, t.s. through the body in different levels showing ectoderm with nematocysts, supporting lamella and entoderm

- Hydra, I.s. through body and tentacles

Hydra, median I.s. through basal disc, gastro-vascular cavity, hypostome and tentacles *
Hydra, t.s. and I.s. on one slide
Hydra with male gonad (testis), t.s.
Hydra with male gonad (testis), w.m. *
Hydra with female gonad (ovary), t.s.
Hydra with female gonad (ovary), w.m. *
Hydra, t.s. of male and female gonads on one slide
Hydra, isolated cells w.m. showing the different cell types, nematocysts Hydra with food in the digestive cavity, w.m. *
Hydra with food in the digestive cavity, t.s. through body Hydra, plain and budding, two specimens w.m.

- Obelia hydroid, colony of polyps with hydrants and gonothecae, w.m. for general study
- Obelia medusa, small jellyfish, w.m. for general study Obelia, sec. through budding medusae in different stages *
Plumularia setaceae, colony of polyps w.m.
- Tubularia larynx, colony of polyps, w.m. or I.s Tubularia larynx, actinula larva w.m. Sertularia cupressina, colony of polyps w.m.
- Campanularia johnstoni, colony of polyps w.m. Hydractinia, colony of polyps w.m. Coryne sarsi, colony of polyps showing budding and developing medusae, w.m.* Jellyfish, section through the margin of umbrella shows statocysts Aurelia, jellyfish, planula larva w.m..
Aurelia, scyphistoma w.m. *
Aurelia, scyphistoma in strobilation, I.s.
- Aurelia, ephyra w.m. *
- Actinia (Metridium), sea anemone, t.s. through entire young specimen cimen
Actinia, t.s. and I.s. on one slide
Anemonia, sea anemone, sec. through the tentacles shows nematocysts and zoochlorellae
- Alcyonium digitatum, leathery coral, t.s. of colony

Alcyonium, coral, w.m. of colony

- Lime bodies of different corals, w.m.


## PLATYHELMINTHES - FLATWORMS

## Turbellaria - Turbellarians

 at w.m. and region of gonadsPlanaria, sagittal l.s. for general structures
Planaria, median I.s. through entire specimen

## Trematodes - Flukes

Py212d
Py2121d
Py213f
Py214c
Py2142d
Py215e
Py2152d
Py216d
Py217h
Py2172i
Py2173i
Py2174i
Py219f
Py220e
Py2201e
Py2202
Py2205
Py2206e
Ру207u
Py2208u
Py2209u
Py221h
Py222h
Рy223i
Schistosoma mansoni, adult fomale w.

## careflly stamed for general study

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
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 in 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 *
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.


Trypanosoma gambiense, causing African sleeping disease, blood smear

## Cestodes - Tapeworms

Py321f - Taenia pisiformis (Taenia serrata), tapeworm of dogs, immature proglottids w.m.

- Taenia pisiformis, mature proglottids w.m.

Py322f
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. *
Taenia saginata, selected mature proglottids w.m.

- Taenia saginata, t.s. of proglottids in different stages, the standard slide for general study
- Taenia saginata, ova in faeces w.m.

Py314d
Py3145f - Cysticercus bovis, bladderworm of Taenia saginata, sec. through beef muscle with parasites in situ
Cysticercus bovis, w.m. of bladderworm *
Taenia solium, human tapeworm, proglottids t.s.
Taenia solium, scolex w.m. *
Taenia solium, ova in faeces w.m.
Cysticercus cellulosae, bladderworm of Taenia solium, section through pork muscle with parasites in situ
Cysticercus cellulosae, w.m. of complete bladderworm *
Dipylidium caninum, tapeworm of dogs and cats, immature proglottids w.m.

- Dipylidium caninum, mature proglottids w.m.

Dipylidium caninum, gravid proglottids w.m.
Py3271f
Py3272t

- Dipylidium caninum, w.m. of scolex with immature proglottids

Dipylidium caninum, composite slide with whole mounts of scolex immature, mature and gravid proglottids *
Py3275e
Py328f
Py3282t

- Dipylidium caninum, egg balls with 5 to 20 ova, w.m.
- Moniezia expansa, tapeworm of sheep, proglottids w.m.
- Moniezia expansa, scolex with immature proglottids w.m

Moniezia expansa, composite slide with whole mounts of scolex, immature, mature and gravid proglottids *
Taenia hydatigena, tapeworm of dogs and predaceous animals, proglottids t.s.
Cysticercus tenuicollis, bladderworm of T. hydatigena, sec. of scolex
Py
Py330f
Py331d

Diphyllobothrium erinacei (mansoni), dog and cat tapeworm, w.m., scolex and proglottids
Diphyllobothrium erinacei. W.m., mature proglottids

- Hymenolepis nana, dwarf tapeworm of rats, proglottids w.m.
- Hymenolepis nana, ova from faeces w.m.

Hymenolepis diminuta, w.m. of mature and gravid proglottids
Hymenolepis diminuta, ova w.m.
Hymenolepis diminuta, cysticercoid. W.m., larval stage
Hymenolepis fraterna, w.m. of entire tapeworm with scolex, immature, mature and gravid proglottids *

- Echinococcus granulosus, tapeworm of dogs, w.m. of complete tapeworm with scolex and proglottids. Selected and carefully stained specimens*
- Echinococcus granulosus, scolices from cyst, w.m.
- Echinococcus granulosus, cyst wall and scolices t.s.

Echinococcus granulosus, sterile cyst t.s.
Echinococcus granulosus, ova in faeces of dog w.m
Echinococcus multilocularis, cyst with scolices t.s. Diphyllobothrium latum, tapeworm of fishes, scolex and immature proglottids w.m. ${ }^{*}$
Diphyllobothrium latum, mature proglottids w.m.
Diphyllobothrium latum, t.s. of mature proglottids
Diphyllobothrium latum, ova w.m.

Diphyllobothrium erinacei, ova w.m.
Taenia multiceps (Multiceps serialis), dog tapeworm, sec. of bladderworm stage (Coenurus cerebralis) shows several scolices* Cysticercus fasciolarias. sec. of rat liver with cyst of Taenia taeniaeformis.


Schistosoma mansoni, male and female in copula

## NEMATHELMINTHES ROUNDWORMS

Ne111d

- Ascaris megalocephala, roundworm of horses, t.s. of adult female in region of sex organs
Ne112d Ne113d

Ascaris megalocephala, t.s. of adult male in region of sex organs Ascaris megalocephala, t.s. in region of oesophagus showing the triradiate lumen
Ne 121 f - 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.
Ne 123 f - Ascaris megalocephala embryology. Sec. of uteri showing ova with male and female pronuclei
Ne 124 f - Ascaris megalocephala embryology. Sec. of uteri showing early cleavage stages (mitosis)
Ne 125 f - 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
Ne 130 d - Ascaris lumbricoides, t.s. of adult male in region of gonads
Ne 1305 e - 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.
Ne 1312 d 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 *
Ne 1352 f Enterobius vermicularis, w.m. of adult female
Ne 136 c - 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.
Ne 1373 g - Strongyloides, filariform larvae w.m. (infective larvae) *
Ne1374g Strongyloides, sec. through host intestine with parasites
$\mathrm{Ne} 1377 \mathrm{~g} \quad$ Strongylus $\mathbf{s p}$., lung worm, infected lung, sec.
Ne1378g Strongylus sp., isolated larvae from faeces
Ne1392s - Ancylostoma caninum, dog hookworm, adult male w.m.
Ne 1393 s - 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 larvae w.m. *
Ne143h - Ancylostoma duodenale, hookworm of man, adult male w.m. *
Ne 144 h - Ancylostoma duodenale, adult female w.m. *
$\mathrm{Ne} 1445 \mathrm{k} \quad$ Ancylostoma duodenale, w.m. of adult male and female per slide *
$\mathrm{Ne} 145 \mathrm{e} \quad$ Ancylostoma duodenale, t.s. of male and female
Ne146e - Ancylostoma duodenale, ova w.m.
$\mathrm{Ne} 147 \mathrm{~h} \quad$ Ancylostoma duodenale, rhabditiform larvae w.m. *
$\mathrm{Ne} 1472 \mathrm{~h} \quad$ Ancylostoma duodenale, filariform larvae 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. *
$\mathrm{Ne} 1514 \mathrm{f} \quad$ Necator americanus, eggs w.m.
Ne1515h Necator americanus, rhabditiform larvae.w.m. *
Ne1516h Necator americanus, filariform larvae. w.m. *
Ne152f Heterakis spumosa, intestinal parasite of rat, w.m. of male or female

Ne153f
Ne163d - Trichinella spiralis, section of infected muscle with encysted larvae
Ne164e - Trichinella spiralis, w.m. of muscle piece with encysted larvae
Ne 1642 e
Ne1643f
Ne1643f
Ne 161 t
Ne 162 t
Ne165g
Ne154h
Ne155d
Ne1551f
Ne156g
Ne231f
Ne232f
Ne234f
Ne158f
Ne1585s
Ne1587k larvae
Ne1597g Microfilaria, smear from bird lung with parasites w.m. *
Ne 159 f - Onchocerca volvulus, sec. through host tissue with tumor containing larvae (filaria)
Ne1592h
N138d Onchocerca volvulus, w.m. of microfilaria from smear of tumor *

- Anguillula aceti, vinegar eels, many stages of development in one slide, w.m.
Gordius, a parasitic nematode living in insects, t.s. through the body
$\mathrm{Ne} 222 \mathrm{G} \quad$ Gordius, t.s. of infected insect showing the parasites in situ
Ne 250 d 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 *
Macracanthorhynchus hirudinaceus, ova w.m.

An118e
An119d
An120f
An121d
An127d
An128f
An130f
An122d
An1264f
An1265g
An124d
An1240d
An1241d
An1242f
An1243d
An123d
An1244f
An131c

An132e
An133c
An134c
An135e
An1352g
An136f
An1365d
An137c
An1375d
An138c
An1385d
An139e
An140e

## ANNELIDA - ANNELIDS and DIVERSE

- Nereis, marine polychaete worm, w.m. of parapodium

Nereis, t.s. of head for general study
Nereis, t.s. of head showing brain and eye

- Nereis, typical t.s. through the body for general study

Arenicola, lugworm, t.s. through the body
Sabella, a sessile marine polychaete, t.s. through the body in different levels
Magelona, marine polychaete, larva w.m.

- Tubifex, a fresh water oligochaete, w.m. of adult worm

Trochophora-Larva, w.m.
Trochophora-Larva in metamorphosis, w.m.

- Hirudo medicinalis, medicinal leech, t.s. through the body for demonstrating general structures of a leech
Hirudo medicinalis, oral sucker, t.s.
Hirudo medicinalis, anterior end with ventral sucker, l.s.
Hirudo medicinalis, anterior end l.s. showing eye
Hirudo medicinalis, posterior end with large suctorial disc, I.s.
Haemopis sanguisuga, horse leech, t.s. of the body
- Leech, small entire specimen stained and w.m. *
- 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.
Lumbricus, t.s. selected to show setae
- Lumbricus, sagittal I.s. through three or more typical segments back of clitellum
Lumbricus, region of mouth, t.s.
Lumbricus, region of the cerebral ganglia, t.s.
Lumbricus, anterior end sagittal I.s. showing the cerebral and subpharyngeal ganglia
Lumbricus, frontal I.s. through ventral nerve cord
Lumbricus, region of pharynx, t.s.
Lumbricus, region of oesophagus t.s.
Lumbricus, region of hearts t.s.
- Lumbricus, seminal vesicle t.s.

Lumbricus, seminal receptacle t.s.
Lumbricus, sperm funnels t.s.
Lumbricus, ovary with developing eggs t.s. *

## An141f

An1415d
An142d
An143c
An1435e
An1436h
An1437e
An144e
An145g
An147e
An148e
An149e
An150d
An151d
An1261d
An1262d
An125d
An1252e

Peripatus, connecting link between annelida and arthropoda, t.s. of anterior region with leg *

## ROTATORIA and BRYOZOA ROTIFERS and MOSS ANIMALS

Ro111d
Ro211e
Ro212d
Ro213e
Ro215e
Ro214e
Ro217e
Ro218e

Sagitta, arrow worm, en
Sagitta, I.s. of specimen

## ONYCHOPHORA

Lumbricus, testis t.s. *
Lumbricus, crop t.s.
Lumbricus, gizzard t.s.

- Lumbricus, clitellum t.s.

Lumbricus, section selected to show nephridiopore
Lumbricus, nephridium dissected and w.m. *
Lumbricus, showing funnel of nephridia, t.s.

- Lumbricus, anterior end including gonads, sagittal I.s.

Lumbricus, anterior end, near median sagittal I.s. with the ventral nerve cord, oesophagus etc. *
Lumbricus, 1 st -9 th segment, sagittal I.s., mouth and oesophagus Lumbricus, 9th - 16th segment, sagittal I.s., sex organs
Lumbricus, 16 th -23 rd segment, sagittal I.s., crop and gizzard
Lumbricus, blood smear
Lumbricus, sperm smear
Lineus sp., nemertine, proboscis t.s.
Lineus sp., of middle region of body t.s.

Peripatus, region of gonads t.s. *
Peripatus, region of head t.s. *
Peripatus, anterior end sagittal I.s. *
Peripatus, middle part of the body, sagittal I.s. *

- Rotatoria, rotifers, strewn slide of mixed species w.m
- Plumatella, moss animals, w.m. or section
- Plumatella, isolated statoblasts w.m.
- Flustra foliacea, a marine moss animal, section of colony

Flustrella hispida, moss animal (sea-mat), section of colony

- Membraniphora, marine moss animal (sea-mat), section of colony Bugula, moss animal, part of colony w.m. Pectinatella, moss animal, part of colony w.m.


## CRUSTACEA -CRUSTACEANS

Cr111c
Cr112c
r1123c
Cr113c
Cr114c
Cr120c
Cr119
Cr115d
r122d
Cr126
Cr128
Cr117e
Cr118e
Cr124
r116
Cr160
Cr161d
Cr168d
C169
Cr125
Cr167f
Cr163e
Cr123d
Cr150f
Daphnia, water flea, w.m.
Daphnia, ephippia, w.m.
Daphnia, w.m. showing winter and summer eggs

- Cyclops, fresh water copepods, w.m.
- Cyclops, nauplius larva w.m.
- Small crustaceans, mixed species of fresh water plankton strewn slide w.m.
Artemia salina, brine shrimp, various developing stages on each slide, w.m.
- Balanus balanoides, common barnacle, nauplius larva w.m.

Bosmina, small crustacean w.m.
Bythotrephes, a cladoceran w.m.
Caprella, an amphipod w.m.

- Carcinus maenas, crab, zoea larva w.m. *
- Carcinus maenas, megalopa larva w.m. * Cypris of Cirrepedia, cocoon stage, w.m. Gammarus, fresh water amphipod, entire specimen w.m. Shrimp, entire small specimen w.m.
- Shrimp, t.s. of small specimen for general study
- Lepas anatifera, barnacle, w.m. of catching leg

Lepidurus apus, branchipode, w.m.
Leptodora, a large cladoceran w.m. Lingula, brachiopode, t.s.
Mysis, shrimp from the Arctic ocean, w.m.
Podon and Evadne, from marine plankton w.m. statolith

- Astacus, crayfish, striated muscle I.s., ideal for the demonstration of striation showing large structures
- Astacus, gills t.s.

Astacus, stomach t.s.

- Astacus, intestine t.s.
- Astacus, liver t.s.

Astacus, green gland t.s.

- Astacus, ovary t.s. with developing eggs
- Astacus, testis t.s. with spermatogenesis Astacus, testis t.s. specially selected for demonstration of meiosis and mitosis, carefully stained *
Astacus, sperm duct t.s. Astacus, eye sagittal I.s. *


Hymenolepis nana, dwarf tapeworm of rats and mice, proglottids w.m.

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 I.s. of small specimen
$\mathrm{Cr} 165 \mathrm{~s} \quad$ Argulus foliaceus, fish louse w.m. *

## ARACHNIDA -CHELICERATES

Ar111e
Ar112b
Ar113d
Ar114d
Ar123e
Ar124e
Ar120f
Ar125d
Ar126e
Ar127e
Ar1272f Ar1273g Ar128f
Ar1281f
Ar129g
Ar130b
Ar171d
Ar172e
Ar131c
Ar132d
Ar133e
Ar134e

Ar142f
Ar154s
Ar156g

## Ar157e

Ar158f
Ar155s
Ar146g
Ar147e
Ar144g
Ar1442g
Ar159s
Ar153e

Ar180s

- Spider, entire young specimen, w.m
- Spider, leg with comb, w.m.
- Spider, spinneret w.m.

Araneus, cross spider, spinneret w.m.
Spider, mouth parts of male w.m.
Spider, mouth parts of female w.m.
Spider, epigyne of adult female w.m. *
Spider, sagittal l.s. of abdomen for general study
Spider, sagittal l.s. of abdomen showing spinneret and spinning glands

- Spider, sagittal l.s. of abdomen showing the book or trachea lung
- Spider, sagittal I.s. of abdomen with epigyne and ovary
- Spider, sagittal I.s. of abdomen showing l.s. of the dorsal vessel Spider, t.s. of cephalothorax showing the central nervous system Spider, cephalothorax with central nervous system l.s.
Salticus, spider, sec. of cephalothorax showing the telescope eyes *
Spider, portion of cobweb w.m.
Opilio sp., shepherd spider, sagittal I.s. of the body
Opilio sp., mouth parts w.m.
- Scorpion, t.s. through young specimen

Scorpion, sagittal l.s. through young specimen

- Scorpion, section selected to show the poison gland

Scorpion, section selected to show the book lung Scorpion, entire young specimen w.m. *
Amblyomma americanum, lone star tick, w.m. *
Argas persicus, fowl tick, w.m. of adult specimen * Argas, six-legged larva w.m.
Boophilus annulatus, cattle tick, the vector of Texas fever, w.m. *
Dermacentor andersoni, Rocky Mountain wood tick, the vector of spotted fever, w.m. *
Dermacentor andersoni, ova w.m. *
Dermacentor andersoni, larva w.m. *
Dermacentor variabilis, American dock tick, w.m. *

- Ixodes sp., tick, w.m. of adult specimen *
lxodes sp., larva w.m.
Ornithodorus, tick, carrier of relapsing fever, w.m. adult *
Ornithodorus, six-legged larva w.m. *
- Rhipicephalus sanguineus, brown dog tick, w.m. *
- Demodex folliculorum, section through the skin with the parasites in situ
- Dermanyssus gallinae, chicken mite, w.m. *

Hydrachna, mite of fresh water, w.m.
Photia, beetle mite, w.m.

- Sarcoptes scabiei (Acarus siro), in section of diseased skin Sarcoptes scabiei, w.m. of adult specimen *
Syringophilus, parasitic mite of poultry, w.m.
- Tyroglyphus farinae, mite from meal, w.m. Tyrolichus, cheese mite w.m.
- Varroa, parasitic mite of bees w.m.

Pseudoscorpion, w.m. of entire specimen *
Limulus, swordtail, trilobite larva w.m., the trilobite shaped larva is of interest for studies in phylogeny *


Apis mellifica, honey bee, mouth parts w.m.

## MYRIAPODA -MYRIAPODS

My111d
My112e
My115f
My117e
My118e
My119d
My211d
My212e
My213f
My218d
My220g
My221f
My225f
My230d
Scolopendra, large centipede, t.s. of body segment
Scolopendra, head with poison glands t.s.
Lithobius, head with poison fangs, w.m. *
Lithobius, centipede, segment w.m.
Lithobius, head, t.s.
Lithobius, midbody, t.s.
Julus, a millipede, t.s. through the body
Julus, diplosegment with two pairs of legs, w.m.
Julus, head with mouth parts (gnathochilarium) w.m. *
Glomeris, sagittal I.s. of entire specimen *
Diplopode, sagittal I.s. through young specimen showing the zone of proliferation (anamorphose) *
Julus, millipede, accumulation of ocelli I.s. *
Scutigera, simple compound eye of a pantopode, I.s. *
Symphyla, entire specimen w.m. *

## INSECTA - INSECTS

## I. Microscopic anatomy and histology

## Head and mouth parts, whole mounts

In111d
In112e In1123d
In121d
In1213d
In122d
In123e
In114e
In118f
In115f
In116f
In113e
In1132g
$\ln 119 \mathrm{~d}$
In1193e
In131e
In117e
In120e
In1201e
In1234d
In124f
In125f
In126e
n127e
$\ln 127 e$
In128h
In130f
In132e
In1322f
In1323e

- Musca domestica, house fly, head and mouth parts with sucking tube, w.m.
- Pieris sp., butterfly, head and mouth parts with proboscis w.m. Pieris sp., mouth parts of caterpillar (larva) w.m
Bombyx mori, silk moth, chewing mouth parts of adult w.m.
- Bombyx mori, silkworm, mouth parts of caterpillar (larva) w.m.
- Apis mellifica, honey bee, mouth parts of worker w.m.

Apis mellifica, rudimentary mouth parts of drone w.m.
Vespa vulgaris, wasp, biting mouth parts of a carnivore, w.m.

- Periplaneta or Blatta, cockroach, biting mouth parts of a herbivore, dissected and w.m.
- Carabus, beetle, mouth parts dissected and w.m. *

Melolontha, cockchafer, mouth parts dissected and w.m. Gomphocerus, grasshopper, mouth parts w.m. Gomphocerus, grasshopper, mouth parts dissected and w.m.

- Formica sp., ant, head and mouth parts w.m. Leptinotarsa, Colorado beetle, w.m. of chewing mouth parts
Curculionidae sp., weevil, head and mouth parts w.m.
- Pyrrhocoris, bug, piercing sucking mouth parts w.m. Stomoxys calcitrans, stable fly, piercing sucking mouth parts Tabanus bovinus, gadfly, piercing sucking mouth parts w.m. * Volucella, Diptera, piercing sucking mouth parts w.m.
- Anopheles, malaria mosquito, head and mouth parts of male w.m.
- Anopheles, head and mouth parts of female w.m.
- Culex pipiens, mosquito, head and mouth parts of male w.m.
- Culex pipiens, head and mouth parts of female w.m.

Culex pipiens, mouth parts of female, dissected and w.m. *
Odonata sp., dragonfly, mouth parts of larva w.m. *
Lymantria, gipsy, mouth parts of larva w.m.
Diving beetle, head of larva w.m. Extraintestinal digestion * Simulium, head of larva w.m. shows filtering mouth parts

## Head and mouth parts, sections

Carausius, sagittal I.s. of head with brain and mouth parts
Apis mellifica, honey bee, sagittal I.s. of head with brain and mouth parts
Musca domestica, house fly, mouth parts, t.s. through sucking tube
Apis mellifica, honey bee, mouth parts of worker t.s.
Pieris brassicae, butterfly. mouth parts t.s.
Culex pipiens, mosquito, mouth parts of female t.s. with mandibles, labrum, maxillae, labium, hypopharynx
Tabanus bovinus, gadfly, mouth parts t.s
Hemiptera sp., bug, mouth parts t.s.
Aphaniptera sp., flea, piercing mouth parts t.s. *

## Antennae

- Pieris, butterfly, clubbed antenna w.m.
- Carabus, ground beetle, filiform antenna w.m.
- Periplaneta or Blatta, cockroach, setaceous antenna w.m. Tenebrio molitor, meal beetle, moniliform antenna w.m.
- Bombyx mori, silk moth, feathered antenna w.m.

Chironomus, gnat, feathered antenna of male w.m. Elateridae sp., click beetle, serrate antenna w.m. *
Curculionidae sp., weevil, geniculate antenna w.m. *
Brachycera sp., fly, antenna as speed indicator w.m. *

- Melolontha, cockchafer, laminate antenna with sensory organs
- Apis mellifica, honey bee, antenna with sensory organs w.m. Musca domestica, house fly, antenna w.m.
Antennae of butterfly (clubbed) and of moth (feathered) w.m. Insect antenna types, composite slide of five kinds of antennae for comparison w.m.


## Legs

- Musca domestica, house fly, leg with pulvilli w.m.
- Pieris brassicae, butterfly, walking leg w.m.

Melolontha, cockchafer or other species, digging leg w.m.

- Apis mellifica, honey bee, anterior leg with eye brush w.m.

Apis mellifica, middle leg w.m.

- Apis mellifica, posterior leg with pollen basket w.m.

Apis mellifica, posterior leg of drone w.m.
Apis mellifica, composite slide of anterior, middle and posterior leg of worker, w.m.

- Bombyx mori, silkworm, abdominal foot of caterpillar

Gomphocerus, grasshopper, stridulary organ w.m. of leg Ensifera sp., locust or cricket, anterior leg with tympanal organ w.m.

Mantis religiosa, praying mantis, grasping leg of larva w.m. *
Diving beetle or water bug, swimming leg w.m.

## Wings

- Musca domestica, house fly, wing w.m.

Musca domestica, house fly, wing and haltere w.m.

- Apis mellifica, honey bee, anterior and posterior wings w.m.
- Culex pipiens, common mosquito, wing w.m.

Anopheles, malaria mosquito, wing w.m.
Chrysopa perla, wing of neuroptera w.m. *
Zygoptera sp., damselfly, wings w.m.
Periplaneta, cockroach, upper chitinous and lower membranous wings w.m.

Gomphocerus, grasshopper, w.m. of upper and lower wing
Forficula, earwig, w.m. of upper and lower wing
Ensifera sp., locust or cricket, wing with stridulary organ w.m. *

- Pieris brassicae, butterfly, portion of wing showing arrangement of scales w.m.
Pieris brassicae, butterfly, isolated scales w.m.
Butterfly, Brasilian species (Morpho sp.), w.m. of wing portion showing scales opaque
Lepisma, silverfish, w.m. of scales from body


## Cytology

- Spermatogenesis with meiotic and mitotic stages, sec. of testis of Carausius, grasshopper, carefully stained
- Giant chromosomes, smear from salivary gland of Chironomus, carefully fixed and stained *
Giant chromosomes in section through the salivary glands of the Chironomus larva
Striated muscles of insect, fibres isolated and stained to show the striations w.m.
- Striated muscles of insect, sections through insect thorax with t.s. and I.s. of muscle showing the striations


## Organs of metabolism

- Trachea from insect, w.m. showing tracheal rings
- Spiracle from insect (stigma), w.m.
- Tracheal gills, w.m. of Cloeon sp., May fly nymph

Tracheal gills of larva, w.m. of Odonata sp., dragonfly
Rectum of larva, respiratory organ, t.s. of Odonata sp., dragonfly
Air tubes of pupa of Culex, mosquito, w.m.
Trachea in insect intestine, specially prepared and stained with cupric sulphide to show the finest branchings *
In289e
In291f Ovary of insect showing telotrophic egg tubules, I.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)
In2914d Complete metamorphosis of insects: larva
In2915d Complete metamorphosis of insects: pupa
In2916d Complete metamorphosis of insects: imago (adult)

## Sense organs and nervous system

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

In2784f Sensory organs in the antenna of an insect, t.s. for finer detail
In279k Johnston's organ, I.s. through insect auditory organ *
In294f Luminous organ, sec. of Phausis, glowworm
In295e Stridulary organ, sec. of Cicada sp. *
In2833f Insect larva with non-centralized nervous system, sagittal I.s. *
In2834f Insect with low centralized nervous system, sagittal l.s. *

- Abdomen of worker with intestine, Apis mellifica, t.s.
- Abdomen with internal organs, t.s. of Carausius, walking stick

Abdomen, t.s. Culex pipiens
Abdomen, t.s. of Drosophila, fruit fly
Gizzard, t.s. of Carabus, ground beetle
Opened gizzard, w.m. Locusta, grasshopper

- Gizzard with chitinous teeth, w.m. of Periplaneta, cockroach Chyle and middle intestine with Malpighian tubules, I.s. of Periplaneta (Blatta)
- Rectum with ampulli, t.s. of Periplaneta

Fat body stained with osmic acid, sec. of Periplaneta, cockroach
Fat body with crystals of uric acid, sec. of Periplaneta, cockroach Appendages of chyle and Malpighian tubules, thin t.s. for finer detail

## Reproductive system

- Testis, in t.s. of abdomen of drone, Apis mellifica
- Ovary, in t.s. of abdomen of queen, Apis mellifica

Ovary, in t.s. of Melolontha, cockchafer

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

- Compound eye, t.s. through head of worker (Apis mellifica), showing the structure of the typical insect eyes and brain. Ommatidia are seen.
Compound eye, t.s. through head showing the large eyes of drone (Apis mellifica)
(Apis mellifica)
Ocelli of Apis mellifica, honey bee, w.m.
Ocelli of an insect, I.s.
Compound eye, t.s. through head of Apis mellifica, tangential section showing t.s. of ommatidia
Head with eyes and brain, t.s. of Culex pipiens, mosquito
Head with eyes and brain, t.s. of Drosophila, fruit fly
Compound eye, t.s. of Musca domestica, fly
Head and eyes, t.s. of Cloeon or Baetis, May fly
Head and eyes, t.s. of Melolontha, cockchafer
Brain, frontal I.s. of Carausius or Gryllus
Brain, frontal I.S. of Vespa vulgaris, wasp
Pars intercerebralis with neurosecretory cells specially stained, Carausius, walking stick, section of brain *
Corpora cardiaca, organs for storing neurosecretes, Carausius, section through brain *

Insect with high centralized nervous system, sagittal I.s. *

## Miscellaneous

- Sting and poison sac of honey bee, w.m.
- Wax plate of worker of Apis mellifica, w.m.
- Silk spinning glands and other organs, t.s. of caterpillar of Bombyx mori, silkworm
Forceps of male of Forficula, earwig, w.m.
- Larva of Apis mellifica, sagittal I.s.
- Pupa of Apis mellifica, sagittal I.s.

Thorax of Culex pipiens, t.s.

- Entire insect, sagittal I.s. of Drosophila, fruit fly, showing all structures for general study
Parasitical larvae of microgaster, in t.s. of infested caterpillar


## II. Whole mounts of entire insects

## Apterygota and Ephemeroidea

- Collembola, spring tail, adult w.m.
- Podura, spring tail, adult w.m.

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

- Caenis, May fly, adult w.m.

Caenis, subimago w.m.
Caenis, larva w.m.

## Diptera

- Culex pipiens, common mosquito, adult male w.m.
- Culex pipiens, adult female w.m.

Periplaneta, cockroach, wings
In323d - Culex pipiens, pupa w.m.
In324d - Culex pipiens, larva w.m.
In3242d •Culex pipiens, ova w.m.
$\ln 316 \mathrm{~g}$ - Anopheles, malaria mosquito, adult male w.m.
In 317 g - Anopheles, adult female w.m.
In318f - Anopheles, pupa w.m.
In319f - Anopheles, larva w.m.
In3192e - Anopheles, ova w.m.
$\operatorname{In} 320 \mathrm{~g} \quad$ 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.
Aedes, ova w.m.
In397e Musca domestica, house fly, larva w.m.
In398d Musca domestica, ova w.m.
In394f
In395f
In3956f
In3957f
In3294f

In3341e
In333e
In334e
In3365g
n3366g
In335g

In336g
In337e
In343e

Phlebotomus, carrier of Leishmaniosis, male mosquito w.m. *
Phlebotomus, female mosquito w.m. *
Culicoides, w.m., a small vicious biter
Gasterophilus intestinalis, horse bot fly, eggs attached to hair Lipoptena, deer ked, w.m. *

## Aphaniptera

- Ctenocephalus canis, male or female specimen w.m.

Ctenocephalus canis, dog flea, adult male w.m.
Ctenocephalus canis, adult female w.m.
Pulex irritans, human flea, adult male w.m. *
Pulex irritans, adult female w.m. *
Xenopsylla cheopis, rat flea, the carrier of bubonic plague, adult male w.m.
Xenopsylla cheopis, adult female w.m.
Nosopsyllus fasciatus, rat flea, adult w.m.
Ceratophyllus gallinulae, chicken flea, w.m. of adult

## Blattoidea and Hymenoptera

Mantis religiosa, praying mantis, larva w.m. *
Isoptera sp., termite, w.m. of worker
Isoptera sp., termite, w.m. of soldier

- Lasius, ant, worker w.m.

Lasius, winged male w.m.
Lasius, winged female w.m.
Chalcididae, w.m. of adult *

## Anoplura and Mallophaga

- Pediculus humanus, louse, adult male or female w.m. Pediculus humanus capitis, human head louse, adult w.m.
Pediculus humanus capitis, nymph w.m.
Pediculus humanus capitis, ova w.m.
Pediculus humanus corporis, human body louse, adult w.m
Pediculus humanus corporis, nymph w.m.
Pediculus humanus corporis, ova w.m.
Phthirus pubis, human crab louse, adult w.m. *
Phthirus pubis, ova w.m.
- Louse eggs attached to the hair, w.m. *
- Haematopinus suis, pig louse, adult w.m. *

Haematopinus suis, ova w.m.
Haematopinus eurysternus, cattle louse, adult w.m. *
Haematopinus piliferus, dog louse, adult w.m. *
Bovicola, cattle louse, w.m. *
Trichodectes canis, dog louse, w.m. *


Asterias rubens, starfish, arm t.s.
In3272f - Lipeurus variabilis, wing feather louse, w.m. *
In3273f
In3274f
In3276f
In381e
Menopon gallinae, bird parasit

- Menopon gallinae, bird parasite, w.m. *

Melophagus ovinus, wingless ectoparasite on sheep, w.m. *
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

Lepidoptera sp., butterfly, young caterpillar w.m.
In338d
In356d
In357d
In361g
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 I.s. through the entire specimen
Mo116e - Mya arenaria, clam, t.s. of entire young specimen
Mo117d
Mo119d
Mo120d Mya arenaria, t.s of intestine and gonads
Mo121d Mya arenaria, adductor muscle of shell, I.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 I.s.
Mo194d Anodonta, intestinal region t.s.
Mo195d Anodonta, livert.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.
Pisidium, a small fresh water mussel, section with embryos
Mo131e - Pecten, clam, eye in section of mantle margin
Mo185f Haliotis, marine snail, I.s. of a simple pinhole camera eye *
Mo187e Patella, cup-shell. simple eye, I.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, abdomen of young specimen, t.s.
Mo1301f - Alloteuthis, entire young specimen, I.s. for general study
Mo126e Alloteuthis, eye I.s.
Mo127d Alloteuthis, tentacles t.s.
Mo1275f Alloteuthis, gill heart and ink sac, I.s.
Mo128d Alloteuthis, fin t.s.
Mo129d Alloteuthis, tail t.s.

Mo141c

- Sepia officinalis, cuttlefish, skin with chromatophores, w.m. of piece Sepia officinalis, skin with chromatophores, horizontal section Sepia officinalis, sec. through the ganglion showing giant nerve fibres
- Octopus, cuttlefish, section through sucking tube
- Snail, typical t.s. of small specimen for general study Snail, typical I.s. of small specimen for general study
- Snail, sagittal I.s. through the head showing the radula in situ Snail, radula w.m.
- Helix pomatia, snail, foot sagittal I.s.

Helix pomatia, mantle margin sagittal I.s.
Helix pomatia, oesophagus t.s.

- Helix pomatia, stomach and glands t.s.

Helix pomatia, intestine t.s.

- Helix pomatia, liver t.s.

Helix pomatia, albumen gland t.s.

- Helix pomatia, hermaphrodite gland (ovotestis), with ova and spermatozoa, t.s.
Helix pomatia, spermoviduct t.s. Helix pomatia, crystalline style and glands, t.s.
Helix pomatia, penis t.s.
Helix pomatia, flagellum t.s.
- Helix pomatia, kidney and heart during the summer, t.s.

Helix pomatia, kidney and heart during the winter, t.s.

- Helix pomatia, lung t.s.
- Helix pomatia, eye l.s.


## ECHINODERMATA - ECHINODERMS

Ec111f
Ec113d
Ec114e
Ec115e
Ec117d
Ec251d
Ec252d
Ec254e
Ec116e
Ec1162f
Ec101h
Ec102e
Ec103e
Ec131d
Ec132d
Ec133d
Ec137f
Ec118d
Ec1183d
Ec1184d
Ec1186f
Ec121e
Ec141d
Ec145e
Ec147f
Ec201d
Ec202d
Ec203d
Ec204d
Ec205d
Ec206d
Ec207d
Ec208d
Ec209d
Ec210d
Ec211d
Ec212d
Ec213e
Ec255e
Ec256e
Ec257e
Ec258e
Ec259e
Ec260e
Ec261e
Ec263e
Ec264e
Ec267e
Ec268e
Ec271f
Ec272f
Ec276s
Ec278s

- Asterias, starfish, young entire specimen w.m. *
- Asterias, arm t.s., digestive gland and tube feet are shown for general study of all details
Asterias, horizontal I.s. of entire young specimen
Asterias, sagittal I.s. of entire young specimen
- Asterias, pedicellaria w.m.

Starfish embryology (Asterias), ovary t.s. showing large ova in different developing stages
Starfish embryology, testis t.s. with developing sperm
Starfish embryology, sperm smear w.m.

- Asterias, bipinnaria larva w.m. *

Asterias, brachiolaria larva w.m. *
Asterina gibbosa, small starfish, entire specimen carefully stained and w.m. for general study
Asterina gibbosa, stages of development w.m.
Asterina gibbosa, horizontal I.s. of small specimen showing gonads Ophiura, serpent star, arm t.s.
Ophiura, base of arm showing bursa and gonads, t.s.
Ophiura, horizontal l.s. of disc
Ophiura, ophiopluteus larva w.m. *

- Echinus, sea urchin, sagittal I.s. of entire young specimen

Echinus, sea urchin, radial sec. of entire young specimen
Echinus, pedicellaria, w.m.
Echinus, sea urchin, t.s. of spine, ground thin *
Asterioidea sp., larva in metamorphosis w.m. *
Cucumaria, sea cucumber, t.s. of small specimen showing the typical structures
Holothurioidea sp., microsclerites w.m.
Holothurioidea sp., larva w.m. *

- Sea urchin embryology (Psammechinus miliaris), unfertilized ova w.m.
- Sea urchin embryology, fertilized ova w.m.
- Sea urchin embryology, two cell stage w.m.
- Sea urchin embryology, four cell stage w.m.
- Sea urchin embryology, eight cell stage w.m.
- Sea urchin embryology, sixteen cell stage w.m.
- Sea urchin embryology, thirty two cell stage w.m.
- Sea urchin embryology, morula w.m.
- Sea urchin embryology, blastula w.m.
- Sea urchin embryology, beginning gastrulation w.m.
- Sea urchin embryology, progressive gastrulation w.m.
- Sea urchin embryology, pluteus larva w.m.

Sea urchin embryology, strewn slide of various stages w.m.
Starfish embryology, germinal vesicle stage w.m.
Starfish embryology, unfertilized ova w.m.
Starfish embryology, fertilized ova w.m., zygote with polar bodies
Starfish embryology, two cell stage w.m.
Starfish embryology, four cell stage w.m.
Starfish embryology, eight cell stage w.m.
Starfish embryology, sixteen cell stage w.m.
Starfish embryology, thirty-two cell stage w.m.
Starfish embryology, sixty-four cell stage or morula, w.m.
Starfish embryology, early and late blastula w.m.
Starfish embryology, early and late gastrula w.m.
Starfish embryology, early bipinnaria larva w.m.
Starfish embryology, late bipinnaria larva w.m.
Starfish embryology, brachiolaria larva w.m.
Starfish embryology, young starfish w.m.

## 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. *

|  | TUNICATA - ASCIDIANS |
| :---: | :---: |
| Tu105g | Ascidia, sea squirt, swimming tadpole w.m. * |
| Tu106g | Ascidia, sea squirt, early metamorphosis w.m. * |
| Tu107g | Ascidia, sea squirt, 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, I.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 I.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. |
|  | 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
Ac110d
Ac111d - Branchiostoma, region of intestine 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 I.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. *
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 smal specimen w.m. *
Pi1274f Ammocoetes, region of head t.s.
Pi1275f Ammocoetes, region of pharynx t.s.
Pi275f 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 I.s. *
Pi1252f Petromyzon, chorda I.s.
Pi1253f Petromyzon, chordat.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.


Branchiostoma, Amphioxus, t.s. of body
Pi111f - Scyllium, dogfish, t.s. in region of thorax and gills of entire young specimen

- Scyllium, dogfish, t.s. in region of abdomen, with spiral intestine and liver
Scyllium, t.s. of fin
Scyllium, t.s. in region of tail
- Scyllium, skin with placoid scales, vertical l.s.

Scyllium, skin with placoid scales, w.m.
Scyllium, yaw with developing tooth t.s.
Scyllium, brain l.s.
Scyllium, olfactory epithelium, t.s.
Scyllium, lateral line organ t.s.
Scyllium, cartilage t.s.

- Scyllium, vertebral column with spinal cord and notochord, t.s.

Scyllium, heart sagittal l.s. *
Scyllium, brain sagittal I.s. *
Torpedo marmorata, electric ray, t.s. of electric organ

## Teleostei - Bony fishes

Fresh water fish (small specimen), entire sagittal I.s.
Fresh water fish, mouth region t.s.

- Fresh water fish, head and eyes t.s.
- Fresh water fish, head with brain sagittal I.s
- Fresh water fish, region of gills t.s.
- Fresh water fish, region of heart t.s.

Fresh water fish, abdominal region showing kidney, liver and intestine t.s.

- Fresh water fish, region of gonads t.s.

Fresh water fish, region of tail t.s.
Fresh water fish, horizontal I.s. through head and gills
Fresh water fish, retina adapted to darkness, t.s. of head
Fresh water fish, retina adapted to brightness, t.s. of head
Fresh water fish, sec. of eye showing horizontal section of the retina
Fresh water fish, heart sagittal I.s.

- Cyprinus, gills t.s.

Cyprinus, heart I.s.

- Cyprinus, blood smear

Cyprinus, pronephros (head kidney) t.s.

- Cyprinus, stomach t.s.
- Cyprinus, small intestine t.s.

Cyprinus, carp, liver t.s.
Cyprinus, pancreas t.s.
Cyprinus, air bladder t.s.
Cyprinus, kidney t.s.

- Cyprinus, ovary t.s.
- Cyprinus, testis t.s.

Cyprinus, brain t.s.

- Cyprinus, skin vertical I.s.
- Cyprinus, barb (tactile organ) t.s.

Cyprinus, t.s. of lateral line organ. The organ of balance *
Trutta, trout, heart l.s.
Trutta, gills t.s.
Trutta, kidney t.s.
Trutta, testis t.s.
Trutta, brain I.s., routine stained
Trutta, brain I.s., silvered
Trutta, brain, t.s. of 3 regions (Bulbi olfactorii, Tectum opticum, Cerebellum)
Trutta, vertebral column and spinal cord, t.s.
Gasterosteus, stickleback, gills w.m.
Gasterosteus, eye, radial I.s.
Gadus, codfish, brain t.s.
Pleuronectes, flounder, skin with chromatophores w.m.
Syngnathus or Hippocampus, sea horse, t.s. showing the aglomerulous kidney
Fish, t.s. of jaw showing teeth
Lebistes, fish, organ of equilibration with macula t.s.
Anguilla vulgaris, eel, young specimen t.s.

- Cycloid scales w.m.


Scyllium, dogfish, t.s. in region of thorax and gills of entire young specimen
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.

## 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 I.s.
Am121e - Salamandra larva, serial sections from selected material to show - Salamandra larva, serial sections from sele

Salamandra larva, head with eyes t.s.
Am11e
Am112d
Am113d
Am114d
Am115c
Am141d
Am146e
Am131d
Am132c
Am133c
Am142c
Am143c
Am144c
Am145d
Am147d
Am148d
Am151e
Am152e
Am153e
Am201d - Rana, frog, epidermis flat mount for squamous epithelium w.m.
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, I.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
Am211d
Am212 Rana, leg t.s. shows artery, vein, bone, nerve etc

- 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 I.s., showing I.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 I.s.

Am216c Am217c Am218c
Am219c
Am220c
Am221c
Am222c
Am223c
Am224e
Am225c
Am2252c
Am226c
Am235d
Am227d
Am228c
Am229d
Am2292d
Am2295d
Am230c - Rana, anterior part of brain
Am2305e Rana,
Am231f Rana, t.s. of brain in three different regions
Rana, complete brain sagittal I.s.
Rana, complete brain sagittal I.s., silver stained
Am232d - Rana. spinal cord t.s., with white and grey matter
Am233d • Rana, posterior part of eyeball with retina, sagittal I.s.
Am2331g Rana, entire eyeball sagittal l.s. for general structures *
Am234c - Rana, skin with skin glands, vertical I.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, I.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
Re122d
Re151c
Re153c
Re154c
Re152c
Re158c
Re155d
Re157h
Re156h
Re161d
Re240f
Re211c
Re212d
Re213c
Re214c
Re215c
Re216c
Re217c
Re2173d
Re218d
Re219d
Re220d
Re221d
Re231d
Re235f
Re237h
Re236e
Re251c
Re252c
Re254c
Re256c
Re258c
Re259c
Re260c
Re262c
Re264d
Re266d
Re267d
Re268d
Re270c
Re272c

Ophidia sp., snake, skin with scales flat mount w.m
Ophidia sp., snake, skin with scales vertical I.s.
Tropidonotus, snake, striated muscles I.s.
Tropidonotus, trachea t.s.
Tropidonotus, lung t.s.
Tropidonotus, intestine and testis, t.s.
Tropidonotus, uterus t.s.
Tropidonotus, brain t.s.
Tropidonotus, motor nerve endings (end plates) in striated muscle of snake, w.m.
Tropidonotus, Jacobson's organ (vomeronasal organ), head of snake, t.s. *

Anguis, slow-worm, t.s. of embryo and placenta
Tarentola, gecko, l.s. of toe adapted for climbing

- Lacerta, lizard, blood smear

Lacerta, trachea t.s.

- Lacerta, lung t.s.

Lacerta, kidney t.s.
Lacerta, testis t.s. showing spermatogenesis

- Lacerta, intestine t.s.

Lacerta, liver t.s.
Lacerta, heart l.s.
Lacerta, ovary t.s.
Lacerta, adrenal gland t.s.
Lacerta, t.s. of jaw showing changing of teeth
Lacerta, brain t.s.

- Lacerta, skin with scales vertical I.s.

Lacerta, small specimen, sagittal I.s. of the head
Lacerta, small specimen, sagittal I.s. of the head showing the parietal or pineal eye *
Lacerta, small specimen, t.s. of the head
Testudo, turtle, blood smear
Testudo, heart t.s.
Testudo, lung t.s.
Testudo, oesophagus t.s.
Testudo, stomach t.s.
Testudo, small intestine t.s.
Testudo, large intestine t.s.
Testudo, liver t.s.
Testudo, thyroid gland t.s.
Testudo, ovary t.s.
Testudo, oviduct t.s.
Testudo, testis t.s.
Testudo, urinary bladder t.s.
Testudo, striated (skeletal) muscle t.s.

## AVES-BIRDS

Av132b Av131b
Av165b
Av133b
Av134c
Av1345d

- Gallus, down feather w.m

Humming bird, down feather w.m.

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
Av111c
Av118
Av112c
Av1123c
Av128
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.
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.
Av1245c - Gallus, cerebellum, t.s. routine stained
Av1247f Gallus, cerebellum, t.s. silvered
Av139d Gallus, anterior part of eye with eyelid and nictitating membrane sagittall.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 I.s.
Av126d - Gallus, unfeathered skin of foot, vertical I.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.

## HISTOLOGY OF MAMMALIA

## Cytology

- 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 eye
Ma112c - Stratified, non-cornified squamous epithelium, in section through buccal gum
Ma1121c Stratified, non-cornified squamous epithelium, in section through vagina of rabbit


Hyaline cartilage, t.s.
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 I.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 muci-carmine
Ma1203e Mucous glands from human intestine, colouring of goblet cells, PASHE
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, I.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
$\begin{array}{lc}\text { Ma124d } & \text { Yellow elastic fibrous tissue, I.s. of Ligamentum nuchae } \\ \text { Ma1242e }\end{array}$
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


Cornea of mammal, t.s

Ma1278d


Nerve cells, stained for Nissl bodies

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.
Ma 130 c - 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, I.s. specially prepared to show the cells and canaliculi
Ma1365d - Cancellous (spongy) bone, t.s.
Ma1367f Compact bone, human, ground thin and mounted *
Ma137e Compact bone and hyaline cartilage t.s., two sections on one slide
Ma138e - Bone development, intracartilaginous ossification in foetal finger or toe, I.s.
Ma139e - Bone development, intermembranous ossification in foetal head (cranial bone), vertical I.s.
Ma140d - Yellow bone marrow t.s.
Ma141e Joint of finger or toe, sagittal I.s.
Ma142e Foetal knee joint, l.s. showing ossification of tendons *

## Muscle tissues

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

## Circulatory system

Ma171d
Ma172d
Ma1725f
Ma173d
Ma174d
Ma182e
Ma175d
Ma1752d
Ma1753e
Ma176d
Ma1762d
Ma178e
Ma179f
Ma180d
Ma181f
Ma190c
Ma1902c
Human blood smear, Wright's stain
Ma195c Rabbit blood smear, Giemsa stain
Heart of mouse, $t \mathrm{~s}$. vessels
blood smear, Giemsa

Ma196c Ma1963c
Ma1965c
Ma197c Ma1973c

Ma211e
Ma212e
Ma213e
Ma214d
Ma215d
Ma 2155 e
Ma216c
Ma217d
Ma218e
Ma2183f
Ma220d
Ma2185c
Ma219d
Ma222d
Ma225e
Ma226h

Ma231c
Ma232f
Ma2323c
Ma2325g
Ma233e
Ma234c
Ma235f
Ma2353c
Ma236d
Ma237d
Ma2375f
Ma238f
Ma239d
Ma240d

Ma252d
Ma2523d
Ma2525e
Ma270f
Ma271f
Ma262f
Ma263f
Ma274f
Ma253d
Ma2534f
Ma2535d
Ma254f - Islets of Langerhans in t.s. of pancreas from cat, specially stained for cellular detail
Ma2543d

Ma257e
Ma2572d
Ma2574d

Ma310c
Ma311d
Ma312d
Ma313f
Ma314e
Ma3142e
Ma315e
Ma316e
Ma317e
Ma321c
Ma322c
Ma323d
Ma326c
Ma327c
M 331 c
Ma3315c
Ma3316c
Ma3318e Oesophagus - stomach junction of cat, I.s.
Ma333d - Stomach of cat, cardiac region t.s.
Ma334d - Stomach of cat, fundic region t.s.
Ma335d - Stomach of cat, pyloric region t.s.
Cat blood smear, Giemsa stain
Camel blood smear, elliptical erythrocytes
Rat blood smear, Giemsa stain

- Frog blood smear, nucleated erythrocytes

Amphiuma blood smear, very large erythrocytes

## Respiratory system

- Nasal region of small mammal (mouse or rat), t.s. showing respiratory and olfactory epithelium, bone etc.
Larynx of mouse, sagittal l.s.
Larynx of mouse, frontal I.s.
Trachea of cat or rabbit, t.s. with ciliated epithelium, cartilage etc.
- Trachea of cat or rabbit, I.s.

Bronchus of cat or dog, t.s.

- Lung of cat, t.s. routine stained for all details

Lung of cat, t.s. stained for elastic fibres
Lung of cat, t.s. silver stained
Lung of cat, sec. showing injected blood vessels
Lung of cat, thick section showing arrangement of alveoli Lung of rat, t.s.
Lung from human fetus, t.s. shows developing tissues
Trachea and oesophagus of rabbit, t.s.

- Lung cancer, human, carcinoma, sec.

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

## Lymphatic system

- Lymph node of pig, t.s. routine stained Lymph node of pig, t.s. shows reticular tissue only (cells removed) *
Lymph node of cat, t.s. routine stained
Lymphatic vessel, w.m. from mesentery, with valve *
- Tonsil, human, t.s.
- Spleen of rabbit, t.s. showing capsula, pulp etc. Spleen of rabbit, t.s. injected to show the blood vessels Spleen of guinea pig, t.s.
- Red bone marrow of cow, thin sec.

Red bone marrow of cow, smear specially stained
Red bone marrow, smear with normoblasts *
Thymus from human child, t.s. with Hassall bodies

- Thymus of young cat, t.s. with Hassall bodies

Thymus gland of cow, sec.

## Endocrine glands

- Thyroid gland of cow, sec. showing colloid Thyroid gland of cat, sec.
Trachea with thyroid gland of rat, t.s.
Thyroid gland, sec. showing insufficiency of the gland Thyroid gland, sec. showing over-activity of the gland Parathyroid gland of pig, t.s.
Parathyroid and thyroid gland of mammal, t.s.
Carotid body of pig, sec.
- Adrenal gland (GI. suprarenalis) of rabbit, t.s. through cortex and medulla
Adrenal gland of rabbit, t.s. silver stained to show nerve fibres in the medulla

Pancreas with islets of Langerhans of cat, sec.

- Pituitary gland (hypophysis), sag. I.s. of complete organ from cow or pig showing adeno- and neurohypophysis
Pituitary gland, t.s. of infundibulum specially stained to show neurosecretes*
Pituitary gland, thin t.s. of glandular portion stained for fine cellular detail
- Pineal body (Epiphysis) of cow or pig, t.s.

Pineal body (Epiphysis) of sheep, t.s.
Leydig's cells in testis of mouse, t.s.

## Digestive system

- Lip of mouse, sagittal I.s.
- Tooth human, t.s. of crown

Tooth human, t.s. of root
Tooth human, entire I.s.
Gum with root of tooth from guinea pig, sagittal I.s.
Gum with root of tooth from guinea pig, t.s.

- Tooth development, early stage I.s.
- Tooth development, medium stage l.s.
- Tooth development, later stage I.s.

Tongue of mouse, entire sagittal I.s.
Tongue of mouse, t.s.

- Tongue of cat, papilla with thick cornified layer, I.s.
- Soft palate of rabbit, t.s.

Hard palate of rabbit, t.s.

- Oesophagus of cat or dog, t.s.

Oesophagus of cat or dog, I.s.

Pinna of the ear of rabbit, sec. injected to show anastomosis of blood

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
Ma3368d Stomach of pig, cardia t.s.
Ma3365e Stomach - duodenum junction of cat, I.s.
Ma337c
23371d
Ma3371d
Ma3373e
Ma338c
Ma3383e
Ма339c
Ma3393e
Ma3395s
Ma343f
Ma340d
Ma3403c
Ma3405d
Ma341d
Ma342d
Ma344c
Ma345c
Ma346d

Ma3463c
Ma3465e
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, sec. showing injected vessels
Ma3564f Liver of dog, sec. 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
Kidney of mouse, t.s. through the complete organ

- 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
Ma433g
Ma4332f
Ma434d
Ma4341d
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, I.s.
Ma437d • Uterus of pig or rabbit, resting stage, t.s.
Ma438d Uterus of pig or rabbit, pregnant stage, t.s.


Ovary of cat, t.s. showing Graafian follicle
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 I.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
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
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 I.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, t.s. 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, I.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
Ma543d
Ma541e
Ma540f
Ma544c
Ma545c

- Sympathetic ganglion of cow or pig, t.s. with multipolar nerve cells Spinal ganglion of cow, t.s.
Ganglion semilunare (G. Gasseri), t.s. shows unipolar nerve cells *
Ganglion of cat, t.s. stained with osmic acid
- Peripheral nerve of cow or pig, l.s. routine stained
- Peripheral nerve of cow or pig, t.s. routine stained


Taste buds in t.s. of Papilla foliata of rabbit tongue
Ma5453d Peripheral nerve of cat, I.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, I.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 t.s. 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 I.s.
Ma602e - Eye of cat, anterior part with iris, ciliary body, cornea, sagittal I.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 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, sec. with entrance of optic nerve
Ma605d Retina of pig, thin sec. special stain for details of rods and cones
Ma606f Retina of pig, sec. with 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 I.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, I.s. or t.s.

## Integument (Skin)

Ma632d - Human skin from palm, vertical sec. showing cornified layers, sweat glands, etc.
Ma633d $\begin{aligned} & \text { Human skin from palm, horizontal sec. } \\ & \text { Ma6334d }\end{aligned}$ 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 I.s. showing I.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 I.s. of nail development
Ma6382e Finger tip from human foetus, t.s. of nail development
Ma639f Foot of calf embryo, sagittal I.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 Ma642d Ma6427e Ma6422f
Ma644d
Ma643f
Ma6443d

Ma704i
Ma 705 g
Ma706g
Ma708f
Ma709f
Ma710f
Ma712e
Ma713e
Ma714d

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, I.s.

## General view of mammalian histology

Ma703g - Young mouse, sagittal l.s. through entire specimen passing the vertebral column
Young mouse, median sagittal I.s. through entire specimen
Young mouse, parasagittal I.s. through entire specimen
Skin of pig, vertical sec.
Skin of pig, horizontal sec.
Corium of pig, horizontal sec. stained for elastic fibres
Skin of pig embryo, t.s. showing injected vessels
Skin of dog, vertical sec. routine stained for comparison
Skin of dog, vertical sec. injected to show the blood vessels
Skin of guinea pig, vertical sec.

- Young mouse, horizontal (frontal) l.s. through entire specimen Young mouse, t.s. of head in region before the eyes, with nasal region, tooth development, sinus hairs etc.
- Young mouse, t.s. of head passing the eyes

Young mouse, t.s. of head in region back to the eyes with brain

- Young mouse, t.s. of thorax with heart, lungs, etc.
- Young mouse, t.s. of abdomen with intestinal organs

Young mouse, t.s. of leg

## HUMAN HISTOLOGY

## Epithelia and Cytology

Ho111c Ho1124e

Ho1127d
Ho114e
Ho1143e
Ho116e
H01163e - 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, salivary gland, human, sec.
Ho1215e Mucous glands from human intestine, colouring of goblet cells, PASHE
Ho1204e Mesothelium, sec. of human mesentery
Ho1205g • Golgi apparatus, sec. 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
Ho123f
Ho126d
Ho127e
Ho128e
Ho1282e
Ho1292e
Ho1293e
Ho1295e
Ho130e
Ho1305e
Ho133e Ho131e Ho1312e Ho132f
Ho1322f
Ho135e
Ho136e
Ho1365e

- Areolar connective tissue, human w.m.

Reticular fibres, human spleen, t.s. silvered

- Embryonic connective tissue from human foetus, sec.
- Mucous tissue, t.s. of umbilical cord (navel string) from foetus
- Adipose tissue, human, sec. fat removed to show the cells

Adipose tissue, human, sec. stained for fat

- White fibrous tissue, tendon, human, l.s.

White fibrous tissue, tendon, human, t.s.
Peritoneum, human, t.s.

- Hyaline cartilage, human t.s.

Hyaline cartilage, from human foetus, sec.
Sternal cartilage, human sec.

- Yellow elastic cartilage, human, sec. stained for elastic fibres

Yellow elastic cartilage, from human foetus sec.

- White fibrous cartilage, human sec.

White fibrous cartilage, human intervertebral disc, sec.

- Compact bone, humant.s.

Compact bone, human I.s.

- Spongy (cancellous) bone, human t.s.

Ho1368h
Ho138e
Ho139e
Bone human, ground thin, c.s. and l.s. mounted in balsam

Ho141e
Bone development (intermembranous), vertical l.s. of foetal skullcap (cranial bone)
Joint of human foetus, l.s

## Muscle tissues

Ho151e Ho1512f
Ho152e
Striated (skeletal) muscle, human l.s
Striated (skeletal) muscle, isolated fibres, gold impregnation
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 I.s.
Ho165g Muscle types, composite slides with l.s. of striated, smooth and heart muscles

## Circulatory system

Ho171e
Ho172e
Ho1726e
Ho170e
Ho173e
Ho174e
Ho1743e
Ho175e
Ho1751e
Ho176e
Ho1762e
Ho1765e
Ho180c
Ho1802c
Artery, human, t.s. routine stained

- Artery, human, t.s. stained for elastic fibres

Coronary artery, human t.s.
Artery with valve, human I.s. *
Vein, human, t.s. routine stained

- Vein, human, t.s. stained for elastic fibres Vena cava, human t.s.
Artery and vein of smaller size, human t.s. routine stained
Aorta, human, t.s. routine stained
- Aorta, human, t.s. stained for elastic fibras

Aortic valve, human or sheep, t.s. *

- Blood smear, human, Giemsa stain

Blood smear, human, Wright's stain

## Respiratory system

Ho214f
Ho215f
Ho2152e
Ho2153f Trachea from human fetus t.s
Larynx, human foetus, t.s.
Epiglottis, human sec.
Ho2134f
Ho220e
Ho216e
Ho217e
Ho2183f
Ho219e
Vocal cord, human t.s.
Bronchus of lung, human, t.s.

- Lung, human, sec. routine stained

Lung, human, sec. stained for elastic fibres Lung, human, sec. showing injected vessels Lung from human foetus, sec.

## Lymphatic system

Ho231e
Ho232e
0233
Ho234e
Ho2352e
Ho236e
Ho2363
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
Ho239f

- Thymus from human child, t.s.

Thymus from human adult, t.s.

## Endocrine glands

Ho252e
Ho2523f
H0253f

- Adrenal gland (GI. suprarenalis), human t

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
Ho3102e

Ho313f Tooth, human, t.s. of root
Tooth, human, complete I.s.
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.


Bone development (intracartilaginous), l.s. of foetal finger
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, humant.s.
Ho339e lleum, humant.s.
Ho340e Small intestine from human foetus, t.s.
Ho341e - Vermiform appendix, human t.s.
Ho345e - Colon, human t.s.
Rectum, human t.s.
Ho3472f Rectum-anus junction, human l.s.
Ho351e - Parotid gland (GI. parotis), human t.s.
Ho352e - Submaxillary gland (GI. submandibularis), human t.s.
Ho353e - Sublingual gland (GI. 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, humant.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

Ovary, human foetus, t.s. *
Ho428f
Ho429f
Ho430f
Ho434f
Ho4343f
Ho435e
Ho4352e
Ho4365f
Ho4368e
Ho437f
Ho438f
Ho439f
Ho4395f
Ho4397f
Ho440e
Ho4402f
$\mathrm{Ho4404e}$ - Umerta, mplantation site, human t.s.
Ho445h
Ho450e
Ho460f
Ho461f
Ho4628e
Ho463e
Ho464e
Ho466e Ho467e
Ho4678e
Ho468e
Ho469g

- Ovary, mature (active phase), human t.s.

Ovary, senile (inactive phase), human t.s.

- Ovary with corpus luteum, human t.s.

Ovary with corpus albicans, human t.s.

- Oviduct (fallopian tube), t.s. in region of ampulla

Oviduct (fallopian tube), t.s. in region of fimbria
Uterus, human foetus, t.s.

- Uterus, human, t.s. for general structure

Uterus, human, proliferative stage t.s.
Uterus, human, secretory stage t.s.
Uterus, human, desquamative stage t.s.
Uterus, human, pregnant (gravid), t.s.
Cervix uteri, human I.s.

- Placenta, human t.s.

Placenta, implantation site, human t.s.
Human foetus, I.s

- Vagina, human t.s.

Testis from human child, t.s.

- Testis from human adult, mature stage t.s.

Efferent tubules of testis, human t.s.
Epididymis, human t.s.

- Sperm smear, human
- Spermatic cord (Ductus deferens), human t.s.

Spermatic cord (Ampulla ductus deferens), human t.s.

- Seminal vesicle (GI. vesiculosa), human t.s.

Prostate of young man, t.s.

- Prostate of old man, t.s.

Penis from human foetus, t.s. *


Testis t.s. showing spermatogenesis

## Nervous system

Ho511e
Ho512g
Ho518g
Ho5125e
Ho5126g
Ho514e
Ho515g
Ho5155e
Ho5156g
Ho5158f
Ho516g
Ho5163g
Ho517g
Ho5368f
Ho5232f
Ho5233f
Ho5235f
Ho5236g
Ho5238f
Ho5239f
Ho525f Ho5251f Ho5252t
Ho5254f
Ho530e
Ho534g
Ho535e
Ho531e
Ho5315f
Ho532e
Ho5325f
Ho533e
Ho5335f
Ho5365f Ho5366g
Ho542f
Ho5423g
Sympathetic ganglion, human t.s. silvered
Ho5432g Spinal ganglion, human t.s. silvered
Ho544e
Ho545e
Ho5453f
Ho549e

- Peripheral nerve, human t.s.

Peripheral nerve, human I.s.
Peripheral nerve, human t.s. and l.s.

- Optic nerve, human t.s.


## Organs of sense

Ho605f
Ho607e
Ho61Of
Ho612f
Ho6103g
Ho5572t
Ho5573f Ho5574t

- Retina from eye, human t.s. *
- Cornea from eye, human t.s.

Wallate papillae with taste buds, human t.s. *

- Olfactory epithelium, human t.s

Internal ear, human foetus, t.s. *
Nerves and nerve endings in sec. of skin from palm, silvered *

- Touch corpuscles in human skin, t.s. routine stained

Touch corpuscles in human skin, t.s. silvered *

## Integument (Skin)

Ho632e
Ho633e
Ho6334d
d
H06336
Ho634e Skin from armpit with apocrine glands, vertical l.s.
Ho635d - Scalp, vertical l.s. shows I.s. of hair follicles, human
Ho636d - Scalp, horizontal l.s. shows t.s. of hair follicles, human
Ho637e Scalp of human foetus, vertical I.s. shows l.s. of hairs
Ho638e • Finger tip of human foetus, sagittal I.s. showing nail development

Ho639f
Ho640e
Ho645e
Ho646e
Ho648e

Finger nail l.s
Eyelid, human, t.s.

- Mammary gland, active, human t.s. Mammary gland, resting, human t.s.
Mammary gland, senile, human t.s.

HUMAN PATHOLOGY

Pa4101e Pa4102e Pa4152e Pa4103e 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 *

Pa4112e
Pa4115e
Pa4123e
Pa4113g
Pa4111e
Pa4117e
Pa4124e
Pa4121e
Pa4126e
Pa4120e
Pa4167e
Pa4122
Pa4162g
Pa4163g

Pa4114e
Pa4116e
Pa4118e
Pa4119e
Pa4160e

Pa4129e
Pa4165e
Pa4164e
Pa4125e
Pa4127e
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

Pa4147e
Pa4155e
Pa4154
Pa4137e
Pa4184e
Pa4185f
Pa4160
Pa4132
Pa4138

Pa4130e
Pa4172e
Pa4133e
Pa4148e
Pa4143
Pa4203
Pa4134e
Pa4141e
Pa4144
Hemorrhagic necrosis of liver (eclampsia)
Hemosiderosis of liver
Pa4146e Icterus hepatis
Pa4149e Cavernous hemangioma of liver
Pa4173e Liver carcinoma

## Pa4140e

Pa4136e
Pa4174e
Pa4201e
Pa4145e
Pa4191e
Pa4202e
Pa4150f
Pa4131g
Pa4139f

Pa4213e
Pa4215e
Pa4207e
Pa4218e
Pa4216e
Pa4217e
Pa4206e
Pa4210e
Pa4205e
Pa4219e
Pa4221e
Pa4175g
Pa4181e

Pa4224e
Pa4211e
Pa4220e
Pa4222e
Pa4169e
Pa4204e
Pa4226e
Pa4209e
Pa4212e
Pa4188e
P4214f
Undescended testicle with hyperplasia of Leydig's cells
Testis, icterus (jaundice)
Pa4223e Sarcoma of testicle
Pa4208f
Pa4189f
Pa4225e
Pa4190e

Pa4227e
Pa4228e
Pa4161f

Pa4231e
Pa4230e
Pa4229e
Pa4248e
Pa4244e
Pa4242e
Pa4241e
Pa4239e
Pa4240e
Pa4245e
Pa4235e
Pa4238e
Pa4156e
Pa4233e
Pa4236f
Pa4243e
Pa4249g
Pa4246e
Carcinoma of liver, primary
Metastasis of liver
Peritoneal metastasis of hepatoma
Liver metastasis from a melanosarcoma recti
Lymphatic leukemia of liver
Inflammation of gall bladder,
Malignant tumor of gall bladder
Congenital syphilis of liver (feuerstein liver) *
Congenital syphilis of liver, silvered for spirochaetes * Cirrhosis hepatis luetica *

## Kidney and urinary organs

Tuberculosis of kidney
Parenchymatous degeneration of kidney
Amyloid degeneration of kidney
Glycogenosis of kidney
Acute nephritis
Acute hemorrhagic nephritis (bleeding of kidney)
Chronic glomerulonephritis
Septic embolic nephritis
Cardiac kidney (icterus, jaundice)
Glomerularatrophy of kidney (cirrhosis)
Hypernephroma of kidney
Syphilis of kidney
Papilloma of urinary bladder

## Reproductive organs

Cyst of ovary
Cystadenoma papilliferum of ovary
Adenoma of ovary
Malignant ovarian tumor
Teratoma of ovary
Myoma of uterus
Fibromyoma uteri
Carcinoma cervicis uteri
Papilloma of uterine fundus
Atrophy of testis

Gumma of testicle
Inhibition of spermatogenesis, testis (subject to hormone disorder) *
Hypertrophy of the prostate
Carcinoma of praeputium
Nervous system
Glioma cerebri
Ganglioneuroma myelinicum (neuroma)
Meningitis

## Skin, locomotor system

Hemangioma simplex hypertrophicum subcutaneum Foreign body granuloma with hemosiderin and giant cells Organized venous thrombosis of muscle
Fat embolism after fracture of the leg
Zenker's degeneration of M. rectus abdominis (influenza)
Myxofibroma of abdominal wall
Myxoma of thigh
sarcoma of thigh
Fibroma of skin
Basaloma
Chondroma of pubic bone
Melanosarcoma of skin
Carcinoma of squamous epithelium of skin
Spindle cell sarcoma
Giant cell sarcoma of maxilla *
Atheroma of head *
Pustule of variola vera *
Cicatricial tissue

## EMBRYOLOGY

## Embryology of the mussel (Bivalvia, Pelecypoda)

Mussel embryog. Zarly zygote through late cleavage. Polar bod Mussel embryology. Early zygote through late cleavage. Polar bod ies, polar lobes and spiral cleavage *
Em217e
Em218e
Em219f
Em21s
Mussel embryology. Veliger larva w.m.*
Em225e Mussel embryology. Glochidia larva w.m.


Giant cell sarcoma of maxilla, t.s.

## Embryology of insecta

Em301g
Em302g
Em3021g
Em303g
Em304g
Em305g
Em306g
Em307g
Em308g
Em309f
Em310f
Em311f
Em312f
Em313f
Em314f
Em315f
Em316g
Em317f
Em318f
Em319f
Em320f

Em411d
Em412d
Em413d
Em414d
Em415d
Em416d
Em417d
Em418d
Em419d
Em420d
Em421d
Em422d

Em431d
Em432d
Em434e
Em435e
Em436e
Em437e
Em438e
Em439e
Em440e Em441e Em443e
Em444e
Em447e Em448e Em448e
Em451f
Em452f
Em456s
Em458s

Acheta, cricket, egg showing maturation division w.m. *
Acheta, superficial cleavage *
Acheta. first cleavage w.m. *
Acheta, superficial cleavage, nuclei migrating to surface *
Acheta, w.m. of egg showing formation of germ layer *
Acheta, w.m. of egg with young germ *
Acheta, w.m. of egg shows early blastokinesis, germ starts to roll in *
Acheta, w.m. of egg shows late blastokinesis, germ with limb buds *
Acheta, w.m. of egg showing rolling out of the germ *
Insect, t.s. of egg showing nuclei migrating to surface, cleavage Insect, t.s. of egg showing superficial cleavage in the blastoderm Insect, t.s. of egg showing young germ with primitive streak
Insect, t.s. of egg showing formation of amnion and serosa
Insect, t.s. of egg showing fusion of the embryonic envelopes Insect, t.s. of older germ showing process of differentiation in ectoderm and mesoderm
Insect, t.s. of older germ in region of head
Carausius, walking stick, w.m. of germ with primordium of head, limb buds, neural groove, coelom *
Carausius, sagittal I.s. of egg with early germ
Carausius, sagittal I.s. of egg with medium germ
Carausius, sagittal I.s. of egg with later germ
Carausius, sagittal I.s. of egg with germ ready for hatching

## Embryology of the sea-urchin

 (Psammechinus miliaris)Sea-urchin embryology (Psammechinus miliaris), unfertilized eggs w.m.

Sea-urchin embryology. Fertilized eggs w.m
Sea-urchin embryology. Two cells w.m.
Sea-urchin embryology. Four cells w.m.
Sea-urchin embryology. Eight cells w.m.
Sea-urchin embryology. Sixteen cells w.m.
Sea-urchin embryology. Thirty two cells w.m
Sea-urchin embryology. Morula w.m.
Sea-urchin embryology. Blastula w.m.
Sea-urchin embryology. Beginning gastrulation w.m.
Sea-urchin embryology. Progressive gastrulation w.m.
Sea-urchin embryology. Pluteus larva w.m.

## Embryology of the starfish (Asterias rubens)

Starfish embryology (Asterias rubens). Ovary t.s. showing ova of large size
Starfish embryology. Testis t.s. with developing sperm
Starfish embryology. Sperm smear
Starfish embryology. Germinal vesicle stage w.m.
Starfish embryology. Unfertilized ova w.m.
Starfish embryology. Fertilized ova w.m. Zygote with polar bodies
Starfish embryology. Two cell stage w.m.
Starfish embryology. Four cell stage w.m.
Starfish embryology. Eight cell stage w.m.
Starfish embryology. Sixteen cell stage w.m.
Starfish embryology. Thirty-two cell stage w.m.
Starfish embryology. Sixty-four cell stage w.m.
Starfish embryology. Early and late blastula w.m.
Starfish embryology. Early and late gastrula w.m.
Starfish embryology. Early bipinnaria larva w.m.
Starfish embryology. Late bipinnaria larva w.m.
Starfish embryology. Brachiolaria larva w.m.
Starfish embryology. Young starfish w.m.

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


Chicken embryo, 72 hour, t.s. of abdominal region

Em511g
Em516k
Em519g
Em522g
Em524g
Em526g
Em528g

Em601f
Em602f
Em603f
Em604f
Em6045f
Em605f
Em606f
Em606f
Em608f
Em609f
Em610f
Em611f
Em612f
Em613f
Em614f
Em615f
Em616f
Em617g
Em618f
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 I.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. of midbody
Em624f Frog, hatching stage, sagittal I.s.
Em625e Frog, young tadpole, t.s. of head
Em626e Frog, young tadpole, t.s. of gill region
Em627e Frog, young tadpole, t.s. of abdomen
Em628f Frog, young tadpole, sagittal sec.
Em629f Frog, young tadpole, frontal (horizontal) sec.
Em630e Frog, older tadpole, t.s. of head
Em631e Frog, older tadpole, t.s. of gill region
Em632e Frog, older tadpole, t.s. in region of heart and lungs
Em633e Frog, older tadpole, t.s. of abdomen
Em6333f Frog, older tadpole, sagittal sec.
Em634f Frog, older tadpole, section through limb bud

Em701f Em702g
Em703f
Em704f
Em7042f
Em7043f
Em7044f
Em7047f
Em705f
Em706f
Em708g
Em709f
Em710f
Em711f
Em712g
Em713g
Em714f
Em715f
Em716f
Em717f
Em718f
Em719f
Em720f
Em722g
Em723f
Em724f
Em725f
Em726g
Em727f
Em728f
Em729f
Em730f
Em731f
Em732f
Em733g
Em751h
Em752h
Em753i
Em754i
Em756g
Em758i
Em760g
Em761i
Em762i
Em764h
Em766t
Em768k
Em770t
Em772k

Em811h
Em813g
Em821h
Em823g
Em831h
Em833g
Em841g
Em843k
Em845g
Em846f
Em847h
Em848k
Em849k
Em851g
Em852k
Em853g
Em854f
Em855f
Em856f
Em858i
Em861g
Em862i
Em863g
Em865f
Em866f
Em867f
Em869i

## Embryology of the chicken (Gallus domesticus)

Chicken, 12 hour, t.s. through primitive streak
Chicken, $12-24$ hour, I.s. through primitive streak *
Chicken, $12-24$ hour, t.s. with neural plate
Chicken, 24 hour, t.s. with neural groove, notochord, germinal layers, somites
Chicken, 24 hour, t.s. head fold region t.s.
Chicken, 24 hour, t.s. intestinal region
Chicken, 24 hour, t.s. pericardial region t.s.
Chicken, 24 hour, l.s.
Chicken, 36 hour, t.s. with neural tube, notochord, differentiation of mesoderm (myotom, nephrotom and splanchnotom)
Chicken, 36 hour, t.s. of anterior region with developing heart (pericardial region)
Chicken, 36-48 hour, sagittal l.s., formation of the somites *
Chicken, 48 hour, t.s. of head
Chicken. 48 hour, t.s. region of heart
Chicken, 48 hour, t.s. showing neural tube, mesoderm
Chicken, 48 hour, sagittal l.s. through primitive node, formation of coelom, Vena terminalis *
Chicken, $48-60$ hour, horizontal l.s. with brain, heart, and somites *
Chicken, 60 hour, t.s. of head
Chicken, 60 hour, t.s. of heart
Chicken, 60 hour, t.s. of abdominal region
Chicken, 72 hour, t.s. of brain
Chicken, 72 hour, t.s. in region of heart and eyes
Chicken, 72 hour, t.s. in caudal region of heart
Chicken, 72 hour, t.s. in abdominal region
Chicken, 72 hour, horizontal l.s.
Chicken, $4-5$ days, t.s. of head
Chicken, $4-5$ days, t.s. in region of heart and eyes
Chicken, $4-5$ days, t.s. in abdominal region
Chicken, 4-5 days, sagittal l.s. *
Chicken, 8 days, t.s. of brain
Chicken, 8 days, t.s. through eyes
Chicken, 8 days, t.s. in region of gill slits
Chicken, 8 days, t.s. in region of heart and lungs
Chicken, 8 days, t.s. in region of intestine and liver
Chicken, 8 days, t.s. in region of intestine and kidney
Chicken, 8 days, sagittal l.s. of entire specimen *
Chicken, 16 hour, w.m. showing primitive streak *
Chicken, 18 hour, w.m. *
Chicken, 21 hour, w.m. *
Chicken, 24 hour, w.m. showing neural groove *
Chicken, 28 hour, w.m. showing heart and blood vessels *
Chicken, 33 hour, w.m. formation of the somites *
Chicken, 40 hour, w.m. flexion of the anterior end *
Chicken, 43 hour, w.m. *
Chicken, 48 hour, w.m. formation of the coelom *
Chicken, 56 hour, w.m. gill arches can be seen *
Chicken, 66 hour, w.m. progression of gill arches and other structures*
Chicken, 72 hour, w.m. with well developed limb buds *
Chicken, 80 hour. w.m. more advanced stage of organ development *
Chicken, 96 hour, w.m. allantois outside the body *

## Embryology of the pig (Sus scrofa)

Pig embryo, 4 mm , sagittal l.s. *
Pig embryo, 4 mm , typical t.s. *
Pig embryo, 6 mm , sagittal I.s. * Pig embryo, 6 mm , typical t.s. *
Pig embryo, 8 mm , sagittal l.s.
Pig embryo, 8 mm , typical t.s.
Pig embryo, $11-12 \mathrm{~mm}$, sagittal l.s.
Pig embryo, 11-12 mm, near median sagittal l.s. *
Pig embryo, $11-12 \mathrm{~mm}$, frontal l.s.
Pig embryo, 11-12 mm, typical t.s.
Pig embryo, 11-12 mm, three typical t.s. through head, thorax and abdomen
Pig embryos, 6, 8, and 11 mm , three typical t.s. *
Pig embryos, 6, 8, and 11 mm , three typical sagittal l.s. *
Pig embryo, 15 mm , sagittal l.s.
Pig embryo, 15 mm , near median l.s. *
Pig embryo, 15 mm , frontal l.s.
Pig embryo, 15 mm , head t.s.
Pig embryo, 15 mm , thorax t.s.
Pig embryo, 15 mm , abdomen t.s.
Pig embryo, 15 mm , three typical t.s. through head, thorax, and abdomen
Pig embryo, $20-25 \mathrm{~mm}$, sagittal l.s.
Pig embryo, 20-25 mm, near median sagittal l.s.
Pig embryo, $20-25 \mathrm{~mm}$, frontal l.s.
Pig embryo, $20-25 \mathrm{~mm}$, head t.s.
Pig embryo, $20-25 \mathrm{~mm}$, thorax t.s.
Pig embryo, $20-25 \mathrm{~mm}$, abdomen t.s.
Pig embryo, 20-25 mm, three typical t.s. through head, thorax, and

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 125-130).

## BACTERIA

## Spherical bacteria, cocci

Ba117e
Ba118d
Ba113d
Ba110e
Ba111f
Ba1113e

- Neisseria gonorrhoeae, causing gonorrhoea, smear *

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-positiveBa136d - 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 from culture
Ba1425d
Pseudomonas aeruginosa, smear from culture
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
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

## Rod-shaped bacteria, spore-forming (bacilli)

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
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


Bacillus subtilis, hay-bacilli, Ziehl-Neelsen stained

## Spiral bacteria and spirochaetes

Ba164f
Ba161e
Ba162d
Ba163d
Ba165d

- Rhodospirillum rubrum, chromogenic rods, smear
- 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 *


## Miscellaneous groups

Actinomyces alni, sec. of root nodule showing mycorrhiza of alder Actinomyces bovis, causing lumpy jaw, section through infected tissue
Actinomyces, causing lumpy jaw, smear
Caulobacter, stalk bacterium, smear
Galionella, iron bacteria, smear
Methanobacterium, forming methane, smear

- Sphaerotilus natans, from putrid water, long chains with sheaths
- Streptomyces griseus, streptomycin antibiotic, smear

Ba192d Thiocystis or Lamprocystis, sulphur bacteria, smear
Ba250e Tobacco mosaic, a virus disease, sec. of infected leaf *

## Typical bacteria, composite slides

Ba171d - Bacteria from mouth, Gram positive and negative bacteria can be observed in this slide, ideal for demonstration

- Typical bacteria: three smears on one slide, cocci, bacteria and spirilli are shown, carefully stained
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
Ba185d
Ba186d
Ba187d
Bacteria from yoghurt, smear
Bacteria from sauerkraut, smear
Bacteria from hay infusion causing decomposition, smear


## Cytological slides, special staining techniques

Ba2081d Typical mixed bacteria, including Gram-positive and Gram-negative
Ba 210 g
Ba212g
Ba211g
Ba221f
Ba224g
Ba225t
Ba229f
Ba226f
Ba228f
rods, smear
Lophotrichous flagella on Spirillum, specially stained *
Monotrichous flagella on Vibrio or Pseudomonas, spec. stained *
Peritrichous flagella on Salmonella or Proteus, spec. stained *
Capsule stain (Klebsiella pneumoniae), smear specially stained
Nuclear stain (Bacillus cereus), smear specially stained for nuclear material (DNA) *
Cell division (Bacillus cereus), Feulgen stain *
Metachromatic granules or polar bodies (Corynebacterium diphtheriae), smear specially stained
Spore stain (Bacillus subtilis), smear doubly stained with central spores
Spore stain (Clostridium botulinum), smear doubly stained with subterminal spores

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


Fucus vesiculosus, seaweed, male conceptacle with antheridia, t.s.

## 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
Ag113c
Ag114d
Ag1146f Nostoc, section for finer details of filaments and sheaths
Nostoc or other blue-green alga, special preparation for nuclear ma-
Ag1145d Nostoc gunnerae, symbiotic algae living in the stem of Gunnera, Nostoc
section
Ag1147c Nostoc zetterstettii, a gelatinous alga, unbranched filaments, w.m.
Ag1148c Nostoc caeruleum, unbranched filaments, w.m.
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 w.m.
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 w.m.
Ag119c - Gloeotrichia, forming akinetes w.m.
Ag1166d Lyngbya, filamentous algae within sheaths w.m.
Ag1164d Merismopedia, flat colonies w.m.
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 w.m.
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, $\mathrm{n}_{0} 1,0$
Ag142f Surirella gemma, for testing microscope resolution, $\mathrm{n}_{0}$ 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, w.m.

## 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

Ag154e
Ag1542e
Ag155c
Ag156e
Ag1565c
Ag158d
Ag157d
Ag159d
Ag160d
Ag161d
Ag162d
Ag165e

Ag1923e
Ag1925d
Ag1722d
Ag1725d
Ag1907d
Ag171c
Ag1711f Ag191c
Ag1902d
Ag182c
Ag1904d
Ag1908d Ag183c
Ag1723d
Ag192d
Ag1757d Ag174d
Ag172d
Ag1721f
Ag1715c
Ag180d
Ag184c
Ag188d
Ag189d
Ag173d
Ag177d
Ag1724d
Ag1743d
Ag1742d
Ag179c
Ag1905d
Ag178d
Ag1832d
Ag1756d
Ag1755d
Ag181c
Ag185d
Ag1852d
Ag1862e
Ag186d
Ag175e
Ag1752f
Ag1916d
Ag1915d

Ag195d
Ag197d
Ag199d
Ag198d

Ag211d
Ag212c
Ag2121e
Ag2122e
Ag2125f
Ag213d

Ag221d
Ag222d
Ag2224e
Ag223d
Ag2234d
Ag2235d
Ag2236e Ag237g Ag239d
Ag233e
Ag234e
Ag235e

Spirogyra, in lateral conjugation w.m. *
Spirogyra, in scalariform conjugation showing zygotes w.m., a large species with several chloroplasts in each cell

- Zygnema, vegetative filaments with stellate chloroplasts w.m.

Zygnema, in conjugation and after conjugation with zygotes w.m.
Mougeotia, a filamentous alga with flat chloroplasts w.m.
Cosmarium, a common desmid with isthmus w.m.

- Closterium, a crescent-shaped desmid w.m.

Mesothaenium, a small rod-shaped desmid w.m.

- Micrasterias, large plate-shaped desmids w.m.

Staurastrum, double cells with spines w.m.
Hyalotheca, a filamentous desmid w.m.

- Mixed desmids of various forms, strewn slide w.m.

Chlorophyceae - Green Algae
Acetabularia, a marine species with an umbrella-shaped thallus w.m.
Bryopsis, marine green algae w.m.
Bulbochaete, sessile filaments w.m.
Carteria, unicellular algae with four flagella w.m
Chaetophora, thallus with many branches w.m.

- Chlamydomonas, small biflagellate algae w.m.

Chlamydomonas, specially stained to show the flagella *

- Chlorella, small unicellular green algae, w.m.

Chlorococcus, living on ground, hollowsphere-shaped chloroplasts

- Cladophora, branching filaments with multinucleate cells w.m.

Coelastrum, cell colonies w.m.
Coleochaete, a soil species w.m.

- Draparnaldia, main filaments and clusters of branches w.m.

Dysmorphococcus, flagellate algae with shells w.m.

- Enteromorpha, seaweed, inflated narrow frond w.m.

Eremosphaera, large unicellular green algae w.m.

- Eudorina, spherical colonies of thirty-two cells w.m.
- Gonium pectorale, plate-like colonial forms w.m.

Gonium sp., specially stained to show the flagella *

- Haematococcus, unicellular red biflagellate algae w.m.
- Hydrodictyon, water net alga, w.m.
- Oedogonium, a common filamentous green alga without branches, vegetative filaments w.m.
Oedogonium, macrandrous with oogonia w.m.
Oedogonium, nannandrous with dwarf males w.m.
- Pandorina, spherical colonies of sixteen cells or smaller w.m.
- Pediastrum, star-shaped flat colonies w.m.

Pithophora, branched tropic green algae w.m
Platydorina, horseshoe-shaped coenobium showing the flagella w.m.
Pleodorina, colonies with cells of different size w.m.

- Pleurococcus (Protococcus), small colonies growing on bark, w.m. Protosiphon, living on ground, with rhizoids w.m.
- Scenedesmus, colonies of four cells w.m.

Stigeoclonium, main filaments and simple branches w.m.
Tetracystis, earth algae, groups of four cells w.m.
Tetraspora, cells in a gelatinous layer w.m.

- Ulothrix, simple filaments with girdle-shaped chloroplasts w.m.
- Ulva, sea lettuce, a marine green alga, w.m. of thallus Ulva, w.m. of thallus with developing gametes
- Vaucheria geminata, sexual stages on lateral branches w.m.

Vaucheria sessilis, showing sexual stages w.m.

- Volvox, spherical colonies with daughter colonies and sexual stages w.m.

Volvox, flattened and specially stained to show flagella
Mixed flagellates, many different species for comparison w.m.
Mixed green algae, many different species for comparison w.m.

## Chrysophyceae - Golden Algae

- Dinobryon, a golden alga forming colonies w.m.

Hydrurus, golden alga in a gelatinous matrix w.m.
Ochromonas, a flagellate golden alga w.m.
Tribonema, a filamentous golden alga w.m.

## Charophyceae - Stoneworts

- Chara, stonewort, thallus with reproductive organs w.m.

Chara, thallus t.s.
Chara, thallus and reproductive organs I.s.
Chara, w.m. of mature antheridia showing spermatogenous filaments Chara, thallus with apex I.s. *
Nitella, thallus with reproductive organs w.m.

## Phaeophyceae - Brown Algae

- Fucus vesiculosus, seaweed, male conceptacle with antheridia, t.s
- Fucus vesiculosus, female conceptacle with oogonia t.s.

Fucus vesiculosus composite slide, t.s. of male and female conceptacles of a dioecious species on same slide
Fucus platycarpus, hermaphrodite conceptacle with antheridia and oogonia, t.s.
Fucus serratus, male branch with antheridia, t.s.
Fucus serratus, female branch with oogonia t.s.
Fucus serratus, male and female branches, two t.s.
Fucus, I.s. through apical region with apical cell *
Ascophyllum nodosum, c.s. of male conceptacle
Dictyota, thallus with tetraspores t.s. *
Dictyota, thallus with oogonia t.s. *
Dictyota, thallus with antheridia t.s. *

Ag238g
Ag225d

## Ag2252d

Ag2393d
Ag231d
Ag232d
Ag228c
Ag230d
Ag2302d
Ag229d
Ag2395d
Dictyopteris, apical region showing more apical cells *

- Ectocarpus, plurilocular gametangia or sporangia w.m.
- Ectocarpus, unilocular sporangia w.m. *

Elachista fucicola, epiphytic living, w.m. of unilocular sporangia Himanthalia lorea, male conceptacle with antheridia t.s. Himanthalia lorea, female conceptacle with oogonia t.s.

- Laminaria saccharina, thallus with sporangia t.s. Pylaiella litoralis, uni- and plurilocular sporangia w.m. Pylaiella litoralis, w.m. showing formation of swarms-cells Sargassum, gulfweed, thallus with conceptacles t.s. Sphacelaria sp., thallus with bulbs, w.m.


## Rhodophyceae - Red Algae

## Ag241d

Ag242d
Ag243d
Ag250d
Ag251d
Ag246d
Ag244d
Ag2445
Ag254d
Ag255d
Lemanea, a fresh water red alga with tubular cortical layer w.m.
Ag245d - Nemalion, thallus with reproductive organs w.m.
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
Fu1182e
Fu118e
Fu115e
Fu113d
Fu114d
Fu119g
Fu117e
Fu116e
Fu111d
Arcyria, slime mold with cylindrical fruiting bodies w.m. Ceratiomyxa, primitive slime mold with external spores, w.m. * Dictydium, fruiting body w.m.

- Fuligo, slime mold, section through the fruiting body * Hemitrichia, slime mold with bell-shaped fruiting bodies w.m. * Lycogola, slime mold with bean-shaped fruting bodies w.m. Myxoflagellatae, myxamoebae and young plasmodia w.m. * Physarum, fruiting body w.m.

Fu1253e
Fu127d

- Spongospora subterranea, potato powdery scab, section with spore balls


## Phycomycetes - Algalike Fungi

Achlya, water mold, with oogonia, antheridia, and zoosporangia

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 conidiat.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
Fu1631d
Aspergillus, perithecia (cleistothecia)
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 I.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, I.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, I.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.


Puccinia graminis, wheat rust, sec. of uredinia on wheat causing red rust
Fu1643d Saccharomyces octosporus, yeast showing asci and ascospores
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
Fu1781e
Fu1782e
Fu148d
Fu141d Sphaerotheca mors uvae, gooseberry mildew, t.s. with perithecia
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
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 I.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, I.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
Gymnosporangium sabinae, section of aecidia on pear leaf
Fu2242f Gymnosporangium sabinae, section of aecidia and pycnidia on same slide
Hydnum, prickly fungus, sec. of basidiocarp showing spores
Fu245d
Fu230c
Fu231c
Fu2452d

Fu244d • Polyporus, pore fungus, sec. of young fruiting body
Fu226c
Fu2263d Psalliota, I.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
Puccinia coronifera, crown rust of oats, sec. with telia
Fu221d $\quad$ Puccinia coronifera, crown rust of oats, sec. with te
Fu225d
Fu250d Scleroderma sp., sporogenous mycelium isolated to show formation of basidia very clearly *
Uromyces pisi, pea rust, sec. of host tissue with parasitic fungus
Fu235d $\quad$ Uromyces pisi, pea rust, sec. of host tissue with par
Fu211d
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
Fu219f and mycelum specially stained
Fu219f Germinating teleutospores show basidia and basidiospores w.m. *

- Lycoperdon bovista, bovist, t.s. of fruiting body

Lycoperdon gemmatum, puff-ball, t.s. of fruiting body
Phragmidium, sec. with teleutospores
sallia campstris (Agaricus),

Usilago tritici, spores w.m.


Pteridium, fern, t.s. of rhizome with dictyostele

## LICHENES-LICHENS

Li103d
Li104d
Li105d
Li106d
Li124d
Li125d
Li115d
Li117d
Li11
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, I.s. of sporophyte
Br 102 e Anthoceros, I.s. of thallus with antheridia *
Br 1025 c Anthoceros, t.s. of thallus
Br108d Conocephalum, t.s. of thallus
Br1085e Conocephalum, I.s. of antheridia *
Br109e Conocephalum, I.s. of sporophyte showing spores with elateres
Br120c Jungermanniales sp., stem with leaves w.m.
Br1193g Pellia epiphylla, liverwort, antheridia I.s. *
Br1194h Pellia epiphylla, archegonia I.s. *
Br1195f Pellia epiphylla, sporogon I.s.
Br1093f Porella, antheridial branch I.s.
Br1094f Porella, archegonial branch I.s.
Br 1095 e Porella, young sporophyte I.s. *
Br1096e Porella, mature sporophyte I.s. *
Br104d Riccia natans, w.m. of thallus
Br105e Riccia natans, thallus with antheridia *
Br106g Riccia natans, thallus with archegonia *
$\mathrm{Br} 107 \mathrm{e} \quad$ Riccia natans, I.s. of sporophyte*
$\mathrm{Br} 1075 \mathrm{e} \quad$ 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, I.s.
Br113d Marchantia, isolated gemmae w.m.
Br114d - Marchantia, I.s. of archegonial branch showing archegonia
Br1141h Marchantia, median I.s. of a young archegonium showing egg cell, neck canal cells and ventral canal cells *
Br1142g Marchantia, median I.s. of an archegonium after fertilization*
Br115d - Marchantia, I.s. of antheridial branch showing antheridia
Br 1151 g Marchantia, median I.s. of antheridium through opening *
Br1152d Marchantia, horizontal sec. of antheridial branch
Br1153f Marchantia, I.s. of antheridial and archegonial branches
Br1154e Marchantia, sperm w.m. and stained for flagella *
Br116d - Marchantia, young sporophyte with developing spores I.s.
Br117d - Marchantia, older sporophyte with mature spores I.s.
Br1171f Marchantia, median I.s. of an older sporophyte *
Br1185g Marchantia, liverwort. composite slide of four stages: cupule with gemmae I.s., antheridial branch I.s., archegonial branch I.s., and sporophyte I.s.

Br129d
Br130d
Br131d
Br132d - Mnium, t.s. of leaves showing large chloroplasts
Br132d - Mnium, w.m. of leaf stained to show large chloroplasts
Br125e - Mnium, moss, I.s. of antheridia
Br 1251 g Mnium, median I.s. of antheridium *
Br1252e Mnium, teased preparation of antheridia w.m.
Br1254e Mnium or other moss, sperm w.m. stained for flagella *
Br126e - Mnium, I.s. of archegonia
Br1261g Mnium, median l.s. of archegonium *
Br1262e Mnium, teased preparation of archegonia w.m.
Br1265d - Mnium, I.s. of sporophyte with spores
Br1266d - Mnium, t.s. of sporophyte with spores
Br127d • Mnium, protonema w.m.
Br1275
Br1325t

Br121c
Br1212d
Br1214c
Br122d
Br1223e
Br1226e
Br123d
Br124d
Br1242d
Br1244c
Br1246d
Br134c
Br135d
Br136e
Br137f
Br138d
Br133d
Br1331d
Mnium, young gametophyte w.m. young leafy shoot with protonema * Mnium, moss, composite slide of four stages: antheridial branch I.s., archegonial branch I.s., sporogon with spores I.s., and protonema w.m.

- Polytrichum, moss, t.s. of stem

Polytrichum, I.s. of stem with leaves
Polytrichum, t.s. of seta

- Polytrichum, t.s. of leaves showing photosynthetic lamellae on the upper side
Polytrichum, I.s. of antheridial branch
Polytrichum, I.s. of archegonial branch
Polytrichum, I.s. of sporophyte with spores
Polytrichum, t.s. of sporophyte with spores
Polytrichum, l.s. of young sporophyte with developing spores
- Polytrichum, w.m. of peristome

Polytrichum, w.m. of protonema

- Sphagnum, peat moss, w.m. of leaf showing chlorophyll bearing and hyaline cells
Sphagnum, t.s. of stem and leaves
Sphagnum, I.s. of antheridia *
Sphagnum, I.s. of archegonia *
Sphagnum, I.s. of young sporophyte
Tortula, moss, w.m. of gametophyte and young sporophyte
Tortula, gametophyte and older sporophyte with peristome w.m.


## Musci - Mosses

## PTERIDOPHYTA

## Psilotales - Psilopsids

Pt101d - Psilotum, t.s. of stem showing exarch protostele and leaflets
Pt102e
Pt103e
Pt1032d
Pt1034d
Pt1035d

- Psilotum, t.s. of three-lobed sporangium

Psilotum, I.s. of stem and sporangium
Psilotum, t.s. of rhizome
Tmesipteris, aerial stem t.s.
Tmesipteris, leaves t.s.
Tmesipteris, sporangium t.s.

## Lycopodiatae - Clubmosses

- Isoetes, quillwort, I.s. of entire plant with corm, leaves, sporangia and rhizophores
Isoetes, I.s. of microsporophyll *
Isoetes, I.s. of macrosporophyll *
Isoetes, t.s. of stem
Lycopodium, club moss, I.s. of stem showing stele
- Lycopodium, t.s. of stem showing typical actinostele
- Lycopodium, t.s. of rhizome
- Lycopodium, t.s. of mature sporophyll showing isospores Lycopodium, l.s. of young sporophyll showing developing spores
- Lycopodium, spores w.m.

Lycopodium, young sporophyll w.m.
Lycopodium, stem with apical region I.s.

- Selaginella, t.s. of stem Selaginella, t.s. of rhizophore
- Selaginella, I.s. of strobilus with micro- and megasporangia

Selaginella, w.m. of strobilus *
Selaginella, l.s. of stem and leaves
Selaginella, c.s. of leaves

## Equisetatae - Horse-tails

Equisetum, root t.s.

- Equisetum, rhizome t.s.
- Equisetum, stem t.s.
- Equisetum, l.s. of stem tip showing apical region and developing leaves Equisetum, horse tail, young strobilus showing developing spores I.s.
- Equisetum, mature strobilus t.s.
- Equisetum, mature strobilus I.s.

Equisetum, I.s. and t.s. of mature strobilus on one slide

- Equisetum, spores and elaters w.m.

Equisetum, prothallium w.m. *

## Filicatae - Ferns

Pt1835d
Pt1836d
Pt1837d
Pt1831d
Pt1832d
Pt130c
Pt132c
Pt131c
Pt133d
Pt134d
Pt136d
Pt135b
Pt1841d
Pt1776c
P1176c
Pt1851
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
157g
Pt1353d
Pt159t

Pt1871d
Pt191f
Huperzia, l.s. of sporangia on leat bases
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, leaft.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

Pteridium, root t.s.
Pt144d
Pt140d
Pt141d
Pt139d

Pt142c
Pt143c
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.

- Pteridium, l.s. of rhizome showing scalariform vessels
- Pteridium, t.s. of rhizome with dictyostele

Pteridium (Pteris), bracken fern, macerated rhizome with scalariform vessels w.m.
Pteridium, stem t.s.
Pteridium, leaves with sori and sporangia, section shows l.s. of sori within inrolled margins of the leaves

## GYMNOSPERMAE

Gy1041e
Gy1042d
Gy1048f
Cycas, seed, t.s
Gy101d Zamia (cycad), root t.s.
Gy102e Zamia, stem t.s.
Gy1021d
Gy1022e
Gy103f
Gy1031g
Zamia, leaft.s.

Zamia, ovule with archegonia I.s. *

Zamia, male cone t.s. showing microsporophyll with spores *
Zamia, young female cone showing ovules l.s. *


Pinus, pine, embryo with endosperm, l.s.

Gy112c
Gy1116c
Gy1114d Gy1124e
Gy1123c
Gy111c
Gy105d
Gy1051d
Gy1055e
Gy106f
Gy107f
Gy108e
Gy109g
Gy110f
Gy113c
Gy114c
Gy115c
Gy121c
Gy122c
Gy123e
Gy1234c
Gy124c
Gy125c
Gy1255d
Gy126d
Gy1265c
Gy127c
Gy1271c
Gy1272c
Gy1273c
Gy1274c
Gy128d
Gy129d
Gy1291d
Gy1295e
Gy130b
Gy1301d
Gy131d
Gy132e
Gy1322g
Gy1324k
Gy133f
Gy134h
Gy135f
Gy1351h
Gy1355k
Gy1357i
Gy136g
Gy1361h
Gy1362h
Gy137g
Gy138e
Gy139e
Gy1391f
Gy140e
Gy141f
Gy145d
Gy146b
Gy147c
Gy1478e

Ginkgo biloba, stem t.s.
Ginkgo biloba, young sprout, t.s.
Ginkgo biloba, shoot apex, I.s.
Ginkgo biloba, three sections of wood, t.s., r.l.s., t.l.s.
Ginkgo biloba, macerated xylem elements w.m.
Ginkgo biloba, leaf t.s.
Ginkgo biloba, male cone t.s. showing microsporophyl
Ginkgo biloba, male cone l.s. showing microsporophyll
Ginkgo biloba, young female cone showing growing ovules I.s.
Ginkgo biloba, archegonium before fertilization, I.s. *
Ginkgo biloba, archegonium after fertilization I.s. *
Ginkgo biloba, ovule I.s. for general study, free nuclear stage
Ginkgo biloba, archegonium showing proembryo l.s. *
Ginkgo biloba, later stage of embryo l.s. *
Taxus baccata, yew, young stem t.s.
Taxus baccata, root t.s.
Taxus baccata, leaves t.s.

- Pinus, pine, young root from seedling t.s.
- Pinus, older woody root t.s.

Pinus, stem apex shows meristematic tissue and leaf origin l.s.
Pinus, young sprout with needles, t.s.

- Pinus, one year stem t.s.
- Pinus, older stem with annual rings, resin ducts t.s.

Pinus, one and two year stem, t.s.

- Pinus, three sections of wood: cross, radial and tangential sections

Pinus, wood, tangential sec. stained for tracheids with pits

- Pinus, leaves (needles), t.s. for general study of gymnosperm leaves Pinus monophylla, single-leaf pine, leaves t.s.
Pinus nigra, Austrian pine, the two-needle type, leaves t.s.
Pinus australis, long-leaf pine, the three-needle type, leaves t.s.
Pinus strobus, white pine, the five-needle type, leaves t.s.
Pinus, male cone with pollen t.s. (staminate cone)
- Pinus, male cone with pollen I.s.

Pinus, young male cone with developing pollen l.s.
Pinus, l.s. and t.s. of male (staminate) cone on one slide

- Pinus, mature pollen grains w.m.

Pinus, germinating pollen grains with pollen tubes w.m.

- Pinus, young female (ovulate) cone, entire I.s. for general study Pinus, young female cone at time of pollination, I.s. with pollen grains and micropyle
Pinus, ovule l.s. showing megaspore mother cell *
Pinus, ovule l.s. showing meiosis of megaspore mother cell, 2 to 4 haploid daughter cells*
- Pinus, ovule I.s. showing growing female gametophyte at the free nuclear stage
Pinus, young archegonium before separation of egg nucleus and ventral canal nucleus I.s. *
- Pinus, ovule I.s. showing archegonia, the standard slide for general study
Pinus, archegonium median l.s. with egg nucleus and neck cells *
Pinus, archegonium I.s. with zygote cell in division. As available *
Pinus, archegonium I.s. showing free proembryonic nuclei in the center of the archegonium *
Pinus, archegonium l.s. with early stage of proembryo
Pinus, young proembryo median l.s. showing four-cell stage *
Pinus, young proembryo median I.s. showing eight-cell or sixteencell stage.
Pinus, archegonium I.s. with later stage of proembryo
Pinus, young embryo l.s.
- Pinus, mature embryo with endosperm I.s.

Pinus, mature embryo with endosperm, near median l.s.

- Pinus, mature embryo with endosperm t.s.

Pinus, germinating seed l.s.
Pinus, older stem, t.s. and I.s. on one slide showing annual rings, resin ducts, bark
Pinus, wood cells macerated and w.m.
Pinus, leaf bud t.s.
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.


Lilium, anaphase of the first maturation division of pollen mother cells
Gy1514d Abies, shoot apex, I.s.
Gy1515d Abies, three sections of wood, t.s., r.l.s., t.I.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, I.s. of male cone
Gy255e Larix, I.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 I.s.
Gy217c Ephedra, macerated xylem elements w.m.
Gy221c Gnetum, leaft.s.
Gy2213c Gnetum, macerated xylem elements w.m.
Gy1549c Arbor-vitae, leaves I.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.

As1159h
As116d
As1165g
As1166e

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

## Cell organelles

As1481d

## 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 Epidermal cells of Allium cepa, plasmolysis, w.m. turgid piece and plasmolized piece of onion epidermis for comparison
As114d - Mitosis, I.s. from Allium root tips showing all stages of plant mitosis carefully stained with iron-hematoxyline after Heidenhain
As1141d Mitosis, I.s. from Allium root tips showing all stages of plant mitosis carefully stained with a quadruple stain
As1142e Mitosis, I.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, I.s. from Allium root tips showing all stages of plant mitosis stained by Feulgen stain *
As1158g Mitosis, squash preparation from Allium root tip, shows intact mitotic stages, orceine stained

Mitosis, squash preparation from Allium root tip, treated with colchicine for metaphase stages, orceine stained *
Mitosis, I.s. from Vicia faba (bean) root tips showing all mitotic stages Mitosis, squash preparation from Vicia faba root tips, showing intact mitotic stages, Feulgen stain *

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

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

- Mitochondria, thin I.s. of Allium root tips specially fixed and stained to show the mitochondria clearly
- Chloroplasts, w.m. of leaf of Elodea or Spinacea showing detail of large chloroplasts
Chloroplasts, in sec. of Tradescantia shoot
Chromoplasts, w.m. of petal of Viola (violet)
Chromoplasts, t.s. of root of Daucus carota (carrot)
Chromoplasts, in w.m. of piece of petal from Tropaeolum
Plasmodesmata, in t.s. of palm seed (Phytelephas)

Inclusions: Reserve and storage substances

- Aleurone grains, sec. of Ricinus endosperm

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

- Starch grains, sec. of tuber of Solanum tuberosum (potato)

Starch grains, t.s. cotyledons of Vicia faba (bean)
Starch grains, t.s. of semen (grain) of Avena (oat)
Starch grains, smear from Euphorbia (spurge)
Starch grains, different kinds of mixed species w.m.
Corroded starch grains, w.m. from potato

- Fat, t.s. of endosperm of Corylus (hazel) stained for fat
- Reserve cellulose, t.s. seed of Phoenix (date)


## Inclusions: Crystals and metabolic products

- Inulin crystals, t.s. of tuber of Dahlia
- Acid tannic, t.s. bark of Rosa
- Calcium oxalate crystals in w.m. of dry Allium scale
- Raphides, t.s. of Impatiens leaf

Raphides, t.s. of Oxalis leaf
Raphid cells with growing raphids, I.s. root tips of Hyacinthus

- Crystal sand, t.s. of Solanum tuberosum (potato) leaf

Clustered crystals, t.s. stem of Opuntia

- Cystoliths, t.s. leaf of Ficus elastica, India rubber plant


## Meristematic tissues

- Stem apex and meristematic tissue of Elodea, I.s. showing growing zone and leaf origin
Stem apex and meristematic tissue of Elodea, median I.s. showing growing point *
- Stem apex and meristematic tissue of Asparagus I.s.

Stem apex and meristematic tissue of Hippuris I.s.
Stem apex and meristematic tissue of Coleus I.s.
Allium cepa, median I.s. of root tip to show the meristematic tissue * Hyacinthus, median I.s. of root tip showing meristematic tissue and growing point *

## Supporting tissues

As140c

- Wood cells, macerated and w.m.
- Thylosis, t.s. and I.s. of Robinia (black locust) wood

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

- Angular collenchyma, t.s. stem of Lamium or Salvia
- Lamellar collenchyma, t.s. stem of Sambucus
- Lacunar collenchyme, t.s. stem of Petasites or Lactuca
- Sclerenchyma fibres, isolated and w.m.

Sclerenchyma fibres of phloem, t.s. and I.s. of stem of Linum (flax)
Sclerenchyma fibres of xylem, t.s. and I.s. of stem of Hypericum

- Bast cells from coconut, isolated and w.m.

Bast cells from Cinchona, isolated and w.m.

## Conducting tissues

- Annular and spiral vessels, I.s.

Annular and spiral vessels, isolated and w.m.

- Scalariform vessels, I.s.

Scalariform vessels, isolated and w.m.

As154d
As1545d
As1545d Pitted vessels, isolated and w.m.
As1547d Tracheids with bordered pits, wood of Pinus I.s. stained with thionine

## As155d - Reticulate vessels, I.s.

As1554d Reticulate, annular, and spiral vessels, isolated and w.m.
As160d - Sieve tubes, sieve plates and vessels, I.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, I.s. stem of Euphorbia (spurge)
As1423c - Lactiferous vessels, tangential I.s. of Taraxacum root
As489c Lactiferous vessels, t.s. of Asclepias, milkweed
As493d Netted venation, portion of dicot leaf w.m. showing venation only

## 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

As202e
As203e
As204e
Monocot and dicot roots, two t.s. on one slide for comparison Herbaceous and woody roots, two t.s. on one slide

As210d
As211d
As2113c Hydrocharis, root tip with central pith and root hairs, t.s.
As2133c Vicia faba, bean, t.s. of root tip
As2134d Monstera, philodendron, I.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, I.s. of root tip specially stained for statolith starch
As224e Hyacinthus, I.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
As278e

## As215c

As214c - Zea mays, corn, root t.s., a polyarch root

- 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

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Convallaria, lily of the valley, rhizome t.s. with concentric vascular bundle

## Typical dicot roots

As241c
As2411d
As2419d
As242d
As245c
As247c
As266c
As244c
As258c
As267c
As268c
As269c
As270c
As280c
As281c
As282c

As212d
As213d
As225c
As283d
As2415d
As253c
As2535c
As259c
As287c
As286c

As216c
As288c
As284c

- Ranunculus, buttercup, t.s. of a typical dicot root for general study showing all structures very clearly
Ranunculus, young and older roots on one slide, t.s.
Helianthus, sunflower, young root t.s.
Helianthus, sunflower, older woody root t.s.
- Raphanus, radish, t.s. of root showing secondary growth and several cambium rings
Medicago, alfalfa, root t.s. showing secondary growth
Beta vulgaris, beet, root showing anomalous secondary growth t.s.
- Tilia, lime, older woody root t.s.

Rheum, rhubarb, root with crystals t.s.
Cannabis sativa, hemp, root t.s.
Clivia miniata, t.s. of root showing polyarch central bundle
Quercus robur, oak, young root from seedling t.s.
Quercus robur, older woody root t.s.
Nicotiana tabacum, tobacco, t.s. of root showing primary and secondary xylem
Actaea, baneberry, young root with primary xylem t.s.
Sambucus, elderberry, root t.s.

## Adaptation to water: <br> hydrophytes and hygrophytes

- Lemna, duckweed, root tip and cap (calyptra) w.m.

Lemna, I.s. of root tip and cap

- Elodea, Canadian waterweed, t.s. of an aquatic root

Nymphaea, water-lily, t.s. of root showing branch root origin

- Caltha palustris, t.s. of primary root showing endodermis and the Casparian strips
- Monstera, aerial root t.s.

Avicennia, mangrove, breathing root (pneumatophore) t.s.

- Dendrobium, orchid, aerial root with velamen t.s.

Taxodium distichum (Cypressacea), t.s. of aerial root for respiration Rhiziphora, mangrove, t.s. of adventitious root

## Adaptation to dry habitat: xerophytes

- Smilax, carrion flower, t.s. of root shows thickened endodermis Pelargonium, t.s. of root for succulence
Sarothamnus, broom, t.s. through woody root


## Adaptation to unusual modes of nutrition

- Taraxacum, dandelion, taproot with lactiferous vessels t.s.
- Scorzonera, black salsify, root with lactiferous vessels I.s.

Lupinus, lupin, root t.s.

- Lupinus, root nodules with nitrogen fixing bacteria (Rhizobium radicicola) t.s.
Pisum sativum, pea, t.s. of nodule with nitrogen-fixing bacteria
Vicia faba, bean, t.s. of nodule with nitrogen fixing bacteria
- Alnus, alder, root nodules with symbiotic actinomycetes (Streptomyces alni) t.s.
- Ranunculus ficaria, root storing starch grains, t.s.
- Daucus carota, carrot, storage root t.s.
- Fagus, beech, root with ectotrophic mycorrhiza, t.s.
- Neottia nidus avis, orchid, root with endotrophic mycorrhiza, I.s. Orchid, root t.s.
Convolvulus, twining plant, older root with compressed endodermis t.s.

Hedera helix, ivy, aerial climbing root t.s.

- 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


Zea mays, corn, typical monocot stem with scattered bundles, t.s.

## III. STEMS

## Typical stems in comparison

As305e Monocot and dicot stems, two t.s. on one slide for comparison of the different structures
As3052e
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
As3424e
Helianthus, young and older stem, two t.s. on one slide
Helianthus, of older stem, t.s. and I.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 I.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, I.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 Triticum, I.s. transition node - internode
As316d
As3162c
As323c
As320c
As321c

- Holcus la, t.s. of typical grass ste
- Holcus lanatus, grass, stem t.s.

Acorus calamus, sweet flag, rhizome t.s.

- Convallaria, lily of the valley, t.s. of rhizome with concentric vascular bundles
As322c
As325d Dracaena, dragon tree, stem t.s., secondary growth in a monocot Drac
Saccharum, sugarcane, stem t.s.
As3813c Saccharum, sugarcane, stem As398c Phragmites, reed, t.s. of monocot ste
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
As3943c
As376b
As339c
As340c
As344d - Cucurbita, pumpkin, I.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
- Lamium, deadnettle, square stem with well developed collenchyma and continuous vascular cylinder t.s.
Galium, t.s. of typical square stem showing collenchyme cells
- Salvia, sage, t.s. of a square stem

Coleus, t.s. of a square stem showing collenchyma clearly
Amaranthus, stem t.s.
Arctium lappa, burdock, stem t.s.
Atriplex, orache, stem t.s. with bladder hairs
Bryonia, t.s. of stem showing large sieve plates

- Cannabis sativa, hemp, t.s. of stem showing woody sclerenchyma fibres
Chelidonium, celandine, t.s. of stem
Chenopodium, goosefoot, stem t.s.
Coleus, stem with leaf base and axillary bud I.s.
Digitalis, foxglove, stem with continuous circular stele t.s.
- Euphorbia, spurge, stem with lactiferous vessels I.s.

Fuchsia, t.s. of stem
Hedera helix, ivy, stem with crystals t.s.
Hoya carnosa, wax flower, stem with stone cells t.s.
Hydrangea, stem t.s.
Impatiens, t.s. of stem
Lactuca, lettuce, stem t.s.
Lactuca, lettuce, stem I.s.
Lonicera, t.s. of young stem
Lonicera, t.s. of older stem

- Medicago, alfalfa, young stem t.s.
- Medicago, alfalfa, old stem t.s. with secondary growth

Mercurialis, t.s. through monopodial rhizome
Mercurialis, t.s. of stem
Ononis, restharrow, stem t.s.
Passiflora, passion flower, stem t.s.
Primula, primose, t.s. of stem
Trifolium, clover, stem t.s.

## Typical dicot stems: shrubs and trees

- Aristolochia, one year stem t.s. for general study
- Aristolochia, older stem t.s. for general study

Aristolochia, one year and older stem, two t.s. on one slide

- Aristolochia, older stem I.s. for general study

Aristolochia, meristematic stem t.s. showing developing vascular bundles
Aristolochia, macerated xylem elements w.m.

- Aesculus hippocastanum, chestnut, petiole t.s.

Aesculus hippocastanum, chestnut, young stem (shoot) t.s.

- Aesculus hippocastanum, chestnut, twig with leaf scar t.s.
- Clematis, young hexagonal stem t.s., collenchyma
- Clematis, older stem t.s., phelloderm, phellogen, phellem

Fagus silvatica, beech, stem t.s.
Fagus, beech, t.s. of mature wood
Fagus, beech, macerated wood cells w.m.
Fagus, three sections of wood: t.s., r.l.s., t.I.s.
Fraxinus excelsior, ash, one year stem t.s.
Fraxinus excelsior, ash, three sections of wood; t.s., r.l.s., t.l.s.
Hibiscus tiliaceus, stem t.s.
Liquidambar, sweetgum, woody stem t.s.
Liriodendron, three sections of wood; t.s., r.l.s., t.l.s.
Liriodendron, stem t.s.
Liriodendron, stem I.s.
Magnolia, stem, I.s.
Magnolia, stem t.s. and I.s. in one slide
Magnolia, macerated xylem elements w.m.
Prunus avium, cherry, one year, two year and three year stems, three t.s. on same slide for comparison

Quercus robur, oak, young stem t.s.

- Quercus robur, older woody stem t.s., annual rings

Quercus robur, three sections of wood, t.s., r.l.s., t.l.s.
Rhus, poison ivy, stem t.s.
Salix nigra, willow, three sections of wood: t.s., r.l.s., t.l.s.
Salix, macerated xylem elements w.m.

- Sambucus, elderberry, stem with lenticells t.s.

Sambucus, three sections of wood: t.s., r.l.s., t.l.s.
Sycamore, three sections of wood: t.s., r.l.s., t.l.s.

- Tilia, lime, older woody stem t.s.
- Tilia, older woody stem I.s.

Tilia, older woody stem t.s. and I.s. on one slide Tilia, one year stem during the summer t.s., showing active cambium, ring-shaped primary vascular tissue
Tilia, one year stem during the winter t.s., showing resting cambium
Tilia, two year stem t.s., showing primary and secondary vascular tissues
Tilia, three year stem t.s.
Tilia, one year, two year and three year stems, three t.s. on same slide for comparison
Tilia, young stem I.s.

- Tilia, three sections of wood: t.s., r.l.s., t.l.s.

Tilia platyphyllos, lime, macerated wood cells w.m.

- Vitis vinifera, grape, stem with medullary rays t.s.

Vitis, three sections of wood: t.s., r.l.s., t.l.s.
Wisteria sinensis, stem t.s.

| 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), I.s. |
| As3735d | Stem thorn on stem of Crataegus (hawthorn), l.s. |
| As373d | Prickle on stem of Rosa (rose), I.s. |
| As3585c | - Nerium, oleander, t.s. stem to show lactiferous ducts |
| As3586c | Nerium, oleander, I.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, I.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
As4119e

As4103d
As4109d

Saccharum (blade), epidermis with stomata w.m.
Monocot and dicot leaves, two t.s. in one slide for comparison phytic, and xerophytic leaves

## Leaf epidermis and stomata

- Tulipa, tulip, leaf epidermis with stomata w.m., showing large stomata and guard cells for general study Calla, leaf epidermis with stomata w.m.
Sedum, epidermis with stomata w.m.
Allium cepa, onion, leaf epidermis with stomata w.m. Lilium, lily, leaf epidermis with stomata w.m.


Nerium, oleander, xerophytic leaf with sunken stomata t.s.
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
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

## 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 glan
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 Aes

## 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.
As 4799 c 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, daffordil, 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

## Typical dicot leaves

As453c - Syringa, lilac, t.s. of a typical mesophytic dicot leaf for general study, showing all structures very clearly
Syringa, paradermal I.s. through all leaf layers
As4535c
As454c
As4541c
As455d
As473d
As476c
As 4964 c
As489c
As449c
As 488 c
As4676c
As 4971c
As 4787 d
As 4785 c
As4965c
As446c
As459c
As4912c

- Ligustrum, privet, t.s. of dicot leaf

Ligustrum, paradermal (horizontal) I.s. through all leaf layers

- Fagus, beech, sun and shadow leaves t.s. on same slide for comparison of the different structures
- Helleborus, t.s. of a typical mesophytic dicot leaf for general study, showing large cellular structures
Helianthus, sunrose, t.s. of dorsiventral dicot leaf
Ranunculus, buttercup, t.s. of dicot leaf
Asclepias, milkweed, leaf with lactiferous vessels t.s.
Begonia, leaf t.s.
Belladonna, deadly nightshade, leaf t.s.
Beta vulgaris, beet, leaf t.s.
Brassica, cabbage, t.s. of leaf
Camellia (Thea) sinensis, tea plant, leaf t.s.
Coffea arabica, coffee, leaf t.s.
Dictamnus, t.s. of leaf showing crystals
Eucalyptus, an isobilateral foliage leaf t.s.
- Ficus elastica, India rubber plant, leaf with cystoliths t.s.

Gossypium, cotton, leaf t.s.


Papaver, poppy, t.s. of flower with floral diagram
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

## Adaptation to water: hydrophytes and hygrophytes

As4155c
As416d
As4946c
As4673c
As4595
Ass4948c
As4949c
As467c
As425c
As457d
As419c

As456c
As4165d
As4567c
As 475 c
As4564d
As4492c
As4752c
As4914c
As4563d
As 4959 c
As4565d
As4566c
As4916d
As458c
As4969c
As4963c

As469c
As4957f
As462d
As463c
As4951c
As470d
As460c
As 4703 d
As465d
As466c
As4941d

As451c
As452d
As4524d
As474d

- Elodea, t.s. of leaf showing the simple structure of an aquatic leaf
- Elodea, w.m. of leaf showing large chloroplasts

Calla palustris, t.s. of leaf of a typical marshy plant
Eichhornia, water hyacinth, aquatic leaf t.s.
Impatiens, hydrophytic foliage leaf t.s.
Lemna, duckweed, t.s. of leaf
Myosotis palustris, w.m. of leaf showing hairs for water reservoir

- Nymphaea, water lily, floating leaf of an aquatic plant with air chambers t.s.
- Potamogeton, pondweed, leaf t.s.

Tropaeolum, nasturtum, showing hydathodes, w.m. or t.s.
Vallisneria, tape grass, leaf of an aquatic plant t.s.

## Adaptation to dry habitat: xerophytes

- Nerium, oleander, leaf with sunken stomata t.s., showing the typical structures of a xerophytic leaf
Agava, xerophytic leaf with thick epidermis t.s.
- Ammophila, xerophytic leaf t.s.

Calluna, ling, revolute leaves t.s.
Cistus, leaf of an evergreen xerophytic shrub t.s.
Clivia nobilis, leaf t.s. showing typical xerophytic thick epidermis

- Erica, xerophytic leaf t.s.

Hakea, a proteacean, leaf t.s.
llex, holly, leaf t.s.
Sempervivum, t.s. of leaf for succulence
Larea tridentata, creosote bush, leaf of a desert plant t.s.
Lavandula, lavender, leaf with oil sacs, t.s.
Olea, olive tree, leaf t.s.

- Sedum, stonecrop, a typical succulent leaf t.s.

Sempervivum, t.s. of succulent leaf
Stipa capillata, t.s. of revolute grass leaf

## Adaptation to unusual modes of nutrition

- Dionaea, Venus flytrap, t.s. of leaf with digestive glands

Dischidia, t.s. of pitcher leaf showing cauline root

- Drosera, sundew, leaf with glandular hairs w.m.
- Drosera, leaf with glandular hairs t.s.

Lathraea squamaria, t.s. of leaf without chloroplasts
Nepenthes, pitcher plant, t.s. of pitcher with digestive glands

- Pinguicula, butterwort, leaf with glandular cells t.s.

Sarracenia, pitcher plant, leaf t.s.

- Utricularia, bladderwort, w.m. of bladder

Utricularia, t.s. through leaves and bladders
Viscum album, mistletoe, t.s. of leaf showing chloroplasts

## Leaf buds, leaf joints, leaf abscission

- Fagus, beech, leaf bud t.s. showing leaf development
- Fagus, beech, leaf bud I.s. showing leaf development Aesculus hippocastanum, t.s. of leaf bud showing bud squama and embedded, folded leaves
Mimosa pudica, sensitive plant, I.s. of leaf joint

As485d
As487d
As361c

Robinia pseudacacia, black locust, leaflets with pulvini I.s.
Aesculus, leaf base with leaf abscission I.s.
Acer platanoides, maple, t.s. of petiole

## V. FLOWERS AND FRUITS

## Microspore development in Lilium

As521e
As522e
As523e
As5232e
As5233e
As5234e
As5235e
As5236e
As524f
As5242f
As525f
As526f
As5262e
As5264f
As5266e
As527d
As5271d

As528b
As577d
As625b
As6252b
As626b
As6262b
As6263b
As630c

As529d
As530e
As531e
As609e
As655e
As656e
As6571e
As583d

As541e

As5412f
As542f
As543g
As544h
As545k
As546h
As547h

As5472k

As549i
As550g
As551k
As5514k

As548g - Lilium, ovary t.s., second four-nucleate stage, a vacuole can be seen between the nuclei
Lilium, anther t.s., very young with microspore mother cells and tapetal layers
Lilium, anther t.s., early prophase for general study
Lilium, anther t.s., late prophase for general study

- Lilium, anther t.s., microspore mother cells in leptotene
- Lilium, anther t.s., microspore mother cells in zygotene
- Lilium, anther t.s., microspore mother cells in pachytene
- Lilium, anther t.s., microspore mother cells in diplotene
- Lilium, anther t.s., microspore mother cells in diakinesis
- Lilium, anther t.s., microspore mother cells showing metaphase and anaphase of first (heterotypic) division (meiosis)
Lilium, anther t.s., microspore mother cells showing telophase of first and prophase of second (homeotypic) division
- Lilium, anther t.s., microspore mother cells showing metaphase and anaphase of second (homeotypic) division (mitosis)
- Lilium, anther t.s., microspore mother cells in tetrad stage
- Lilium, anther t.s., uninucleate (haploid) microspores after the separation of the daughter cells
Lilium, anther t.s., third division *
Lilium, anther t.s., binucleate mature pollen grains at the time of shedding with tube cell and generative cell
- Lilium, anther t.s. for general study showing pollen chambers and pollen grains
Lilium, anther l.s. for general study


## Pollen types

- Lilium, mature pollen grains w.m.

Tulipa, anthers with pollen and pollen chambers t.s.

- Helianthus, sunrose, pollen grains w.m.

Ambrosia, ragweed, pollen grains w.m.

- Corylus, hazel, pollen grains w.m.

Oenothera, pollen w.m. showing viscin filaments
Helianthus and Cucurbita, pollen grains w.m.

- Mixed pollen types, showing various forms of many different species


## Fertilization

Lilium, t.s. of stigma before pollination

- Lilium, l.s. through pistil and stigma with pollen and pollen tubes

Lilium, germinating pollen grains with pollen tubes w.m.

- Oenothera, evening primrose, stigma with pollen grains and pollen tubes I.s.
Stigma of Eschscholtzia, w.m. showing penetrating pollen
- Stigma of Eschscholtzia, I.s. showing penetrating pollen

Vicia, bean, stigma and anthers, w.m.

- Fritillaria, nectary with glands t.s.


## Megaspore development in Lilium

Lilium, ovary t.s., very young, showing the developing tissue before the formation of the megaspore mother cell. Abundant mitotic figures can be observed
Lilium, ovary t.s., with megaspore mother cell

- Lilium, ovary t.s., showing uninucleate embryosac with megaspore mother cell
Lilium, ovary t.s., uninucleate embryosac with first (heterotypic) division of megaspore mother cell *
Lilium, ovary t.s., binucleate embryosac *
Lilium, ovary t.s., showing second (homeotypic) division with two division figures *
Lilium, ovary t.s., first four-nucleate stage *
Lilium, ovary t.s., showing migration of three nuclei to the chalazal end of the embryosac while one nucleus remains in the micropylar end
Lilium, ovary t.s., showing third division after the three chalazal nu-

Lilium, ovary t.s., showing fourth division *
Lilium, ovary t.s., showing the stage of eight-nucleate embryosac for general study, not all nuclei present

- Lilium, ovary t.s., eight-nucleate embryosac showing all the nuclei in one or more serial sections *
Lilium, ovary t.s., embryosac showing double fertilization in one or more serial sections *


## Ovaries, formation of ovules and embryos (monocot)

As560d
As561d
As553f
As554f
As555f
As571d - Tulipa, tulip, t.s. of ovary showing arrangement of ovules and all structures for general study
As572d
As573d
As574d
Iris, t.s. of ovary showing arrangement of ovules
As575e Iris, ts of ovary showing later stage of embryo
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

## Ovaries, formation of ovules and embryos (dicot)

## As662d

As664d
As665d
As663d
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
As6192f Capsella, I.s. of embryo in precotyledon stage
As6193f Capsella, I.s. of embryo in early cotyledon stage
As6194f Capsella, I.s. of embryo in later cotyledon stage
As6195f Capsella, I.s. of embryo with curving cotyledons (mature)

## Flowers and floral diagrams (monocot)

As501e
As511d
As512d
As653d
As5778d
As5798d
As588d
As590e
As657d

Corylus avellana, hazel, diclinous male flower I.s.

- 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

## As606d

As600d Prunus avium, cherry, flower bud with perigynous ovary I.s
As595d Ranunculus, buttercup, I.s. of flower
As659d Rhododendron, t.s. of flower showing bud scales
As603d Ribes, currant, I.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
Monocot and dicot flower buds t.s. on same slide for comparison

- Lilium candidum, lily, t.s. of flower bud showing floral diagram of a monocot
- Lilium, I.s. of flower bud

Galanthus, snowdrop, t.s. of flower
Secale, rye, t.s. of a typical gramineous flower
Zea, t.s. of male flower
Anthurium, flamingo plant, pedicel with flowers t.s.
Arum maculatum, cuckoopint, l.s. of flower, insect trap
Arum maculatum, t.s. of flower bud showing ovary

## Flowers and floral diagrams (dicot)

## - Bellis, l.s. of a composite flower bud

Caltha palustris, l.s. of flower
Cheirantus, wallflower, t.s. of flower bud with marginal-parietale placentation

- Lycopersicum, I.s. of flower bud

Magnolia, t.s. of flower bud showing anthers with microspore mother
cells cells

- Papaver, poppy, t.s. of flower shows parietal placentation
- Papaver, poppy, t.s. of older flower, formation of embryos

Pyrus malus, apple, flower bud with hypogynous ovary l.s.
Primula, primose, t.s. of flower
Prunus avium, cherry, flower bud with perigynous ovary l.s.

- Taraxacum, t.s. of composite flower


Triticum, wheat, grain I.s. showing embryo

## 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

Ranunculus, I.s. of fruit
Ranunculus, t.s. of fruit

- Pyrus malus, apple, young pome t.s., a fleshy, many seeded fruit Rosa, syncarpous fruit I.s.
As641d Rubus idaeus, raspberry, young aggregate fruit I.s.
As642d Fragaria, strawberry, young aggregate fruit I.s.
As6035d Ribes, I.s. of a simple berry fruit
As643d Morus, mulberry, young multiple fruit I.s.
As645e
Ficus carica, fig, young fruit t.s.


## Seeds

- Triticum, wheat, grain (seed), t.s. showing embryo and endosperm
- Triticum, grain (seed), sagittal l.s. showing embryo and endosperm
- 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 I.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 $1,5 \mu \mathrm{~m}$ (micrometers) as compared to $5-10 \mu \mathrm{~m}$ 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.

NEW! Microscope Slides on CD-ROM. The new amazing CDProgram 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 125-130).

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