CRYPTOGAMIC BOTANY

AND ITS LITERATURE.

EDITED BY M. C. COOKE, M.A., A.L.S.,

1880-81.

INDEX.

Grevillea,

QUARTERLY RECORD OF CRYPTOGAMIC BOTANY AND ITS LITERATURE.

AUSTRALIAN FUNGI.

By C. KALCHBRENNER and M. C. COOKE.

(Continued from Vol. viii., p. 154.)

[illegible]porus (Mesopus) perdurans, *Kalch.*

[illegible] ferrugineus, habitu toto *Pol. perennis,* Fr., sed [illegible] [illegible] zonatus radiatimque striatulus, glaber, [illegible] [illegible] ad basin bulbose incrassatus [illegible]; pori [illegible] [illegible]anguli, acuti.

[illegible] boreali-orientalis (Mueller).

Pileus [illegible] unc. latus, stipes vix unciam longus, 4-5 mm. crassus.

[illegible]ydnum (Apus) delicatulum. *Klotzsch Fr. Ep.* 515.

Pileo [illegible], coriaceo, [illegible]; margine reflexo, [illegible] [illegible]escente, pagina fertili albescente; aculeis tenuissimis, [illegible] [illegible]bus, distantibus, fulvis punctata.

[illegible] River (Mueller).

[illegible] setacei.

[illegible]ex hexagonoides, *Kalch.*

[illegible]. Pileus suberoso-coriaceus, postice porrectus (pen[illegible] ?) pollicem circiter latus, inconspicue zonatus, moliter vil[illegible], dentibus reticulo favaceo, [illegible] [illegible] [illegible]iticulis.

Richmond River (de Mueller).

Hymenium primo favaceum, ut in *Hexagona,* demum in dentes [illegible]aceos, [illegible] elevatur.

[illegible]ereum semilugens, *Kalch.*

Membranaceum, subcaespitosum, sessile, lateraliter confluens. [illegible] explanati, semiorbiculares, [illegible] lobati, [illegible] [illegible], demumve glabrescentes, [illegible] [illegible] [illegible], sub[illegible] [illegible] [illegible] [illegible].

[illegible] (Mueller).

Fere papyraceum, a *Stereo membranaceo,* Fr. et *Stereo Borgiano* Fr., colore [illegible] distinctum.

Thelephora Archeri. *Berk. in Kalchbr. Flora.*

On the ground. Dolomite Hill (Mueller).

Corticium miniatum, *Cke.*

Effusum, adnatum, [illegible] subitu fimbriato [illegible]; hy[illegible] [illegible] cento, late [illegible] umbrino.

On bark, Queensland (Baron von Mueller).

When dry the hymenium resembles patches of dried [illegible] which cracks off and exposes the umber substratum.

Phallus (Cynophallus) papuasius, *Kalch.* **Mutinus papuasius,** [illegible] *in Grevillea* ix., 74.

Peridio exteriori laxo, cum stipite gracili, subflexuoso, ca[illegible] celluloso pallido. Receptaculum ovato-conicum, stipitem [illegible] superans, leviusculum, nigrum.

Australia. Queensland, prope Rockhampton, in terra, [illegible] Thozet, com. de Mueller.

Phallus (Dictyophallus) aurantiacus, *Montg.* var. **discolor** [illegible] leg

Pedunculus cylindricus, *subæqualis*, celluloso-cribrosus, [illegible] [illegible]iacus, peridio ovato, albo, quintuplo longior; pileus digitaliform[illegible] præter marginem liberum adnatus, apice primum clausus, de[illegible] pervius, tenuiter reticulato-rugosus, stipiti subconcolor, demu[illegible] nigricans. Sporæ ellipticæ, ·002 × ·0015 mm. diam.

Australia orient. subtropica, ad Wigton (Mueller).

In specimine quod adest (juniore) pileus griseo-lutescens est, [illegible] altero nigricans.

Phallus (Hymenophallus) tahitensis, *Schlecht, Syn.* **Phall[illegible] Dæmonum,** *Hook. in Beechey Voy.*, *p.* 78.

Pedunculus cylindricus, vix superne angustior, lacunis exig[illegible] tectus; laxe amictus velo ultra medium ejus dependente, undulat[illegible] plicato, interstitiis mediocribus, subrhombeis reticulato, [illegible] integerrimo; pileus ovalis, medio crassior, apice late pervius, de[illegible] reticulato-rugulosus, basi membrana brevi, plicatula cinctus, ped[illegible] culo paullulum latior, volva angustior.

N. S. Wales. Richmond River (Mueller).

Differt a *Ph. Dæmonum*, Rumph., velo longiore, laxius reticul[illegible]ato pileoque fusco-nigro nec gilvo.

[illegible] Volva ovata, truncata, vel leviter lobata; stipes cylindricus [illegible] dilatatus, *late pervius*, in 7–8 lacinias simplices, [illegible] stratum sporiferum paginam interiorem laciniarum [illegible] occupa[illegible]

Genus *Lysuri* stipitem ore plus-minus constrictum (nec [illegible] pervium) habet et lacinias numero pauciores, 4–5. In *Aseroë* et *Calathisco* stratum sporiferum intra basim laccinarum occupa[illegible] ceterum si liber [illegible] *Lysuro* ut *subgenus* adjungi potest.

Anthurus Muellerianus, *Kalch.*

Volva basi coma densa radiciformi [illegible]; pedunculus [illegible] tenuis, sursum cupulari, vel subinfundibuliformi dilatatus, [illegible] [illegible]bescens; laciniæ octo, basi sinu discretæ, erecto-patentes, [illegible] recurvatæ, lanceolatæ, pagina interna sinuoso-rugosa, rubr[illegible] massa sporifera [illegible].

Australia (Mueller).

Volva 2 cent. alta, $1\frac{1}{2}$ cent. lata, exsiccatione fuscescens, int[illegible]

sarum, fl[illegible] [illegible] hyalinis immixtis. Stipes validus,
sublignosus, dein[illegible]

Col. Berkeley, qui pro *Phellorina* [illegible] stipitem cavum po[illegible]
ipse monet, se unicum modo specimen vetustum fungi hujus
disse; cum vero specimina plura nuperius e regione Capensi al[illegible]
et characteres generis hujus [illegible] pro se ferentia, stipite s[illegible]
gaudeant, conjicere licet, cavitatem stipitis modo fortuitam, [illegible]
tustate pendentem esse. Nec color sporarum [illegible], inter [illegible]
ceteres generis recipiendus videtur.

Phellorina strobilina, *Kalchbr.* (**Scleroderma strobilina,** *Kl*[illegible]
Grevill., iv. 74.)

Peridio globoso-depresso, superne squamis validis, angu[illegible]
immite, glabro pallido, deinde rimose dehiscente; stipite so[illegible]
sublignoso, nudo, sursum dilatato; sporarum massa, a stipite [illegible]
tincta, cinereo-fuscescens. Sporæ globosæ, verruculosæ, vix p[illegible]
cidæ, ·005 mm. diam.

Queensland. Rockhampton. Thozet, No. 722 (Mueller).

Peridium 4-6 cent. diam.; stipes 3-4 cent. longus, 1-1½ [illegible]
crassus; pariet[illegible] peridii 2-3 mm. crassi; squamæ [illegible]
tulatim delabent[illegible]

Dehiscendi modo et colore sporarum a genuinis *Phello*[illegible]
differt; hinc facile novum genus.

Valsa echidna, *Cke.*

Erumpens. Peritheciis (10-20) in stromâ [illegible] p[illegible]
nidulantibus. Ostiolis cylindricis, elongatis, flexuosis, [illegible]
Ascis numerosissimis, clavatis, minimis (·02-·025 × ·00[illegible] m[illegible]
Sporidiis tenuibus, curvulis, hyalinis (.004 mm. long).

On bark (Baron von Mueller).

A most distinct and characteristic species, in habit [illegible]
Valsa Salicis, Berk.

BREAKING OF THE MERES.

By W. Phillips, F.L.S.

Several of the Shropshire Meres are subject at this time of [illegible]
to, what is locally known, as "*breaking*," which consists of a t[illegible]
green scum being formed on the surface of the water, which l[illegible]
for a period of a week or more. It is a well-known fact amon[illegible]
fishermen that it is utterly useless attempting to fish while [illegible]
water is in this state, for the fish are said to be sick, and will not [illegible]
the bait. If the cause of this "breaking" of the Meres be enqu[illegible]
about on the spot various opinions are expressed. Some [illegible]
attribute it to the *seeds* of aquatic plants with which they s[illegible]
the water becomes filled, which, as we shall presently see, is
very far from the truth. G. Christopher Davies, in his little b[illegible]

"Mountain Meadow, and Mere," suggests that it may be caused by the American weed (*Anacharis alsinastrum*), but, unfortunately for this opinion, the "breaking" was observed long before the American weed became naturalized in Britain. The real cause of this phenomenon, so far as the Chlorosperæ are concerned, is the rapid growth of a minute Alga (*Echinella articulata*, Ag.), which, lying at the vanishing rate, forms a dark green slime under the surface of the water. This Alga was figured by Lyngbye, tab. 2,555, so long ago as 1803, but I am not aware that any figure has been published of it since then, and that does not give the precise structure. It is strange that Dr. Rabenhorst makes no mention of this plant in his "Flora Europæa Algarum," although our British Manuals give an adequate description of the species (viii. "English Flora," v. V., p. 498; "Manual of British Algæ," p. 187).

Having been informed by a friend that a large pool at Hawkstone, the seat of the Rt. Hon. Viscount Hill was "breaking," I visited the place in the absence of Lord Hill, a bottle of the water in question, and was much surprised to find that the cause of the "breaking" in this pool was a totally different species of Alga. If I am not mistaken, it is *Anabæna circinalis*, Rabh., Flor. Alg., sec. II., p. 187, which is, possibly the same as *Nostoc flos-aquæ*, Bory. It consists of moniliform filaments, twisted in a corkscrew form, composed of nearly spherical cells, containing green chlorophyl, with here and there a colourless cell, much larger than the others. These colourless cells are each a large oblong ovate cell, ·015 × ·007 mm., replete with green chlorophyl in coarse granules. These large cells drop to the bottom of the vessel containing the water, surviving the rest of the filament. The colourless cells probably [illegible] those larger oblong cells.

DESCRIPTION OF PLATE 134.

Echinella articulata, nat. size. Filaments, 0·7 mm. long.

Single plant enlarged about 70 times.

Filaments more highly magnified, each with a spherical cell at the base, dia. ·01 mm., filled with chlorophyl.

Spherical cells, with very thin walls filled with minute granules in an active state of motion. These cells soon become empty, and the fractured remains of the cell membrane remain. I have only seen these cells once.

Anabæna circinalis, Rabh., nat. size.

Groups of filaments.

Single filament, showing large oblong cells, with the two adjacent colourless cells.

CALIFORNIAN FUNGI.

By M. C. Cooke, M.A., LL.D., Harkness.

This is a first instalment of a collection of about four hundred numbers, made during the past year by Dr. Harkness. Species already described have not been enumerated, except in instances where a record has been considered advisable.

Phoma Hosackiæ, *C. & Hk.*

Sparsa, punctiformiis, subtecta, atra. Sporis cylindraceis utrinque rotundatis, hyalinis (·01-·012 × ·003 mm.).

On stems of *Hosackia glabra.*

Chætophoma atriolis, *C. & Hk.*

Atra, effusa, velutina. Hyphis erectis, simplicibus, cum conidiis ellipsoideis, 1-2 septatis. Conceptaculis (·8-·18 mm.), brunneis, membranaceis. Sporis minut (·004 × ·003 mm.).

On bark of *Acer macrophyllum.*

Vermicularia subglabra, *C. & Hk.*

Sparsa, epidermide nigrofacto tecta. Peritheciis subapp aliis glabris, aliis pilis sparsis brevibus cristatis. Sporis hyalinis, [illegible] (·02 mm. [illegible]).

On stems of *Helianthus.*

Septoria helianthicola, *C. & Hk.*

Peritheciis semi-immersis, atris, maculis nigris [illegible] Sporis rectis vel flexuosis, linearibus, achrois (·03-·035 mm.).

On stems of *Helianthus.*

Discella olivacea, *C. & Hk.*

Sparsa, atro-olivacea, cupuliformis (¼ mm. diam.). elliptieis, utrinque sub-attenuatis, olivaceis, integris (·011 mm.).

On stems of Nettle (?).

Discella tenuispora, *Ces. & Hk.*

Sparsa, atro-viridis, punctiformis, applanata, margine elevato (¼-½ mm. diam.). Sporis rectis, cylindraceis, hyalinis (·02 × ·0025 mm.).

On *Juncus.*

Diplodia microscopica, *C. & Hk.*

Sparsa, tecta. Peritheciis minimis, vix conspicuis, ellipticis, palide fuscis, uniseptatis, leviter constrictis (·01 mm.).

On stems of *Cynoglossum.*

Diplodia rhuina, *C. & Hk.*

Sparsa, erumpens. Peritheciis subglobosis, atris, ellipticis, uniseptatis, nec constrictis, brunneis (·025-·028 × ·0 mm.).

On stems of *Rhus trifoliata*, with an immature Sphæria. (1

Hendersonia galiorum, *C. & Hk.*
Sparsa, atra, prominulis, demum erumpens. Sporis subellipticis, utrinque attenuatis, fuscis, triseptatis, cellulâ penultimâ longitudinaliter divisâ (·02 × ·008 mm.). (1339.)
On stem of *Galium*.

Dichomera Phaceliæ, *C. & Hk.*
Sparsa, atra, erumpens, opaca, obtusa. Sporis subglobosis, vel breviter ellipticis, atro-fuscis, transverse et longitudinaliter 1-3 septatis (·012 × ·009 mm.). (1427.)
On stems of *Phacelia*.
Sometimes the spores are so opaque that the septa are not

a compositarum, *C. & Hk.*
erumpens, atra, opaca, obtusa. Sporis ovatis 2-3 sep-
nchymatis, atro-fuscis, demum opacis (·02 × ·014 mm.).
s of *Artemisia* and *Achillea*. (1238, 1367, 1587.)

um leguminis, *C. & Hk.*
Sporis ovalibus, hyalinis, in massam gelati-
ucentib (·012 × ·006 mm.). (1208.)
umes.

utinosa, *C. & Hk.*
da. Maculis atris orbicularibus. Hyphis ramosis vel
brunneis. Articulis subquadratis (·0065 mm. diam.). (1112.)
ves of *Eriodictyon glutinosum*.
to *Torula plantaginis*.

rium baccharidis, *C. & Hk.*
alinum. Soris elongato-erumpentibus (1 cm.) aurantiis,
entis. Sporis concatenatis, demum liberis, ellipticis, gra-
(·05 × ·02 mm.). (1257.)
ving twigs of *Baccharis*.
the manner of *Coleosporium pingue*, the spores when free are
ed towards each extremity.

porum culmorum, *C. & Hk.*
aceum, effusum, subcrustaceum. Hyphis flexuosis, simpli-
reatisve, fuscis. Sporis clavatis, 3-4 septatis, hinc illic
divisis (·04-·05 × ·018 mm.).
lms of maize. (1200, 1232, 1199.)
very difficult to characterize the closely-allied forms in this
but the present may perhaps be considered entitled to rank
net.

eum atrum, *Preuss. in Sturm Deutsch. Flora.*
is laevibus (·018-·02 mm. diam.). (1663.)
ems of *Scrophularia*.

egum opacum, *C. & Hk.*
sum, atrum. Acervulis minutis; floccis erectis, subflexu-
mplicibus, atro-fuscis. Sporis subglobosis, angulato-cellu-
itris, opacis, minute granulosis (·025 mm. diam.).
wood of *Acer macrophyllum*. (1556.)

Fusarium gallinaceum, *C. & Hk.*

Aurantiaco, tremelloideum, convexum. Hyphis furcato-ramosis. Sporis fusiformibus, curvulis, utrinque acutis, nucleatis (·04-·05 × ·003 mm.).

On chicken feathers.

Leotia ochroleuca, *C. & Hk.* (1292.)

Sparsa, tremellosa. Pileo carnoso, convexo, undulato, ochroleuco; margine involuto. Stipite albo, gracili, flexuoso (1 inch). Ascis clavatis. Sporidiis cylindricis, curvulis, nucleatis (·025 × ·002 mm.). Paraphysibus quandoque curvatis, hinc illic furca

On damp ground.

Allied to *L. circinans*, but sporidia only half as long. (13

Stictis decipiens, *Karst. Myc. Fenn.*

Sporidiis ·12 mm. long.

On *Artemisia.*

Stictis radiata, var. **pumila.**

Sporidiis ·23-·25 mm. long.

On *Mimulus glutinosa.*

Stictis annulata, *Cke. & Phil.*

Sparsa, orbicularis. Cupulis depressis (·3-·5 mm. dian
gine albo, integro, annulato. Hymenio ochraceo vel palli
elongato-cylindricis. Sporidiis filiformibus, subflexuos
mm. long

On bark of *Lonicera.*

This species had previously been found in Britain by Mr. (121
and seems to be distinct from any form of *S. radiata.*

Ascomyces fulgens, *C. & Hk.*

Bullatum. Maculis irregularibus, hete aurantiaceis, c
Ascis brevibus (?). Sporidiis subglobosis (·0035 mm. diam

On living leaves of *Arctostaphylos.*

Apparently but few sporidia in each ascus, but this coul
accurately determined, as the asci were dissolved, and the
agglomerated in groups of 6 to 8.

Sphæria (Pleospora) labiatarum, *C. & Hk.*

Sparsa, atra, semitecta. Peritheciis ... *P. herbarum* mi
Ascis cylindraceis. Sporidiis uniseriatis, ellipticis, succin
dis, triseptatis. Loculo penultimo longitudinaliter divisi
·01 mm.).

On stems of *Marrubium vulgare.*

Sphæria epipteridis, *C. & Hk.*

Sparsa, tecta, vel erumpens et semi-immersa, atra. A
vatis, sessilibus. Sporidiis fusiformibus, hyalinis, 3-5
(·022-·025 × ·005 mm. diam.).

On stipes of *Pteris aquilina.* (1288.)

Sphærella brachytheca, *C. & Hk.*

Peritheciis sparsis, tectis, exiguis (·66 mm. diam.), men
ceis. Ascis ovatis (·02 × ·016 mm.). Sporidiis ellipticis, 1
uniseptatis (·008 × ·004 mm.).

On stems of *Convolvulus.*

Sphærella arctica, *E. & H.*

Perithecia gregaria, brunnea, membranacea, epidermide tectis, in maculis orbicularibus congestis. Asci cylindracei. Sporidiis fusoideis, hyalinis, uniseptatis (·01 × ·003 mm.).

On stems of *Aralia californica*. (1248.)

Sphærella dendromeconis, *E. & H.*

Minuta, sparsa, epidermide tecta. Perithecia membranacea, primeis. Sporidiis biseriatis, ellipticis, hyalinis, uniseptatis, cellula infra tenuiore (·016 × ·005 mm.)

On stems of *Dendromecon rigidum*. (1638.)

Sphærella acacia, *E. & H.*

Epiphylla, subgregaria. Perithecia membranacea, epidermide tecta. Asci clavatis. Sporidiis biseriatis, hyalinis, sublanceolatis, medio constrictis, uniseptatis, biguttulatis (·025 × ·007 mm.).

On leaves of *Acacia*. (1415.)

The sporidia appear to become ultimately triseptate, but too indistinct to be included in the diagnosis.

SAPROLEGNIA FERAX.

The subject of the salmon disease still occupies the attention of the Fishery Commissioners, and we observe that a paper on the subject has been read at the Dumfriesshire Natural History Society, in which it is maintained that the disease is aggravated, if not caused, by the presence of a vast number of bacteria in the flesh of the diseased spots. Mr. Rutherford writes:—"Sections of the muscle, when placed under the microscope, were seen to be literally one mass of life; that life being a species of Bacteria. They are small discoid-looking bodies, which in this case I find embedded in, and moving amongst, the striated muscle fibre of the fish, and when by pressure or otherwise they are forced into the surrounding fluid, they have a power of motion, moving mostly in a sort of circular direction. In some fish that I have examined, I observed that the muscle was almost detached from the strong fibro-muscle layer of the skin, and the muscle fibres of that layer were not adhering together as in their natural state, and could be separated from each other like threads by the needle. Whether that diseased condition of that part of the skin was caused by the state of the muscle immediately below it, or by the fungus on the surface, I am not in a position to say." Afterwards he says:—"The disease is located in the muscle of the fish, and I also have some idea that it will be found to commence in the blood, caused either by the food they eat, or by some deleterious solution in the water which passes through the gills; and that the unhealthy decaying fluid or matter which will naturally pass off from those Bacteria, and exude through the pores of the skin, forms a healthy

and proper media for the germination of the zoospores of the fungus, which must be in those affected rivers in myriads.

It would be some consolation to the mycologist if, after all he could feel convinced that this fatal salmon disease was not primarily caused by the *Saprolegnia*. But there are very grave doubts whether these Bacteria are not more probably the result of a certain disintegration of the substance of the flesh caused by the mycelium of the *Saprolegnia*, than a preliminary depravity of the flesh inducing the subsequent development of the fungus. However much we may dislike the conclusion that a fungus is the principal cause of so much mischief, I fear that we must accept the force of evidence which goes to show that the *Saprolegnia* appears to be the great destructive agent in this disease. It may be true, and undoubtedly is, that the constitution of the fish is in a low condition, that it is debilitated, and powerless to resist the fungoid attacks; and that this condition may be the result of various secondary causes; but the theory that Bacteria in the flesh is the primary cause, though it may be a new suggestion, can scarcely be accepted as a true one. The coincidence should be borne in mind, even if it is no more than a coincidence, that in all the great instances of devastating fungal disease, there has been an undoubtedly weakened constitution in the subject, caused by overcultivation, and in-breeding, preliminary to the attacks. Such was the case in the silkworm, and it fell a prey to "muscardine." In the potato, and it succumbed to the *Peronospora*. In the vine, and it became a victim to *Oidium*. May we not add also, in the salmon, ere it was devastated by the *Saprolegnia*; and it may yet be to the onion in Europe, and the poppy in India, unless the threatened misfortune should be averted.

EXOTIC FUNGI.

By M. C. Cooke.

The following small collections from various localities are chiefly in the Herbarium of the Royal Gardens at Kew:—

Venezuela.

The following specimens were sent by Dr. Ernst as illustrations of the diseases of the Coffee Plant. Only one is really destructive, and that has been previously described. We regret that we cannot accede to his view that it is a condition of a species of *Erysiphe*.

Pellicularia Koleroga, *Cke. in Grevillea.*

On leaves of *Coffea arabica*. Venezuela (Dr. Ernst).

This is the *Erysiphe? scandens*, Ernst. We have failed in finding the concatenate conidia and pycnidia as described by Dr. Ernst.

In habit it is less dense, but differs in no other respect from the Mysore specimens.

Leptostroma discoidea, *Cke.*
Epiphylla, punctiformis, sparsa, convexa, atra. Sporis minutis, linearibus, hyalinis, rectis (·006 mm. long).
On leaves of *Coffea arabica*. Venezuela (Dr. Ernst).
Resembling externally a minute species of *Microthyrium*.

Torula Sphærella, *Cke.*
Gregaria, atra. Caespitulis sphæriformibus, sub-globosis, compactis. Sporis cyliadraceis, quinque-articulatis, constrictis, brunneis, ·018-·02 × ·004 mm., cellulis subquadratus, nec facile dissilientibus (·004 mm. diam.).
On leaves of *Coffea arabica*. Venezuela (Dr. Ernst).

Stilbum flavidum, *Cke.*
Pallido-flavidum, gracile; capitis globosis, stipitibus flexuosis, tenuibus. Sporis minimis, subglobosis (·0015 mm. diam.).
On leaves of *Coffea arabica*. Venezuela (Dr. Ernst).
Seated, several together, upon pallid spots, similar to, and in company with, *Sphærella coffeicola*.

Sphærella coffeicola, *Cke.*
Maculæ pallidæ, subrotundatæ, margine brunneo (⅛-1 cm.). Perithecia pancis, sparsis, innereis, atro-fuscis, minimis. Ascis clavatis. Sporidiis fusiformibus, arcte constrictis, uniseptatis, binucleatis, hyalinis (·025 × ·0045 mm.).
On leaves of *Coffea arabica*. Venezuela (Dr. Ernst).
Not more than two or three perithecia scattered over a roundish pallid spot. Sometimes the *Stilbum* occupies the same spot.

PARAGUAY.

Collected by M. Balansa.

Meliola furcata, *Lev.* Ann. Sci. Nat. (No. 1291.)
On leaves.

Tribilidium rufulum, *Spreng.* (No. 1276.)
On branches.

Nectria coccinea, *Fr.* (No. 1287.)
On bark.

Xylaria graminica, *Mont.*
On wood.

Pseudosphæria *Cke.*
Amphigena. Sporis oblongis, bullatis, in annulis confluentibus, purpureo-brunneis. Pseudosporis elongato-ellipticis, constrictis, lævibus, læte brunneis (·045-·056 × ·02-·025 mm.). Pedicello hyalinis, elongatis.
On leaves of *Pilocarpus Selloanus*. Paraguay (Balansa, 1290).

Stereum xanthellinum, *Che.*

Coriaceo-membranaceum, ochraceo-flavidum; pileo infundibuliformi, glabro, opaco, lenites subzonato; margine undulato; stipite deorsum attenuato, tenui; hymenio pruinoso, concolori.

On wood. (No. 2790.)

Resembling *S. elegans*, Fr., in size and form, but very different in colour and texture. It has very much the appearance of thin crash leather. Stem about the same length as the pileus, about one inch.

BRAZIL.

Polyporus (Pleuropus) sanguineus, *Fr.*

On wood. Rio Janeiro. (Glaziou, 11767.)

Polyporus (Placodermei) Australis, *Fr.*

On wood. Rio Janeiro. (Glaziou, .)

Polyporus (Placodermei), ulmarius, *Fr.*

On wood. Rio Janeiro. (Glaziou, 11772.)

Polyporus (Placodermei) lateritius, *Che.*

Pileo suberoso-lignoso, explanato, dimidiato-sessili, sublateritio, concentrice viridi-zonato, postice tuberculoso duro, opaco; intus molli, laete lateritio; poris minutis rotundis confluenti-stratosis, ferrugineo-fuscis (⅓ mm. diam.).

On wood. Rio Janeiro. (Glaziou, 11770.)

Pileus 8 to 10 inches by 4 to 6 inches, and two inches thick behind. Perennial. Internally of a bright brick red, or almost orange red; somewhat of the colour of a red-fleshed melon. Substance beneath the hard horny cuticle not at all fibrous; soft, but firm; not so dense as in *P. ulmarius*. With a sharp knife it may be cut in slices almost as thin as paper. Pores smaller than in *P. fomentarius*.

Trametes ochroñava, *Che.*

Ubique ochraceo-flavida; pileo suberoso, compacto, convexo applanato-ex, tuberculoso; margine sæpe concentrice sulcato; intus concolore; poris subrotundis, minutis, æqualibus, ochraceis.

On trunks. Rio Janeiro. (Glaziou, 11769.)

Pileus 3 to 10 inches by 2 to 5 inches, and from ½ to 1 inch thick behind. Often imbricated. Pores ⅕th mm. diam. Internally concentrically zoned. Tubes half an inch long, or more, according to the thickness of the pileus.

JAPAN.

Polyporus (Placodermei) glaucotus, *Che.*

Pileo suberoso-lignoso, applanato, concentrice sulcato, glabro, olivaceo cinereo, postice gibbo; intus molli fibroso, rhabarbarino-ochraceo. Poris rotundis, minutis, brevibus, cinnamomeis.

On wood. Japan. (Mr. C. Welford).

Often imbricated, or with a short stem. Sometimes three or four short stems arise from a hard tuberiform mass, the size of a hen's egg, which is of the same substance as the pileus. Pilei 3 by 2 inches; 1½ inches thick at the base. Attenuated to the thin margin, which is of a shining blue-grey.

Polyporus (Placodermei) concentricus, *Cke.*

Pileo lignoso, subapplanato, lævi remote concentrice sulcato, fusco, purpureo-fasciato, intus duro, pallido, zonato. Poris minutis, tandis (¼ mm. diam.) ochraceis, demum, cinnamomeis.

On wood. Locality uncertain.

Pileus 7 by 5 inches; 1½ inches thick behind. Tubes nearly half the thickness. Substance wood-coloured; concentrically zoned. Externally the pileus is variegated with numerous concentric purple lines. Somewhat resembling *P. fasciatus*, Fr.

INDIA.

The following have been received from Dr. Aitcheson and Mr. Duthie:—

Podaxon calyptratus, *Fr. Sys. Myc.*

On the ground. Punjab (Dr. Aitcheson).

Eaten by the natives.

Helvella crispa, *Fr.* Cke. Myco. f. 159.

On the ground. Punjab (Dr. Aitcheson).

This is acknowledged as an edible species in Europe.

Agaricus (Lepiota) excoriatus, *Schæff. t.* 19.

On the ground. Punjab (Dr. Aitcheson).

Geaster hygrometricus, *Fr. Sys. Myc.*

On the ground. Saharunpore (Mr. Duthie).

Phyllosticta marmorata, *Cke.*

Maculis niveis, numerosissimis, hinc illic confluentibus. Perithecciis paucis (1-2) semi-immersis, punctiformibus, brunneis. Sporis ellipticis, hyalinis (·005 mm. long).

On leaves of *Mallotus Philippinensis*. Saharunpore (Duthie).

PERSIA.

Collected in Kurdistan, Luristan, &c., by Dr. Haussknecht:—

Asteroma haussknechtiæ, *Cke.*

Peritheciis atris, minimis, in maculis nigris irregularibus conspectis. Sporis arcte ellipticis, hyalinis (·006 mm. long).

On dead leaves of *Haussknechtia*. Luristan (Dr. Haussknecht).

Puccinia achilleæ, *Cke.*

Epiphylla. Soris discoideis, eruimpentibus, purpureo-brunneis; pseudo-sporis elongato-ellipticis, brunneis, constrictis (·05 × ·025 mm.), episporis leniter granulatis, pedicellis hyalinis, elongatis, robustis. Protosporis n. v.

On *Achillea albicaulis*. Kurdistan.

Puccinia gundeliæ, *Cke.*

Amphigena. Soris [illegible] sparsis, brunneis. Protosporis globosis, fuscis, gl[illegible]ratis (·028-·03 mm.). Teleutosporis immixtis late ellipsoideis vel differmibus (·032-·035 × ·02 mm.), lævibus; pedicellis brevissimis.

On *Gundelia Tournefortii*. Kurdistan.

Puccinia heterophylla, *Cke.*

Hypophylla, vel amphigena. Soris apotasmatis, subconfluentibus, brunneis, pulverulentis, dense gregariis. Protosporis globosis, lævibus, pallide fuscis (·02-·022 mm.). Teleutosporis, in soris immixtis obscurioribus, ellipticis, vix constrictis, brunneis (·03-·032 × ·02 mm.), lævibus; pedicellis brevissimis.

On *Serratula heterophylla*. Kurdistan.

Puccinia jurineæ, *Cke.*

Epiphylla. Soris discoideis, atro-fuscis, sparsis. Teleutosporis ellipticis, constrictis, læte brunneis (·05 × ·03 mm.), episporio lævi, pedicellis gracilis, hyalinis, elongatis (circa ·08 mm. long.).

On *Jurinea*. Beg Dagh.

Melampsori Lini, *Tul. Ann. Sci. Nat.*

On *Linum austriacum*. Luristan.

Melampsora Euphorbiæ, *Tul. Ann. Sci. Nat.*

On *E. falcata*.

Uromyces gypsophilæ, *Cke.*

Hypophylla, vel caulina. Soris orbicularibus, atro-fuscis, magnis. Pseudosporis subglobosis, intense fuscis (·025-·027 mm.). Episporio verrucoso, pedicellis evanidis. Protosporis n. v.

On *Gypsophila*. Kurdistan.

NATAL.

Communicated by Mr. J. M. Wood, of Inanda:—

Agaricus (Collybia) dryophilus, *Fr. prox.*

On the ground. (No. 464.)

Trametes inunctis, *Fr. Epicr., p. 459.*

On wood. (No. 435.)

Cladoderris Australica, *Berk.*

The pileus of a dark umber brown.

On wood. (No. 239.)

Physarum cinereum, *Batsch.*

On grasses. (No. 429.)

Æcidium aroideum, *Cke.* in *Grevillea*.

On leaves of *Stylochiton*. (No. 111.)

Coleosporium ochraceum, *Fckl.*

On leaves of *Agrimonia*. (No. 432.)

Puccinia hydrocotyles *Cke. &c.*

Protosporis (*Uredo hydrocotyles*, Mi.) immixtis. Teleutosporis ellipticis, leniter constrictis, brunneis (·03 × ·02 mm.). Episporio lævi, pedicellis elongatis.

On *Hydrocotyle*. (No. 450.)

NEW COSMARIUM IN TRAFALGAR SQUARE.

We have been somewhat surprised to learn that Dr. Wittrock has found a new species of *Cosmarium* in the fountains of Trafalgar Square (London), which he calls *Cosmarium trafalgaricum*. New organisms turn up in the most unexpected manner, and, although this was found as far back as 1872, many of us are now hearing of the fact for the first time. Specimens are published in Wittrock's Exsiccati, it is presumed, although not detected in the copy we have seen, under No. 81. It has been thus described:—

Cosmarium trafalgaricum. Wittr.

Parvum, quinta fere parte longius quam latus, in medio profunde constrictum, sinu lineari extrorsum ampliato, membrana glabra; semicellulis a fronte visis reniformibus, latere dorsali in medio leviter emarginato, a latere visis orbicularibus, in utroque latere tuberculo minimo mediano ornatis, a vertice visis ellipticis, lateribus tuberculo minimo mediano ornatis. Long. cell 24-26 m., lat. 20-21 m., crass 13-14 m. lat. isthmi 6-7 m.

In the fountains, Trafalgar Square, London. Allied to *C. Phaseolus*, Breb., and may be compared with *C. Biembii*, Reinsch.

BRAITHWAITE'S BRITISH MOSS FLORA.—The attention of Bryologists is specially directed to the announcement, which accompanied the last number of "Grevillea," of the commencement of a series of monographs by Dr. R. Braithwaite, F.L.S., of the families of British mosses. These monographs will each be complete in itself, illustrated by plates of all the species, with microscopical details of their structure. The work commenced with the Andreæaceæ, which is ready for delivery. Subscribers for the first section will receive twelve plates illustrating the Andreæaceæ (2), Buxbaumiaceæ (1), Gymnostomeæ (1), Polytrichaceæ (5), and Fissidentaceæ (81). The subscription for this and similar sections, will be two guineas. It is unnecessary to add that this work will be thoroughly abreast of the time, and that Dr. Braithwaite may be relied upon to do his duty completely and satisfactorily.

The above paragraph was written for insertion in our last number, but pressed out for lack of space. Since then we have seen the two parts already issued, and find them fully equal to our expectations. No Bryologist in this country, or indeed in the United States, can do without a copy of this Moss Flora, which, being privately printed, we would recommend them strongly to procure without delay. It may be had direct on application to the author, No. 303, Clapham Road, London.

SOUTH AFRICAN FUNGI.

By C. Kalchbrenner and M. C. Cooke.

The majority of specimens from which the following species have been described were collected by Professor McOwan at Somerset East, and communicated to Herr C. Kalchbrenner. A few were obtained in Natal by Mr. J. M. Wood, of Inanda. They have been determined for some months, but publication has unfortunately been delayed.

Agaricus (Lepiota) pteropus, *Kalch. & McOw.*

Facies *Ag. Friesii*, Lasch, sed procerus, stipite ebulbi, omnino solido, annulo fixo, lamellis sub adnatis. Odor fortissimus, raphanoideus, cum odore liquaminis fungorum ("Ketchup") pro condimento præparato sed omnibus ingratus.

On the ground. No. 392.

Agaricus (Lepiota) rubrinatus, *Berk. & Br., Ceylon Fungi, p. 497, proæ.*

On the ground. Nos. 103, 394.

Agaricus (Pleurotus) septicus, *Fr.*

On wood. No. 191.

Agaricus (Pleurotus) aureo-tomentosus, *Kalch.*

Pileus carnosus, vix excentricus, e hemisphærico-convexus, obtusus, exstrius, cum stipite fareto subæquali aureo-tomentosus; tomentum in disco pilei areolatum, quasi verruculosum. Lamellæ adnato-decurrentes, sub-distantes, cum carne stipitis et pilei albolutescentes.

On wood. No. 416.

Agaricus (Psilocybe) tenfosus, *Kalch.*

Pileus carnosus, e convexo-planus, obtusus vel vertice depressus (1-2 poll. latus) stipes gracilis, cavus (4-5 unc. longus, 1-2 lin. crassus). Lamellæ adnatæ ventricosæ, sub confertæ, fuligineæ. Sporæ ovatæ (·012 × ·009 mm.).

On the ground. No. 393.

Pileus brown, stem paler; flesh of the pileus 2-2½ ‴ thick.

Coprinus punctatus, *Kalchb.*

Pileus tenuiter carnosus, cylindrico-campanulatus (2-2½ unc. altus; 1-1½ unc. latus) vertice squamulosus, impressus, margine striatus, epidermide firmula, squamulis nigricantibus subtilissime punctata et passim vage rimosa, fuscescens. Stipes solidus, gracilis, tereti-spithameus (medio 2-3‴ crassus), utrinque fusiformi-attenuatus et ipsa basi ovato-bulbosus, fibrillosus, pallidus. Lamellæ liberæ, postice attenuatæ, nigræ. Sporæ ovales ·0015 × ·001 mm. nigræ.

On the ground. No. 413.

Xerotus caffrorum, *Kalchb. Fungi Capenses ined.*

No. 341.

Xerotus nigrita, *Lev.* (*Panus melanopoides*, *Fr. Fungi. Natal*).
On wood. No. 189.

Lentinus Zeyheri, *Berk. Hook. Journ. II.* 307.
On wood. No. 37.

Lentinus strigosus, *Fr.*
On wood. No. 421.

Cyphella farinacea, *Kalch. & Cke.*
Subgregaria, aquoso-grisea. Cupulis (1-2 mm.) expansis, demum explanatis, extus albo-farinaceis, margine sub-recurvo; contextu tenue, diaphano.
On naked wood. No. 1221.

Cyphella punctiformis, *Fr.* var. **strigosa**.
Pilis elongatis, granulatis.
On dead leaves. No. 189.

Tremella micropexa, *Kalch. & Cke.*
Erumpens, sicco hysteriiformis, udo gilva, convexa. Sporophoris ovatis. Sporis elongato-ellipticis quandoque curvulis, triseptatis, hyalinis (·02 × ·01 mm.).
On branches. No. 1351.
Breaking through the bark in a similar manner to *Colpoma quercinum*, Wallr.

Hypsilophora calloioides, *Kalch & Cke.*
Rosea, gelatinosa, pulvinata, erumpens (1 cm. long). Hyphis simplicibus vel furcatis, concatenato-cellulosis; cellulis oblongis, utrinque truncatis, hyalinis, uni-nucleatis.
On dead wood. No. 76.
With the habit of *Dacrymyces*, but separated from that genus by Berkeley, in common with two or three North American species, on account of the moniliform threads.

Phoma stapeliæ, *Kalch. & Cke.*
Sparsa, epidermide nigrifacto tecta. Perithecis globoso-depressis. Sporis arcte ellipticis, hyalinis, binucleatis (·01-·012 × ·008 mm.).
On stems of *Stapelia moschata*. Nos. 476, 1395.

Phoma artemisiæ, *Kalch. & Cke.*
Sparsa, tecta, hysteriiformibus. Perithecis applanatis, sporis spathulatis, hyalinis, binucleatis (·015-·018 × ·004 mm.). Sporophoris tenuibus, elongatis, superne curvulis.
On stems of *Artemisia*. No. 1399.

Phoma tatulæ, *Kalch & Cke.*
Sparsa, minima. Perithecis membranaceis, punctiformibus, fuscis. Sporis ellipticis, hyalinis (·0065 × ·004 mm.).
On stems of *Datura tatula*. No. 1407.

Macroplodia corticale, *Kalch & Cke.*
Sub superficiale, gregarium. Perithecis subglobosis, atris, vix papillatis. Sporis ovato-globosis, fuscis (·007 × ·004 mm.).
On bark. Nos. 138, 522.
Resembling a small *Sphæria* of the section *Dendrina*, but without asci.

Diplodia cassinopsidis, *Kalch. & Cke.*
Sparsa, epidermide nigricante tecta, lutida, centro pertusa. Perithecis subconicis, sporis ellipticis, biseptatis, nec constrictis, fuscis (·022 × ·011 mm.).
On *Cassinopsis Capensis*. No. 1264.
It has the habit and appearance of a species of *Pemphidium*, but with the fruit of a *Diplodia*.

Diplodia clematicis, *Kalch. & Cke.*
Sparsa, erumpens, epidermide cincta. Perithecis obtusis, atris, opacis. Sporis ellipticis, subseptatis, nec constrictis, fuscis (·012-·014 × ·006 mm.).
On twigs of *Clematis brachiata*. No. 1358.

Vermicularia dianthi, *Westdp.*
On leaves of *Dianthus*. No. 1435.

Ceuthospora oleæ, *Kalch. & Cke.*
Epiphylla. Maculis orbicularibus, fuscis. Perithecis depressis, fissurato-dehiscentibus. Sporis cylindricis, utrinque obtusis, hyalinis, (·03 × ·0035 mm.).
On leaves of *Olea Capensis*. No. 1333.

PROTOSTEGIA, *Cke.*
Primo tecta, dein denudata, discoidea, margine lacerato, dentato, fimbriatove. Disco gelatinoso. Sporis elongatis, simplicibus, vel septatis, pedicellatis, dein liberis.
This genus was constituted for the reception of the species long known as *Stegia Magnoliæ* Rav. from the United States. It may possibly be a stylosporous condition of *Stegia*, but no asci have yet been discovered.

Protostegia euclea, *Kalch. & Cke.*
Epiphylla. Receptaculis immersis, discoideis, fuscis margine dentato; disco aqueo cinereo, convexo; sporophoris parce ramosis, sporis linearibus, rectis, vel subarcuatis multinucleatis, demum 3-5 septatis (·04-·05 × ·003 mm.).
On leaves of *Euclea undulata*. No. 1340.

ONCOSPORA, *Kalch.*
Receptaculum erumpens, cupulæformis vel discoidea, plerumque gregaria, vel stromatis tympanoideis enata; hymenio nudo, gelatinoso; sporis hyalinis, continuis, flexuosis in hyphis tenuissimis apicalibus gerentibus.
Differs from *Protostegia* in its similarity to *Tympanis* rather than to *Stegia*, and in the different character of the spores. The cups are subsuperficial and emergent, often cæspitose.

Oncospora bullata, *Kalch. & Cke.*
Maculis bullatis, nigris. Receptaculis gregariis, discoideis, atris, margine elevato; hymenio fusco. Sporis subclavatis, hamatis, vel sigmoideis, simplicibus (·03 × ·007 mm.).
On leaves of *Gardenia citrifolia*. No. 23.
Resembling a cluster of the cups of *Peziza Dehnii*, collected on a dark bullate spot. Spores of a peculiar form, often sigmoid, or resembling a note of interrogation (?).

Oncospora viridans, *Kalch. & Cke.*

Epiphylla, cæspitosa, erumpens. Receptaculis atris, substipitatis, in stromate pulvinato congestis; disco cinereo; sporis cylindricis, vel subclavatis, rectis, vel curvulis (·02 × ·005 mm.) hyalinis; sporophoris in gelatina viridi immersis.

On leaves of *Capparis Guiacii*. No. 1273 bis.

Sacidium gomphocarpi, *Kalch. & Cke.*

Maculis suborbicularibus, fuscis. Perithecis gregariis, minutis, applanatis, membranaceis, fuscis. Sporis subglobosis, acutis (·004 mm.).

On leaves of *Gomphocarpus fruticosus*. No. 1491.

Septoria umbelliferarum, *Kalch.*

Maculis suborbicularibus, fuscis. Peritheciis in centro suffultis, punctiformibus; sporis linearibus, rectis vel flexuosis, hyalinis (·035-·05 mm. long).

On leaves of *Umbelliferæ*. No. 1393.

Septoria nesodes, *Kalch.*

Epiphylla. Maculis irregularibus, fuscis. Peritheciis immersis, membranaceis. Sporis cylindricis, obtusis, multinucleatis, rectis vel curvulis (·02-·025 mm. long).

On leaves of *Hybocotyle Asiatica*. No. 1115.

Septoria buddleiæ, *Kalch. & Cke.*

Epiphylla. Maculis irregularibus, fuscis, hinc illic confluentibus. Peritheciis membranaceis, semi-immersis. Sporis linearibus, rectis vel flexuosis, hyalinis (·04-·05 mm. long).

On leaves of *Buddleia salviæfolia*. No. 1251c.

Phyllosticta alces, *Kalch.*

Epiphylla. Maculis ellipticis, aurantio-fuscis. Peritheciis membranaceis, gregariis, fuscis, immersis. Sporis ellipticis, profusis, hyalinis (·005 mm. long).

On *Aloe latifolia*. No. 1023.

Phyllosticta auriculata, *Kalchb. & Cke.*

Epiphylla. Maculis orbicularibus, pallidis, purpureo-cinctis. Peritheciis punctiformibus, immersis, poro pertusis; sporis ellipticis, continuis, hyalinis (·005 mm. long).

On leaves of *Buddleia auriculata*.

Phyllosticta carissæ, *Kalch. & Cke.*

Epiphylla. Maculis suborbicularibus, pallide fuscis, brunneo-cinctis. Peritheciis punctiformibus, papillatis immersis. Sporis arcte ellipticis, hyalinis (·006 mm. long).

On leaves of *Carissa Arduina*. No. 1356.

Phyllosticta rhuina, *Kalch. & Cke.*

Epiphylla. Maculis elongatis, fuscis. Peritheciis punctiformibus, atro-fuscis, dense congestis. Sporis arcte ellipticis, hyalinis (·005 × ·002 mm.).

On leaves of *Rhus lucidus*. No. 1106.

The perithecia are minute and densely crowded on the irregular brown spots.

Æcidium withaniæ, *Thumen.*
On leaves of *Withania somnifera*. No. 1138.

Æcidium stobeæ, *Kalch. & Cke. in Grevillea* VIII, *p.* 70.
On leaves of *Stobæa*. Natal, No. 63.

Æcidium aroideum, *Cke. in Grevillea* VIII, *p.* 71.
On leaves of *Stylochiton Natalensis*. Natal, 114.

Æcidium crypticum, *Kalch. & Cke.*
Hypophylla. Peridiis paucis (5-6) in circulo gerentibus, inter tomento nidulantibus. Sporis subglobosis, lævibus, aurantiacis (·012-·014 mm. diam.).
On leaves of *Gerbera*. Natal, 66.

Æcidium vignæ, *Cke. in Grevillea* VIII, *p.* 71.
On leaves of *Vigna marginata*. Natal, 407.

Uredo macrospermum, *Cke. in Grevillea* VIII, *p.* 71.
On fronds of ferns. Natal, 61.

Trichobasis zehneriæ, *Thum.*
On leaves of *Zehneria scabra*. 1271.

Uredo clematidis, *Berk.*
On *Clematis brachiata*. No. 1141.

Coleosporum hedyotidis, *Kalch. & Cke.*
Epiphyllum, sparsum, aurantiacum. Soris elongatis vel confluentibus. Sporis concatenatis, ellipticis, utrinque truncatis (·02-·03 × ·016 mm.) episporio granuloso.
On leaves of *Hedyotis Amatymbica*. Natal, 60.

Puccinia helichrysi, *Kalch. & Cke.*
Protosporis. *Uredo Lepisclinis*, Thum. Teleutospor lanceolatis, uniseptatis, constrictis, atro-fuscis (·04-·055 × ·015-·018 mm.) episporio lævi. Pedicellis evanidis.
On leaves of *Helichrysum petiolatum*. No. 35.

Puccinia ornithogali, *Kalch.*
Sporis. Soris ellipticis, tectis, demum elongato-fissuratis, fuscis. Protosporis ellipticis, lævibus, pallidis (·02-·022 × ·018 mm.). Teleutosporis ellipticis, uniseptatis, constrictis, fuscis; episporio lævi; pedicellis sporis æquilongis.
On *Ornithogalum*. Nos. 1140, 1190.

Puccinia Africana, *Cke. in Grevillea* VIII, *p.* 74.
On *Sphenothes Africana*. Natal, 200.

Puccinia galiorum, *Link.*
On *Rubia petiolaris*. No. 1151.

Puccinia printziæ, *Thum.*
On leaves of *Printzia Huttoni*. 1278.

Uromyces pulvinatum, *Kalch & Cke.*
Epiphyllum. Soris discoideis pulvinatis, sclerotioideis, atro-brunneis, compactis. Sporis subglobosis (·018-·02 mm.) fuscis, lævibus.
On leaves of *Euphorbia inæquilatera*. No. 1247.
The spores spring from a discoid stroma, or cushion, almost as in *Coryneum*.

Uromyces circinalis, *Kalch. & Cke. in Grevillea VIII, p. 71.*
On leaves of some *monocotyledon.* No. 1417.

Melampsora hyperici, *Schrot.*
On *Hypericum æthiopicum.* No. 1392.

Ravenelia glabra, *Kalch. & Cke. in Journ. Roy. Micr. Soc., 1880, iii, p. 384.*
Sparsa. Capitulis magnis (·15 mm. diam.) convexis, subsessilibus, cellulis (·02 mm.) levibus, late brunneis.
On leaves of *Acacia horrida*, No. 1130, and *Calpurnia sylvatica.*

Protomyces physalidis, *Kalch. & Cke.*
Cellulis in maculis obscurioribus immersis. Sporis globosis, pallidis, levibus (·01-·02 mm. diam.).
On leaves of *Physalis Hornemanni.* No. 1121.

Cystopus quadratus, *Kalch. & Cke.*
Epiphyllus. Soris albis, minimis, convexis. Sporis quadratis (·025 lat., ·018 long.). Sporis ultimis subglobosis. Oogoniis, n. v.
On *Herpestes verticillaris.* No. 1244.
Evidently allied to *C. cubicus*, but the discovery of the oogonia will doubtless prove it to be distinct.

Hemileia Woodii, *Kalch. & Cke.*
Hypophylla. Pulvinulis parvis, aurantiacis, gregariis; sporangiis globosis, vel uno latere compressis, asperulis (·03 mm.) longe stipitatis, cum cystidis hyalinis, triquetris, sterilibus, levibus immixtis.
On leaves unknown. Natal, No. 28.

Ceratium sphæroideum, *Kalch. & Cke.*
Pulvinulis convexis, hemisphericis, carneo-albis; sporis globosis, levibus (·01 m.m. diam.) cum hyphis continuis, hyalinis immixtis.
On *Andropogon marginatum.* No. 1284.

Isaria coralloidea, *Kalch. & Cke.*
Cæspitosa, ramulosa, coralloidea, pallida cervina, apice dilata, penicillata; filis clavatis; sporis minutissimis, globosis.
On rotten wood. No. 69.
A very singular species, growing in small fawn-coloured tufts.

Stilbum cineripes, *Kalch. & Cke.*
Sparsum. Capitulis globosis, cervinis ([illegible] mm. diam.). Sporis ellipticis, hyalinis, binucleatis (·005-·006 × ·0035 mm.) stipite inferne leniter incrassato, sulcato, torto, cinereo (2-3 mm. long.).
On bark. No. 214.

Stilbum connatum, *Kalch. & Cke.*
Cæspitosum. Capitulis subglobosis, flavido-carneis (1/3–1/2 mm. diam.); sporis minutis, linearibus (circa ·005 mm. long.). Stipitibus erectis, in stromate irregulare, concolore connatis.
On wood. No. 196.

POLYCEPHALUM, *Kalch. & Cke.*

Stipes solidus, stilboideus terminatus, capitulo composito, gelatinoso, involvente sporæ. Capitulis numerosis, globosis, elongatisve deciduis.

The structure is that of a compound *Stilbum*, each stoma surmounted by a cluster of capituli which terminate short branches, and are composed entirely of minute gelatinous spores.

Polycephalum aurantiacum, *Kalch. & Cke.*

Totum aurantiacum. Stipite crasso, cylindraceo, superne in ramulis brevibus diviso. Capitulis ellipticis, deciduis. Sporis hyalinis (·0025 × ·0015 mm.).

On rotten wood. No. 1353.

The ramuli are scarcely more than papillæ, each of which bears a capitulum.

Fusarium aloes, *Kalch. & Cke.*

Sparsum, carneum, gelatinosum. Hyphis brevibus. Sporis fusiformibus, continuis, rectis vel lunatis, utrinque acuminatis, hyalinis, (·04-·05 × ·0035-·004 mm.).

On *Aloe arborescens*. No. 1472.

Microstroma quercinum, *Niessl.*

On oak leaves.

Ramularia richardiæ, *Kalch.*

Effusa, farinosa, albida. Hyphis simplicibus vel furcatis, erectis. Sporis elongato-ellipticis vel subclavatis, hyalinis (·05 × ·015 mm.).

On leaves of *Richardia albomaculata*. Nos. 1116, 493.

Ramularia rumicis, *Kalch. & Cke.*

Maculis fuscis, ellipticis, magnis. Hyphis subsimplicibus, erectis, fasciculatis. Sporis cylindricis, utrinque rotundatis (·022-·03 × ·005 mm.).

On leaves of *Rumex obtusifolius*. No. 1180.

Distinct from *Peronospora obliqua*, Cke., which is technically also a *Ramularia*.

Oidium erysiphoides, *Fr.* Nos. 493.

On leaves of *Verbena*.

Mystrosporium polytrichum, *Cke. in Ravenel's N. Amer. Fungi.* (*Mystrosporium adustum*, *K. & C.*)

Atrum, velutinum, effusum. Hyphis fasciculatis, erectis, simplicibus. Sporis clavatis, multicellulosis (·04-·045 × ·018 mm.) fuscis.

On aloe. No. 500.

Apparently not distinct from the common North American species.

Mystrosporium aterrimum, *B. & C.* No. 1282.

On *Celastrus buxifolius*.

Macrosporium punctatum, *Kalch. & Cke.*

Effusum, griseum; cæspitulis sparsis, punctiformibus. Hyphis fasciculatis, erectis, simplicibus. Sporis clavatis, 3-5 septatis, fuligineis, hinc illinc cellulâ unicâ longitudinaliter divisâ (·035-·06 × ·01-·015 mm.).

On *Allium schœnoprasum*. No. fr. 21.

Erochinum phyllogenum, *Kalch. & Cke.*

Effusum, epiphyllum. Hyphis repentibus, hyalinis, ramosis; ramulis assurgentibus, rectis; sporis terminalibus, globoso-ovatis, cellulosis, fuligineis (·025 × ·02 mm.).

On living leaves. Natal, No. 89.

Menispora cylindrica, *Kalch. & Cke.*

Phyllogena, effusa, atrofusca. Hyphis tenuibus, simplicibus, erectis, flexuosis, mycelio ramoso fusco assurgentibus. Sporis cylindricis, utrinque obtusis, hyalinis, continuis (·016 × ·0025 mm.).

On leaves of *Myrsine melanophlœos.* No. 1352.

Fusicladium fuliginosum, *Kalch. & Cke.*

Effusum, fuliginosum, incrustatum. Hyphis repentibus, ramosis. Ramulis assurgentibus, brevibus, quandoque furcatis. Sporis fusoideis, continuis, hyalinis (·01-·012 × ·004 mm.).

On living leaves. Natal. No. 9.

Forming large sooty patches on the green, but fading leaves.

Cladosporium laxum, *Kalch. & Cke.*

Phyllogenum, maculæforme. Cæspitulis brunneis. Hyphis flexuosis, laxis, repentibus, ramosis, sparse septatis, fuscis. Sporis cylindrico-fusoidis, 1-3 septatis (·015-·03 × ·004 mm.).

On fading leaves of *Printzia pyrifolia.* No. 1391.

Forming little brown tufts on the fading leaves.

Cercospora hæmanthi, *Kalch.*

Maculæ elliptice, magnæ, pallidæ, rubro-marginatæ. Cæspitulis sparsis. Hyphis fasciculatis, flexuosis, simplicibus, sporis cylindricis, curvulis vel flexuosis, nucleatis dein 3-5 septatis (1· × ·004 mm.).

On *Hæmanthus puniceus.* No. 1020.

Cercospora commelynæ, *Kalch. & Cke.*

Maculæ orbiculares, fuliginosæ. Hyphis brevissimis, simplicibus, hyalinis. Sporis tenuibus, linearibus, flexuosis indistincte septatis (·05-·07 mm. long).

On living leaves of *Commelyna Bengalensis.* No. 1346.

Cercospora leonitidis, *Cke. in Grevillea* VIII., *p.* 72.

On leaves of *Leonitis ovata.* Natal. No. 5.

Cercospora delicatissima, *Kalch. & Cke.*

Maculæ orbiculares, fuliginosæ. Hyphis tenuibus, repentibus, sub-fasciculatis. Sporis linearibus, rectis vel curvulis, nucleatis (·065-·085 mm.).

On living leaves of *Priva dentata.* No. 1109.

Cercospora cluytiæ, *Kalch. & Cke.*

Maculæ irregulares, fuscæ. Hyphis brevibus, dense fasciculatis, hyalinis. Sporis ob-clavatis, curvulis, 3-5 septatis, apice acuto (·03-·07 × ·0035-·004 mm.).

On fading leaves of *Cluytia pulchella.* No. 1352.

Exosporium celastri, *Kalch.*

Cæspitulis sparsis, subcircinatis, atris, erumpens. Hyphis dense fasciculatis, olivaceo-fuscis. Sporis sublanceolatis (·02-·025 × ·005 mm.).

On leaves of *Celastrus buxifolius.* No. 1896.

Physospora rubiginosa, *Fr.*

On rubbish, broken twigs, &c. No. 1387.

Probably this species, of which we have seen no authentic specimen.

drophora stercoraria, *Tode.*

On dung. Nos. 487, 1299.

[illegible] (Mollisia) subgilva, *Kalch. & Cke.*

[illegible] sessilis, cerraceo-mollis. Cupulis totius subgilvis ¾-1½ [illegible] diam.) concavis; margine rotundato, subundulato; ascis cylindraceis. Sporidiis ellipticis, hyalinis (·008 × ·004 mm.). Paraphysibus filiformibus.

On rotten wood. R. 22a.

Helotium capensis, *Kalch. & Cke.*

Sparsum, aurantiacum. Cupulis stipitatis, explanatis (3 mm. diam.). Stipite deorsum attenuato, pallidiore (2½ mm. long.) in cupula expanso, ascis clavatis. Sporidiis fusiformibus curvulis, 3 septatis (·05 × ·006 mm.).

On sticks.

Helotium ferrugineum, *Fr.*

On twigs. Nos. 22, 1126.

Phillipsia kermesina, *Kalch. & Cke.*

Sparsa, subcæspitata, firma. Cupulis (1 cm.), concavis, purpureo-rubris, extus levi, pallido, deorsum attenuato; ascis cylindraceis. Sporidiis ellipticis, binucleatis, dein spurie uniseptatis (·013-·023 × ·011 mm.). Paraphysibus linearibus, multinucleatis.

On chips.

Substance much firmer than in *Peziza*, not shrinking or collapsing in drying. The genus was established by Rev. M. J. Berkeley for five or six species formerly included in *Peziza*.

Dermatea pelidna, *Kalch. & Cke.*

Cæspitosa, crumpens. Cupulis concavis, contortis (3 mm. diam.), subsessilibus, extus rufis, furfuraceis. Disco atro-fuligineo. Ascis cylindraceis. Sporidiis linearibus (·004 mm. long).

On decorticated branches. No. 16.

Allied to *D. confluescens* and *D. fasciculata*. Exterior covered with short granular hairs.

Dermatea rufa, *Cke. in Grevillea* VIII., *p.* 72.

On bark. Natal, No. 400.

Stictis thelotremoides, *Phil.*

Sparsa, immersa, orbicularis (½-½ mm. diam.). Disco melleo, excavato. Margine prominente, subintegro, albo. Ascis cylindraceis. Sporidiis filiformibus (·15 mm. long). Paraphysibus filiformibus.

On branches. No. 76.

Stictis bella, *Kalch. & Cke.*

Immersa, orbicularis (·1 mm. diam.), margine niveo, expanso, lobato-fissurato; disco aureo, excavato. Ascis cylindraceis. Sporidiis filiformibus (·3 mm. long). Paraphysibus filiformibus, sublaxosis.

On branches. No. 1289.

The cups break through elongated fissures of the bark, and have somewhat the appearance of miniature daisies. A very elegant species.

Stictis radiata, *Fr.*
On branches. Nos. 1288, 19
Sporidia 18-22 mm. long.

Phacidium litigiosum, *Desm.*
On leaves of *Ranunculus pinnatus*. No. 1

Triblidium rufulum, *Spr.*
On branches. No. 1228

Hypocrea lycogalæ, *Kalch. & Cke. in Grevillea* VIII., *p.* 72.
On rotten wood. No. 1557.

Hypocrea sulfurella, *Kalch. & Cke.*
Discoidea vel confluens, convexa, sulphurea, fusco-punctata. Ostiolis prominulis, demum atro-fusca. Ascis cylindraceis. Sporidiis articulis globosis, fuligineis (·0006 mm.).
On *Eucalyptus* bark. No. 178
The dark perithecia are very conspicuous in the pale greenish yellow stroma.

Hypocrea subcitrina, *Kalch. & Cke.*
Discoidea, elliptica vel confluens, tenuis, subapplanata, citrina, ostiolis vix prominulis, fuscescentibus. Ascis cylindraceis. Sporidiis articulis globosis hyalinis (·0045 mm.).
On bark. Nos. 184, 202, 205.
Stroma thinner, and sporidia rather larger than in *H. citrina*, to which it is allied.

Hypocrea chrysostigma, *Kalch. & Cke.*
Discoidea, convexa, aurea fuscescens, intus flava. Perithecia fuscis. Ostiolis vix prominulis, punctiformibus, fuscis. Ascis cylindraceis. Sporidiis articulis globosis, fuligineis (·0043 mm.).
On bark. No. 1301.

Hypocrea carnea, *Kalch. & Cke.*
Convexa demum applanata, elliptica, vel sublobata, carneo-rosea. Ostiolis vix prominulis, punctiformibus. Ascis cylindraceis. Sporidiis breviter ellipticis, uniseptatis, nec constrictis, hyalinis (·008 × ·006 mm.).
On bark. No. 20.

Sphærostilbe rosea, *Kalch.*
Gregaria, rosea. Conidiophoris stipitatis, stilboideis. Capitulis globosis, turbinatisve (½ mm.). Conidiis ellipticis, hyalinis, (·005 × ·0025 mm.), stipite erecto, rubro (·2 mm.), ad basin incrassato, quandoque confluente. Perithecia n.v.
On *Acacia horrida*. No. 1118.
At present only the *Stilbum* has been observed, but the habit is so much that of *Sphærostilbe* that it is placed here.

Sphærostilbe nigrescens, *Kalch. & Cke. in Grevillea* IX., *p.* 15.
On bark. No. 1039.

Sphærostilbe hypocreoides, *Kalch. & Cke.*
Pallide rosea, convexa. Perithecia in stromate hypocreoidei connatis. Ostiolis papillatis. Ascis cylindraceis. Sporidiis ellipticis, uniseptatis, hyalinis (·01-·012 × ·007) episporio tenuiter

...Conicephoris clavatis, paucis, stipite brevo. Conidiis ...nulato. ...te ellipticis (·005 × ·002 mm.).

On bark. No. 36.

A remarkable species. The perithecia are fused into a stroma in *Hypocrea*. The *Stilbum* grows principally upon the stroma. The sporidia are slightly rough.

...ctria **martialis**, *Kalch. & Cke.*

...parsa, coccinea. Peritheciis subglobosis, minute granulatis, ...illatis, demum depressis, dein cupuliformibus. Ascis clavatis, ...ridiis biseriatis, ellipticis, uniseptatis, hyalinis (·015 × ·0065 ...).

...n naked wood. No. 1161.

...erithecia dark blood-red when old. Sporidia apparently constantly biseriate. Distinct from *N. sanguinea* to which it is allied.

...trria **leocarpoides**, *Kalch. & Cke.*

...parsa vel gregaria. Peritheciis obturbinatis, fragilibus, ...ntibus, aureo-fulvis. Ostiolo mamillato, castaneo. Ascis cylindrici-. Sporidiis uniseriatis, ellipticis, uniseptatis, constrictis (·015 × ·008 mm.).

On *Sarcophyte sanguinea*. No. 5.

Perithecia fragile, reminding one of *Leocarpus fragilis*, shining, with a dark mamillate ostiolum. The perithecia are Indian yellow when the light is transmitted through them under a high power.

Nectria heterosperma, *Kalch. & Cke.*

Cæspitosa, erumpens, livido-rubra. Peritheciis subglobosis, demum depressis, laxibus, in stromate convexo congestis. Ascis cylindraceis. Sporidiis uniseriatis, ovatis, ellipticis, lanceolatisve, uniseptatis, hyalinis (·012-·022 × ·009 mm.).

On dead branches. Nos. 1064, 56.

Sporidia singularly variable in length and form in the same perithecium.

Nectria eximia, *Kalch. & Cke.*

Cæspitosa, læte coccinea. Peritheciis obovatis, exiguis, in stromate convexo congestis; ostiolo prominulo. Ascis cylindraceis. Sporidiis uniseriatis, ellipticis, utrinque attenuatis (·015 × ·00 mm.).

On bark.

The sporidia are scarce mature, so that the very faint indications of a septum are too doubtful to be relied upon. The minute numerous bright coloured perithecia are distinctive features.

Nectria furfuracea, *Kalch. & Cke.*

Cæspitosa, erumpens, carnea. Peritheciis globosis, furfuraceis, in stromate convexo gerentibus. Ostiolo punctiformi, fusco. Ascis cylindraceis, sporidiis uniseriatis, arcte ellipticis, utrinque attenuatis, demum tenuiter uniseptatis (·015-·018 × ·005 mm.).

On bark. No. 186.

Perithecia covered with large mealy granules. Allied to *N. subquaternata*, B., but larger.

Xylaria stilboides, *Kalch. & Cke.*

Parva, stipitata. Capitulum subglobosum, atrum (1-2 mm. diâ ostiolis exsertis asperatum. Stipite cylindrico, fusco (1-1½ ... long) gracili. Stromate albo. Peritheciis atris, immer Ascis cylindraceis. Sporidiis uniseriatis, ellipticis, atro-fu (·014-·015 × ·005 mm.).

On wood. No.

A very minute species, with the habit and appearance of a spec of *Stilbum*.

Hypoxylon placenta, *Kalch.*

Corticola, applanata, atra, erumpens. Stromate disco margine tenui, sterili, centro ostiolis punctiformibus punct ascis cylindraceis; sporidiis uniseriatis, ellipticis, atro-fuscis (× ·006 mm.).

On branches. No. 1

Closely allied to *H. exutans*, Cke., of which it may possib only a variety.

Diatrype caminata, *Kalch. & Cke.*

Erumpens, suborbicularis, convexa, nigrescens; ostiolis exsertis, cylindricis, obtusis, truncatis. Ascis clavatis. Sporidiis linearibus, curvulis, hyalinis (·012 × ·003 mm.).

On branches. No. 1263.

The specimens were old, and in bad condition. The exserted ostiola are abruptly truncate. Probably also the specimen (No. 23), provisionally named *Diatrype congesta*, is only the same species with the ostiola broken off, and all the asci dissolved.

Diatrype capensis, *Kalch. & Cke.*

Erumpens, elliptica, atra, convexa. Peritheciis paucis, magnis; ostiolis pertusis. Ascis clavatis. Sporidiis linearibus, curvulis pallide fuscis (·01 × ·002 mm.).

On branches of *Cussonopsis capensis*. No. 1264.

On *Rubus pinnatus*. 1350.

Valsa infinitissima, *Kalch. & Cke.*

Innata) stromate corticali circumscripto. Peritheciis lageniformibus; ostiolis cylindricis, rectis, sub-elongatis, in stromate fusco exsertis. Ascis clavatis (·025 × ·005 mm.). Sporidiis spermatoideis, curvulis (·004 mm. long).

On branches. No. 1344a.

The asci and sporidia profuse and very minute.

Lasiosphæria capensis, *Kalch. & Cke.*

Atro-fusca. Peritheciis globosis, læviusculis, pilis elongatis mollibus, sparsis, tectis, papillatis, demum depressis, e subiculo strigoso atro-fusco emergentibus. Ascis cylindrico-clavatis. Sporidiis biseriatis, cylindricis, vel elongato-lanceolatis, fuscis, 7 septatis, rectis, vel subflexuosis, leniter constrictis (·08 × ·01 mm.).

On bark. No. 1397.

Leptosphæria cylindrica, *Kalch. & Cke.*

Parasitica. Peritheciis globosis, atris, in cortice immersis. Ostiolo papillæformi, cylindrico, tenui, flexuoso; ore fimbriato, erumpente (2 mm. long). Ascis clavatis (·013 × ·008 mm.). Sporidiis (paraphyses?) oideis, hyalinis, curvulis (·0035-·004 mm. long).

No. 22, R.

On branches.

A sterile brown subiculous mould surrounded the specimen, whether related to the *Sphæria* it is impossible to determine.

Sphæria Africana, *Kalch. & Cke.*

Parasitica, caulicola, erumpens. Peritheciis subglobosis, atris, ostiolis, pertusis, semi-emersis. Ascis cylindraceis. Sporidiis biseriatis, amygdalæformibus, atro-fuscis, opacis (·032-·022 × ·012-·010 mm.).

Nos. 1399, 1400.

On herbaceous stems.

Remarkable on account of the sporidia, which resemble those of species of *Sordaria*, although the perithecia are more like those of a *Pleospora*.

Sphæria intercepta, *Kalch. & Cke.*

Parasitica, cuticulâ cinerascente tecta. Peritheciis subglobosis; atro-cinerascente. Ascis clavatis. Sporidiis biseriatis, ellipticis, uniseptatis, fortissime constrictis, loculis subglobosis, hyalinis (·022-·025 × ·012 mm.).

No. 1398.

On stems of *Senecio longifolius*.

Sphæria metuloidea, *Kalch. & Cke.*

Sparsa, epidermide nigrefacto tecta. Peritheciis globoso-depressis, atris. Ascis clavatis. Sporidiis biseriatis, lanceolatis, triseptatis, nucleatis, hyalinis (·028-·03 × ·01 mm.).

No. 1399a.

On stems of *Artemisia*.

The lanceolate sporidia are not at first constricted, and for some time without septa, with two large central nuclei, and a smaller one at each end.

Sphæria cervispora, *Kalch. & Cke.*

Sparsa, epidermide elevato demum fissurans. Peritheciis atris, subglobosis. Ascis saccato-clavatis. Sporidiis fusiformibus, rectis vel curvulis, 7 septatis, leniter constrictis, flavidis (·03 × ·008 mm.).

No. 1399d.

On stems of *Artemisia*.

Two or three distinct species of *Sphæria* are much intermixed on the same stems of *Artemisia*. Their great and manifest differences prevent any assumption that they are at all related to each other.

Sphæria Owaniæ, *Kalch. & Cke.*

Sparsa, epidermide elevato demum fissurans. Peritheciis atris, tectis, hinc illic lineâ brevi dispositis. Ascis clavatis. Sporidiis sublanceolatis, rectis, 5 septatis, medio constrictis, parte superiore latiori breviori, flavidis (·01-·042 × ·012 mm.).

On stems of *Artemisia*.

The sporidia differ from those of *S. cercispora* in being shorter, broader, divided by a contriction into two nuequal parts, of which the upper is broader and shorter than the lower, and there are only five septa.

Sphæria brachiata, *Kalch. & Cke.*

Sparsa, minuta. Peritheciis numerosis, tectis, punctiformibus, submembranaceis. Ascis clavatis; sporidiis biseriatis, lanceolatis, hyalinis, demum leniter 1-3 septatis (·015-·018 × ·004 mm.).

On twigs of *Clematis brachiata*. No. 1

On stems of *Senecio quinquelobus* (McOwan).

The septa are so delicate as to be distinguished with difficulty. The perithecia are minute, resembling some species of *Phoma*, and would perhaps have been better included in *Sphærella*.

Sphæria cumana, *Sacc. & Speg., Fungi Italici, No.* 327.

On leaves of *Carex pendula*. No. 1

Sphæria nigro-annulata, *Berk. & Curt.*

Sporidiis fuscis, continuis (·018 × ·007 mm.).

On leaves of *Aloe lineata*. No.

Sphæria caffra, *Kalch. & Cke.*

(*Leptosphæria caffra*, Thum. *Plagulia Alicina*, Thum.)

On *Marattia salicifolia*. No. 655.

Sphæria (Pleospora) lanceolata *Kalch. & Cke.*

Sparsa, subtecta. Peritheciis nucliis, globosis, papillatis. Ascis clavatis. Sporidiis lanceolatis, 5-7 septatis, cellulis plurimis merenchymato-divisis, flavidis (·035-·04 × ·01 mm.).

On stems of *Artemisia*. No. 1399c.

Sporidia much more uniformly lanceolate than usual in *Pleospora*. One of the central cells often largest and undivided.

Sphæria (Pleospora) refracta, *Kalch. & Cke.*

Sparsa, subtecta. Peritheciis globosis, vix prominulis, cum aliis immixtis. Ascis clavatis. Sporidiis biseriatis, ellipticis, 5-septatis, cellulo uno alterove longitudinaliter diviso, hyalinis, refractis, dein brunneis (·025-·028 × ·015 mm.).

On stems of *Artemisia*. No. 1399 *b*.

Sphærella myrsines, *Kalch. & Cke.*

Hypophylla, sparsa. Peritheciis membranaceis, brunneis, poro pertusis (·1-·15 mm. diam.), applanatis. Ascis arcte clavatis. Sporidiis lanceolatis, demum uniseptatis, hyalinis, nec centro constrictis (·014 × ·003 mm.).

On fading leaves of *Myrsine africana*. No. 1245

Sphærella geicola, *Kalch. & Cke.*

Hypophylla. Maculis suborbicularibus, fuscis, purpureo cinctis. Peritheciis semi-immersis, numerosis, atro-fuscis. Ascis clavatis. Sporidiis breviter lanceolatis, binucleatis, dein uniseptatis, hyalinis, vix constrictis (·016-·017 × ·0035 mm.).

On leaves of *Geum capensis*. No. 1141.

hærella agapanthi, *Kalch. & Cke.*
Maculæ magnæ, irregulares, nigrescentes. Pertheciis numerosis, membranaceis, applanatis, fuscis; mycelio fusco, radiato, undatis. Ascis obclavatis. Sporidiis ellipticis, utrinque undatis, uniseptatis, hyalinis (·015-·018 × ·003 mm.).
On *Agapanthus*. No. 1342.

hærella cassinopsis, *Kalch. & Cke.*
Epiphylla. Maculæ pallidæ, purpureo-cinctæ, orbiculares. Peritheciis atris, centro gregariis, minimis. Ascis clavatis (·025 × · mm.). Sporidiis inæcalibus, rectis, hyalinis (·006 mm. long).
On living leaves of *Cassinopsis capensis*. No. 1341.
The sporidia probably scarce mature, as no septa could be distinguished.

Asteroma cephalariæ, *Kalch. & Cke.*
Epiphyllogena. Maculæ fuscæ, orbiculares. Peritheciis globosis, gregatibus, pilis rigidis, erectis, brevibus, fuscis ornatis. Ascis cylindraceis, aliis clavatis. Sporidiis uniseriatis, vel biseriatis, irregulariter uniseptatis, pallidis (·02-·023 × ·009-·01 mm.). Cellulâ superiore magna, cellulâ inferiore minutâ, apiculi.
On leaves of *Cephalaria attenuata*. No. 1338.

Melogramma eucalypti, *Kalch. & Cke.*
Argillacea, elevata. Stromate convexo, irregulari, confluente. Pseudo-peritheciis in contextu excavatis. Ascis cylindraceis. Sporidiis uniseriatis, ellipticis, medio constrictis, uniseptatis, fuscis (·015-·018 × ·008 mm.), cellulis subglobosis.
On bark of *Eucalyptus globulus*. No. 1179.

Dothidea oleafoliæ, *Kalch. & Cke*
Atra, nitida, subdiscoidea, convexa, 1-3 cellulata, sparso vel gregaria. Ascis clavatis. Sporidiis 4-8, ellipticis, uniseptatis, constrictis, atro-fuscis (·035 × ·012 mm.).
On leaves of *Olea capensis*. No. 7.

Dothidea arduinæ, *Kalch. & Cke.*
Epiphylla, atra, nitida, rugosa, obtuse subconica, 2-4 cellulosa, sparsa. Ascis clavatis. Sporidiis ellipticis, medio constrictis, uniseptatis, fuscis (·028-·03 × ·012 mm.). Stylospris in peritheciis nitidis ovatis (·006 × ·0045 mm.).
On leaves of *Carissa arduina*. No. 1351.
Upper cell of the sporidia usually larger than the lower.

Dothidea kniphofiæ, *Kalch. & Cke.*
Maculæ nigrefactæ, ellipticæ. Pseudo-peritheciis gregariis, convexis, atris, subnitidis. Ascis clavatis. Sporidiis elongato-ellipticis, primo nucleatis, continuis hyalinis (·018-·02 × ·005-·006 mm.).
On stems and leaves of *Kniphofia aloides*. Nos. 1011, 1337 b.

Dothidea repens, *Corda.*
On living leaves. Natal. No. 228.

Dothidea vorax, *B. & C.*, [illegible] **minor.**

On *Oplismenus africanus.* No. 13[illegible]

Dothidea circinata, *Kalch. & Cke.*

Amphigena, inæqualis, minuta, convexa, atra, nitida, circula[illegible] gregaria. Ascis clavatis. Sporidiis biseriatis, inæqualiter [illegible] septatis, fuscis (·012 × ·006 mm.).

On living leaves of *Leguminosæ.* No. [illegible]

Forming orbicular spots on both surfaces, almost with the h[illegible] of a *Sphærella.*

Dothidea scabies, *Kalch. & Cke.*

Amphigena. Maculæ fuscæ, orbiculares. Pseudo-perithe[illegible] gregariis, convexis, atris, subopacis. Ascis clavatis. Spor[illegible] ellipticis, continuis, fuscis (·025 × ·01 mm.).

On unknown leaves. Natal. No. 50. Caffraria. No. [illegible]

Stigmatea sutherlandiæ, *Kalch. & Cke.*

Phyllogena, punctiformis, atra, elevata, convexa, nitida, sp[illegible] Ascis clavatis. Sporidiis ellipticis, continuis, hyalinis (·01 × [illegible] mm.).

On fading leaves of *Sutherlandia.* No. [illegible]

Stigmatea rhynchosiæ, *Kalch. & Cke.*

Epiphylla, atra, nitida, convexa, gregaria, in maculis [illegible] [illegible] disposita, numerosa, minutissima. Ascis clavatis. Sporidiis ellipticis, hyalinis, continuis, binucleatis (·012 × ·006 mm.).

On living leaves of *Rhynchosia.* No. 55.

Perithecia more numerous, and not one-third the size of those of *Dothidea circinata*, K. & C., which it somewhat resembles.

Rhytisma grewiæ, *Kalch.*

Epiphylla, piceo-atra, orbiculares, applanata. Cellulis circumdatis, convexis, fissurato-dehiscentibus. Ascis clavatis. Sporidiis sublanceolatis, hyalinis, continuis, binucleatis (·04 × ·007 mm.).

On living leaves of *Grewia occidentalis.* No. 106.

Asterina capensis, *Kalch. & Cke.*

Sparsa. Peritheciis orbicularibus, fuscis (·15 mm. diam.); mycelio fusco, radiante circumdatis. Ascis clavatis. Sporidiis ellipticis, uniseptatis, fuscis (·015 × ·006 mm.).

On living leaves of *Hippocratea alata.* No. 1328.

The mycelium is furnished with short uniseptate processes on each side, which are often opposite to each other. A few erect rigid setæ are mixed with the perithecia.

Asterina erysiphoides, *Kalch. & Cke.*

Minima, gregaria. *Erysiphis* species simulans. Peritheciis applanatis, discoideis (·06–·1 mm. diam), atrofuscis, membranaceis, radiato-cellulosis: mycelio tenui, ramoso, fusco, circumdatis. Sporidiis ellipticis, continuis, atrofuscis (·018–·02 × ·01 mm.).

On leaves of *Jasminum tortuosum.* No. 1139.

Asterina ditricha, *Kalch. & Cke.*

Hypophylla, effusa, fuliginea. Mycelio radiante, ramoso, atrofusco, processibus papillatis, ganglioformibus ornatis. Hyphis tenuioribus, ramosis, conidiiferis immixtis. Conidiis fusiformibus

...ptatis, fuscis (·015-·016 × ·004 mm.). Perithecia? discoidea, ...rfecte evoluta.

...living leaves of some *Celastrus*. No. 8.

...n the absence of perfect perithecia, it can only be thus provi...ally described.

...erina confluens, *Kalch. & Cke.*

...mphylla, crustacea, membranacea. Peritheciis applanatis, dis...eis, confluentibus, radiato-cellulosis, hinc illic maculis crustaceis ...manibus.

...n fading leaves of *Plectronia ciliata*. No. 1331.

...There are no definite radiating threads, and no asci or sporidia ...e yet been detected, so that this imperfect diagnosis must be ...pted as provisional. The perithecia are one-tenth of a mille...re in diameter.

...erina fimbriata, *Kalch. & C...*

...phylla. Peritheciis gregariis, radiato-fibrosis, convexo-...natis, atro-fuscis, stellatim fissurato dehiscentibus; margine ...ato (·15 mm. diam.). Ascis ...rcatis, pyriformibus, ...diis ellipticis, profunde constrictis, uniseptatis, fuscis (·015 × ... mm.).

...n living leaves of *Sclerochiton Harveyanum*. No. 1230.

...e perithecia are collected together in little brown patches.

...rina reticulata, *Kalch. & Cke.*

...yllogena, effusa, fuliginea. Peritheciis convexo-applanatis, ...ato-fimbriatis, fuscis (·15 mm. diam.). Mycelio intricato, ..., anastomoso, reticulato, fusco, processibus hamatis bicellu...rnatis. Ascis clavatis. Sporidiis ellipticis, atro-fuscis, ...fascia hyalina ornatis (·016-·018 × ·007 mm.).

...On ...*a cymosa*. No. 1336.

...Th... a transverse hyaline ...e centre, are peculiar.

Asterina solaris, *Kalch. & Cke.*

Amphigena, crustacea, atra. Peritheciis convexis, ...pressis, atro-fuscis, densissime radiato-strigosis. Ascis ? ellipticis, 1-2 septatis, fuscis (·02-·025 × ·008 mm.).

On living leaves of *Olea verrucosa*.

The parallel simple radiating fibres of the perithecia ...longitudinally attached in bands. Small obtuse papillae ...right angles from some of the threads.

Asterina Macowaniana, *Kalch. & Cke.*

Atra, effusa. Peritheciis gregariis, discoideis, applan... mm. diam.), mycelio radiante nidulantibus. Asci pyrif... Sporidiis ellipticis, uniseptatis, constrictis, fuscis (·02-·022 × ... mm.).

On leaves of *Celastrus buxifolius*.

This is apparently *Meliola Macowaniana*, Thumen, but it is in no respect a *Meliola*, from which genus the flattened perithecia ... quite sufficient to separate it.

Meliola polytricha, *Kalch. & Cke. in Grevillea*, vii., p. 72.

On living leaves of *Osyris compressa*. No. 1.

And *Cunonia capensis*. No. 4.

Meliola ganglifera, *Kalch. & Cke.*

Hypophylla, insculis *fasciculis* orbicularibus effiguratis, ceptaculis globosis, subverrucosis, atris (·15-·2 mm.). Ap diculis erectis, subulatis, simplicibus. Mycelio ramoso, rep processibus subglobosis stipitatis, conico-verrucosis, ornato.

On living leaves of *Curtisia faginea*. No. 1.

The ganglia-like processes of the mycelium are peculiar. They are nearly globose, shortly stipitate bodies, clad with obtuse con warts. Asci and sporidia not seen.

Meliola inermis, *Kalch. & Cke.*

Amphigena, atra. Peritheciis globosis, hinc illic conge (·20 mm. diam.), mycelio ramoso, fusco, nidulantibus. Appendic nullis. Asci clavatis. Sporidiis 2, ellipticis, quadriseptatis, strictis, fuscis (·055 × ·015 mm.).

On living leaves of *Brabejum auriculata*. No.

This does not accord with *Meliola quinquespora*, Thumen., is not five spored; nor with *Meliola quinqueseptata*, Rehm., the sporidia are not five septate; and yet specimens from authors under these names are the same thing. There clearly an error somewhere, which we leave to those mycologi correct.

DR. A. MINKS ON THE MICROGONIDIA OF LIC

Minks has communicated [illegible] ne" a
y in the French language [illegible] leading points in his new of the physiology and morphology of lichens. He s ed that a great number of students are ignorant of his s because they are not familiar with the language in which ritten. In addition to this cause, he thinks that many be dangerous to differ in opinion with certain eminent accepted the earlier scientific views as finally and settled. He regards the train of argument [illegible] the Schwendenarian doctrine as humiliating to modern as it is altogether based on false premises, and appeals cently published work and his article in the "Flora" of d to the plates given them to establish beyond doubt the ness of his new views. Space prevents our giving more than brief epitome of his communication, for further information the reader must consult his recently published book "Das Microgoni thum."*

* Das Microgonidium. Eine [illegible] zur Kenntniss des wahren der Flechten von Dr. Arthur Minks. Bale, 1879.

The presence of gonidia excludes the idea of lichens living as parasites on other plants or on bodies in a state of decomposition. They owe this to the chlorophyl they contain, which gives to the gonidia their colour. The granular contents of the gonidia consist principally of corpuscles which are the microgonidia and must be looked upon as a higher rank than the chlorophyl substance itself. These microgonidia are capable of arranging themselves in beautiful harmony, contributing to the formation and increase of the gonidial cell without losing their independence, and playing a part which controls the whole development of the reproductive and vegetative life to the final end—the production of seed. The gonidia maintained a globose form, slightly flattened, sometimes like a convex lens, having in its centre a transparent and highly refractive nucleus, surrounded by a green zone, enveloped by a rather thin, white, protoplasmic layer, which is not always visible. In harmonious conformity to this structure all the cells of the lichen body, even to the completion of its life—the asci—more or less confined, maintaining this form even during all the stages of development and growth, during which the microgonidia vigorously increase. There are two modes of increase—by division and by progemmation, the first altogether resembling cell-division. This proves that the microgonidia are protoplasmic bodies, to which the existence of a membrane, at least in the most perfect condition, cannot at present be proved. The connection of the microgonidia with their cells is visible principally by the regularity with which the simultaneous division of the cell itself and its microgonidia takes place.

It is necessary to state that the intensity of the green of all the gonidia certainly depends on the microgonidial cells alone, but essentially on the quantity and arrangement of these corpuscles. It is possible that the gonidia of the [illegible] gonidia presents itself as absolutely colourless, as do some "metrogonidia" ("heterocysts" of Crouzeiller) of the *Collemaceæ*, because the distance of the conglomerated microgonidia appears much more considerable all round the cell membrane owing to the reflection of the colourless parts predominating. For his reason also the microgonidia distributed in the hyphæ have remained up to the present invisible, their cells always appearing destitute of green colour. But the impossibility of recognising this is accounted for by employing insufficient objectives to the microscope. The powers necessary to be used have already been named in the "Revue." Anyone having access to my work will, I am sure, by the aid of my figures find proof of the existence and activity of the microgonidia throughout all the process of vegetation and reproduction; and he will readily perceive that these corpuscles are in fact the thread of *Ariadne* which ought to guide him through the labyrinth of the anatomy and morphology of lichens.

The homogeneousness of the hyphæ of lichens and fungi has no

existence, for the hyphæ cell of the lichen, as the gonidial cell together with each cell of the lichen, is capable of pysiologic activity, such as appertains to all vegetable cells that cont chlorophyl; and as regards systematic botany the presence gonidia appears to be the criterion between these two great veg table kingdoms, for the microgonidia are characteristic of lich cells only.

The greater part of lichens, if not all, do not grow by a sim increase of the cells of the two systems of tissue; the developm of the gonidial tissue results from the hyphæ tissue and never reverse. The series of microgonidia running through the axi the hyphæ threads and filling up by conglomeration the gon cells is in fact a series of gonidia in the [illegible] stage. ment the microgonidia secrete a membrane they become gonidia, which commence, either in the mother cell or after breaking up, to take on the known form, producing at the s time new microgonidia. There is no doubt that the develop of the gonidia issuing from the hyphæ cells or from the gon cells does not take place without order in lichens, but either predominates or the other, according to certain fixed rul certain ends.

It is evident that the gonidia cannot augment exclusiv division or progemination as do the hyphæ, there must be other source, to the present invisible, whence issues the hyp tissue. The new tissue, the *hyphéme*, is, I believe, the mos cate in nature, and as far as is known, the lenticular cells tissue are excessively minute, and their natural connexion only at a single point. The study of the *hyphéme*, the existe which is already difficult to establish, presents inexpr difficulties.

An absolute necessity of the *hyphéme* is manifest in certain phenomena of growth, especially in the work of reproduction. Primarily the *hyphéme* accompanies or pursues each reproductive extension of the Mallus which in the same lichen may partake of many types, and exhibit itself in the greater part of lichens in enormous quantities. In each case of reproduction it establishes an initial point due to an elementary organ, arising it may be from the gonohyphéme, or the gonidéme, or the hyphéme, throwing out nevertheless, only the basis of the gonidéme, with which is asso ciated the maternal hyphéme to be completed by the germ of the hyphoidal tissue, the reproductive lichen organ.

This co-operation on the part of the hyphéme is an evident fact amongst some blastémes, but especially amongst the hormospores discovered by me, and principally amongst the mecaspores, which uniquely, by means of a hypenatic capsule, become capable of re producing a lichen. Unfortunately I have not been able to do more than roughly sketch the activity of the hyphéme in my drawings for a magnifying power of 2,000 diameters would be necessary for the purpose of properly drawing it.

he mecaspore of the lichen is without doubt a gonidial organ
eeding from the gonohyphæme which can be seen at a glance
n my drawings, and especially in the fresh living spores of
ogium, which resemble, to describe them briefly, a little
ony of *Nostoc*. Besides, it may be seen that the mecaspore is
y the product of free intercellular formation; for the micro-
idia contained in all the cells of the fructifying parts are equally
e in morpheological activity, from the commencement to the
These phenomena sufficiently prove that the meci and
aphyses bear to each other the relation of fertile to sterile
hæ.

is almost impossible, without the aid of figures (which are n
n in the *Revue*), to convey an adequate notion of Dr. Minks'
ies, and we much doubt whether we have caught the exact
ning of the author, owing in some measure to the fact that he
writing in his native language, but more especially on
nt of his views being quite novel, and subversive of our
nceived notions of the morphology and physiology of lichens.

nslated and abstracted by W. Phillips, F.L.S., from *Revue Mycolo-*

PREPARATION OF GREEN ALGÆ.

By Prof. O. NORDSTEDT.*

t summer I collected at Jönköping the rare and in many
a interesting alga (*Sphæroplea annulina*). This alga has
sterile cellules arranged in transversal bands
them, I found that the rings were
atedly tried to get good mi-
sing "Liquor Hantzschii" as well as
ssium, but when without success I applied warmth. I
tle containing the alga in water on a black object, and
trong sunlight for a couple of hours. When the
s was dried, the rings proved to be pretty well pre-
afterwards heated by a spirit lamp, the thermometer
the rings when boiled—

te at 35-40° Cels.	Did not keep, or were very ill-preserved.
5-10 minutes at 45° / minute at 50°-98° ,,	The rings kept very well.
nutes at 60° Cels. / nutes at 98°† ,,	The rings were separated from the membrane and placed in the centre alongside the cellule.

d from "Botaniska Notiser," by Dr. S. Berggren.
han 98° Cels. I could not manage the thermometer to rise.

It appears to be most convenient for the purpose to use 4 60° Cels. during about two minutes.

In the *Spirogyra* the chlorophyl bands, when the plant boiled, also keep tolerably well. I therefore often have appl heat in preparing them. The different species seem to req different degrees of heat.

ADDITIONAL BRITISH DESMIDS.

By M. C. Cooke.

Since the notice of "British Desmids" in our last, we hav the opportunity of consulting a collection of an extensive cha made over a period of many years, by Mr. A. W. Wills, of W Green, and found amongst them the following species, whic only been previously recorded in Ireland :—

Tetrastrum mutronatum, *Dixon.*
In all intermediate stages between the typical form and *chastrum octanæ*, It.
From N. Wales.

Micrasterias angulosa, *Hantzsch.*
In Sutton Park, near Birmingham.

Cosmarium pseudopyramidatum, *Lund.*
North Wales.

Cosmarium speciosum, *Lund.*
Dunkeld.
Two or three other species of *Cosmarium* not yet

Staurastrum cerastes, *Lund.*
Barmouth.

Docidium nodosum, *Bailey.*
Found at Barmouth, August, 1857.

Closterium directum, *Archer.*
Sutton Park, near Birmingham.

Closterium Pritchardianum, *Archer.*
Barmouth, N. Wales.

Closterium gracile, *Breb.*
Barmouth, N. Wales.

Closterium cynthia, *De Not.*
Sutton Park, near Birmingham.
Apparently this species, with a [illegible]ted membrane, so robust as the figure by De Not[illegible]

...ium Nægeli, *Bréb.*
...tton Park, near Birmingham.

...ndylosium pulchellum, *Archer.*
N. Wales.

...ndylosium pygmæum, *(Rabh.) Cke.*
Barmouth, N. Wales.

This is decidedly a *Spondylosium*, with a hyaline sheath, but it ...s equally certain that the *Cosmarium tinctum*, Ralfs., which is ...ed a *Spondylosium* by Rabenhorst, and other Continental ...hors, is *not* a *Sphærozosma* or *Spondylosium*, but a good *Cosmarium*. And we very much doubt if *Cosmarium pygmæum*, Archer, ...y other than a *Cosmarium*, although called *Sphærozosma* by ...enhorst. Mr. Archer is too critical and experienced an ...rver to have made such a mistake. This Desmid, however, ...throw some light upon the subject. It has probably been ...unded with the true *Cosmarium pygmæum*, Ar., from which, ...ithstanding its uniform disc and appearance, we are disposed ...ard it as distinct. At any rate, without stronger evidence ...we yet possess, we cannot exclude the *Cosmarium* from our ... The present *Spondylosium* even when divided up into the ...*arium* form, still retains evidence of the hyaline sheath. Faint ...ing lines, which are liable to be mistaken for cilia may ...t invariably, be observed, and these are evidently the mar... ...ckenings in the sheath. This may be verified by the ...on of aniline solution, or some coloured fluid.

... SOCIETY OF SCOTLAND.—The Si... ...nnua... ...lasgow, on Septe... 27th-30t... ...ons interested in ...

CRYPTOGAMIC LITERATURE.

...UTE, Dr. R. British Moss Flora. Parts 1-2.

... Fungi aliquot novi in terra Kirghisorum a Juliana ...n "Nuovo Giorn. Bot. Ital.," July, 1880.

... Lichenum Italiæ meridionalis, manipulus tertius, in ...n. Bot. Ital.," July, 1880.

... Botanischer Jahresbericht (for 1878), Vol. vi., part 1.

... F. Contributiones ad Floram Mycologicam Lusi... ...t. 2. (Reprint).

...H. Thirty-first Annual Report of the N. Y. State ...Nat. History.

...C. On the Resting Spores of *Protococcus pluvialis*, ...Quekett Micro. Club," May, 1880.

MUELLER, BARON F. Index perfectus ad Car. Linnæi Spe
Plantarum. 1st ed., 1753. Melbourne.

URLWORMS, Dr. O. Botanisches Centralblatt, Nos. 12 to 25

CRISP, F. Cryptogamic Bibliography, in "Journal of Ro
Microscopical Society," June, Aug., 1880.

WINTER, Dr. G. Ueber einege Uredineen und Ustilagineen
"Hedwigia," No. 7, 1880.

MUELLER, Dr. J. Lichenologische Beiträge, in "Flora," Ju
11 and 21, 1880.

GROVES, H. & J. Review of British Characeæ, in "Jo
Bot.," June.

VENTURI, Notes Critiques sur le genre Orthotrichum
"Revue Bryologique," No. 4, 1880.

WOLLE, F. Notes on Fresh-water Algæ, in "Amer
Monthly Microscopical Journal," May, July, 1880.

ROUMEGUERE, C. Sur un Nouvel habitat d'un Lichen ra
les Pyrenees-orientales.

BOUNARD, P. Tableau dichotomique des familles des Py
mycetes, in "Revue Mycologique," p. 129.

BRISSON DE LENHARREE, T. P. Observationes Lichenolog
"Revue Mycologique," p. 141.

[illegible] M. Les Lichens des regions arctiques, in "
logique," p. 145.

[illegible] C. Fungi in Australia et Asia a Jul.
"Revue Mycologique," p. 152.

[illegible] FLORENTIA. Anacrisi dei Lich
atti della Soc. [illegible] Ital." XI.

[illegible], M. C. The Genus
1880.
Soc.," [illegible], 1880.

GRUSOW, A. On some new species o
Roy. Micr. Soc.," June, 1880.

WARMING, E. Symbola ad floram Brasiliæ cent
(Berkeley), in "Naturist. Foren. Vidensk. Meddelelse

THUEMEN, F. Mycotheca universalis. Cent. xvii.

COOKE, M. C. Report on the Salmon Disease
in "Reports of Fisheries Commissioners of Great B

VIZE, J. E. Micro-Fungi Britannici Exsiccati, fasc.

FRIES, E. Icones Selectæ Hymenomycetum, Vol.

VAN HEURCK, Dr. H. Synopsis des Diatomées
Part 1.

DANIER, G. Sterigmatocystis et Nematogonum
la Soc. Bot. de France, No. 1, 1880.

ARNOLD, Dr. F. Lichenologische Ausflüge
(Reprint.)

Grevillea,

QUARTERLY RECORD OF CRYPTOGAMIC BOTANY AND ITS LITERATURE.

"ANIMAL NATURE" OF MYXOMYCETES.

In a work recently published on the *Infusoria*, by Mr. Saville Kent, the exploded doctrine of the animal nature of *Myxomycetes* is revived in the following words:—"Formerly, and by some even yet regarded as a low order of fungi, or as a special group of organisms intermediate between animals and plants, which exhibit at one epoch of their life all the vital characteristics of the former, and at another those of the latter kingdom, their admission into the Protozoic galaxy or system will no doubt encounter objection. The evidence most recently and independently eliminated by L. Cienkowski and Dr. A. de Bary concerning the structure and life history of this most remarkable group, establishes, however, beyond question their purely animal nature." After recapitulating, in a summary compiled from De Bary's work, the phases of the life history of the *Myxomycetes*, the author proceeds to identify these with the sponges. "In both the formation of the gigantic compound plasmodium, and in the development therefrom of the characteristic sporangia, these *Myxomycetes* exhibit certain phenomena singularly suggestive of a more or less remote affinity with the sponges. In these latter also the initial term takes the form of spore-developed uniflagellate monads, which uniting in social colonies, form a gelatinous mass, corresponding closely with the plasmodial element of the former group. In the fine horny network usually contained with the spores within the sporangium developed by the mature plasmodium, a substance is produced singularly resembling the fine horn-like elements or keratose fibre of certain sponges, while, what is still more remarkable, in certain forms spicule-like bodies, composed of carbonate of lime, are also developed within the substance of the walls of the sporangium, or so called 'peridium,' that accord substantially in outline with the stellate siliceous spicula of the *Tethyidæ*, and other familiar sponge groups. In illustration of the apparent close approximation of the *Mycetozoa* to the spongida and other flagellate *Protozoa*, as here presumed, the lower half of Plate xi. of this volume, with its accompanying descriptions, has been devoted to a reproduction of some of the more characteristic figures given by De Bary and

Cienkowski in the works quoted, that would appear to substantiate support the author's views."

Competent, as Mr. Kent has shown himself to be, to deal with the *Infusoria*, it is much to be regretted that he should have gone out of the way to meddle with [illegible] figures on a perusal of what he has written to discover that he does not understand. It is quite unnecessary to do more than utter a protest against the assumptions of this author, inasmuch as mycologists will accept his opinions for what they are worth. Those who are *not* mycologists might perhaps be induced to accept what has been written as acknowledged science, instead of exploded theory, if for some such protest.

It is quite true that De Bary wrote a book [illegible] in a hurry, and repented at leisure. He then believed in the animal nature of the *Myxomycetes*, or he thought that he did, which amounts to the same thing. In like manner he at first proposed the basis of the Swendenerian theory of Lichens, and then [illegible] more about it. So also he opposed the discovery of the oogonia of the *Peronosporæ*, and believed them to be something else, as long as he could. Probably he now adheres to none of these three failures, because he has discovered at leisure that they are all fallacies. It is certain that he no longer holds the opinion that the *Myxomycetes* belong to the animal kingdom, but holds and teaches that they are veritable plants. Despite of this, the theory propounded twenty years ago, and since rejected by its author, Mr. Kent, says, "The evidences most recently and independently eliminated by L. Cienkowski and Dr. A. de Bary concerning the structure and life-history of this most remarkable group, establish, however, *beyond question, their purely animal nature.*"

The italics are ours. The assumption we deny. The animal nature of the *Myxomycetes* rests on similar and no better evidence than the animal nature of the zoospores, so common in algæ, or the animal nature of diatoms, and, therefore, "beyond question" has no place in the sentence. When those who are best acquainted with the *Myxomycetes*, such as the mycologists who have made them a special study, accept them as "beyond question of a purely animal nature," it will be time enough for those who are not practically acquainted with these organisms, to assume such a dictum as "beyond question." To assert, in the face of all the best authorities in mycology, that "the animal nature of *Myxomycetes* is "beyond question," is an assumption of superior intelligence of which no author of good taste would be guilty.

Without waiting to enquire what this writer knows of the important Polish and Russian works on the *Myxomycetes*, which have appeared during the past twenty years, since they do not support his views, we would note the concluding paragraph of our extract from his work. It is clear from this that he has based his theory upon the figures which he has observed in illustrated books. Had he practically examined the organisms themselves he would have

fiiis own drawings of such simple structures, and not accepted niade at second hand. Then, he would have learnt how deceptive ^hep'ltov/M can *he,* and that the " fine horny net work, usually conmore with the spore3 within the sporangium," and also the tainecle-like bodie- composed of carbonate of lime developed "spic the substance of the walls of the sporangmin " are not so withimch like the keratoae fibre, and spicules of sponges after all. very ite Dr. Bowerbank knew something of fungi, and Mr. H. J. The 1- lias examined *Myxomycetes* closely, and for this reason, Oartegh both are acknowledged as supreme authorities on sponges, althouever recfgnised the close affinities between sponges and they *lastera.*

Afyxop would .seek the reason why this effort has heen made to *1£* «e the *Mixomycetes* into the animal kingdom by stealth, it squeez; found illustrated by the following definition—" The broad may.btion *insisted* upon as subsisting between unicellular plants *ditd* animals is the capacity of animal organizations to incept and digrest food-matter in its solid form, and the corresponding absence of suc•U an incentive faculty in. all vegetable organisms." Taking C as an absolute distinction between animals and plants, the ..omycetes are decilared to be " undoubted animals," because they do not " undoubtedly " iucept and digest food-matter in its solid state.

Logic is again defied when animals of a very simple organizatic• :i are admitted to a place in the scheme, although they do *not* " incept and digest food-matter in its sc did form," but, on the contrary, " derive their nutriment by absorption from the fluid which they inhabit." It is not, however, our intention to fight with these shadows of reasons for regarding *i*he *My.>:o(}a$t<rs* as animals. Our until or has declared their " undoubted animal nature." To this we join issue, and declare our belief in their truly vegetable nature. The onus rests with him to substantiate his position, and produce his evidence, but it must be something more than the mere *c* ^ion of De Bary and Cienkowski.

GEASTER COLIFC•RMIS IN NORFOLK.

I was much pieased to receive from my friend, l>r. J. D. Alexander, of Grimston, on Saturday last, September 25th, 1880, four fiesh specimens of this rare *Geaster,* which, as far as I can make out, has not been found in Britain since the first decade of the esent entnry. The specimens grew on a hedge bank in the vil ge• of Hill ing ton, Norfolk. The largest of them measures six inches across the widest part of the outer coat or peridium, which is divided into ten unequal rays ; the inner peridium is no less than tYO inches in ditfmeter, and has the beautiful silver-grey lustre ieu*i lieu by the older botanists, since whose time the fungus has lardiy, if at all, been gathered in this country. In the specimen

before me, as I write, the inner coiat or peridium shines as were i covered by a very thin coating of silver leaf, totally u any ottier *Gcaster*. It has no less tinan 40 distinct or ings upon it. Another charact'er, not noticed in the text-book, i that the inner peri'idium is minutely tuberculated. Neither of^ese points struck me when I examined the specimen in the Irtish Museum herbarium some \ears ago; but they are both obsei,ftDle on careful observation in a specime n my friend, Prof. C. A. \ \, Oudemans, oi Amsterdam, sent me from Haarlem, gather3(by him in January, 1877.

As showing the rarity of tliis species generally, it is worthy of note that Persoon, when lie wrote the Synopsis in 1801, h:f\ seen 10 specini-en, neithec liad tries, when he wrote the Syste^na, ul 1829. In this country it has been found (1) by Toody, "\n lane from Cray ford to i>exley Common" (Ray, Synop., edit iii., p. 27, 1724); (2), by Mr. &errett. at Hampton Court; (3), ou* mdy banks at Mettingham, Suffolk, and st Gillingham md Earsham, Norfolk, by Messrs. Stone and Woodward (Linnean Trans., vol.' ii., p. 59); (4), at Hani-y Castle, Worcestershire, by Meg srs. Ballard and Rufford (Withering, ed. ii., vol. 1. [v.,] p. 460, 171>J; Purton, Midland Flora, vol. ii., p. 702; No. 1075, 1817). On the Continent it has been found at Haarlem and near Darmstadt (Fuckel, Synib. Myc, p 37). The figu] (in vol. ii-j plate v.) by Mr. Worthingl on G. Smith, after Sowerby, t. 313, conveys a very accurate idea of the general appearance and habit of this fin e Geaster.—CHARLES B. PLOWRIGHT, in "Gardener's Chronicle/' Oct. 2, 1880.

G&astei coliforma"a.—I have read Mr. Plowright's communication,\at p. 439, as to *Geaster coliformis*, in which lie suggests I hat the puant has noi been found in England since 1810. I am not aware of any published notice of it, biit knowing that my friend, Mr. G. li. Wollastonj had found it long since that time, 1 made a j of him. lie tells me he found it in 1830, at Westwood, near Southfleet, in Kent, and again between 1836 and 1840 at Bridg*n, near Bexley, in Kent; also that in 1810 he saw a specimen found by a lady at East Wickham, near Plumstead, in Kent; and he adds, "I have since found i' . "ntly, but when and where 1. do not recoil-ct." 1 have thought that these facts might be of interest to your mycological readers.—FREDK. CCKIIBY, "Gardeners' Chronicle," Oct. 16, 1880, p. 506.

BRITISH SPECIES OP SPIRULINA.

Some difficulty having arisen through lack of figure* of *Spirulina* whereby one species has been confounded with another, we have given the figures on Plate 139. Of these fig. 1 represents *Spirulina tenuissima*, Kutz, found in brackish ditches at Northfleet, Kent, of which the portion marked *b* is still more

made ly*r* magnified than our usual scale of 420 diameters. Fig. 2 is then *Spirulina Jenneri*, Hass.. found in several localities during the imsi year, with the articulations quite distinct, as shown also on an enlarged scale, at *b*. And fig. 3 is *Spirulina oscillarioides*, Turp., drawn from Rabenhorst's Alga\ No. 1015, which name inadvertently has been applied to *Spirulina Jenneri*, a much nobler species. All these figures are drawn to the same scale, as near as their minute diameter would permit. The other figures on the same plate represent some species of *Siaurastrum* found by Mr. Wills iu North \Vales, of which two additional plates are prepared for a succeeding number.

PL 139, Fig. 1 Spirulina tenuissima, *Kutz.*
„ *2* bpirulina Jenneri, *Hass.*
„ *ò* ISpiruliua oseillaiioides, *Turp.*
„ 4 Staurastrum grande, *Laud.*
„ 5 Staurastrum sebaldi, *Remsev*, var.
„ <J *i* tauras trum anatiuuni, n.s.

ISOUTil AFRICAN FUNGI.

(*Continued from p.* 3•0-

The following is a description of the four plates which accompany the text from pages 17 to 34. The plates are numbered from 135 to 138. The majority of the figures are drawn to the same scale as previous plates in this Journal, about 4^0 diameters, and also to the stune uniform scale of the figures in " Mycographia."

*1)1*SCRIPTIC'X OF PLATES.

PI, 135, f. 1.—*Tremella micropera*, K. & C. *a*, nat, size ; *h*, enlarged ; *c*, basidium ; *d*, spores X 45O.
„ 2.—*Protostegia Euclei*, K. & C. *a*, nafc. size; *//*, c, enlarged receptacles ; *d*, section, enlarged ; *e*, spores X 450.
„ 3.—*Oncospora viridans*, K. & L'. (i, nut, size; *b*, a cluster enlarged ; *c*, section ; *d*, spores X 450.
„ 4.—*Oncospora bullata*. K. & C. t spores X 450.
„ 5.—*Puccinia helichrysi*, K. & C. Spores of both kinda X 450.
„ 6.—*Puccinia ornithogali*, K. & 0. iSporas of both kinds X 460.
„ 7.—*Puccinia Africana*, K. & *. .L'es X I-
„ 8.—*Hemileia Woodii*, K. & C. *a*. cluster of frait X 450 ; *b*, isolated sporangia; *c*, barren cysts X 450.
„ 9,—1• *coralloidea*, K. & <J. *a*, pun ion of t aft X 70; *b*, tip of I) nch X 450.
„ 10.—*Polycephalum aurantiacum*, K[. & C. a, nat. size; *b*, individual X 450 ; *c*, spores X 500.
Pl. 136i, f. 11.—*Bamularia Richardiæ*, K. & 0. SporeB X 450.
„ 12.—*Ramularia rumicis*, K. & 0. Threads and spores X 450.
„ I^J.—*Epochnium phyllogenum*, K. & C. Portion of hypluo with spores X 450.

Pl. 136, f. 14.—*Menispora cylindrica*, [illegible]
" 15.—*Fusicladium fuliginosum*, [illegible] æ, and spores × [illegible]
" 16.—*Cercospora hæmanthi*, K. [illegible]
" 17.—*Cercospora commelynæ*, K. & C. [illegible] × 450.
" 18.—[illegible]*zosporium celast*[illegible] Spores × 450.
[illegible] 50. Portion of tuft with spores
" 19.—*Helotium capensis*, [illegible] and
spores × 450.
" [illegible] & C. Section of cup enlarged, with
spores × 450.
" 21.—[illegible]*illinsia* [illegible]
" [illegible]
" [illegible] sporidia × 450.
" [illegible]—*Sphærostilbe nigrescens* [illegible] cluster enlarged
" [illegible] enlarged; *a*,
[illegible] *hypocreoides*, K [illegible]
enlarged; sporidia × 450.
Pl. 137, f. [illegible]—[illegible]*laria stilboidea*, K. & C.
sporidia × 450.
" [illegible]*sphæ*[illegible] , c,
" [illegible]*ratostoma cylindrica*, [illegible] 50.
asci, and sporidia × 450. [illegible] enlarged, with
" 29.—*Sphæria Africana*, K. & C.
and sporidia × 450.
" 30.—*Sphæria intercepta*, K. & C. [illegible]
" 31.—*Sphæria metuloidea*, K. & C. Sporidia × 450.
" [illegible]
" [illegible]
" 36.—[illegible]
" [illegible] Asci and sporidia × 450.
" [illegible] Sporidia × 450.
" 39.—*Dothidea scabies*, K. & C. Sporidia × 450.
Pl. 137, f. 40.—[illegible] Asci and [illegible]
" [illegible]—*Asterina capensis*, K. & C. [illegible]
" [illegible]*rina erysiphoides* [illegible] × 450.
" [illegible] with sporidia
" [illegible]*rina ditricha*, K. & C. [illegible]
" 44.—*Asterina Macowania* [illegible] conidia × 450.
" 45.—*Asterina confluens*, [illegible] Asci and sporidia × 450.
Pl. 138, f. 46.—*Asterina fimbriata* [illegible] Perithecia × 450.
[illegible] & C. Perithecium magnified; *b*
" 47.—[illegible]
[illegible] mycelium [illegible] C. Perithecium magnified; *b*, por-
" 48.—*Asterina solaris* [illegible] idia × 450.
[illegible] Perithecium enlarged; *a*, hyphæ,
" [illegible]
[illegible] C. Portion of mycelium × 450;
" [illegible]
[illegible] perithecium enlarged. C. *a*, hyphæ and conidia × 450;
" [illegible]—*Meliola inermis*, K. & C. *a*, portion of mycelium × 450;
b, asci and spo[illegible] × 450.

ON SPORE DIFFUSION IN THE LARGER ELVELLAOJEL*

Bit CHAS. }!. PLOWRIGHT.

We c *h-* . : ' frequently observed the clouds of sporidia, resembling p?uff- of smoke, which take *i*lace from the hymenia of the larger *P* *e* in a ripe condition. These jet-like expulsions of sporidi a - *:e* apt to convey a very incorrect notion of the manner in which 'the i. of this group of fungi is disseminated under ordinary ci<rcuiasj ances. The jet-like clouds of smoke are the re'sult of tl ptureof a number of asci simultaneously. They occu r only wh<Tjn tin *Peziza* has attained full uaturity, the asci being-, so tospoai., in a sta!o of tension from tlioir contents having atta ined the maximum amount of develo puaeut. Under such circam stances *t he* giving way and consequent emptying of one ascus dis turbs tfif i equilibrium of those in immediate contact with it, and as they a r s fully i natured, the slig lit concu ssion thus produced is a snfficient' excil ing cause, to render manifest the latest elasticity of their w ulls; the mea sure >*t'* which elasticity being determined by the di stance to wh ich the cloud i-j expelled.

On; 'the 29th May, 187 9, I gathered about one hundred specimens of *Morchella gigas*, Pers., and laid them out separately upon boards in my study. In the evening, as the rays of the setting , n fell obliquely upon them, 1 observed that all the older specimens w e quietly and continuously diffusing their sporidia. I^ach gporidiniii i as distinctly visible to the naked eye, floating in the air, twisting and turning in the sunlight. The head of each of the liioreli.s in question was surrounded by a cloud of sporidia extending three *ov* four inch es above and around it. This dou'i could dly be se en in the oblique light against a dark background. iVheu acted upon by a gentle current of air, such as would be produce* l by g ently waving the hand, it swayed *i>* and fro, without manifesiting any tendency to become dispersed. The ibmponent sporidi; were in constant motion, risi; g and falling, and circling abo nt, as ii' tin law of g ravity was a myth existing only in the imagination of philosopher;*, V\ h<n the cloud was blow a quite away by a ii, werful air-cur rent, it in *lh a* tew seconds refe j-med. The contents *oi'* each a sen in to be separately ejected i *n* a minute jel, consisting of a limited number of siporidia, which speedily 1 ecame lost with the others forming the cloud.

The phenomenon above deisciibed is int eresting from a physiologic;d point of view, as showin a; the capabilities of the unaided lmman eye. "These sporidia m<asured only about one-hundredth jf an incii in their long diameter, and hVe-one-thousanjths of an

* Koail at the meeting of the Woolhope Club, Oct. 8th, 1880.

inch in their short—yet they could distinctly bo seen to be having length and breadth.

That the process aboi >mal m the sporidia of and not tl accidental chain of circmnstan* wn in ar way. *A* ho has a particularly irritable skin, and wl often; mied. me in my myi ' excursions, *w* to gather Murells without suffering from a very tin **thema** of the face, the explanation of which wag until ht hci[1] that the Morells must always *be* kept at arm Vie

What particularly struck me wlum observing these spores jjiven off, was tbe facility with which th little or no tendency to subsid **rity** ij rery low, and thi 1 by their eount jxtensive and, wi id by air-currents, rapid diffusion t* us sporidia.

DR. MINKS ON THE STRUCTURE OF LICET*

You have favoured me with a copy of No. 49 of "Grev lea," containing a paper on the letter wi, ich I published in the "évue Mycol.," No. 7, for the i rench-speaking public, especially for the readers of that journal—n favour for which I thank you most sincerely.

Theintention of Mr. Phillips has certainly deserved the acknowledgmenta of the English public, but they may decide with what success he has solved his theme.

In order to enable t, the readers to completely understand my rectificatioL, the cecessity of which a] ppears both urgent and indispensable, I subjoin the follow! ng sketch:—

The tin- ee tissues of the body of lichens, the recc ntly-di scovered hyphema, the gonohyphema (formerly th hyphoidal system), and "ie gonide na, arc not separated from each other by sh arp limit s; th e only modifications of a single anatomical principle, created fo cy :u f physiological and morj al **ends,** f contain s in its cells at least one microgon idiura. That not all the cells of these tissues, notwithstand ing their including green corpuscles, appear gree n in (he micro scope image, reposes simply on opt ca] coi iditions. The intensity of green colour of th e gonidia does not dep pend, as Mr. Phi nrately transla ted, on the microgonidia, t ut on t) much n. e intensity of their colour, and ore on the number and arrangement of these corpuscles in each cell. i'i t exp lains how, not only real hyphae, but also true gonidia, with their products, can appear now colourless, now green. Mr. P lips, after correctly translating my precise definition—that the iiil- mic is the m of the cell of lichens in opposition

ogonidiuD criteri

at of fungi, that, **consequent** ... ni **homogenousness** of **the** to th... in bot ii plants does exist, falls into that inconceivable c<on- tra**cticbion of making me say that,** as **r**egards syste untie bota ny, the *gonidic'* **are the** criterion of **the two** great **vegetable kingdoms.**

Accordiug to my explication, it' we shall be **enabled** to conceive a vegetable form as a •..;henic one, we have **not** to prove **the** presence of gonidia n s body, **hut of microgonidia in** its **cells, we** hav e to s**an h f • the hyphema, etc.**; **in** short, to demonstrate that it is subi ect o quite **either** laws than the **fungus,in** its vegetative and r ep odu ve life. In the whole train of **argument,** the criterion, consi ^ in the presence of the **microgonidia,** is the most **B mple** and **commodious, so** that the very tyro or ***difettu**nte* may **he** expected to ma ke himself familiar with it. **In** future, at **least,** an **examinati' 6f** the **cells** of the fructification, paraph}ses and thecffi, **with theii** spor is, must by all **means take** place.

Anticipating that the readers **of my** letter would have the well-done plates of **my** work before their eyes, 1 referred to them. especially to the last plate, under **the firm** conviction that a glance must inform any botanist a **little acquainted with** the structure of the concerned parts of what, in verbal translation I pronounced. It may be seen that the th ecaspo re cannot at all be the product **of intracellular** free formation,* **for** the microgonidia contained in **all the** cells of the fructifying parts are equally **here in** morphological activity, from the **commencement** to the end. The origination of the spores reposes on simple **metamorphoses** of colls of ready hyphæ containing **mi**crogon **lidia,** and **if no metamorpl**osis ensues, the **hyphse** become and remain what is **called** paraphyses.

It \Y;LS properly *I,* the discoverer and author, whom alone it might be allowe**d** to give such a brief epitome —as it were, the **quin**tescence **of** my **workf**—since its real **tendency** could and should **benoc'**[1] than to direct **the** attention of the French public to these noveltii-s. S**lould** the same end be reached **among** the English public, of course **an uncurtailed** translation of my letter ought to have been given, but still **mor**e, two antiei;pations ought **have** been **answered** : that **the** reader o)' my **French** h-tter had also read all the **publications** in that journal on my **lichenological** discover**•ies, and that an un**derstanding **of my** paper **without** a c**>nteu porary** inspection of the **figures of** my wo**rk—the m**ost important c**>f which are** even cited—is hardly to be obtained.

Air. Phillips does not fulfil these anticipations—for lie even neg**lects mentioning** that my letter insists on them. **With him"!** co**iplain** that the same space **(insignificant as it is) which** the li llevue *V.*ycolog•iijiie " **has** afforded, was **not** allowed for his important communication. Already **ray** letter, reduced **in your**

* Mr. Phillips makes me say, that the thecaspore is *only* the product of free *intera*llular formation.

+ " Das Microgonidium. Ein Beitrag zur Keuntniss des wahren Wesens der F^ecbten." Basle {h Georg), 1879, with 6 col. plates.

jou[illegible] to one-third of its extent, could and should be [illegible] a satisfactory extract of my book, for which [illegible] published in "Flora," 1878, Nos. 14-20, [illegible] much more comprehensive treatise. [illegible] restriction of the intention of the eminent English [illegible] consideration of the circumstance that I was not writing in my native language, but more especially on account of my views being quite novel and subversive of our preconceived notions of the morphology and physiology of lichens, seems [illegible] caused him to fall into so striking [illegible] position to this [illegible] of my paper. [illegible] consideration of the narrow space, a reproduction of my [illegible] such as it interests the [illegible] ists and [illegible] followers of the Schwenenerian doctrine, this [illegible] and could be reached by uniting all the most essential passages in a uniform representation.

If we consider that the definition hitherto ac[illegible] f lichens, as it stands in the work of recent date, sounds "Plantæ cellulares thallo gonidiifero praeditæ sporasque [illegible] era generatione [illegible] in ascis foventes," [illegible] that the [illegible] of my contention [illegible] definition [illegible] protestation from my part against the [illegible] well justified [illegible] appear [illegible] facts could appear [illegible] Mr. Phillips [illegible] my new suspicion that I had stated such [illegible] raised the [illegible] The English public [illegible] will [illegible] utopias.

[illegible] expo[illegible] conviction that a more [illegible] urgently required, and [illegible] assistance [illegible] every way, for which [illegible] nce to its apparition [illegible] paper published in "Flora," 1878, [illegible] und [illegible] to translate the [illegible] words and certain notes [illegible] such [illegible] omission of the [illegible] extraordinarily gain by the [illegible] ion of figures [illegible] translation would [illegible] promotion of its [illegible] I declare myself ready for [illegible] exhaustive [illegible] Beseeching you to print the above [illegible] next number of your [illegible]

Dr. A. Minks.

P.S.—I am hoping that my paper will [illegible] contain thus much errata as that of Mr. Phillips.

NOTE ON THE ABOVE BY W. PHILLIPS.

I strongly disclaim any intention of misrepresenting the opinions of Dr. Minks in the brief abstract of his paper, of which he complains, and I am glad that he undertakes to correct any errors into which I might have fallen, as there is nothing more to be wished than a clear exposition of his theories. I trust, however, that your readers will derive more light from his communication above than I am able to do.

to thas e tc .reef the following typographical errors in my 14. line 13 from the top for "plates given there," read "-plates given there." Page 35, Hne]2 from top, for "mi crosronidia mintained," read "microeonidi a maitain." Page 36, line 1, for "hyptra," read "hypha;" line 16 from bottom, for "Mallus," read "thallus." Page 37, line 1, for "mecaspore," read "thecaspore;" line 5 from top, for "mecaspore," read "thecaspore;" line 9 from top, for "meci," read "theci."

INDEri TO BRITISH FUNGI DESCRIBED OR NOTICED JN « GBJEV1LLEA." VOLS. I.-V11I.

% GREENWOOD PIM, M.A., F.L.S.

In presenting to the reader, of « GreviUea" the accompanying Index to the **British** Fungi in the first eight volumes **of** that serial, the compiler believes he is, to some extent at least, snpplv-**ing a** want that has Lee.! **felt** by almost all students **of our** JWycologic rlora.

It **is now some** twelve years since **Dr. Cooke's « Handbook** " appeared, and since **that** time the records of new species have been so very numerous as to make it no easy matter to turn at a moderate notice to the exact **pag,** and numbe, of u GrcYillea." **in wL. h such** additions are to be found, **forming** as they do **no small** or **ummportant portion of its** contents.]« a **few cases where** a **Spe?ies** is noticed a second t **ime** and merely referring to a former notice, it has been indexed only **once,** viz., the first occurrence.

In compiling such an Index, it is no easy matter to eliminate every **error** especially where the amount of time **available** has been limited and irregular; **it** is hoped, however, that the errors are few and unimportant, and **that** this list may serve, in some sort, as a **cojici :ord** of the **pi**ogress **of British** Mycology till a second edition **of the** " Handbook " is given to the public.

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phaseolorum, *De By.*	...	...	... VII. 135
» pisi, *De By.*	...	...	... VII. 135
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JJ scutellatu*ev.*	...	...	••• VII. 137
JJ sparsa, *Lev.*	...	...	-•• VII. 137
,, urticæ *Ck*	...	...	••• vn. 137
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Virgasporium maculatum, *Cke.* ... ... III. 1^2
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COED COCH AND COLWYN FUNGI.

By invitation of Mrs. Lloyd Wynne and Mr. A. O. Walker, a party of mycologists visited these localities for two or three days, from the Oth October ; and the following list includes the majority of species found during the excursions. Others have been collected since by the Rev. M. J. Berkeley, of which a special record will probably be. given by that gentleman. As no extensive list of the North Wales Fungi has been published, we give the list in its entirety, although it represents only the result of two or three consecutive days, and must therefore be regarded as fragmentary.

AGARICUS.

acerbus, *Bull.*
acicula, *Sch.*
iuruginosus, *Curt.*
albus, *Fr.*
alcalinus, *Fr.*
arvensis, *Schff.*
bifions, *B. (j- Br.*
Bloxami, *B. $ Br.*
brevipes, *Bull.*
brumalis, *Fr.*
butyraceus, *Bull.*
campestris, *L.*
capnoides, *Fr.*
cervinus, *Sch.*

AGARICUS.

chalybeus, *P.*
cinerascens, *Bull.*
clavipes, *Fr.*
columbetta, *Fr.*
carcharias, *P.*
confluens, *P.*
corrugis, *P.*
cristatus, *Fr.*
cucumis, *P.*
epipterygius, *Scop.*
equestris, *L.*
euthelus, *B. ij- Br.*
excelsus, *Fr.*
fascicularis, /.•'

AGARICUS.
fastibilis, *Fr.*
fibula, *Bull.*
flaccid us, *Sow.*
fiavidus, *Sch.*
foenisecii, *P.*
frag ran s, *Sow,*
galopns, *Schr.*
geophyllus, *Sow.*
giganteus, *Fr.*
gracilis, *Fr.*
grammopodius, *Bull.*
granules us, *Batsch.*
hypnorum, *Batsch.*
inamsenus, *Fr.*
in fund **ibuli** for u 1 is, *Sch.*
inopus, *Fr.*
jubatus, *Fr,*
laccatus, *Scop.*
lenticular is, *Lash.*
longicaudus, *P.*
Mappa, *Bat sch.*
melleus, *VahL*
mitis, *B.*
mollis, *Sch.*
mutabilis, *Sch.*
nebnlaris, *Batsch.*
nidorosus, *Fr.*
nudipes, *Fr.*
odor us, *Bull.*
parabolicus, *A. $ S.*
pascuus, *P.*
plialloides, *Fr.*
pliyllophihis, *Fr.*
prujjulus, *Scop.*
purus, *P.*
pyriodorus, *P.*
rachodes, *Vttt.*
radicatus, *llelh.*
radicosus, *Bull.*
resplendens, *Fr.*
rimosus, *Bull.*
rosellus, *P.*
rubescens, *P.*
rugosus, *Fr.*
rutilans, *Schff.*
sfinguinolentus, *A.* (- *S.*
saponaceus, *Fr.*
semiglobatus, *Batsch.*
semilanceatus, /•>.
senilis, *Fr.*

AGAIUCUS.
soparatus, *L.*
spadiceus, *Sch.*
spectabilis, *Fr.*
sulfureus, *Bull.*
tener, *Sch.*
tenerrimus, *B,*
terreus, *ScL*
tuberosus, *Bull.*
tumid us, *Fr.*
vaccinus,/^
velutipes, *Curt.*
vulgaris, *P.*

COPRINUS,
comatus, *Fr.*
micaceus, *Fr.*
plicatilis, *Fr.*

BOLBITIU8.
fragilis, *Fr.*

CORTINARIUS.
anomaius, *Fr.*
cinnaniomeus, *Fr.*
Cookei, *Quel.*
diabolicus, *Fr.*
elatior, *Fr.*
liinnulens, *Fr.*
ocbroleucus, *Fr*
purpurascens, *Fr.*

GOMPHIDIUS.
roseus, -*Krom.*

HVGROPHORUS.
conic us, *Fr.*
hypothejus, *Fr.*
niiniatns, *Fr.*
psittacimis, *Fr.*
virgineus, *Fr.*
Wynnes, *B. 4' Br.*

LACTARIUS.
circellat
controvcrsiis, *1J.*
deliciosus, *Fr.*
pyrogalus, *Fr.*
rufus, *Fr.*
seriflims, *Fr.*
subdulcis, *Fr.*
tonninosus, *Fr.*
<*ir.* exsuccus, *Sm.*

RUSSULA.
cyanoxanthn, *Fr.*
emetica, /•'

HUBSULA.
f el lea, *Fr.*
fragiliSj *Fr.*
heterophylla, *Fr.*
integra, *Fr.*
nigrieans, *Fr,*
Queletii, *Fr.*
rubra, *Fr.*
subfsetens, *Sin.*

CANTHARELLIUS.
aurantiacus, *Fr.*
cibarius, *Fr.*

MARASMHUS.
androsaceus, *Fr.*
epiphyllus, *Fr.*
erythropus, *Fr,*
Hudsoni, *Fr.*
oreades, *Fr.*
peronatus, *Fr.*

BOLETIUS.
bovinus, *L.*
ehrysenteron, *Fr.*
edulis, *Bull.*
elegans, *Schwn.*
felleus, *Bull.*
laricinus, *B.*
luteus, *L.*
pacLypus, *Fr.*
subtoinentosus, *Fr.*

POLYPOROS.
adust us, *Fr.*
aneirinus, /"/•.
annosus, *Fr.*
fra»ilis, *Fr.*
uidlluscus, *Fr.*
picipes, *Fr.*
railesceus, *Fr.*
s (iiamosus, *Fr.*
vaporarius, *Fr.*
versicolor, *Fr.*
vulgar is, *JFr.*

D^DALKA.
quercina, *P.*

FlSTULINA.
hepatic a, *Fr.*

MiiRULIUS.
corium, *Fr.*
paliens, *B.*

HYIJNUM.
ocbraceum, *Fr.*
repanduni, *Fr.*

HYDNTJM.
udum, *Fr.*

BADULDM.
orbiculare, *Fr.*

GRADINIA.
granulosa, *Fr.*

CUATERELLUS.
crispus, *Fr,*

THBLEPHORA.
caryophyllfsa, *Fr.*
laciniata, *Fr.*

STBREPM.
acerinum, *Fr.*
purpureum, *Fr.*
rugosum', *Fr.*
spadiceum, *Fr.*

CORTICIDM.
arachnoid en m, *B. & Br.*
comedens, *Fr.*
giganteiim, *Fr.*
incarnatuni, *JFr.*
laive, *Fr.*
punctulatum, *Che.*
sambnei, *Fr.*

PENIOPHORA.
cine reft, *Fr.*
qtiercina, *P.*
rimosa, *Cke.* n.s.
velutina, *Fr.*

CYPHEI^LA.
villoijii, *P.*

CLAVARIA.
coralloides, *L.*
inasqualis, *Mull.*
rngosa, *Bull.*

CALOCKIIA.
viscosa, *Fr,*

PlSTILLARIA.
quisquilaris, *Fr.*

TREMELLA.
albkla, *II"ds.*
mesentei'ica, *Retz.*

HlBNEOLA.
auricula-Judaajj *Fr.*

K^MATELIA.
onct'plniliX, *Fr.*

DACUYMVCES.
stillatus, *Nees.*
deliqnescens, *Dub,*

SCLERODERMA.
bovista, *Fr.*

I*HAI,L1S.
- mipudicns, *L,*
LYCOPEKDON.
baccatum, *Vahl.*
genimatuin, *Fr.*
pyrifonue, *Schff.*
STEMOMTIS.
fusca, *Roth.*
TlUIADOCHB,
nutans, *II.*
CHONDRIODERHA.
floriforme, *ft.*
ARCYIUA.
pun ice a, *P.*
TRICMA.
cL:ysospe rma, *D.C.*
TCBULINA.
cylindrica, *Bull.*
CYATHDB.
striatus, *Hoffm.*
CRUCIBULUM.
vuIgare, *Tul.*
PBRAOMIDI'JM.
bulbosum, *Sckl,*
COLEOSPORIUii.
tussilaj;inis, *Lev.*
ÆCIDIUM.
tussilagini.s, *I*[1].
RHINOTRICHUM.
repens, *Preuss.*
POLYACns.
citierea, *Lk.*
ZYGODKSMIS.
fnscus, *Ca.*
ÆGERITA.
cmdida, *P.*
ERYSIPHB.
hc• rriihila, *Lev.*
Martii, *Lk.*
LEOI'lA.
lubrica, *P.*
PEHTZA.
badia, *P.*
calycina, *Schum.*
cinerea, *Batsch.*
cjathoidea, *Bull.*
l)almeniensis, *Cke.*
firina, *P.*
loporina, *Batsch.*
scutellata, *L.*
steireicola, *Cke.*

PEZIZA.
succosa, />'.
umbrorum, *Fckh*
vinosa, *A. (y S.*
virgiuea, *Batsch.*
vulgaris, *Fr.*
HELOTIUM.
aciculare, *Fr.*
reruginosuui, *Fr.*
claro-flavium, *Grev.*
pruinosnui, *Jerd.*
virgulloruin, *Fr.*
BULGAIUA.
sar<oides, *Fr.*
RHYTISMA.
acorinam, *Fr.*
XKCTIUA.
cinnabarina, *T<m.*
Ii;i •sii *B. & Br.*
manimoidea, *P.* <\ *P.*
sinopica, /')•.
HYPOCBKA.
rufa, *Fr.*
H\ POMYCE8.
aureo-nitens, *Tul.*
chrysospermus, *CuL*
rosellm', *Tul.*
XYLARIA.
Ijypoxylon, *Grev.*
HVPOXYLOS.
coccineum, *Bull.*
confluens, *Tode.*
rubiginosum, *Fr.*
serpens, *Fr.*
TRYPE.
disci form is, *Fr.*
^forruginea, *Fr.*
imcleata, *Cnrr,*
quercina, *Fr.*
stigma,/r.
DOTHIDEA,
graminis, *p.*
pt*ridis, *Fr.*
EDTYPA.
Ac:harii, *Tul.*
flavo virens, *Tul.*
lata, *Tul,*
VAI.SA.
ambiens, [<,^
stL'llulata, *Fr.*

SPHÆRIA.
acuminata, *Sow.*
aquila, *Fr.*
innumera, *B. & Br.*
inquilina, *Fr.*

SPHÆRIA.
ovina, *P.*
phaeostroma, *Mont.*
psecilostoma, *B. & Br.*

CRYPTOGAMIC LITERATURE.

BERKELEY, M. J. Fungi Brasiliensis, in Warming's « Symbolae ad floram Brasiliae," xxv.

NORDSTEDT, C. F. O. Desmidiaceae, in Warming's « Symbolae ad floram Brasiliae."

COOKE, M. C. Report on Salmon Disease, Appendix to Commissioners' Report. C. 2660.

COMES, O. Funghi del Napolitano. Pt 1 [illegible]

WILLS, A. W. The Structure and Life History of Volvox globator, in " Midland Naturalist," Sept., Oct., 1880.

PRENTISS, A. N. Destruction of Noxious Insects by means of Fungoid growths, " American Naturalist," Aug., Sept., 1880.

ARNOLD, Dr. F. Lichenologische Ausfluge in Tirol, xxi

WILLE, N. Om en nyendophytisk Alge, in « Christiana Videnskab. Forhand." 1880, No. 4.

WILLE, N. Bidrag til Kundskaben om Norges Ferskvandsalger, in " Christiana Videnskab. Forhandl." 1880, No. 11.

CORNU, M. Alternance des generations chez quelques Uredinees, " Comptes Rendus," 12 July, 1880.

CORNU, M. Sur la reproduction des Algues Marines (*Bryopsis*), " Comptes Rendus," 15 Dec, 1879.

DICKIE, Prof. G. Notes on Algae from the Amazons, " Linnean Journal," No. 108.

HOLMES, E. M. On Codiolum gregarium, in " Linn. Journal," No. [illegible]

MURRAY, G. On the application of the results of Pringsheim's Researches on Chlorophyll to the life of the Lichen, in « Linnean Journal," No. 108.

STOLTERFORTH, Dr. H. A Simple Method of Cleaning Diatoms, in " Journ. Quekett Micr. Club," Aug., 1880.

AURIVILLIUS, S. Monographia Arthoniarum Scandinaviae. Synopsis, in " Hedwigia," No. s, 1880.

[illegible] Versuche mit Puccinia malvacearum, in " Hedwigia," No. 9, 1880.

WINTER, Dr. G. Mykologisches aus Graubunden, « Hedwigia," No. [illegible] 1880.

WARTMANN & WINTER. Schweizerische Kryptogamen," Cent. viii.

GAGE, S. H. Permanent Microscopic Preparations of Plasmodium, in "Amer. Mon. Micr. Journ.," Sept., 1880.

PETIT, P. De Hildebrandtia rivularis, in " Brebissonia," Bryo- No. 1, 1880.

MIQUEL, P. E[illegible] des sur les P[illegible]res [illegible] de l'atmosphe[illegible]
V[illegible]CK & NORDS[illegible] [illegible]gæ. aquæ dulcis exsiccatæ. Fas[illegible]
I[illegible] 1880.
J[illegible] [illegible] 21, [illegible]80. [illegible] Universalis, [illegible] "Flora,"
ARNOLD, F. [illegible]enologische [illegible] "Flora," Aug. 21, 1880.
NYLANDER, W. Addenda nova ad L[illegible] [illegible]æam, in "Flora," Sept. 1, 1880.
MASSEE, G. E. Notes on some of our sma[illegible], in "Science Gossip," Oct., 1880.
[illegible]OWE, W. I[illegible] [illegible]es, in "Science Goss[illegible]
ERNST, Dr. [illegible] [illegible]otia de las Moscas, in "La Opinion [illegible]ly 15, 1880.
[illegible]port on Coffee Leaf Disease.
[illegible]nvirons de Paris.
[illegible]ctions [illegible]-6. [illegible]e Naturalists' Field Club," for
[illegible] [illegible]easter Coliform[illegible] [illegible]n Norfolk, in "Gardener's [illegible] 1880.
SMIT[illegible] [illegible]. Fungus Foray in Epping Forest, in "Gardener's Chronicle," Oct. 9, 1880.
COOKE, M. C. Report of Wo[illegible] [illegible]nnual Foray, in "Gardener's Chronicle," O[illegible] 2[illegible]
PHILLIPS, W. New British Discomycetes, in "Gardener's Chronicle," Sept. 4, 1880.
ALLEN, T. F. The C[illegible]aceæ of [illegible]ca, 4to. coloured plates. Parts. 1, 2.
VAN HEURCK, [illegible]. H. Synopsis of the Diatoms of Belgium. Part 1.
"Cryptogami[illegible] of the Botanical Record Club," for [illegible] and 1880.
FARLOW, Dr. W[illegible] On some Impurities of Drinking Water caused by Vege[illegible]is.
RICHTER, [illegible]s von Gloeocystis, in [illegible]ed-wigia," No. [illegible]
PASSERINI, G. [illegible] alcune crittogame osservante sul Tabacco, "Atti. Soc. Critt. Ital.," iii., Pl. 1.
CASTRACANE[illegible] [illegible]ee Italiano, "Atti. Soc. Critt. Ital." [illegible]
[illegible]A, A. Licheni del Monte Gargano, "Atti. Soc. Critt. [illegible] iii., P[illegible] 1.
COMES, O. Nola sull *Agaricus parthenopejus*, "Atti. Soc. Critt. Ital.," iii., Pt. 1.
SPEGAZZINI, C. Nova addenda ad Mycologiam Venetam, "Atti Soc. Critt. [illegible]
OUDEMANS, [illegible] A. Revi[illegible]sion des Champignons dans les Pays-Bas, in "des Archives Neerlandaises," T. xv.

(Srailtea*,

A QUARTERLY RECORD OF CRYPTOGAMIC BOTANY AND ITS LITERATURE.

CALIFOKNIAN FUNGI.

By M. C. COOKE AND DR. W. H. HARKNESS.

(Continued from page 9.J

The following completes the list of undescribed species contained in the collection made by Dr. W. H. Harkness in California during 1880. Although a large number of the species now described belong to the category of imperfect fungi, they cannot be entirely ignored on that account.

Coiticium pactolinum, *Che. & Hark.*

Aureo-fLavum, effusum, cmstaceum, indetemiinatum, hymenio Ia3vi, glabro, friabili, demurn fissurato. Sporis globosis ((*007-f008 mm. diam.), lgevibus, pallide flavibus.

On naked wood of *Quercus.* (No. 1521.)

A singular species, of a brilliant golden yellow, the surface a compact mass of globose spores. The hymenium becomes cracked in drying, and falls away in irregular fragments.

Macroplodia astexina, *Cite. & Hh.*

Hypophylla. Maculis radiato-fibrosis, suborbicularibus, atris ; peritheciis subglobosis, aggregates, inter hyphis nidulantibus. {Sporis ovalibus, fuscis ('006 x -0035 mm.).

On leaves of Madrono *[Arbutus Menziesii).* (1317.)

Macxoplodia ovalis, *Che. & Hk.*

Peritheciis atris, globosis, semi-liberis, in plagas elongatas collectis. Sporis pallido-fuscis, ovalibus, continuis ('005 x *004 mm.).

On Locust twigs. (1589.)

Phoma pini, *eke.* <6 *Hk.*

Sparsa, tecta. Peritheciis minimis, subglobosis, cryptis. Sporis ellipticis, hyalinis, continuis ('0065 x '003 mm.).

On bark of *Coniferce.* (1548.)

Scarcely visible, except by slight cracking of the cuticle.

Phoma capsularum, *Cke. & Hk.*

Erumpens. Perit]; eciis a tris, nitidis, in maculas orbiculanbm congestis. Sporis- ellipticis, hyalinis, continuis (-0065 x '0025-•0028 mm.).

On legumes of *Robinia.* (1448.)

Phoma Eucalypti, *Cke. & Hk.*

Erumpens, gregaria. Peritheciis atris, semiliberis, maculas punctatas formantibus. Sporis elongato-ellipticis, hyalinis, continuis **(•01-012** x -0028 mm.). (1476.)

On inner bark of *Eucalyptus glohulus.*

Phoma librincola, *Che. 8{ Sh.*

Exigua, gregaria, inter fibrillas nidulans. Peritheciis globosis, numerosis, **atris.** Sporis **ellipsoideis,** continuis, hyalinis (-008-'009 x-004 mm.).

On liber of *Acacia.* (1444.)

Spreading over a considerable surface, imparting a rough appearance.

Phoma xylostei, *Che. fy We.*

Sparsa, punctiformis. Perithecifs atris, subprominulis. **Bporis ellipticis,** continuis, hyalinis (*006 £ *003 mm.).

On twigs of *Lonicera hispidula.* (1551.)

Hypocenia herbarum, *Cke. & Hi.*

Caulicola, erumpens. Peritheciis atris, obtusis, in lineas dispositis. Sporis subclavatis, hyalinis, bi-trinucleatis, demum univel biseptatis (*018 x '0035 mm.).

On stems of *Aster.* (1373.)

The habit is that of many species of *Diaporthe,* of which it may be a condition.

Sphaejropsis maculaeforme, *Cke. ib Hk.*

Epiphyllum. Peritheciis **exiguis,** atris, **snbnitidis,** in maculas orbicularibus congestis. Sporis cylindricis, **utrioque** obtusis, hyalinis, continuis ('015x*0035 mm.J.

On leaves of Madröno *Arbutus Menziesii.* (1318.)

Sphaeropsis amenti, *Cke. $ Eh.*

Peritheciia minimis, membranaceis, sparsis, convexis, **brunni**is. Sporis eliipticis, **hyalinis,** coutinuis (-01 x "005 mm.).

On catkins of *Alnus.* (1375.)

Diplodia **Lupini,** *Cke. & Eh*

Sparsa. Peritheciis atris, globosis, semiliberis, Sporis **ellip**ticis, utrinque subattenuat:s, unis"ptatis, medio constrictis, brunnis, **cellulis** subtriquetris (*028 x "01 mm.).

On Lupin stems. H308 1

Diplodia sedicola, *Cke. ty Hi.*

tip! Doinula, erampens. Perith.ciis subglobosis, atris. Sp trie ellipticis, uniseptatis, brnnneis, medio nec constrictis (·02 × ·0085 mm.).

C*n *Sedum,* (1408.)

Diplodia cyparissa, *Cke. Sf Hk.*

Sparsa, tecta, epidennide elevata. Peritheciis subglobosis demum depress. Sporis elhpticis, hyalinis, continuis, demum unf septatis^ brunneis, medio vix constrictis (-02--022 x '009 mm T

On *Cupressus macrocarpus.* (1269 1270 ^

Diplodia symphoricarpi, *CJce. & Hk.*

nid ub cnticulâ

con o fortissime

ictis, celluhs subglobosis *('022-'Q2±* x -011--012 mm.)

On *Symphoricarpus.* nSfil)

Diplodia extensa, *Che. & El.*

Grogaria. Perithsciis subglobosis, atris, sub cnticuli nicrofactS strictis (x x cv5 ,, ,, m con-

On Jc^r *macrophyllum.* n4Q9 ^

Diplodia phyllodiae, C% ^ ffi

Sparsa. PeritLeciis rabglobo is, aim prominulis, sapeme nudis. stri z (Sit ix s? r , n e o nec con-

On phyllodia of *Acacia.* 51.)

Diplodia laurina, *Cke. & Bit.*

Epiphylla' sparsa' punctiformis. Peritheciis convexis, atro-brunn e,s. Sporis eUipticis, uniseptatis, fuscis (-01-012 x •004 mm.).

On Laurel loaves. **(1302.)**

Diplodia maculata, *Cke. & Hk.*

^piphylla. Maculis irregularibus, fuliginosis, fusco-marginatis. Pen liecns applanatis, membranaceis, brunneis. Sporis ellipticis, palhdofusras, uniseptatis (-02 x "005 mm.).

On living leaves of Madrono. (1316.)

Diplodia'periglandis, *Cke. $ Hi.*

Erumpens, Peritheciis globosis, atris, demum subliberis. Sporis elhpticis, uniseptatis, hyalinis, medio nee constrictis (-015 x -004 mm.).

On acorns. **(1433.)**

Dichomera viticola, *Cke. $ Hk.*

Sparsa, erumpens. Peritheciis atris, subdobosk, prominulis. Spo ? a r A ^verse divisis, fuscis (·00 x

On wild grapevine. (1489.)

Spores sometimes globose, sometimes a little elongated, usually wit septum, each of one of the cells being transversely div r

Dichomera rhuina, *Cke. & Hk.*

Sparsa. Peritheciis subglobosis, atris, demum denudatis obt, Sporis elhpticis, tnseptatis, celluli. alterovo » *A* Tuscis (-02 x -008 mm.). ansverse dinsis,

On *Elms triloba.*

(1327.)

Hendexsonia Lupini, ***Cke.*** *<}- Hk.*

Sparsa, erumpens. Peritheciis subglobosis, prommulis, ; atris, obtusis. Sporis arete ellipticis, hyalinis, demum fuscis, triseptatifl (-016--018 x "0035 mm.).

On *Lupinus.* (14.11.)

Ceuthospora **bxevispoxa,** *'CJ:e. & We.*

Epiphylla. Peritheciis applanatis, in lacimas parvulas dehiscentibus. Nucleo subseruginoso. Sporis cylmdricis, obtusis, hyalmis, contimiis (-01--014 x '003 mm.).

On *lle terometes arbutifolia.* (1296 bis.)

Cryptospoxium eucalypti, ***Cke. $ Ilk.***

Sparsum, punctiforme, epidermide tectum. Sporis fusoult sis, abrupte curvulis, hyalinis ("02 x '0035 mm.).

On twigs of *Eucalyptus globuhts,* (1286.)

Cryptospoxium punctifoxme, ***Cke.*** *& Eh.*

Epiphyllunij sparsum, exiguum, punctiforme, habitu *Sphærellæ punctiformis.* Sporis leniter cnrvnlis, utrinque attenuatis, hyalinis (-02--092 x '022 mm.).

On leaves of *Arbutus Menziesii.* (1317.)

Cryptospoxium falcatum, ***Cke.*** *$ Hk.*

Hypopbyllum vel amphigenum, punctiforme, in plagas nel losas aggregation. Sporophovis elongatis, falcat utrinque attennatis, hyalinis, leniter curvulis (-02--023 x '00! mm.).

On leaves of *Arctostaphjlos.* (1470, 137;

Similar to the last, but with the spores produced at the apex and on one side of long falcate sporophores, Perithecia more densely aggregated.

Astexoma Dianthi, *Cke. <j Eh.*

Macnlis irregularibus, cinereis. Peritln . hyphis nuihus fupci'- iSporis miniaiis, hyalinis, ellipticis

K

005--006 x -002 mm-)-

On stems and leaves of *1)* , (1451.)

hyllosticta innumera, *Cite. A Hk.*

Hypophylla. Peritheciis exiguis, aliis in macnlas orbicnlaril dispositis, aliis in plagas roaximas gregarii iris ellipti hyalinis, contimiis (*0045 x '002 mm.).

On living leaves. (11-

Phyllosticta Craxxyae, *Cl-e. Sr Sk.*

Epiphylla. Maculis ellipticis, griseis, **purpureo-cinctis. P<** theeiis convexis, prommulis, **atris, snb-nitidis.** is arete **elliptic is,** byalinis, continuia (-01--012 **x '002--0025 mi**

On *Garrya elliptica.* f I "•*94 ^

Phyllosticta heteromeles, /ft

Lphylla. Maculis pallidis, orbicular!bus vel conflnentibns, nigro-Hmitatu. P.ritheciis convexis, **eUiptii** hyalmis, contimiis (-008 x "002 mm.).

On leaves of *JL* **/jgi**

Sporidesmium fumago, *Oke.*, var. **umbrinum**

. In this variety the general colour is umber 'brown ; otherwise it scarcely differs from the common form, which is probably only a condition of some *Capnodium.*

On twigs and leaves of *Arctostaphylos.* (1485)

Helicoma fasciculatum, *Berk. % Curt, in U.S. Exp. Exp.*

A very interesting species only previously found in Japan.

On *Jbaurus* leaves. (JKAO.)

HARKNESSIA, *Cke.*

Perithecia vera nulla. Sporaa elliptic* vel subglobos®, simplicia, opaca, deorsum pedicula hyalina producta, in nucleum conglutmata, demum m cirrhos atros erumpentia.

Allied probably to *Melanconium,*

Karknessia eucalypti, *Cke.*

Epiphylla, vel caulina. Sporis late ellipticis, atro-fuscis (-03 x I0^.mm;) ^eorsum Pedicellatis. Pedicellis ^ualibus linearibus hyalmis ('04 mm. long). Orificio orbiculari, margine elevato, hinc line dentato-lacerato.

On leaves and twigs of *Eucalyptus globulus.* (1280 ^

This curious fungus seems to be related to *Melanconium.* The spores resemble most those of an *Uromyces,* but they are ejected in thick black tendrils, immersed in gelatin, and do not become pulverulent. There is no proper perithecium, and the tendrils issue from orbicular openings, the margins of which are elevated into a kind of collar, and remain after the spores are dispersed, and then not unlike some *:SUctis.* Chiefly found on the dead leaves, but also scattered over the young twigs. Its development requires to be studwd m living specimens, and as its host, *Eucalyptus globulus* is becoming widely distributed, this parasite should be sought after and its life-history investigated.

Diatrype eucalypti, *Cke. & Elc.*

Suborbic ularis, convexa, nigra, ostiolis conicis, sulcatis. Ascis clayatis, longe stipitatis. Sporidiis leniter curvulis, utrinque obtusis, hyalmis (-01 x '0015 mm.).

On branches of *Eucalyptus globulus.* **(1419)**

Diatrype prominens, *Cke. & Hk.*

Erumpens, oblonga, convexa, nigra, elevata. Ostiolis prominulis, sulcatis. Ascis clavatis, sessilibus. Sporidiis leniter curvnhs, utrinque obtusis,-hyaliuis (-012--013 x "002 mm.).

On twigs of *Mimulus* and *Arbutus Henziesii.*

Valsa eucalypti, *OU. * EL* ^ ^ ^ U^

Erumpens, subrotunda, convexa, nigra. Peritheciis oblon-is Ostiolis elongatis, cylindncis, lavibus, rectis. Ascis clavatis £'

^itgmzz^jtf"curvulis;ut^ •*£;

On twigs of *Eucalyptus globulus.* n 9 q 7 (-a.)

Pustules small, consisting of five or six perithecia.

Diaporthe phaceliæ, *Cke. & Hk.*

Sub-effusa, stroma sub corticum nigricans. Perithecüs subglobosis, immersis. Ostiolis cylindricis, elongatis, flexuosis. Ascis clavatis, sessilibus, sporidiis rectis, sublanceolatis, quadri-nucleatis, dein uniseptatis (·015 × ·003 mm.).

On branches of *Phacelia.*

(134;7.]

Diaporthe aesculi, *Che & Bit.*

Cortical is, in plagas elongatas collects. Peritheciis glohoso- **depressis.** Ascis lanceolatis, sessili -iporidiis sub-lanceolatib, j, quadrinucleatis ('018 x '0035 mm.).

On *JSsculus californica.* (1463.)

Spheexia anisometra, *Cke. & Ilk.*

Sparsa, erumpcns. **Perithecite** hemispherico-prominulis, obtusis, **atrie, primo epidermide** *i* **emumsuperne nudia.** Ascis clavatis, sessilibus. Hporidiis, biseriatis, sublanceolatis, utrinque rotund,a tis 1-4 septatis, **cellnla** pen ultima incrassata, hyalinis (-026 X '008 mm.).

On twigs of *Mimulas glutinosus* (1445); on *L*. hicrata* (1499); **on** *Ctipressus macn* (1439); on *I fits globulus* (1287); on *Juhts* (1486, 1262); on ***Draccena*** **(1447)** and on legumes of ***Bobinia*** (1237).

The **sporidia** are **at** length unequally divided, the upper portion being the shortest, and consisting of two cells, of whicli the sect •arly equal e< The broad cell only usually nucleate.

Sphaeria acuum, *Cke. & ilk.*

Erumpens, hemispherico-proaiiiiala. Perithe< tpil- latis. Ascis **clavatis.** ig, **utrinque rotundatis,** niedio constrictis, 1-3 **ttaiis,** quandoque **tafcis,** hyalinis (•023--024 x 'OOG mm.).

On fir leaves.

Closely allied to *Spharia ani&ometm, C. $• II.* pleospora vitrispora, *Che. § Hk.*

Sparsa, epidermide nigrofactâ tecta. Per i, papillatis, atris. Ascis **:ylindricis, Sporidiis** i: **ntm.),** nque leniter attenuatis; merenchymatkis, **hyalinis ('032 x *01:**

QnLonicera. **(1311.)**

Sphaerella (T) Hosackiae, *Cke. $ Hk.*

Sparsa, **tecta, punctiformis.** Peritheciis **globoso-d<** Ascis clavatis, **ridiis (16?) numerosis elli >n-** **(•006 x "0025** UUB.J.

On twigs of *Somchta.* /^.

Iphterella dryophila, *Cke. j- Hk.*

Spiphylla. brunneis, subimmersis. Ascjsclavatis, sessilibus ; sporidiis lanceolatis, tnseptatis, pallule fuscis (-02 X *0035--<

On leaves of *Quercus,*

(1471.)

Gibbera flclni, *Cke, $ Hk.*

Caspitosa, atro-violacea. Peritheciis stipatis, hevibus, vix pa ptatis, hy

On bark of *Ficus.* ('U72 ^

Asci and sporidia not seen. Stylospores evidently different from those **oi** *Or. pulica?*is.*

Dothidea sequoiae, *Cke. & Eh.*

As? T £ S r f' Con vex, atra, nitida, minuta, unicellnlata. late, davatis sessilnbus. Sporidiis biseriatis, lanceolatis, obtusis, m dio ConStnCtl8, unise P^tis, binucleatis, hyalinis (023 X ·0075 mm?).

On leaves of *Cupressus.* H182

Dothidea rugodisca, *Cke. fy Hk.*

Hypophylla. Maculis irregalaribus, fascis. Peritheciis angalatis, applanatis, rugosts, congestis. Ascis subclavatis. 5555- d SP ra ot ndatis att6nUatiS, tri^tatis, ^alillis (TM - ·(T7×OO4rU mm.).

On leaves of *Arbutus Menziesii.* (t52 8 "i

Dothidea corylina, *Cke. $ Hlc.*

Emmpens' orbicularis, depressa, atra, intus concolor. Ascis an mb —? l- f^^^i^^z^r^'

On twigs of *Corylus rostrata.* L-ooi, 1383.)

Asterina anomala, *Cke. 4- Hk*

Peritheciis hemisphericis, vel globosoato fusco nidulantibus; hinc llic setis Ascis clavatis. Sporidiis biseriatis, lanlinis (·02-·022 × ·004 mm.).

A singular spocija. Sometimes sets are also found on the TMri' (1461.

EEVUE MYCOLOGIQUE.

he continued pubof information it to diffuse mycological subjects. all connoisseurs in nal question,

Apropos of this we commendttthe notice of iconography the recent illnsttatioSs of 2he specially the figure No. 2 of plate X, which *tZid* £ Pm»««pora wtfcofa. This figure is haidv Vill S repr6Sent American *Peronospora* with which w™ 7 - i\ * genuine •»»* h - degenerated ^ ^ £ ^ ^ ****** genuine portrait. -^uiope, it *this* be a

ILLUSTRATIONS OF BRITISH FUNGI.

For obvious reasons, our remarks on this head will be confined to a statement of facts.

During the last Fungi meeting of the Woolhope Club the subject of conversation, on one or two occasions, was the desirability of publishing at a reasonable price, and with as much expedition as possible, a series of coloured figures of the larger British Fungi, that is, of the Hymenomycetes. As a conscquence such a work has now been commenced, and it remains with the mycologists of this country to determine whether it shall be continued with vigour or not. All particulars as to price, &c., will be found in the advertisement.

It is proposed that these "Illustrations" should be of uniform size with the plates of this journal. That each part shall consist of sixteen 8vo. coloured plates, and that four parts shall, if possible, be issued during the year. No letter press will accompany the plates, but this will be compensated by the issue of a second edition of the first part of the "Handbook," uniform in size, which will be undertaken as soon as circumstances may warrant.

The plates will represent the objects of a natural size wherever possible, but when reduced the scale of reduction will be named on the plate. In the same manner when enlarged the magnification will be stated. As far as possible an uniform scale of 420 diameters will be adopted for the spaces.

The plates will be numbered consecutively as published, but they will *not* be stitched, so that any one may place them in systematic order as the publication proceeds.

It would hardly have been possible to have issued such a series of figures in systematic order, and this will not be attempted, but whenever more than one species is figured *on* a plate, these will be closely consecutive species, so as not to interfere with a subsequent arrangement in accordance with the proposed "Handbook." An effort will be made to give figures of *all* the species included in the British Flora, as far as the kind of the Hymenomycetes.

Co-operation will materially lessen the difficulties of the undertaking, which involves a serious amount of labour and expense. Only a limited number of copies will be printed, and those who are willing to encourage the work should send their names at once, that they may receive their copies at the reduced subscription price. When the number of *two hundred* subscribers is completed the subscription list will be closed, and copies can only be obtained without any reduction in price. The principle of subscription is adopted only as a guarantee against the major cost of production, and its advantages are offered to those who are desirous of rendering that aid.

The first part is already published, and the second in preparation. From these an opinion may be formed as to the execution

and merit of the work. The attempt is an ambitious one, **and** it is sincerely hoped that it may not fail for lack of that small support which it seeks. Further particulars may be obtained from the Editor of this Journal.

NOTES ON BRITISH DESMIDS.

By M. C. COOKE.

The most unique and interesting collection of Desmids made by Mr. A. W. Wills, in the neighbourhood of Capel Curig, during 1880, renders some observations essential as a supplement to our list in " Grevillea," vol. viii., p. 121.

In so far as the forms have yet been identified, this gathering contained no less than nearly ninety species, some of them new to the " British Flora," and many of them rare.

Before commencing these observations, it will be necessary to give some explanation of our Plate 141. It will be remembered that in 1859 the Rev. R. V. Dixon proposed (" Nat. Sci. Rev.," vi., p. 464) a new genus, under the name of *Tetrachastrum* for such species of *Micrasterias* as were allied to *M. oscitans,* and described a new species under the name of *Tetrachastrum mucronatum,* of which our PI. 141, fig. 2 a is the typical form, or very nearly so. It was contended that this was a species quite distinct from *Tetrachastrum oscitans,* of which our fig. 2/ is a typical form. Having examined a collection made by Mr. A. W. Wills, in the neighbourhood of Birmingham, and a gathering from near Salisbury, we have found almost every intermediate gradation between these two extremes. So variable was the contour in the Birmingham gathering that no two individuals agree entirely with each other. From a large number of tracings by camera lucida we have selected only a few which-are reproduced at PI. 141, fig. 2 to illustrate our view that there is in reality no specific difference. Fig. *e,* which was in company with fig. a, is more closely related to fig. /, which is *T. oscitans,* than to fig. a, which is *T. mucronatum.* Hence wo regard all as forms of the same variable species. As to the genus *Tetrachastrum,* let each be persuaded in his own mind; for ourselves we do not recognize any very strong argument in its favour.

Returning now to the Capel Curig gathering, we have to note the occurrence of *Sph&rozosma (Spondylosiwri) pulchellum,* Archer, a species hitherto only found in Ireland.

Oi the species of *Euastrum* only one calls for special mention,* and that approximates so closely to *Euastrum erosum,* Lund., that we do not hesitate to consider it a form of that species. Nothing can be more accurate and characteristic than the figures of Lundell, and we feel confidence in trusting to them, although in this instance we have seen no authentic specimen,

The genus *Cosmarium* is one in which great care is necessary in the discrimination of species, but of the following we entertain no doubt.

Cosmarium pseudoconnatum, *Nordst* (PI. 140, fig. A).

Smaller than any form of *Cos. connatum.* In size it agrees completely with Nordstedt's measurements. It was only recorded previously in Ireland.

Cosmarium pseudonitidulum, *Nordst.*

Not previously recorded in the British Isles.

Cosmarium tetrachondrum, *Lund,*

Only found previously in Ireland.

Cosmarium cyclicum, *Lund.*

Of which varieties have been recorded in Scotland and Ireland.

Cosmarium variolatum, *Lund.*

Recorded in Ireland only, but not uncommon at Capel Curig.

Cosmarium Nymannianum, *Grunow.*

Previously recorded in Ireland.

Cosmarium. truncatellum, *Petty.*

A minuta species only found hitherto in Ireland.

Cosmarium Holmier*se, *Lund.*

Not before recorded, except in Ireland, but now found in England, as well as North Wales.

Cosmaiium quadrum, *Lund.*

The quincunx arrangement ot the nodules is one feature in which this species differs from *C, conspersum.* Not previously recorded in the British Islands.

Cosmarium galeritum, *Nordst.*

Not previously recorded in Britain or Ireland.

Cosmarium orthostichurn, *Lund.*

Also new to the British Islands.

Cosmarium sphalerotrichum, *Lund.*

Another addition' to the list of the British Islands.

Cosmarium coronatum, *Cke. & Wills.*

Frond about as long as broad, or rather shorter; constriction deep, linear; segments quadrilateral, narrowest at the base, and dilated upwards, very slightly convex at the ends, rough all over with elongated conical granules, arranged in lines (about eight at the end and four on each side), side view truncate at the ends; end view elliptic.

Length -065--07 mm. Breadth, -075--08 mm. Isthmus -02 mm. Side view, *045 mm. broad.

This resembles *C. biretum* in form, but the granules are conical and prominent as in *C. Brebusdniu* The almost truncate ends in front view, have eight of these conical projections, which impart a coroneted appearance. In side view the ends are also truncate which would be sufficient to distinguish it from closely allied species, and the regular elliptic ends separate it distinctly from

Cosm. biretum. **By many** features this seems to be entitled to rank as a distinct species.

Cosmarium cambricum, *Ckc. & Wills.*

Frond longer than broad; constriction linear; segments quadrilateral, narrowed from the base, sides with two sinuations, and one in the centre of the end, the latter rather the broadest. Side view, segments oval, narrow, rounded at the ends, with **a** shallow constriction. End view elliptical.

Length, -046--048 mm. Breadth at the base, -036--O38 mm., at the end, -02--022 mm.

Allied to *C. tetragonum* and *C. Nymannianum,* from both of which it differs in the character of the sides and ends, and the number of sinuatiSns. It has been found in two or three stations in North Wales, but not elsewhere. The empty frond seems to be minutely punctate.

Cosmarium globosum, *Buln.* var.

Empty frond, punctate, with a distinct border, the **punctse in** diagonal lines. End view circular.

Length, -035 mm. Breadth, -022 mm. Breadth at constriction, •019 mm.

Of the species of *Staurastrum* one of the most noteworthy is—

Staurastrum Brasiliense, *Nordst.*

A large and beautiful species, of which numerous specimens were found, quite new to the British Islands (PI. 140, figs, *d, e).*

Staurastrum arctiscon, *Ehr.*

Not uncommon in the gathering, previously found in Ireland, but now for the first time in Britain.

Staurastrum ophiura, *Lund.*

Uniformly with eight arms (PI. **140, figs, a,** ***b, c)*** **only recorded** hitherto in Connemara.

Staurastrum cerastes, *Lund.*

A most distinct species, which cannot be confounded with any other. Eare in the present gathering. Recorded by Mr. Archer in Ireland.

Staurastrum aversion, *Ltind.*

Similar in many respects to *Staurastrum brevispina,* Breb. **Pfe**viously recorded in Ireland (PL 140, figs. i_9 *k).*

Staurastrum grande, *Lund.*

A large species (PL 140, *B.g.* 4) not before in the British list. In the majority of the specimens there is a very minute papilla on each side of either segment, and consequently at the three angles of the end view. This form is not represented on the plate, indeed the minute papilla were not observed until after the plate was printed.

Staurastrum longispinum, *Bailey.*

The form found and figured (PL 140, fig. 9) is the same as that of Northern Europe, and not exactly that of the United States, It had already occurred in Ireland.

Statirastrum pseudofurcigerum, *Reinseh.*

Is now recorded for the first time in the British Islands.

Staurastrum Sebaldi, *Reinstih.* var.

The variety of this species figured (PI. 13D, fig. 5) differs from the typical form in its longer arms, but not apparently in any other essential points. The species has been found in Ireland.

Staurastrum P ring she imii, *Beinseh.*

Also found previously in Ireland, but not hitherto in Britain.

Staurastrum megacanthum, *Lund.*

Appears to be entirely new to the British Islands.

Staurastium paradoxum, *Jtfeyen.* var. B. longipes, *X*

This peculiar variety also occurred at Capel Curig.

Staurastrum anatinum, *Che.* & *Wills* (pi. 189, fig. 6).

gftaentsin front view broadly fusiform; rough with prominent granules, which are truncate on the outer margin; procef elongate, rough, teraiinated with minute spines. End view triradiate, processes elongate, Tough, slightly and gradually concave, nodules at the centre truncate.

Qgth -05 mm. Breadth, including the processes, -1 mm. Breadth at the sinus, -02 mm. Length of the processes, -025 mm.

Allied to *S. Sebaldi,* but differs in the front view in the broadly fusiform segments, and the upward, rather than downward, direction of the processes, hence, the third process is usually visible on one or both segments in the front vi

Docidium nodosum, *Bailey,* (PL **14],** fig. 1).

The occurrence of this extraordinary form for the second time in North Wales is noteworthy, the first being at Barmonth, where o it was found by Mr. A. *W.* Wills, in the year 18.67.

This enumeration is confined to the Capel Curig collection. We have notes on species from other localities during the past y some of which are new to Britain, but these must be postpi i until a succeeding number.

L()ND0N CATALOGUE OF BRITISH MOSSES AND HEFATICJE *

Bryologists will be glad to learn that the Botanical Record Club has issued a .second edition of this useful catalogue brought u date. It is in two forma—one, printed on both sides of the pai and one, printed on one side only.

Jt *h* n nnecessary for Ils to attempt any commendation, for a catalogue of this kind will commend itself, beiu g, in f lc t a n^ ces- sity for all *ho are interested in British Bryology. It ig D) and clearly printed, and shows the comparative rarity or frequency of each species by means of a census indicating its distribu tion through the eighteen Watsoman Provinces of I Great Britain.

* London : D. Bogue, 3, St. Martiu'e Place.

NEW BRITISH FUNGI.

By M. C. COOKE.

***(Continued from Vol.* FIJI., *p.* 11.)**

The following includes only a few of the additions found during the past year. Messrs. Berkeley and Broome have others to record, and until this is done any others which may have come to our knowledge may be postponed.

Agaricus (Amanita) virosus, *Fr.* Hym. Eur., 18.

White, pileus conical, then expanded, acute, glutinous ; margin repand, even; stem stuffed, cylindrical above the bulbous base, torn into scales ; volva thick and floccose, as well as the ring which adheres in shreds at the margin of the pileus ; gills free, linear-lanceolate. *Fries Svamp,* t. 84 ; *Cooke Illust.,* t. 1.

In Mr. Hartcup's Plantation, Bungay, in company with Mr. D. Stock (1865), also at Forres (Rev. J. -Keith.)

Although the drawing has been in my possession so long, it has not been recorded, by some oversight, until its reproduction for the illustrations brought it again to mind. Several specimens were found on the above occasion, the largest nearly 8 inches high. The conical pileus, appendiculate margin, and scaly stem, are very characteristic.

Agaricus (Amanita) magnificus, *Fr.* Hym. Eur., p. *25.*

Already recorded for Scotland. It was found about 12 years since at Highgate, two or three times during one autumn, but has not been seen since. Not being acquainted with the above species until recently, it has not been recorded, but the figure then drawn is reproduced in the *il* Illustrations/' and the Rev. M. J. Berkeley coincides in regarding it as exactly the species of Fries.

Agaricus (Tricholoma) atrosquamosus, *Chev.* Fung, et Byss. Ill us.

Gregarious. Pileus convex then flattened, umbonate, pallid cinereous, squanmlose; margin rather woolly, squamules of the piloUS small, black ; gills vehtricoso, ernargmate, rather thick, scarcely crowded, stem stuffed, fibrillose, white, with a few small black squamulose points about the apex ; base slightly thickened.

In grassy places. Dorking, Nov., 1880.

Pileus about 2 inches, stem 2^-3 inches long, ¼ inch thick. In some respects resembling *Ag. terreus* and *Ag. argyraceus,* to which it is allied. Exactly like Chevallier's figures.

Agaricus (Psilocybe) udus, *Pers.* Fr. Hym. Eur., p. 298.

Pileus fleshy, thin, convex, then plane, dry, rugulose, growing pale, stem elongated, thin, tough, fibrillose, ferruginous downwards, gills affixed, ventricose, lax, whitish, then becoming purplish.

In swampy places, amongst *Sphagnum* and *Polytrichum.* Plentiful in Epping Forest. Nov.; 1880.

Pilous f~l inch broad, becoming flat Hke a button, ochraceous when dry. Stem *4* inches long, stiff and firm, the lower portion ferruginous. When rooting amongst *Sphagnum* the stem is attenuated to 6 or 7 inches.

Corticium punctulatum, *Cke.*, in " Grevillea" VI., p. 132.

Persistently white, effused, thin, indeterminate, circumference and substratum floccose, of a snowy white. Hymenium at first punctulate, at length smooth and even. Spores globose^'006 mm. diam.).

On chips, &c. Colwyu Bay.

Distinguished from all other white species by the rather large globose spores.

Feniophoia xixnosa, *Cke.*

At first yellowish-white, then ochraceoue in the centre, effused, indeterminate, closely adnate, minutely velvety. Hymenium cracked into minute areolse, the larger of these exposing the matrix, Hymenial processes most abundant, often in clusters (•05-*07 x '01 mm,), hyaline, rough nearly to the apex.

On bark- Colwyn Bay,

Externally it bears so close a resemblance to *Coriichim J>erkeleyi,* C, that when collected it was believed to be that species, but its substance is thicker and firmer, and it is further distinguished by the presence of the processes characteristic of the genus.

Cyphella cyclas, *Cke. <t Phil.*

Conchiformis, dimidiata, pendula, albida, tomentosa (.- in. lata), hymenio hevi, carneo, sporis allantoideis (-007 x '002 mm.).

On dead wood. Ely (W. Marshall, Esq.).

Resembling a small bivalve shell, about half an inch broad, or less, attached on one side and pendulous. Externally whitish, clad with fiexuous hairs, some of which are smooth and others rough. The hymenium when fresh of a beautiful pink flesh colour and smooth. Spores minute, slightly curved and sausage-shaped.

Phyllosticta magnolia;, *Sacc,* Mich, i,, p, 139.

Epiphyllous, spots variable in form, becoming whitish, not marginate. Perithecia punctiform, lens-shaped, Spermatia oblong-ovoid, unegual, •008-'0l2x-003--0045 mm., hyaline.

OD leaves of *Magnolia grandijlora,* Kew.

Is aria fuciformis, *Birh.*, in Linn. Jonrn., xiii,, p. *17H.*

Pallid (bright rosy red), slender, filiform, sparingly branched, branches acute, spores very minute, globose.

On grass, Ashford, Kent. Mr. W, i\, Jeffrey.

At first found in Australia, and now detected plentifully on grass in this country. Identified by the Rev. M. J. Berkeley with his Australian specimens, although of a bright red, almost "like coral," about half an inch high when full grown.

Apiosporium abietis, *Cke,*

Ellusmn, atrum, vclutitmm. Hyphia mycelloideis atro brunneis. Pentbeciis globosis, exiguis (-1 mm. diam.;. Ascis clavatis (•02 x -007 mm.). Sporidiie clljptkls, hyalinis (·005 × ·002 mm.).

On twigs of living spruce. Glencorse and Penicuik, N.B.

Investing the young twigs with a black incrustation resembling soot, in which the perithecia are seated. The subiculum consists of an irregular mass of brown cells, resembling a low form of *Sporidesmium.*

CHARACEiE AMERICANS*

The *Characece* have fortunately suffered from their lack of close consanguinity with other cryptogams. Not accepted as Algae, the Algologists have not considered them as coming within their province. Bryologists, Filicologists, &c.,have all disregarded them, and hence the *Characece* have been outcasts. It is satisfactory, therefore, to find not only that we have acquired for the British Isles patrons who are taking them under their charge, but also that in the United States Dr. Allen is working in the same direction. The monograph, with coloured plates, of which two parts are issued, is now supplemented by a fasciculus of dried specimens, including ten species, which is to be followed by others. It is to be hoped that the venture will be encouraged.

The species contained in the first fasciculus are :—

Nitella tenuissimaj Desv., forma *brevifolia.*
Nitella intermedia, Nordst.
Nitella megacarpa, Allen.
Chara intermedia, Br., forma *tenuior.*
„ *intermedia,* var. *Amerĺcana* Br.
„ *contrariety* Br., forma *brachyphylla.*
„ *sejuncta*ȷ Br., forma *elongata.*
„ *coronata,* Br., var. *Schweinitziů*
„ *gymnopuSy* Br., var. *Michauxii.*
„ *hydropitys,* Br., var. *septentrionalis,* N.

ON THELEPHORA LYCIL PERS.

By M. C. CooKE.f

The species of *Corticium* have, unfortunately, had the reputation of being ill defined and difficult to comprehend, and hence they have been much neglected. Those who devote themselves to the study of Agarics, *Boleti,* and *Polypon* consider them beyond the range of their activities, and those who study the micro*fungi discard them as being outside their sphere, and hence no one devotes to them the attention they deserve. I have already shown on a former occasion how, by attention to microscopical features, the

* Characess Americans Exsiccatae, distributao a T. F. Allen, M.D,, pars. 1.
f Prepared for the Meeting of the Woolhope Club, Oct., 1880.

genus may be numerically reduced, and their study facilitated, I have now to direct attention to a single species which has been long overlooked.

Persoon, in his "Mycologia Europasa," described (p. 248) a species of *Tkelepkora,* following *cinerea,* which he called ***Thelephora Lycii,*** found on the dry branches of *Lycium* ***barbarian.*** Subsequently Desmazieres published in his " Exsiccati" what he considered the same species, on branches of the Lilac, adding that he had found it also on the Ash. **Many** years ago I found the same species on the Ash, but not having seen the specimens issued by Desmazieres, these always remained without a name, as I could not refer them to any species with which **I** was **acquainted.** This I have met with them again, but this time on the Lilac, in Kew Gardens.

By comparison I am satisfied that my specimens are identical with those published by Desmazieres. I have no direct evidence of the species being that of Persoon, but the presumptive evidence is strong in its favour.

Fries appears to have known the *Thel, Lycii* P. only by repute, for he had not seen apecimens. In his *Elenchus,* under " *Thelephora limitata,"* he says *Th. Lycii* is possibly referable to this species. On **the** next page he includes it amongst his uncertain forms, **which** he considered as **imperfect states** of the **species** previously described.

TLat Fries was **wrong** I think manifest from the fact that what is I believe an authentic specimen of *Corticium limitatum* in the Berkeley herbarum is a species of *Peniophorum* with the characteristic bodies on the hymenium, and there are none of these on *Thel. Lycii,* although the hymenium is **perfectly mature.** From this I conclude that the species are not identical. It is true **that** the description of *Cort. violaceo-lividum* is very like *Cort, 1. Lycii,* **but** specimens of that plant have a very **different appearance,** I am, therefore, strongly of opinion that this which I consider to be *Thelephora Lycii,* Pers., cannot be referred to any **European** species, and is in itself distinct.

Persoon says of it briefly, "sub-orbicularis, **crassiuscala,** confluens, **glabra;** papillis minutis **subi**congestis." He **afterwards** adds in a note that the single **individuals** are half an inch broad, subrugose, with the margin **sub-repand, whitish,** becoming cinereous, eubpulverulcnt.

It is characterised by growing in small discoid patches ±-\ in. in diameter, with at first a whitish **byssoid** circumference, ot **ap**osy grey tint, papillate in the c**atre,** and cracking when **old. there is** a tendency to **grow** around the old pustules oi the manner of *C. polygonii,m.* But it is thinner an**Jhcate,** and of a **different** colour **to** *C. polygonium,* tc, **which it Jias** really the nearest external resemblance.

To C. (, it could not be referred, as **that is** also a *Peniophora.* I have carefully compared it with all the forms **of** allied

species of *Corticium* found in Europe, and cannot feel satisfied to include it with any of them, but to recognise it as *Corticium Lycii* of Persoon, for all the species of *Corticium* were included by him under *Thelephora.* It is at least the *Thelephora Lycii* of Desmazteres, for of this authentic specimens place it beyond doubt, and it has been found on precisely the same plant. Whether of Persoon or Desmazieres the name is the same, and it must be left to the conscience of mixologists to determine the rest.

SOME EXOTIC FUNGI.

By M. C. COOKE.

The majority of the fungi enumerated in the following list are in the Herbarium of the Royal Gardens at Kew. Many of them *Jiuva* been recently received. The names of species already described are only enumerated for places where our knowledge of the Mycologic Flora is scanty.

MAURITIUS.

Lentinus calvescens, *Berk.* (No. 6.)
Lentinus exilis, *Kl.* (No. 9.)
Lentinus stuppeus, *Kl.* (No. 14.)
Xienzites applanata, *Fr.* (No. 5-13.)
Lenzites deplanata, *Fr.* (No. 12.)
Polyporus (Pleuropus) naJbelliformis, *N.* (No. 4.)
Polyporus (Pleuropus) affinis, *Nees.* (No. 3.)
Polyporus (Pleuropus) amboinensia. (No. 17.)
Polyporus (Pleuropus) sanguineus, *Fr.* (No. 7.)
Polypozus (Pleuropus) popanoides, *tke.*

Pileo carnoso, fragili, albo, glabro, tuberculoso, magno. Stipite laterali, brevi, crasso, so lido ; margine incurvo, flexuoso : pori; curtis. minutis, integrisj albo-pallescentibua.

On the ground (?). Mauri tins, No. 15.

Pilous nine inches in diameter and one inch thick in the centre, whitish, reseral bling a large crac:knel biscuit. Substance soft, resembling that of *P. aul fureus.* Stem lateral, nearly two inches long; and one inch thick, probably growing from rotten wood.

Polyporus (Anodexmei) betulinus, *Fr.*
Polyporus (Placodermei) rubiginosus, *Barh.* (21.)

A curious proliferoua form.

Polyporus (Flacodermei) nigrolaccatus, *Cke.*

Pileo flabellaeformi, coure'xo-plano, suberoso-lignoso, sulcato-rugoso ; margine crispato, castaneo-nigrescente, laccato, nitido, dein opaco in tus mo Hi, floccoso; poris pallidis, deuium umbriiiis, rotunuis. miuituis.

On wood. Mauritius, No, 2.

Pileiis 8 by 5 inches, U inches thick behind, attenuated oat- wards, somi-times pendulous. At first laccate, and resembling some of the sessile forma of *P. lucidus*, but in many features quite distillCt.

Polyporus (Inodermei) caperatus, *B.* (No. 19.)

Trametes hystirix, (*ke.*

Pileo suberoso, applanato, azono, fusco, sctis ngidia, compressis, atro-fuscis strigoso, iiitns pallide fusco ; poris mediis, rotundis, æqu;;ilib»s, obtnsis, fuscis (-7 mm. diam), dissepimentis crassis.

On trunks. Mauritius, No. 1.

Allied to *T. hydnoides* and *T. fibrom*, but pores much larger than in either. Pileus 4-5 inches by 2£ inches, about *l*\ inch thick behind, margin acute.

Trametes ungulatus, *Berk.* (No. IE.)

Favolus hepaticus, *K{.*

Cyclomyces fuscus, *Kg*.*

Hydnum ochraceum, *Ft.*

Cladodezris dendritica, /*. **(No. 8.)**

Stezeum lobatum, *Kze.*

Himeola auricula- Judas, /•'/•• (No. 11.)

ASDAHAH ISLANDS.

Collected by the late S. Kurz.

Polyporus grammocephalus, B.

Polypotus Cuxxeyi, *Berk.*

Lentinus exilis, A".

Lentinus revelatus, *Berk.*

Lenzites repanda, *Fr.*

WEST AFRICA.

Bydnum (Apus) durescens, *Cke.*

Pallido-falvum. Pileo coriaceo-lignoso, tenui, nnditiato, striato, concentrice sabzonato, glabro, duresoente; margine acuto, flexuoso; aculeis rigidis, crassiuscitlia, brevibus, obtusis, regularibus, (1^-2 mm. long.)

On wood. West Africa (Mann. No. 9.)

Allied to //. *fflo*scen•, Berk. 3-3½ inches broad, 2|in. *k*ng, substance thin but hard. Hymenium rather darker "than the pileus. A most distinct and characteristic species, with the habit of a *Polyporus.*

JAMAICA.

Wstilago stzumosa, *Cke.*

Stroma nodulosa, globoaa, dura, pallida, pun,tata, sclerotiformis, intus concolor. Sporis in |periphericis, sub cuticulâ gerentibtis, olivaceis ; sub l$_{en}$te globosis, ovalibus, ovoideis, regula"bne, vel sub-irregularibus (-01)6-·008 mm. diam.) olivaceo-brutmcis, episporio tenui, la.vi.

On *Chusquea abietifolia.* Jamaica.

A very singular and interesting species, forming hard globose lules *(6-8* millemetres diam.) on the culms of the grass.

Coxynelia ubexata, ***Fr.***

Xylaria Domingensis, ***B.***

Cercospora coffeicola, ***Berk. & Cke.***

Hypophylla. Muculis amphigenis, orbicuhuibus, albidis, purpureo-cinctis. Hyphis brevibus, fasciculatis, olivaeeis Sporis subcylindricis, hyalinis, 2-3 septatis, paucis (*04-*06 **x** '0035 mm.).

On coffee leaves.

VENEZUELA.

Sphaexella Psammisiae, ***Cke.***

Epiphylla. Maculis orbicularibus, hinc illic confluentibus, inaprnis, pallidis, rubro-cinctis. Peritheciis paucis, subprominentibus, atris; ascis clavatis, sessilibus ; sporidiis biseriatis, ellipticis, inajqualiter uniseptatis, hyalinis ('015X005 mm.).

On leaves of *Psammisiapendulifera.* Caracas (Dr. Ernst).

INDIA.

polyporus (Inodermei) aethiops, *Ckr.*

Nigrescens. Pileo coriaceo, convexo, rigidi, breviter velutino, intus purpureo-fusco, postice adnato-decurrente, poris minutis, rotundatis, regularibus, Jth. mm. diam, dissepimentis crassiusculis.

On bark. India (1225.)

Pileus from ^ to 1 inch broad. Substance of a dark purple brown. Externally becoming entirely black when dry.

BRAZIL.

Communicated by M. GLAZIOU.

Agaxicus (Lepiota) gracilentus, ***Fr.*** **(9141.)**

Agaricus (Lepiota) mastoideus, ***Fr.*** **(9142.)**

Agaricus (Lepiota) procerus, ***Fr.*** **var.** **(9144.)**

Agaxicus (Lepiota) flavido-xufus, ***B. $ Br.*** **(9145.)**

Agaricus (Collybia) radiculosus, ***Cke.***

Pileo carnoso, tenui, convexo-piano, obtuso, glabro ; stipite farcto, radicato, superne attenuato ; lamellis adnexis, subconfertis, albidis.

On wood (?) (9149.)

Pileus 1^ to 2 in. broad; stem 2 inches long, attenuated upwards, gibbous below, then suddenly contracted and rooting. Apparently ceespitose, and nearly white.

Agaxicus (Psalliota) insinuatus, *Cke.*

Pileo carnoso, ex ovato expanso, obtuse umbonato, fusco, squamis latis adpressis tecto, margine priino infracto, fibrilloso-striato ; stipite crasso, abrupte bulboso, subradicato ; aiinulo fibrilloso, evanido. Lamellis subliberis, latis, ventricosis,fusco-purpureis.

On tbe ground (?) Eio Janeiro. {9140.)

Pileus 4-5 inches, stem 4 inches high, ½ in. thick, squarrose to the middle, with a large fleshy umbo. Stem, with an abrupt bulbous base, contracted below and rooting. Veil only a few fibrils attached to the stem. Resembling *Ag. hæmorrhoidalis* in size and appearance, but the ring is almost obsolete, whereby it approaches *Hypholoma*, as well as by the almost attached gills.

Agaricus (Psilocybe) fortunatus, *Cke.*

Pileo carnosulo, campanulato-expanso, obtuso, laevi. Stipite erecto, rigido, fistuloso, fusco, lineato-striato, ad basim vix incrassato. Lamellis adnatis, vix confertis, atro-fuscis. Sporis amygdaliformibus, purpureis (·018 x ·009 mm.).

On the ground. Rio Janeiro. (No. 9150.)

Pileus 1½ in. broad and high. Stem 3 inches long, ⅛ in. thick, rigid, marked with longitudinal lines. Doubtless larger when fresh. A fine species.

Panus subtorulosus, *Cke.*

Pileo e carnoso-lento coriaceo, inaequalis, excentrico dimidiatoque, breviter velutino (sicco fusco), margine incurvo, postice in stipitem distinctum tomentosum porrecto, lamellis decurrentibus, angustissimis, confertis, concoloribus.

Rio Janeiro. (9153.)

Forming dense clusters springing from a thick common base, each pileus ½ to 1 in. broad, with a distinct velvety stem nearly ½ inch long. Gills very narrow, and much crowded, deeply decurrent. Allied to *Panus quaquaversus*, B.

Polyporus (Inodermei) sepiater, *Cke.*

Pileo subcorneo, convexo, concentrice sulcato, primo striato, demum glabro, atro-umbrino, intus pallido-lignoso, poris elongatis (2-3 m.) minutissimis, rotundatis, obscurioribus.

On branches. (12340.)

Pileus 1-1½ in. wide, 1-1½ in. long, entire, thickness about one-eighth of an inch. Somewhat resembling *P. sideroides*, Lev., but entirely sessile, and not velvety. The pores are so minute as to be scarcely visible under a pocket-lens. The dark sepia-brown colour justifies the name of *sepiater*.

Polyporus fulvi-tinctus, *B. & C.*

On trunks. (12329.)

Beccaria caespitosa, *Cke.*

Pileo coriaceo, multiplici, infundibuliformi, e variis lobis stipitibusque confluentibus oriundo, sursum striato, glabro; margine lobulato; hymenio papillas acutas in lineas parallelas ordinato.

On the ground (?). Rio Janeiro.

Tufts 3-4 inches broad, 2 inches high. No indication is given of the colour in the fresh state, hence the diagnosis is imperfect. The papillæ of the hymenium shrink in drying, so as to be almost imperceptible, but assume the form of teeth, arranged in parallel lines when moistened. A very curious fungus, referred with some hesitation, to the genus instituted by Baron V. de Cesati.

Hymenochaete tuberculosa, *Che.*

Tota resupinata, crassa,. durissima, tuberculosa, purpureo-vnnbrina, subtus ferruginea. Setis sparsis, rigidis, acutis (-05--06 **x** 18 mm.).

On bark. Rio Janeiro. (12332)

Extending in a thick, hard tuberculated crust for several inches. Most nearly related to //. *corticolo?*,* 13. & C, but thicker, harder, and different in colour.

Stereum poxtentosum, *B.* cj *C.*

On bark. (12333)

XVXidotis regularis, *Che. & Phil.*

Erunipens. btipite brevi, rarrioso; ramulis brevissimis. Cupulis concavis, fuscis, punctatis; margiue inrlexo. Hymenio obscuriore, **lasvi.** Ascis cjlindraceis. Sporidiis ellipticis ('01-•013 X '004--005 mm.) Paraphyses linearibus.

OIL rotten wood, Rio Janeiro. (9162.)

WITTROCK AND NORDSTEDT'S ALGiE.

The seventh fasciculus of Wittrock and Nordstedt's " Algtc aquae dulcis exsiccatse" includes the following **new** species of *Desmidsj* chiefly Brazilian:—

Besmidium laticeps, *Nordst.*

Habitu *Desmidio cylindrico* (Grev.), simile at latitudo cellularum longitudine circiter triplo (vel sub-quadruplo) major est, latitii'lo marginis, apicalis circiter J diametro transversalis cellulae, crassitudo cellulte fere dimidiuin longitudinis.

Yar. a **ellipticum.**

Long -023--028 mm., lat. -070--078 mm. crass.,-05G--058 mm., isthm. -07 mm-

Var. *P* **quadirangulaxe.**

Long -02--023 mm., lat. **-076--082 min.** crass., -054--0G mm., istbm. -068- '074 mm.

In freshwater. Brazil.

Closterium subcostatum, *Nordst,*

Habitu *CL costato* (Ralfs, t. 29, f. 1), simile, sed brevius, diametro 5-plo longius, apicibus angustioribus obtusis, membrann (rufa) costis longitudinalibus 11-12, in ipso apice rotundato nullis, nucleis amylaceis secundum observationes A. Löfgren factas sparsis, locello apicali parvo corpuscula 1-5 includente.

Lat. 05--06 mm., long *"2b--3* mm., lat. apic. ***012-'0l4 mm.**

In clay ditches. Brazil.

Allied to *Clost. Isis,* Colin (Desm., Bong., t. xi, f. 15), in which the disposition of the amylaceous nuclei are not noted, but **more** currate.

Closterium subturgidum, *Nordst.*

Habitu *Clo*L turgid/,* sed maj'us et prae Jo ngi tad in era *cram*us, iiticleis muitis sparaia, membrana dii ute fuscescente subtili ter striata, striis (3-7 in -01 mm., apicibus rectis magis traacatis at u jew bran a iucrassata ornatis saipe rufeseeutibus.

Lat. -082 X 'I mm., long "75-'l mm., lat. apic. -02 mm la fresb water. Brazil.

Closteiium laterale, *Nordst.*

Leviter semihinare, lineari-huiceolatimi, diametro 8-11 plo longius, venire late subtuinidum, utroqae polo sensini atteuufttum, apicibns truncatis, membrana panim colorata siibtilissime striata, btriis segre conspicuis, laminis chloropt yllaceis circ. 5 sublafa ra-libus nucleos amjlaceos multos in qua que lamina in serie in unicam ordinatos iocludentibas, Joeello apicali granulis (circ. 10) repletw.

JJiam, -O5-'O6 mm., long •*Ao-'bZ* mm. lat,, apic. circ. '008 mm.

In river. Brazil.

Allied to *CL acerosum,* van & *bangustum* (Klebs.), *CL Balfsii* (Breb.), *Cl. cmgustum* (Hantsch), 67 *hirudo* (i>elp), *Cl. d\ecorum* (Breb.), but differing iu the amjlaeeous granules not being unisi riate or central.

Zosmaxium binum, *Nonlst.*

l>iametro quarta, 1. quiiita parte longias, medio profnnde constrictam, sina lineariangnstissiaiefextremoampliato) ; seini-cellulse pyramidatæ apice late truncato 6-crenatæ, angulis inferioribus rotundato-obtusis, lateribus modice convexis crenatis, crenis circ. 10 (bigranulatis), supra isthmum tumore plus minus circulari l. elliptico granulato, granulis in series circ. 7 verticales apicibus cunvergenfcea, dense ordinatis et iafra magis sparsis vel in 2 series borizoutales posftis oniata?, ad marginem vei sus gra imlataj, granulis radiatim et concenfrice dispositis in seriebus (2-3), inturioribus singulis, ceteris buiis; a ktere visa.[1] tumore basili; a verticc oblonga; medio utrinqtie tumidse. Latitudo istlmii latitu-jl ine apicM modo paollo minor; nucleo amylacei bini.

K Lat. *'{)7-'i)7'2* unn. long -08(J--0y mm., lat. isthm. ·021-·024 j,m.

Cosmarium (juartei-narium, *Nordtt.*

Paulo longins quam latins, medio profund econstnetum, sinu lineari (interne paullum dihitato), extrcmo ampliato; semicellulae aubtrapezicae basi snbreniformi, apice late tnmcataa granulis nullis, angulis iaferioribas obtnsa-rotandatis, superioribus rotundatis, lateribus paullo convex*k,* granulato-crenatis, membrana granulis sub-parvis ex apice rsdiantibua oruata, in area magna cent tali Bub-circulari-elHptica, granulis inter se jugis connexis ande scrobicul® fiont j a rertice visæ ellipticæ granulis e centr J non granulato radian ti bus ; a hue re circulares. *ZL*ssa chlorophyllacea e lamiuis 4 parietalibus nucleis amylaceis singulis formuta.

Lat. -058--065 mm., long -068--072, mm., crass. -038-*0i mm lat. isthm. '02--024 mm.

With the habit of *Cosm. Brebissonii,* as figured by Delponte (t. ix, f. 17-22), but differing in the granules and the disposition of the chlorophyll.

NEW JEKSEY FUNGI.

By M. C. COOKE and J. B. ELLIS.

Polyp or us (Resupinatus) fumosogiiseus, *C. Sf E.*

Effusus, coriaceus, tenuis, mycelio mucodino albo, floccoso; margine albo, snblifccro, poris curtis, irregularibus, angulatis, subconfluentibus, fumoso-griseis, acie primo albidis, dissepimentis tenuibus

On bark of *Juglans.* (3409 "i

The hymenium shrinks and cracks in drying, exposing the white substratum, somewhat resembling *P. viridam,* B. & Bi\, but darker and of a different colour.

Hydnum (Resupinatum) pallidum, *C. 8f E.*

Albidum, effusum ; subiculo membranaceo, molli, margine villoso-aculeis gracilibus, acutis (vix 1 mm. long), hinc illic confertis candidis demum fuscescentibus.

On rotten wood of *Quercus.* /o 11 o \

Seems to be quite distinct from *H. mucidum,* P., and //. *diqvhZ mtm,* Schrad.

Odontia fusca, *C.* 4 *E.*

Effusa, membranacea, costis rhizomorpheis percursa, pallida ambitu fibnlloso-radiato; verrucis minutis, confertis, granulatis apice multifidis, demum fuscescentibus, dein intense umbrinis fatiscentibus.

On rotten wood. ^S42Q ^

With the habit of *0. fimbriata,* but of a bright clear brown becoming quite dark and cracking when old.

Grandinia tab ac in a, *C. $ E.*

Ceracea, late effusa, adglutinata, tabacina ; ambitu subradiante • granulis confertissimis, inaaqualibus, ha3misphericis,mollibus, sporis globosis.

On *Juniperus virginiana.* C308fi ^

Colour of *Hymenochate tabacina.* Habit that of *Grandinia granidosa.*

Corticium effuscatum, & d* *E.*

Effusum, incrustans, aureofulvnm, absque pellicula, ambitu concolore; hymenio pnlverulento, fragili, fatiscente, fuscescente Sporis profusis, globosis, laevibus, hyalinis (-006 mm. diam ^

On rotten log. 7,3401 ^

Its only near ally is *Corticium pactolinum,* C. & H. These ao-ree in the fragile pulverulent hymenium, and profuse globose spores.

EELIQUiE LIBERTIAN.E

DISCOMYCETES,

By M. C. COOKB **and** W. PHILLIPS.

Peziza (Acetabula) vulgaris,
„ (Cocblearia) badia, P. 902, 909.
„ („) abietina, P. 930.
„ (Discina) venosa, *Fr.* 891.
„ (Galactinia) succosa, *B.* 889.
„ (Pustularia) cerea, *Sow.* 933.
„ („) castanea, Q. (?) 549.
„ (Geoscypba) ampliata, P. (?) 923.
„ („) sepiatra, *Cke.* 907.

Peziza (Humaria) psilopezoides, *Cke,* ct *Phil.*

Applanata, fusco-nigra, sessilis. Cupulis sparsis (3-5 mm. lat.), subtus arete adnatis ; margine vix elevatis. Ascis cylindricis. SporiiHis ellipticis, loevibus (*02 X *012 mm.); paraphysibus cohserentibus, supra fuscis.

On rotten wood. (No. 895.)

Peziza (Pyronema) omphalodes, *Bull.* 573.
„ (Humaria) glnmarum, *Desrn.* 897.
„ (Scntellinia) mnbrorum, *FckL* 578.

Peziza (Scutellinia) axctespoxa, *Cke. & Phil.*

Gregaria, fusca, sessilis. Cupulis hemisphericis (2-4 mm.), extus margineque strigosis. Pilis gracilibus, acutis, branneis, Hymenio rubvo. Ascis cylindricis. Sporis sublanccolatis, utrinque obtusis, uni-guttulatis, hyalinis ('022 **x** §005-'008 mm.). Paraphysibus leniter clavatis.

On the ground under fir trees. (888 bis.)

Peziza (Scntellinia) labellum, P. 934.
Scarcely fully matured. Sporidia **-019 X *013-*015** mm.
Peziza (Dasyscypba) virginea, *Batsch.* 583, 901.
„ („) „ var. spirseicola, *Karst.*
„ („) mvea, *Fr.* 925, 920.
„ („) patula, P. 500.
„ („) acuum, *Fr.* 548.
„ (Oyphella) villosa, P. 582.
„ (Dasyscypba) luzulina, *Phil.* **935.**
„ („) corticalis, P. 563.
>» (n) barbata, *Kze.* 581.
JJ (*i,*) cerina, P. 559.
„) senecionis, C. (J- *Ph.* 931.
„) albotestacea, *Desm*

Peziza (Dasyscypha) seminis, *Cke. if Phil*

Ocbracea, stipitata. Cupulis clavatis, demum **concavis** (^-1 mm. diam.), extus tomentosis ; stipite crassn. vix **deorsum atten-**

uaio [I mm.;. Ascis clavatis. Sporidiis arcte' ellipticis, minutis ('005 X -0025 mm.).

Growing on *Sclerotium semen.* (No. 394.)

Peziza (Tapesia) Rosaj, P. 575 *a*, *b*.

„ („) fusca, *P.* Pallid form. 898.

Feziza (Tapezia) ruborum, ***Oke. & Phil***

tfubgregaria, ceraceo-flava, subiculo' tenui, evanido, concolori, nidulans. Cupulis concavis, demum applanatis, extus tomentosis, fuscis (|-1 mm.). Tomento tenui, sparso. Ascis clavatis. bporidns sublanceolatis, demum triseptatis, hyalinis (-015 x 005 mm.).

On *Eubus*, (No. 936 bis.)

Peziza (Hymenoscypha) cyathoidea, *Bull.* 913, 977 bis, / x x , . , . 567,936.

» v ») strobilma, *Fr.* 580.

» (») scutula, P. 585, 577.

» (») coronata, *Fr.* 562.

» (v) calyculus, *Fr.* 554.

» (v) bolaris, i&a/^c^. 584.

» (-r ... .») tuberosa, *Hedw.* 920.

„ (Mollisia) sphteroides, P. 550.

99 (J>) caricina, £><?sw. 556.

» (») atrata, P. forma Valerianse. 679.

» (,i) excelsior, A V ^. 571.

» (») fallax, Z)^w. 912.

» (») cinerea, *Bdtsch.* 575c.

» (») ventosa, /iars^. 899.

» (») Hvido-fusca, i^;». 568.

Feziza (Mollisia) ribesia, *Che. $ Ph.*

Sparsa, atra ceraceo-mollis. Cupulis globosis, arcte apertis, dein concavis, hemisphencis, glaberrimis (1-4 mm. diam.) Ascis clavatis. Sporidiis exiguis, hyalinis (-005 X *001 mm.).

On *Eibes rubrum.*

Peziza (Mollisia) betulina, *A. & S.* 553.

" L n" •) nervise qua» *P** 572.

„ (Oallona) xanthostigma, *Fr.* 586 589.

» (J>) vinosa, P. 916.

„ („) coccinella, Pr. 588.

Helotium alniella *(Nyl),* 902.

„ conigenum var. /J incarnatum, JrV. 370

„ epiphyllum, P. 558 ter., 576, 558 bis.

„ lagmeum, *Fcfcl.* 890.

„ citrinum, *Hedw.* 558.

„ paliescens, *Fr.* 576 bis.

» . „ var. Genista. 921.

ratellaria fusco-atrum, *Eehm.*

Possibly **a** variety of this species, to which it seems **too** closely allied to be **regarded** as a distinct species. **Cups** £4 mm. diaiu. **Sporidia-015-*02** x ·003-·0**04** nun., triseptate.

On trunks. (No. 57*0

Dermatea conigena, *Phil.*

Sparsa, ceraceo-cornea, incarnata (j-1 mm, diam.). Cupulis convexis, lentifonnibus, sessilibus. Ascis clavatis. Bporidua arete ellipticis, binucleatis (·015-·02 × ·005-·008 **mm.),** Paraphysibus bine illic **furcatis, linearibus,** Iiyalinis.

On fir cones. (No. 903.)

**Tympania Franguli];*\ *Fr.* 1026.
„ **Fraxini,** *Fr.* 1029.
„ **Arias,** *Fr.* 1023, 1024.
Hysterium Frostii, *Duby.* 871.
„ Roussellii, *Duby.* 872.
Gloninm graphicmn, *Fr.* 877.
Triblidiom ca]ciiforme, *Reb.* 607.
Lophodermium juni]perinum, *Fr.* 875.
„ **pinastri,** *Chev.* 874.
„ **arandinaceum,** *Chev.* 868.
„ **apicnlatm**n, *Duby.* 867.
Cenangium Uul-i, *Fr.* 847.
Phacidium Vaccinii, ***Fr.*** 969,
„ Pirn*. *Fr.* 959.
„ Inzulinum *[Karst.*f sub **MoUisia). 971.**
Stiotis rersicolor, T^r. 972.
„ **pnnctiformis,** P. 974.
„ nivea, *P.* 973.

No. 922 is *Leeidea parasitica.*

WOOLHOPE CLUB ANNUAL FORAY.

Unnsnal pressure upon our pages by the **publication** of tlie long list of British Fungi which have been recorded therein **during** the **past eighi** years, prevented us from giving **an** account of the last **Hereford Meeting,** but **as tbi;** was recorded in the "Gardener's **Chronicle," to which** most of our readers have access, and as the **meetij**ng was not **particularly** rich in new discoveries, on account of the unfortunate **weather,** this omission may be condoned. Our present object is to announce that the next Annual Foray will take place on **the first** Thursday **in** October, 1881, and the assembly will commence, as usual, on the previous Monday.

FUNGI MACOWANIANI.

By C. KALCHBRENNER,

Ag. (Amanita) muscarius, *L. Fr. Epicr., 5.*

In pine woods, near Cape Town ; first detected by A. E. Eaton in 1874.

Ag. (Lepiota) procerus, *Scop. Fr.Ep.,* 12.

Somerset East (MacOwan). No. 1246.

The African fungus has the stature and habit of *Agaricus proce?ws,* but the stem is smooth, and not squamose, hence approaching *A. subtomentosus,* Kr. The same form occurs in Brazil.

Ag. (Lepiota) Zeyheri, *Berkl.* Fang. Uitenhage, No. 1, in HooV. Lond. Journ. ii., 1834. Fries Fung, Natal, p. 2.

Variabilis, hinc a3gre limitanda species. In forma primaria ; stipes validus, spithamaceus, pileus amplus; marginem versus in areolas squamifomies, angulatas, diffractus. Varietates, vel si libet subspecies notabiliores sunt:—

(a) **telosus,** K. et M.Ow.—iEque spectabilis, pileo e globoso-expanso, in squamas latas, fuscas lacero, tela araneosa, delicatula co-operto, albo-fiavescente.

{h) **verucellosus.**—Minor, stipite gracili, calamum scriporium crasso, basi bulbilloso, pileo subumbonato, verucellis aut squamulis fuscis eleganter punctato. IHs notis congruit cum fungo a eel. Drege ad Cap. b. spei quondam lecto=(;l(7. *verucellosus,* Miquel. Fung, exot., No. 1), differt vero stipite toto albo. Sed adsunt form^e ad *Ag. Zeyheri* accedentes. Tales exhibet, pro parte, de Thuemen Mycotheca univ., No. 701.

Somerset East (MacOwan). Nos. 1001, 1011a. P. Natal, Inanda (J. M. Wood). No. 392.

Ag. (Lepiota) excoxiatus, *Sehceff* Fr. Ep->* [13]«

Subpluribus foraris. In terra argillacea camporum, et arvorum prope Somerset East (MacOwan). No. lOOld. . A3. *Bazuja Caffravice* (Ilev. Baur). Port Natal (Wood No. 331).

Adest sub No. 1430 (MacOw.) forma stipite enrto et pileo, pro ratione lato, heimsphserico insignis, ulterius observanda.

Ag. (lepiota) polysarcos, *K, et M.Ow.*

Totus albus. Pileus teximie carnosus, centro depressus, ad margi^.em declivis, lsevis, vel subtilissime squamuloso-pnnctulatus. Annulus mobilis; stipes farctus, lsevis, basi bulbosus; latnellas valde remotas, postice attenuate, confertaB, pallidoe, exsiccatione cum stipite brunneo-rufescentes.

Somerset East (MacOw.). No. 1370.

Pileus 3-5 unc. latus ; stipes 2-3 unc. long, |~£ unc. crassns. Caro pilei -|-1 unc. crassa, in centro et ad marginem declivem, quasi oblique truncatum, valde attenuata. Forma inconsveta pilei ab affinibus, priiuo visn distinquenda species.

Ag. (Lepiota) pleropns, *K. et M,Ow.* in " Grevillca*' IX., *p.* 17.

Agarico **Friesii proxiuiiK**, sed stipite *solido* **Bubajquali,** "* deorsum attenuato, ethmiellis *adnatis,* a distinctly, fortissinms rapl anoideus. **Freqae** Odor

(Somerset East **(MacOwan.).** No.] 120, subpluri, **Formis,** A, B, *T*>, **E.** P. Natal (Wood, Nos. §45, **356, 359,** i :).

a' **Magnitudine** et colore **varius,** piloo 2-4 unc. lato, stipite 2-G ini to, 3-10 lin. crasso, albidus, rufes cens, in io brunnco-lateritiu Stipes superne pallidus, ad basim coloratus, squamosus, nunquam bulbo RUB. *Verus Ag. Friesii,* Lasch., in his torris deesse videtur.

Ag. (Lepiota) sulfurellus, *K. et Cooke.*

Subconcolor, sulfureus. Pileus convexo us, umbonatus, tenuis, vix pollicem latus, in umbone glaber, umbrinus, ceterum squamulis verrucæformibus, sparsis, umbrinis notatus, margine striatulus; stipes tenuis, fistulosus, æqualis, glaber; annulus membranaceus, pendulus; lamellæ approximatæ, vix confertæ, ventricosæ. Sporæ late ovatæ 0·006 × 0·0035 mm.

P. Natal (by J. M. Wood). No. 387.

Ab *Ag. citrophyllo,* B. et Br. (" Fung. of Ceyl.," No. 55), ob annulum membranaceum, alienus. Chartam colore pulchre sulfureo tingit.

Ag. (Lepiota) varians, *K. et M.Ow.*

(*Ag (Lepiota) rubricatus,* B. & Br., prox. in " Grevillea " ix., p. 17.)

Pileus tennis, e conico-campanulato, planus, umbonatus, 1-3 centm. latus, lævis, glaber, subsericeus, excoriatus, albus, cinerascens, carneus, vel fusco purpureus, ne striatus; stipes farctus, gracilis, 3-7 centm. longus, 1-4 rassus, subaqualis, basi leviter bulbosus, mycelio al ido obductus, ceterum glaber, pallescens aut rubescens; annulus medius, fixus, erectus, floccoso-membranaceus. Lamell remotæ, subdistantes, ventricosæ, albæ.

Inter folia putrida arbu StOmm ad !'«'• " **W * Bo**B**chberg** (Mac-Owan). No. 1195.

E. Mesomorphis.—Ab •^9-*sordescente,* g pt p ,, (Cuban Fung., No. 4), vix, nisi colore pilei læto et lamellis ventricosis, latiusculis, distinctus.

Ag. (Lepiota) magnannulatus, *Kalchbr.*

Pusillus; albus, pileo carnost campanulato expanso, umbonato, lævi, sericeo, stipite gr subfiliformi, flexuoso, subannulo, pro ratione amplo, membra erecto, fibrillis albis obsito; lamellis subliberis, ventricosis, co

Somerset East (MacOw.). i\u, 14^2.

Pileus 2-3 lin. latus, stipes 1½ unc. altus, siccitate rufescens. Ab *Ag. parvannulato,* Fr., modo stipite tenuiore, longiore et annulo amplo differt.

Ag. (Tricholoma) ustalis, *Fr. Ep.,* 29.

In Pinetis umbrosis pr. Somerset East, raro (MacOw.). No. 1176.

Tricholomata quidem, prajsertim limacina, siccitate nimiam nmtantur et bine asgre determinantur; sed fungus noster ob. staturam mediocrem ; pileum viscosum, carnosum, convexo-planam, umbrinum, stipitem sequalem, pallidiorem et lamellas rufescentes, fors non injnste ad Ag. ustalem, Fr., trahitur. In genere monendum est, Agaricos siccatos, in quibus subspeciem, tribum et sectionem discernere quidem licet; sed no toe subtiliores adeo obscurata^ sunt, ut ad condendam novam speciem non-snfficiant, in his pagellis, ad speciem proximam, notain, relatus esse.

Ag. (Tricholoma) Georgii, *Clus. Fr. Ep.,* 43.

In cainpis graminosis ad Somerset East (MacOw.). No. 1119.

Exceptis lamellis pallide carneis, totus albus, firmus. Lamella) horizontals, sublineares, confertae. Odor subnullus, sapor nucum avellanas. *A. Caffris* editur. (MacOw. in sched.) Eundem etiam o Mongolia Chinaque boreali, ubi venalis est, habenms.

Ag. (Tricholoma) caffrorum, *K.etM.Cw.*

E. Trich. guttatis. lnsignis, circulos sa3pe 60 pedum diam. formans. Pileus,saspe 12 uncialis, e convexo planiusculus, Ia3vis, impolitus, albus ; stipes solidus, subbulbosus, pollicem crassus, concolor ; Iamella3 latiusculce, postice rotundato emarginatos, albaa (HOC carneae), siccitate fuscidulte. Sapor gratus, ostreatus, odor nullus. Edulis, sapidus (MacOwan in sched.).

In campis graminosis ad Somerset East (MacOw.). No. 1222.

Statura gigantea et pileo plerumque eumorpho, nee ungul&fornri ab *Ag, gamboso* egregie differt.

var. **Sulonensis.—**^Eque giganteus, edulis, albus ; sed differens pileo subgibbo, margine involuto et stipite ovato bulboso, ad basim 2 unc. et ultra crasso, sursum valde attenuato, quo habitum alienum acquirit.

Somerset East (MacOw., *sine* No.),

Ag. (Clitocybe) amarus, *Fr. Ep.,* 60.

Inter dumeta. ad folia putrescentia, mont. Boschberg. (Mac-Ow. et Tuck, No. 1013 At 1212.)

Ag. (Clitocybe) sinopicus, *Fr. Ep.* 69.

Somerset East (MacOwan.). No. 1871. (i Aurantio-ruber lamella? albidfe, flaventes."

Ag. (Clitocybe) trull aefor mis, *Fr. Ep.* 68.

In fol. deciduis, sub avboribus montis Boschberg ad Somerset East. (MacOw., No. 1249.)

" Pileus cinereus, Iamella3 albas, decurrentes." (MacOw. in sched.)

Ag. (Clitocybe) membranaceus, *Fr. Ep.* 65.

Ad Bazuja caffraria? **(Rev.** Baur.).

Sat frequena videtur forma haec minor, exumbonata *Ag.infux*[di-] *bii/i/brmis,* Scbteff.

Ag. (Clitocybe) splendens, *Pert. Fr. Ep.* 70.

In dumetosis ad Somers. E. (MacOw., No. 1201.)

Ex bac stirpe plures adsunt forma[1], inter *Ag. gilvum* et *Ag.fio*[ic-] *cidum* vacillantes.

Ag. (Clitocybe) expallens, *F. I*[r. Ep. 74.

Inter folia putrida, sub fruticibus nioni is Boschberg, (Mac.Ow. et Tuck, No. 1217.) P. Natal (W ood, No. 3[9]5).

Ag. (Clitocybe) laccatus, *Schæff. Fr. Ep.* 79.

Somerset East. (MacOw., No. 1359, b.)

Ag. (Collybia) radicatus, *Relh. Fr. Ep.* 81.

Somerset East, in silrestribus. (MacOw., No. 1254.)

Ag. (Collybia) alveolatus, *Kalckbr.*

Species singularis, cum nulla alia confundenda, c foedere *A; radicati* et *Aff. lor<ipedis.* Pileus earnosus, tejax, convexo-planus, leviter ambonatus, 3-4 centm. latiis, in umbone rugis en's-jmlis, nigricantibus oi natus, circa umboneni sulcis radiantibn s, latis et profundis, margineia baud attingentibus exaratos, ce terum glaber, cerrinua ; stipes solidus, gracili s, ;,en etriatas, **10-1** i centm. longns, 5 mm. era ssus, basi ovato-fuaiformis, radical us, ibidetuve 1-] ½ centm. crassus, pileo subconcolor; lamcll«e rotundato-adnexte, conferUe, latiusculse, all)*,

Somers. E. (MacOw.,one No,).

Pileo, in alveolos oblongos, radiautes exsculpto insignis; eecl- an haec nota constans?

A;. (Collybia) melinosaxcus, *Kalchbr.*

Forma ad *Ag. fusipedem,* indimento stipitis ad *Ag. vet utipedem* accedens. Solitarius vel gregarius, nfin inoclonis, rufo-yaccinus. Pileus carnosus, e convexo planus, vix umbonatus, pro rationc parvus, pollicnris et ultra, la?vis, glaber, rufo-bruni eus; stipes rigid us, ten ax, farctus, extus eximie cartilagineus 3-8 ce utm. longus, 5-G mm. crassus; e basi ventrioot a radice fusiformi caudatua vel totua fusiform is, pnlverulento-tom entosus. falvo-ferr ngineus. Lame llæ ema rginato-i sublibera, et secedentes, firmæ, distantes, pileo pall:diores ; caro flava.

In silvis, ad pedem montis Boschbeftrg , 187-1. (No. 1013.) MacOw.

Ag. (Collybia) stridulus, *Fr. Ep.*[f] 85.

Spe cimina nostra omuino referunt fungum in Icon. Bel, Friesii, tab. 62, fig. 2, depictum.

Som nersetEast. Boschberg **(MacOw.,** No. 1160).

Ag. (Collybia) butyxaccus, *Bull.*

Prom, B. pp. kg., (MacOw., No. 1305).

Ag. (Collybia) aceivatus, *Fr. Ep.,* 92.

In truncis putridis, mont. Boschberg (MacOw., No. 1187).

Ag. (Collybia) diryophilus, *Bull. Fr. Ep.* 92.

Somerset East (MacOw., No. 1157, 1165, 1187, 1180). P. Natal (Wood, No. 192, 121, 349, 401).

Procul'dubio, inter specimina, qua adsunt copiosa, plures latent species, sed in fungillis siccatis jam non distinquendae.

Ag. (Collybia) extuberans, *Fr.*

P. Natal leg. Wood, No. 354.

Ag. (Collybia) chortophilus, *Berhl.* Hook, Lond. Jonrn., II., 1843, p 507. (Fung Uitenhage, No. 2.)

In stipulis emortuis graminum, inter dumeta aperta. Somerset East (MacOw., No. 1359). P. Natal (Wood, No. 121).

Ag. (Mycena) galeropsis, *Fr. Hym. eur.* 136. F. Icon. sel. t. 79, f. 1.

Somerset E. (MacOw., No. 1207).

Specimina nostra, ob stipitem arrhizum ad *Ag. galericulatum* hand referenda, cum icone Friesii citata bene congruunt.

Ag. (Mycena) sciolus, *K.*

Totus albus, pileo tenui convexo, umbone prominente acuto, circa umboncm depresso, ad marginein striato, 1-1^ centm. lato; stipite fistuloso, gracili, aequali 5-7 centm. longo 1 mm. crasso, viscoso (?), basi vix pubescente, lamellis ventricosis, latiusculis, distantibus.

Port Natal. Inanda, ad inuros huniidos stabuli cujusdani (J. M. Wood, No. 92, 388).

Ag. (Mycena) tintinabulum, *Fr.* Ep. I, p. 107 ; n, p. 140.

Pileo spadiceo, viscido ; stipite pro ratione brevi, pallido, basi strigoso. Semel tantum lectus. (MacOw., *sine* No. .)

Ag. (Mycena) heliscus, *B. <& Br.* Fung, of Ceylon, No. 128.

Pileo hemispherico, sulcato, plumbeo stipiteque capillari albo pruinosis; lamellis paucis, crassis, adnatis. (Berk. I.e.).

In ramulis putrescentibus montis Boschberg. *(sine* No.).

Ag. (Mycena) vitreus, *Fr. Ep.* iii.

" Pileo saturate cinereo, lamellis albissimus." MacOw. Somerset East in silvis (MacOw.).

Ag. (Mycena) debilis, *Fr. Ep.* 112.

Somerset East (MacOw.).

Ag. (Mycena) dilatatus, *Fr. Ep.Wj.*

Forma lignatilis, stipite brevi, basi membrana orbicular!, alba <-incto.

Somerset **East** (MacOw.).

Ag. (Mycena) capillaxis, *Fr. Ep.* 119.

In ligno putrido, sub fruticibus, Bosclibcrg (MacOw., Nos. 1041 et 1302).

Agaricus (Mycena) actiniceps, *K. & (7.*

Pusillus, rufo-fuscus. Pileas ovatus, 1 mm. latus, fibrillis patentibus strigulosus; stipes filiforinis, 4 mm. long., supra furfuraceo-granulosus, ad basim strigosus; lamellai adscendentes, sublibera3, distantes, albse.

In fol. emortuis ad Somerset East.

Ag. (Omphalia) syndesmius, *Kalclibr.*

Pileo membranaceo, convexo, leviter umbilicato, stnatulo, YIX 1 cent, lato, nudo, badio-fulvo; stipitibus fasciculatis, fistulosis sequalibus vel apice parum incrassatis, 5 cent, longis 2 mm. crassis, glabris, pileo subconcoloribus, basi tomento albo connexis; lamellis breviter decurrentibus, angustis, distinctis, pallidis. ^

A proximis *Ag. campanella* et *Ag. Laestadii,* abunde differt, lamellis pallidis et stipite basi nee nudo, nee fulvo, strigoso.

In ranmlis bumi jacentibus, ad Somerset East (MacOw., No. 1198).

Ag. (Omphalia) gxiseo-pallidus, *Besmaz. Fr. Ep.* I.,[r]*p.]* 125, it., *p.* 161.

Si non idem, certe proximus.

In fol. putrescentibus ad Port Natal, leg. (Wood, No. 130).

Ag. (Omphalia) linopus, *K.*

Proximus *Ag.pyxidato,* sed gracilior, stipite filiformi, rufescente insignis. Pil. membranaceus, profunde ninbilicatus, albido ccrvinus, lamellae sat confertse, eximie deccurrentes, pallidee.

Somerset East. In silvis, Martio leg. (MacOwan., 1878, No. 1369).

Ag. (Omphalia) acyphifoxmis, JVV. J5p. i., *p.* 124, **nM p.** 150,

Semel lectus, ad quisquilias, sub arbustis, Boscbberg, **1877** *(sine* No.).

Ag. (Omphalia) scyphoides, *Fr. Ep.* 122.

In graminosis mont. Boscliberg, 4000 alt. (MacOw.).

Ag. (Omphalia) integxellus, *Pers. Fr.* Ep.i.p. 128, II.J?. 165.

In cortice *Acacice horridce* (MacOw.).

Ag. (Pleuxotus) ostreatus, *Jacq, Fr. Ep.* 133.

In truncis putridis montis Boscbberg (MacOw., 1083).

Ag. (Pleuiotus) oleaiius, *DeC. Fr. Hym. Eur.* 170.

Ad truneos einortuos, in dumetis mont. Boscbberg (MacOw. et Tuck, No. 1216).

Ob stipitem rliabarbarinum, siiTsum incrassatum, **carnem** flavam stationemque in lignis, indubie hue potius referendus, quam ad similem *Ag. Zizypliinum,* Viv.

Ag. (Pleurotus) sciadium, *K. et MacOw.*

Pileus carnosus, lateralis, postice immarginatus, flabelliformis, confluendo multiplex, lobatus, 4-7 centm. latus, basi in stipitem productus vel basi subangustata sessilis, floccosus, albo-olutaceus ; stipes solidus, vix pollicaris, basi albo-floccosus; lamella) deenrrentes, passim furcatae, confertae, angusta3, albse.

In lignis putrid, **mont** Boscliberg, alt. 4000 (MacOw. et Tuck, No. 1243).

var. **salmoneus.**-Lamellis aurantio-salmoneio LL sporis carneis differt; stipitcque obsoleto, ad rudimentum reducto. Fors distincta species.

(MacOv?., No. 1401.)

Ag. (Pleurotus) flabellatus, *B.et Br.* Fung, of Ceylon, No. 145.

Pileo albo tomentoso demum glabrescente, cinereo, margine ineurva. Stipite brevi tomentoso albo, lamellis albis (MacOw. in Sched.). Siccando ex cinereo-purpurfascens vel potius rufescens.

Pileus lateralis, 2-3 centm. longus l'atnsve, basi angnstatus, ad dimidium fere tornento floccoso vestitus, lamellae angustse, decurrentes.

In lignis putridis montis Boschberg Maj., 1670 (sim. 180), p. 187.

Ag. (Pleurotus) limpidus, *Fr. Ep.* 135.

In ram is dejectis. Boschberg (MacOw., No. 1052).

Ag. (Pleurotus) caveatus, *Berhl. et Curt.* Fung, of Cuba, No. 37.

Pileo albo vel pallide-fusco, infundibuliformi leviter striato; stipite solido glabro excentrico, lamellis albis vel albidis, decurrentibus.

Pileus 2, latus 1-2, altus. Gregarius et caespitosus. Affinis *Aq. commisibili,* B. et C, sed pileus multo niagis depressus (B. I.e.).

In ligno putrescente debeatur (?) mont. Boschberg, vere pluviali, 1874, No. 1045. E. Natal, No. 1216.

Ag. (Pleurotus) aureo-toxnentosus, *KalcJi. in "* Grevillea[1] ix.,jp. 17.

P. Natal in lignis (J. M. Wood, Nos. 103, 348, 416).

Pileus 2-3 centm. latus, stipes 2-3 centm. longis, 1-2 ram. crassus, in pileum dilatatus. Tomentum intense luteum, ad verticem pilei et basim stipitis aureo-aurantiaenm. Elegans hie fungillus, ob lamellas subdecurrentes et stationem epixylam. Pleurotis quidem adnumerandus videtur, sed inter lios propriorem affinem non babet. Stratum pilci tonientosum **e** fibris subcapitatis, ramosis,* constat.

Ag. (Pleurotus) septicus, *Weinm. Fr.E]?.* 136.

Port Natal (Wood, Nos. 135, 191).

Ag. (Pleurotus) radiatim-plicatus, *K. 1.*

Habitu *Ag. applicati*, Batsch., sed rufus, et ad maginem-plicis paucis (6-9) notatus. Lamellse distantes, angustae rufescentes.

Ad ramulos deciduos, m. Boschberg (MacOw.).

Ag. (Pleurotus) contraiius, *K%*

Pusillus, *Ag. septico* similis, sed evolutio contraria. Pileus nempe primt) globosus, seminum Sinapis ma^nitudine, pallide carneus, albo pruinatus, stipitello subexcentrico, yerticali, concolori insidet, quo sensim incurvato totus resupinatus. LamellaB ad insertionem stipitis coneurrentes, paucas, latiusculas, parce venosa3, siccitate carnea,e.

In ramulis siccis Boschberg (MacOw.).

Pileus explicatus 4-5 mm. latus, margine semper inflexo, stipitellus persistens. In affinibus pileus primo resupinatus est et demum stipitello evanescente sublateralis fit.

Ag. (Pleurotus) gilvescens, ***K,***

Pileus membranaceus, resupinatus, parum reflexus, subreni-foraiis, he vis, **glaber, gilvus,** vel sublaten tius; stipitellus **excen-tricus, cur7atus,evanescens** ; larnellaa plicasfonnis, distaatos, irenoso-coanexaj, concolores.

Port Natal (Wood, No. 332).

Pileus ^-1 centm. latus.

Ag. (Pleurotus) atrocoeruleus, ***Fr.*** *Ep.* 137.

In cortice vivo **arboram frondosarum** mont. Boschberg. Somer-set East **(MacOw.,** No. 1048).

In junioribus quibusd&m etiam lamella? atro-cojnilt'a3.

Ag. (Pleurotus) clusilis, *K.*

Pusillus, pileo tenui, membranaceo, resupinata -rt'floxi , marg ino inctirvo Iamollas **adscondente,** 8-4 rara. **la** to, Iovitor **striato** vcl **rugaloso, subpruinoso, carneo-rufescente. Radicula brevis, ova-scens. Lamellre** paucitt (5-9) plica;formes, in **puncto** excentrico **concurrentes, caraeas,**

la cortice vivo vanarum **arborum,** montis **Boschberg (MacOw., No. 1038).**

A proximo *Ag. perpusillo,* **Fr.,** colore **et margins** pilei **lamellas** tegente **distinctus.**

Ag. (Pleurotus) perpusillus, ***Weinm.***

P. Natal (Wood, No. 191).

Ag. (Volvaria) bombycinus, *Sohoeff. 7V.Fp.138.*

Somerset E. Leg. e t determ. **(MacOwan, No.** 1410). Speci-**mina** ampla, **egregia.**

Ag. (Pluteus) cexvinus, ***Seherff. Fr. Ep.*** **140.**

In trancis purlidis (MacOw.).

Ag. (Entoloma) aagittaefoxmis, *K. et C.*

PiJfus **carnosus,** coiiieo-campanulatus, in **umbonem** acntum pro-dtictus, lajvis, glaber **flividus** *?) ;* stipes solid us, **senio aiodo** caviis, **ventricosus et in radicem longam** productus, hinc **snbfusiforrai fibriJJoso-striatus**; lamolla? **emarginato-adnatae, confertaa,** ros-Spora3 **ovales,** 6 x 4 mm. diaiu. **roseae.**

§ **P.** Natal (Wood, 344, 357).

Pil.]-3centm. Iatos, 1^ cent, altus; stipes 4-5 cent, longus, **supra** basin) 1 cent, crass us, **sursum** deorsumve ud 3-4 **mm. a tatus,** radi la, glabra, 2-3 cent, longa auctus. **Verticalii sectus** sagittam fere **refert.**

Ag. (Nolanea) castus, *MacOimn,*

Totus albus, pileo camosolo, conrexo, **1-2 centra, lato circa** um-**x>nem papilkformem** depressus, ad **margin** stnato, **tevi, glabro,** sicco; **stipite fi-**cento, loiigo **antice distantibus, ventricosis,** c ^ii **glabro; lamellis**

I d?zz^: * *

Inter frutiecs, **in graminosis ad Somerset E. (MacOw**

etim Var naUnqa8m albo_cinereus, ^"tro \ ,, **Adi**

Ag. (Pholiota) unicolor, *Flar. Dan. Fr. Ep.* 170.

" Totus cinnamomeus ; stipes glabriusculus, annulus distinctus, persistens ; lamellse lalas, adnexae " (MacOw. in Sched.).

Ad ligna putrida, m. Boschberg, 1877 *(sine* No.).

P. Natal (Wood, No. 390).

A«. (Pholiota) mycenoides, *Fr. Ep.* 170.

Somerset E. (MacOw., No. 1423).

Praeter formain vulgatem adest etiam altera, robustior, ad. *Ag. togularem,* Bull., accedens.

Ag. (Pholiota) togularis, *Bull. Fr. H//m. Eur.p.* 21G.

Somerset East (McOwan).

Ag. (Hebeloma) spoliatus, *Fr. Ep.* 142.

Somerset East (MaeOw., No. 1388).

Ag. (Flamula) harmoge, *Fr. Ep.* 189.

Mediocris, colore inconsueto inter Sapineos insignia.

Pileus carnosus, convexus, subgibbus demumve explanatus, *8-8* centm. latus, siccus albido- alutaceus, marginem versus colore lilaceo quasi suffusus, squamis fibrosis, fulvo-ferrugineis ornatus ; stipes solidus, tenax, sursum, rarius deorsuui incrassatus, plerumque curvatus, 4-6 centm. longus, ^--^ centm. crassus, fibroso striatus, sordide lividus ; annulus fibrosus, lacerus, evanidus; Iamella3 adnata3, emarginatae, subconfertae, luteotas, dein rubro-aurantiacee demumve l^ete ferrugineae. Caro firma, albida, in pileo cyaoescens, in stipite flavescens.

In tec to tugurii cujusdam ad Somerset E. (MacOw., No. 1380).

Fungum hunc rarum, post Fricsinm, vix ab aliquo repertuin etiam in Hungaria, observavimus. Color in disco pilei aerugineus pgepe deest, bine fortuitus videtur.

Ag. (Flame 11 a) tilopus, *K.et MacOw. Icon Tab. Fig.*

Pileo carnosulo, convexo-plano, leviter umbonata, ^-*2* centm. lato Pellicula viscosa, secernibili tecto pallide flavo ; stipite tenui fistuloso, 3-7 centm. longo, 1-2 mm. crasso subaaquali pileo concolori, squomulis fibrosis raris vestitus. Caro flavovirens. Lamellte adnatas confertas, ferrugineas.

Cgespitosus vel subfasciculatus, in terra circa truncos vel in ipsis truncio muscosis, *Ag. squamosa* proximus.

Som.erset East *(sine* No.).

Ag. (Flammula) Janus, *B. et Br.* Fung, of Ceylon, No. 207.

Casspitosus, sulfureus, pileo convexo, obtuso umbonatove, subcarnoso ; stipite subaequali, fistuloso glabro j lamellis angustis e subfusco-ferrugineis (Brk. I.e.).

In lignis putridis, montis Boscbberg, Mart., 1877 (No. 1013).

Ag. (Naucoiia) arenicola, *Berll.* I.e. Fung, in Uitenhage, No. 6.

Somerset East (MacOwan).

Stipite basi incras^ato—ad morem *Ag. radicati*—et arenam conglobante, insignis.

Ag. (Naucoria) pediades, *Fr.* -0,1 nr r\

In stereo re vetusto, inter grainina mont. Boschberg (JVlacUw., No. 1006 et 1377).

Cel. Berkeley inter fungos ad Uitenhage lectos sub No. 5, aotat *Ag. semiorbicularem* ibidem in fimo vaccino lectum. Ad hunc nostrum quoque fungura referrem; ni stipite crassiore, humiliore, basi bulbilloso potius *cuw'Ag. pediade,* Fr., convenirot.

Ag. (Naucoiia) pygmaeus, *Bvll. Fries Ep'.* 194.

In quisquiliis silvarum. ad Somerset E. (MacOw., No. 1310). P. Natal (Wood, No. 91).

Ag. (Naucoiia) undulosus, *Jungh. Fr. Ep.* 109.

Somerset East, in mont. Boschberg, sub fruticibus (MacOw., N<>. 1223). P. Natal (Wood, No! 370).

Sporae breviter ovata3 0*006 X 0*004 mm.

Ag. (Galeia) hypnoxum, *Fr. Ep.* 207.

In silvis, mont. Boschberg, sub fruticibus (MacOw. No. 1213).

Ag. (Galeia) tenet, *Selimff. Fr. Ep.* 204.

Inter frutices ad Somerset E. (MacOw.). P. Natal (Wood).

NECTRIA DITISSIMA.

According to. Hartig (" Unter. Förstbot. Inst. Miinchen," 1880, p. 145), a large part of the diseases to which forest trees are subject are due to the attacks of this parasitic fungus. It attacks *Fagus, Quercus, Corylus, Fraxinus, Carpinus, Alnus glutinosa, Acer campestre,* and *Acer pseudoplatanus, Tilia, Frangula, Padus,* and possibly also the apple. It almost always enters through wounds, especially those caused by hail, or by the puncture of an insect *(Agiilus viridis)* ; but in some cases ienticels appear to give the opportunity. The development of the mycelium takes place especially in the autumn. The portion of the bark attacked assumes a black colour. The mycelium is mostly intercellular, and from the extremities of the excessively fine hyphae are abstricted minute conidia resembling schizomycetes., These are not, however, known to serve for the propagation of the fungus, but bring about the rapid destruction of the cortical tissue. The medullary rays, wood parenchyma, and vessels are also attacked by the mycelium, causing a brown colour in the wood to the depth of a few millemetres. In damp weather, especially in September and October, the fertile cushions make their appearance, producing first conidia and then small red perithecia, the result of an act of impregnation that has not yet been accurately followed.—*Journ. Hoy. Mkr. Soc, Feb.,* 1881, *p.* 85.

SCHIMPER'S MOSSES.

Our Bryological readers will be glad **to learn that the** splendid collection of European mosses, which were contained in Schiniper's herbarium, and which were transferred by the liberality of the Baroness Burdett Coutts to the Herbarium of the Royal Gardens, Kevv, have been in course of arrangement, and are now eligible for consultation by those interested in the subject. Including, as this collection does, the herbarium of Bruch, all the types of Bruch and Schimper are accessible to those who are interested in the labours of the learned authors of the " Bryologia Europsea."

PRESERVATION OF FUNGI.

Some years ago, when Mr. James English, of Epping, first exhibited his specimens of the fleshy fungi, as preserved by him, by means of a new method, "so as to retain much of their natural appearance, there was considerable curiosity amongst fungologists as to the secrets of the process. Some suggested one thing and some another, but no one produced similar specimens. As time progressed the process was improved, and there still seems to have been an anxiety amongst some to know how it was accomplished. At length Mr. English has announced that having been often applied to for details of his method, he has at length resolved to communicate it for **a** consideration. That is, he is prepared to print and publish a full account of his process, with all the requisite information, by subscription. If a sufficient number of persons will subscribe, or send in^tjieir names as subscribers, to his manual, at the subscription price of five shillings, he will print it us soon as the requisite number are obtained. This must be considered as a reasonable proposition. He says, justly, that the experiments caused him much anxiety, and entailed expense and great loss of time, and he cannot be expected, in addition, to speculate on the publication of his method, and invest money in printing, without a reasonable guarantee that he shall not be out of pocket. He considers that the only eligible course for him to pursue is to give those who desire to obtain the information the opportunity of doing so by means of a list of subscribers, as by this plan he will learn what encouragement there will be for him to publish his manual, and how far he will be justified in taking that step.

Having consented to explain these circumstances, we now leave the subject in the hands of our readers, with the intimation that all further particulars may be obtained by communication with Mr. James English, Naturalist, Epping, Essex.

NECTRIA CUCURBITULA.

The fir trees of Upper Bavaria have been attacked during recent years by a fungus which penetrates the bark, chiefly through, injuries "caused by hail or the weight of snow, or still more by a microlepidopter *Grapholitha pactolana.* Hartig states that the mycelium develops mainly in the sieve tubes (" Unters. Førstbot. Inst. Miinchen," 1880, p. 58), but also in the cortical tissue, and only in the spring ; its development in summer is arrested by the want of water in the substratum. The fertile layer appears principally near the base of the stem, where there is a more abundant supply of moisture, in the summer and autumn, as cushions, at first white, afterwards reddish, which break through the bark, and detach, firstly, conidia and subsequently red perithecia, the latter probably the result of impregnation. The ascospores are two-chambered, ripen in the winter, and produce on germination a mycelium, on which conidia are again formed in various ways, sometimes directly, sometimes on special shoots. The development of the mycelium and the formation of the conidia can be followed out in a drop of turpentine. The growth of the parasite destroys the bark and cambium ; the tree dying as soon as the mycelium has grown completely round the stem.—*Journ. Boy. Micr. Soc, Feb.,* 1881, *p.* 84.

AGARICUS (FLAMMULA) C ARE OX AIII US.

This Agaric made its appearance on burnt ground in Kew Gardens, during the month of November last. In some places it was accompanied by *Cantharelhis carbonarius,* A. & S. In the next, and early part of the following month, very fine specimens, five to six inches high, and three inches in diameter, appeared. Up to the present time (the close of February) they have appeared in succession for three months, without intermission, through the severe frosts, which reached 23 or 24 degrees, without putting a stop to their development. It is a noteworthy circumstance that one well-determined Agaric has flourished continuously for three months, and survived nights of intense frost. *Agaricus (Collybiu) velvtipes* is also still to be found, but it did not appear until long after *Ag. carbonarms* had commenced growth, and the specimens have been small. Although it has generally been admitted that *Ag.velutipes* is uninjured, and perhaps improved, by a little frost, I was not prepared to find a *Flammula* resisting 24 decrees with apparent comfort.

BRITISH MOSS FLORA.

Dr. Braithwaite is still pursuing the even tenour of his way with his excellent illustrations of British Mosses. The *Poly trychacece* filled the last part, and it is to be hoped that he will receive all possible encouragement to proceed as rapidly as he can with this useful work.

CRYPTOGAMIC LITERATURE.

BRAITHWAITE, Dr. R. British Moss Flora, part 3, Polytrichaceae.

COMES, Dr. 0. Notizie intorno ad alcune crittogame parassite della piante Agrarie.

COMES, Dr. 0. Osservazioni su alcune specie di funghi del Napoletano.

THUMEN, F. Die Blasen rost pilze der coniferen. Monographic der Gattung *Perideimium.*

PHILLIPS, W. The Hymenomycetes of Shropshire.

MORREN, Dr. Correspondence Botanique, 8th Edition.

BESSEY, Prof. C. E. Sketch of Progress of Botany, in United States, in 1880.

KALCHBRENNER, C. Pballoidei novi vel minus cogniti.

WINTER, Dr. Rabenhorst's Kryptogamen Flora, Part 1. Fungi.

ROZE, and BOUDIER, M. M. Contribution a l'etude mycologique de TAuvergne.

PHILLIPS, W. British Lichens and How to Study Them.

BURRELL, Prof. T. J. First Report on Useful and Noxious Plants.

QUELET, Dr. L. Champignons recemment observes en Normandie, en Alsace, en Suisse, <fcc.

BRETON, A. le. Contributions a la Flore Mycologique de la Seine-in ferieure.

THUMEN, F. von. Symbols ad floram mycologicam Austriacam. P. iv.

UHLWORM, Dr. O. Bibliography of Cryptogamia, and Phanerogamia, continued in " Botanisches Centralblatt," weekly.

HAMPE, E. Ein neues *Sphagnum* Deutschlands, in " Flora," Oct. 1,1880.

THUEMEN, F. Fungi iEgyptiaci, ser. iii, in " Flora," Oct. 21, 1880.

MINKS, Dr. A. Morphologisch Lichenographische Studien, iv, in « Flora," Nov. 21, Dec. 1, 1880.

ARNOLD, Dr. F. Lichenologische Fragments, in "Flora/' Dec. 1, 11th and 21st, 1880.

STOLTEKFOKTH, Dr. II. On the Diatomaceaj of the Liyn Arcing Bach Deposit, in " Jonrn. Roy. Micr. Soc.,*' Doc. 1880.

OKISP, F. Record of current researches relating to Cryptogainia, &c, in " Journ. Roy. Micr. Soc." Dec. 1880, Feb., 1881.

Voss, Prof. W. On Peronospora viticola, in " Hedwigia," Nov. 1880.

THUBMKS, F. On Pcronospora viticola, in " Hedwigia," Nov. 1880.

WINTER, Dr. GEO. Mykologisches aus Graubfiuden, "Hedwigia," Nov. 1880.

JSPKOCK, Dr. R. Masci prateriti, in " Jouru. Botany," Dec. 1880, Jan, and Feb. 1881.

GKOVKS, H. and J. On *Chara obtusa.* Desv., in "Journ. Botany," Jan. 1881.

COOKE, M. O. Illustrations of British Fungi (Hymenoraycetes), part 1.

KODMEQCERS:, C. and others. Numerous brief connnunications in " Revae Mycologique," Oct. 1880 and Jan. 1881.

TfI0BMBN, F. Mycotlicca Universalis, Cent, xviii.

LISDBERG, S. O. *Schistopliyllum Orrii,* n. s., in "Revue Bryologique," No, 6, 1880.

PBILIBERT, *M.* Lo veritable *Thuidium delicatulum,* in "Revue Bryologique," No. 6, 1880.

VESTUBI, IEA>UULD, and others. Bryological communications, in "Revue Bryologique," No. 6, 1880.

MIGUEL, P. Etudes sur Ics Poudeieres organisees de l'atmosphere, in " Brebissonia," Oct. 1880.

IJoujiEGUjEiti;, C. Fungi Gallici Exsiccati. Cent. 7 to 12.

KABSTEN, P. A, Enomeratio Boletinearum, Tolyporearum et Hydnearum Fennicarum, in " Ilevue Mycologique," Jan. 1881.

GILLET, Dr. X. Nottvelle etude du *Rcesleria hypogcea,* in "Eevue Mycologique," *Jim* 1881.

LONDON Catalogue of .British Mosses and Hepatica by the Botanical Record Club, 2nd Edition.

BOULAY and LE DA NTix'. Catalogue des Mousses des environs de Brest, in " Revue Bryologique," Ni. 1, 1881.

Boazi, A. *Havc&ia,* naora Palinellacea deli Isola, in "Nuovo Giorn. But. ltd," Nov., 1880.

MABSALOXGHO, C. and CARESTIA, A. Epatiche delle Alpi Penniuo, in " Nuovo Gioni. Bot. ltd," Nov. *IH*80.

JATTA, A. Lichenea novi vel critici, in " Herb, Notarisiano," in "Nuovo Giorn. Bot. ltd," Jan. 1881.

THDMEN, P. Eeliqoaa LibertianjB, in «Hedwigia/' No. 12, L880.

ALLBN, Dr. Characcaa Americani Exsiccati, fasc. i.

Grevillea,

A QUAETEELY EECOED OF CEYPTOGAMIC BOTANY AND ITS LITEEATUEE.

NEW BRITISH FUNGI.

By M. C. **COOKE.**

{Continued from p. 95.J

The following are a portion of the additions described in their last paper by Messrs. Berkeley and Broome.

Agaxicus (Amanita) nitidus, *Fr.* Hym. Eui\, **p. 24.**

Pilens convex, then plane, firm, beset with thick, angular, indurated, darker warts; margin quite even, flesh white; stem stuffed, conically attenuated, squamose ; ring torn, fugacious; gills white. *Fr. Icon.* t. 12 f. 1. *B. $ Br. Ann. Nat. Hist,* No. 1833.

In shady woods. Mattish&ll (Rev. J. M. DuPort).

" Several specimens have been forwarded, some exactly agreeing with the definition of Fries in the thick indurated angular warts, while others approach so near to *A. Mappa,* that it is difficult to distinguish them." *M. J. B.*

Agaricus (Lepiota) granulosus, *Batsch. var.* rufescens.

" A curious form was found near Bristol, by Mr Bucknall, quite pure white at first, then partially turning red, and in drying acquiring everywhere a rufous tint." *B. $ Br. Ann. Nat. Hist,* No. 1834.

Agaxicus (Lepiota) Bucknalli, J3. *& Br. Cooke lllus.* ***t.* 19, *f.b.***

Strong smelling. Pileus campanulate then convex, white, as well as the lower part of the stem sprinkled with lilac powder, gills white, scarcely reaching the margin. *B. § Br. Ann. Nat. Hist.,* No. 1836. *Ag. seminudus,* var. *lilacinus,* Quelet. Clavis Hym., p. 6.

On the ground. Clifton (Mr. Bucknall).

Pileus nearly an inch across; stem 3in. high. Odour strong of gas tar. Spores '007 x *0025 mm. Those of *Ag. seminudus* •0035 X -0018 mm. We have the authority of M. Quelet that it is his variety *lilacinus* of *Ag. seminudus.*

Agaricus (Armillaria) focalis, *Fr.* Hym. E
Pileus fleshy, so , convex then plane, obtuse, cuticle silky, becoming smooth ; br oad, oblique ; stem solid, equal, br with a fibrous · gills nearly free, crowded, narrow, becoming pallid. *Cool. Illust.*, t. 31. *B. & Br. Ann. Nat. Hist.*, No. 1837.

sli ove, 1½ in thick at base, various y ate ; mycelium iches high, rin very broad to wh ich the specific name alludes e, fibrillose, Odo farinaceous; substance ter lost agre ior. dimensions wit his species. eing in the finest

da too

Agaricus (Tr
Pileus con . Eur., 52. granulated ened, viscid, smooth becoming reddish, flesh reddish be t e Stem solid, ite, spo equal, s ose ; g ded crowded, w 6. 1838. On the ground. Coed Coch.

"This species was formerly call Fries *A. pessundatus*, and was found of large size at Coed Coch. The figure in the 'Icones' marked '*pessundatus*' is now referred to *A. stans*. The true *A. pessundatus* was sent by Mr. Renny from Lucerne." *B. & Br.*

Agaricus (Tricholoma) guttatus, *Schæff. Ic. t.*, 240.
Pileus fleshy, convex, then flattened, cinna grey, breaking in granular or floccose scales, m sulca first involute, floccose ; stem solid, mealy with a decurrent line, much crowded. s emargi *Eur.*, p. 54. *B. & Br. Ann.* No. 100
On the borders of woods. ton.
Taste bitter, rather acrid. Pileus 3-5in. broad.

Agaricus (Tricholoma) tumidus, *Fr.* Hym. Eur., 61.
Rigid, fragile ; pileus bullate then expanded, undulate, rather shining, then cracked and split, cinereous ; margin thin, broken ; stem so , rooting, swollen, striate, white ; gills marginate, broad, somewhat distant, white, becoming reddish-grey. *Kromb.*, t. 72, f. 1-5. *B. & Br. Ann. Nat. Hist.*, No. 1840.
In moist pine woods. Coed Coch.
"Exactly according with ombholz's figure." *& Br.*

Agaricus (Tricholoma) li *Fr.*
"There is no doubt that Sowerby's *A. compressus* is this species." *B. & Br.*

Agaricus (Clitocybe) hir *Fr.* Hym. Eur., p. 82.
Pileus rather fleshy, co ane, even, smooth, with a silky lustre; disc at length depressed, margin involute, very thin ; stem

stuffed, tough, slender, slightly flexuous, powdered with white at the apex ; gills rather decurrent, crowded, becoming hoary. *Fr. Icon.*, t. 48, f. 3. *B. § Br. Ann. Nat. Hist.*, No. 1841.

Amongst moss. Coed Coch.

Stem l-2in. Pileus 3-5 lines.

Agaricus (Clitocybe) amarus, *Fr.*

B. $ Br. Ann. Nat. Hist., No. 1842. *Coohe* in "Grevillea" viii., p. 74.

Agaricus (Clitocybe) pithyophilus, *Fr.* Hym. Eur., p. 87.

White, pileus fleshy, thin, nearly plane, umbilicate, smooth, becoming pallid, stem somewhat hollow, terete then compressed, smooth (with a white downy base); gills adnate decurrent, crowded, plane, always white. *B. $ Br. Ann. Nat. Hist.*, No. 1843.

In pine woods. Coed Coch.

Agaricus (Clitocybe) cryptarum, *Letellier.*

Densely ca^spitose. Pileus somewhat conical, depressedly floccose, spotted with brown ; stem white, rather striate, virgate, attenuated upwards, more or less compressed, narrowly fistulose; gills narrow, arcuate, rather decurrent, **white.** *B. § Br. Ann. Nat. Hist,* No. 1844.

On sawdust. Coed Coch.

" Habit that of *A. tumulosus.* Pilei varying much in size, according to the denseness of the clusters. Inodorous, insipid ; stem mottled within." *B. $• Br.*

Agaricus (Clitocybe) decastes, *Fr.* Hym. Eur., 90.

Pileus convexo-plane, undulate, rather umbonate, even, smooth, of one colour, growing pale ; disc compact, rather umbonate, stem solid, smooth, pruinose above, and white ; gills rounded, adnate, crowded, rather wavy, white. *Fr. Icon.*, t. 52. *B. $ Br. Ann. Nat. Hist,* No. 1845.

On sawdust. Coed Coch.

" Agreeing closely with the figure of Pries in the ' Icones/ but we are doubtful whether what we find is not an advanced stage of *A. cryptarum*—a matter which requires future observation." *B. & Br.*

Agaricus (Clitocybe) Tirogii, *Fr.* Hym. Eur., p. 85.

Pileus fleshy, compact, convex then expanded, obtuse, smooth, cinereous white, opaque ; stem solid, firm, short, thickened at the base, villous; gills rather decurrent, crowded, white. *B. § Br. Ann. Nat. Hist,* No. 1846.

In woods. Coed Coch.

The colour approaching that of *A. metachrous.* **Very fragrant.**

Agaricus (Clitocybe) senilis, *Fr.* Hym. Eur., p. 98.

Pileus between fleshy and membranaceous, funnel shaped, smooth, concentrically scarred, tan coloured, margin patent, stem solid, equal, smooth, whitish; gills long decurrent, linear, crowded, at length of the same colour as the pileus. *Fr. Icon.* t. 56 f *1 B. $ Br. Ann. Nat. Hist,* No. 1847.

In pine woods. Coed **Coch.**

*' We are bound to say that the specimens shown **to** us at **Co** Coch as **belonging to thi** **ired** to beloi I nnt. nmw> with the fif lire in the ' ICOIK s ' in several particulars." *M.C.C.*

Agaricus (Collybia) macilentus, Fr. IHym. Eur., 123.

Pileus r **ither fleshy,** nearly plane, obtuse, ever', smoot h; stem d **elicately** fistulose, tough, naked, rooting; gills free, seceding, **Towded, linear, yellowish.** ***Fr. Icon.* t. 66, f. 1/ *B.*** *& Br. Ann. Vat. Hist.,* **No. 18** 48.

In pine woods. Coed Cor h.

Agaricus (CoIlyMa) stolonifer, *Jungh.*

Pileus rather fleshy, nearly plane, obtuse (slightly '1epressed), smootii, margin -striate ; ste tn hollo w, equal, smoo th, becoming tawny, root creeping like a stolo: ; gills rounded adnexed, vent **ri**cose, somewhat distant, w **bitish.** *Fl. Dan.* t. 202**1, f. 2.** ***B.*** *& Br. Ann.* ***Nat. Hist.*, No.** 18 i 8, bis.

Amongst fir **lei** ves. **Perth (Dr. Buchanan** Whi[1] e).

Agaxicus (Mycena) Adonis, *B* ull.

Th e scarlet for **m.** ***B.*** *& Br. Ann. Nat. I fist.,* No. 1819.

Garthewin (Mrs. **B. Wynr** e).

Agaxicus (Omphalia) hydrogrammus, *Fr.* HJTH. Ear., *i*>, 154.

Pileus rather mem I imibilie; rauaceous, ite, flaccid, smooth, livid, hy grophanous ; m argin pr itent, striate, somewhat **undulai** e ; stem h olloiv, smooth, rather **ci** mpressed, rooting; base clad w ith **whil** ish hairs ; gills decnrrent, **much** crowded, **whitish.** ***I*** *r. Icon.*, t. **71** ; *B. 4r Br. Nat. J* ist., No. I J50.

Among **beech leave** s. Coe *I* Coeh.

A garicus (Omphalia) lufumatus, *S.* *$ Br.*

Pileus obtuse, not membra naceous, greenis h, then smoky ; stem thin, **yellow ; gills f** ew, bro **ad, decurrent,** distant, **yell** ow, *B, & Br.Ann. Nut. Hist.,* **1851.**

On bark, n? ongst moss. Garthe **win.**

" Pileus 2in. **ac** oss ; stem 1 line high, not a line thick, c **lilatec** at the '< ase, tomentose, especially below ; gills about twelve, with smaller intermediate. Allied to *A. umbelliferus*, but quite distinct fro ***m* all** its varieties." ***B.*** *& Br.*

Agaricus (Omphalia) offuciatus, *Fr.* Hym. Eup., p. 156.

Pileus somewhat fleshy, plano-depressed, obtuse, even, smooth, reddish, growing pale ; stem hollow, tough, straight ; gills decurren **t,** thii, , crowded, of the same colour. *Fr. Icon.*, t. 72, f. 3 ; *B. & Br. Ann. Nat. Hist.*, No. 1853.

In beech woods. Coed Coch.

Stem 2in. long, 1-2 line thick, with the habit of *Ag. dryophilus.*

Ag axicus (Omphalia) abhcuei s, *B. & Br.*

Odour of dung. Pileus umbilicate, brown ; stem slender, of the same colour ; gills decurrent. *B. & Br. Ann. Nat. Hist.*, No. 1853.

On lawn. Coed Coch.

Agaxicus (Pleurotus) laurocerasi, *B. ft* J3r.

Oyster-shaped. Pileus sulcate, brown, with a very thin cuticle ; ^tem obsolete ; gills connected by veins; spores ovate. *B. # Br., Ann. Nat. Hist.,* No. 1854.

On the naked trunk of, a laurel. Coed Coch.

" Pileus rather more than an inch across ; the cuticle is extremely thin, and gives way at the furrows so as to expose the substance of the pileus. Spores -0D08 min. long." *B. § Br.*

Agaricus (Pleurotus) palinatus. *Bull.*

" The spores of this species are pale ochre-coloured, #0004in. (•01 mm.) in diameter ; it has the same right to be placed in *Pleurotus* as the rosy-spored *A. euosmus" B. fy Br. Ann. Nat. Hist.,* No. 1855.

Agaricus (Pluteus) spilopus, *B. $ Br.*

Dwarf. Pileus brown, rugulose ; stem flexuous, punctate with black; spores globose, even. *B. tj* Br. Ann. Nat. Hist.,* No. 1856.

On wood (?). (C. *E. Broome.)*

" Allied to *A. nanus."*

Agaricus (Leptonia), sethiops, *Fr.* Hym. Eur., p. 202.

Pileus rather fleshy, plano-deprossed, without stride, shining, black, then smoky, smooth, but clad with innate fibrils ; stem tuffed, thin, smooth, tawny, becoming black, punctate with lack above ; gills adnate, whitish, with the edge of the same colour. *B. fy* jfer. *Ann. Nat. Hist.,* No. 1857.

In grassy places. Coed Coch.

Agaricus (Eccilia) atrides, *Fr.* Hym. Eur., p. 212.

Pileus somewhat membranaceous, plane, deeply umbilicate, striate, virgate with black ; stem fistulose, punctate with black above, pallid ; gills deeply decurrent, attenuated behind, rather crowded, pallid, edge black and toothed. *B. fy Br. Ann. Nat. Hist.,* No. 1858.

In moist woods. Hereford.

" This is not the plant figured by Quelet." *B. # Br.*

Agaricus (Acetabularia) acetabulosus, *Sow. t.* 303.

Berk. $ Br. Ann. Nat. Hist., No. 1859.

"•This curious species has never been satisfactorily elucidated. The occurrence of an allied form from Swan River necessitates the proposition of a new section *{Acetabularia),* analogous to *Volvaria* and *Chitonia.* The spores in the original specimen of Sowerby, now (with the drawing) in the British Museum, are clay-coloured." *B. $ Br.*

Agaricus (Pholiata) erubius, *Fr.* Hyin. Eur., p. 216.

B. $ Br. Ann. Nat. Hist., No. 1860. Agaricus (Pholiota) Leveillianus, *D. § 31.,* in Cooke's "Handbook," p, 110.

" This is clearly the same species with *A. denigritus,* the spores of which are brown." *B. $ Br.*

Agaricus (Phollota) omMophilus, *Fr,* Hym. Eur., p. 216.

Pileus fleshy, convex, then plane, even, smooth, ferruginous, hygrophanoue ; stem hollow, fibrillose, striate, pallid ; **rinf** distant ; gills adnate, seceding, ventricose, clay-colour<< ferruginous. *Fr. Icon.,* t, 103; *B. fy Br. Ann. Nat, Hist.,* No, 1861.

In grassy places. Coed Coch.

Sporadic. Pileus 3in., stem 3-5 lines thick.

Agaricus (Pholiota) **subsquaxxosus,** *Fr.* Hym. Ear,, p. 221.

Pileus fleshy, convex, **viscid,** ferruginous brown, with darke adpressed floccose scales; stem **stuffed, equal, ferrugii** How, darker adpressed scales terminating in an annular zone ; gills nearly free, crowded, yellow, then dirl »lour. *B. $ Br. Nat.* ***Hist.,*** No. 1862.

On trunks and the ground, Hereford *(T. Ho*

Agaricus (Pholiota) tuberculoses, *Fr.* **Hym. Eur,,** p. 2'j;i.

Pileus fleshy, conveso-plane, obtuse, dry, up into innate, adpressed scales ; stem hollow, incurved, short, bulbous, fibrillose, ring rather membra naceoup, **deciduou** ills ema» nate, broad, serrulate, yellowish or cinnamon. *B. 4' Br.* ***An*** *NaLHist.,* No. 1863.

On sawdust. Coed Coch.

Agaxicus (Pholiota) cuxvipes, *Fr,* Hym. Eur., p. 22.1.

Pileus rather fleshy, convex, then i into adpressed floccose scales; stem somewhat hollow, **thin,** incurv- veil as the ring fibriJlose, **with** radiating floe* adnate, **white,** then yellowish, at length tawny. *B. $ Br. Ann. MtU Hint.,* 1864.

On sawdust, Coed Coch.

A gaHcus (Inocybe) muticus, *Fr.* Hym. Eur., 230.

Pi!ens fleshy, convex, then plane, very , and at depressed in the centre, squamulose, whitish, with tawny **fibr** stem hollow, attenuated downwards, fibrillose, **white,** coloured, or tawny; gills ad; led, **thi** **then** becoming tawny. *Fr,* ***Icon.,*** t. **109** ; *B. § Br. A* No. **1805.**

On roadsides, Coed, Coch.

Pileus l-2in., stem Uin. long, 3-4 lines **thick.**

Agaxicus (Inocybe)deatiictus, *Fr.* 11

Pileus fleshy, camp;. fibrillose, then torn **into** sc:t sol id, smooth, fibril!o- te, **whil** ad nate, with a tooth, c *Fr. Icon.,* t. 108 ; *B. & Br. Ann. Nat. Hist.,* No. 1866.

In pine woods. Coed Coch.

Flesh thin, white ; odour uuplea

FUNGI ON EUCALYPTUS.

By M. C. COOKE and H. W. HARKNESS.

The following enumeration of Fungi found upon *Eucalyptus globuluSj* by Dr. EL W. Harkness, were all collected in California:—

Agaricus (Mycena) sacchariferus, *B. §f Br.*
On bark of *Eucalyptus.* (No. 2035.)

Pistillata ovata, *Fr.*
On rotting leaves of *Eucalyptus.* (No. 2198.)

Corticum epiphyllum, P.
On rotting leaves of *Eucalyptus.* (No. 2014.)

Spheeronema eucalypti, *C. <L- Eh.*
Peritheciis sparsis, erumpentibus, conicis, atris. Sporis ininoribus, subcylindricis, leniter curvulis, hyalinis, utrinque obtusis, (•008 X *002 mm.).
On bark of *Eucalyptus.* (No. 2145.)

Cryptospoiium ceuthosporoides, *Cke. <£ Hfc.*
Peritheciis deplanatis, fuscis, ceuthosporoideis, demum superne fissuratis. Sporis fusiformibus, curvatis, hyalinis (-018-02 x #003 mm.).
On dead leaves of *Eucalyptus.* (No. 2005.)
Habit resembling that of *Ceuthospora phacidwides.*
Thumen has described a *Phyllosticta eucalypti* from Portugal, not at present found in this locality.

Sphaeropsis Mollerianum, *Ihum., in lUyc. Univ.*
On dead leaves of *Eucalyptus.* (No. 2037.)

Diplodia eucalypti, *Cite. & Hk.*
Sparsa, tecta, demum erumpens. Peritheciis carbonaceis, globosis, atris. Sporis ellipticis, brunneis, uniseptatis, medio leniter constrictis ('022 X -009, vel -025 X '012, vel -03 x *011 mm.).
On bark of *Eucalyptus.* (No. 2000.)
The spores differ in size and proportions on younger and older twigs and branches, but it is difficult to find any specific differences in the three forms of which the measurements of the spores are given. Not identical with *Diplodia Molleriana,* Thum.

Diplodia tennis, *Che. & Hit.*
Peritheciis sparsis, globosis, obtusis, membranaceis, atris, dein prominulis. Sporis ellipticis, uniseptatis, hyalinis (-012 x "004 mm.).
On decayed bark of *Eucalyptus. (No.* 2195.)

Diplodia microspoia, *Sacc.*
On inner bark of *Eucalyptus.* (No. 2196.)

Hendersonia eucalypti, *Cke. & Bk.*

Peritheciis in **maculas orbicnlaribus** collects, immersis. Spons ellipticis, infra **attenuatis,** bine subclavatis, trisepfcatis, fuscis (•< X •OOGmm.).

On twigs of *Eucalyptus.* (Nos. 2150,220 0, 214 9.)

On dead leaves. (JSV 2039.)

Spores exuding and staining the matrix, the perithecia more scattered when growing on twigs and spores, darker, but not differing in form or size.

Hendersonia, corynoidea. *Cite. 4 ftk.*

Peritheciis spars is, tee t is, doin **stellato-fisanratis. Sporia** magnis, laneeolatis, 5-7 septa Us, loculis ultimis **hyalinis,** aliis olivaceo-fuscis(-05 x "01 mm.).

On twigs of *Eucalyptus.* (No. 2012.)

Spores resembling th^se of *Corynewn^* **but** enclosed in a perithecium,

Pestalozzia tjruncatula, *Fekl.*

On bark of *Eucalyptus,* **(No.** 2034.)

Pestalozzia monochaeta, *Demi.*

On fading leaves of *Eucalyptus,* **(No. 2155.)**

Pestalozzia funerea, *Dcsm.*

On twigs of *Eucalyptus.* **(No. 2002.)**

Harknessia eucalypti, (*Cke.*

On twigs and leaves of *Eucalyptus.* **(Nos.** 2c30, 203 **I.)**

Melanconium globosixm, *Cke. d* *Hk.*

Discoidenm, erumpens, atrui. n. Sporis globosis, **atro-fu**scis (01-0/1 mm.).

On twigs of *Eucalyptus.* *Qs*o. 204!.)

Stilbospora angustata, *Pers.* var.

Inside bark of *Eucalyptus.* **(f_0, 1999.)**

Septoneraa multiplex. *B $ (*'.

On bark of *Eucalyptus.* ' *(y* os. 2011, 204 **g.)**

Fusarium eucalyptorum, *Cke. # Ek.*

^ Rosei!m **vel** cinnabarimim, eonvexum, **oblongnm** vel confluens. Sporis fusifovmibus, otrinque acutis, **cnrratis, hvalii**is, 5-septatis (•05 x -00-1 mm.)

On barkof *Eucalyptus.* (Nos. 2021, 219 ;g

Fusazium *m*esentericum, *Cie. $ III;*.

Aurantmn vel **aorantio-rnbrum, oblongmn,** con vex urn, in **mac**ulo lesentenfomn conflnei s. Sporis cylindricis, , t H , obtusis, sinter curruhs, centimes, hyalinis (-018-02 x ·0045 mm.).

On bark of *Eucalyptus.* ***Qs*** o. 2020.)

Volutella coi-onata, *Clie. <t- III;*

r^$h' tata (-IS mm. diam.). St fpite (·006 Sporis ellipticis hyali is. *ctk (cirea 12) septatis, aculeatis,

On tmgs of Eucalyptus. (Xo. **198-1.)**

Subercularia eucalypti; *Cke. § Hh.*

Epiphylla, erumpens, convexa, atra, nitida. Hyphis tennis, breviter ramosis. ISporis cylindricis, obtusis, rectis vel curvulis, continuis, hyalinis (01 x '002 mm.).

On dead leaves of *Eucalyptus.* *(No.* 20-10.)

No. 2144 is probably a condition of the same thing, but pezizce-fonn.

Fusidium albocarneum, *Cke. & Hk.*

Effasum, macula eforme, albocarneum. Sporis fusoideis, reelis, continuis, hyalinis ('018--02 x *0025 mm.).

On (lead leaves of *Eucalyptus.* (Nos. 2027, 1998).

Somewhat like *F. griseum* in habit, but differing in colour.

Penicillium glaucum, *Lh.*

On decaying leaves of *Eucalyptus.* (No. 2152.)

Coremiuxn glaucum, *Link,*

On twigs of *Eucalyptus.* (Nos, 2022, 2048.)

Polyactis fusca, *Cke. 4- Ilk.*

Lsete fusca, floccosa. Hyphis clongatis, pavce ramosis, supra hyalinis, infra fuscis, ramulis torminalibus brevissimis deciding, Spciris globqso-ovatis (-009 x *0075 mm.) hyalinis.

On twigs of *Eucalyptus.* (Nos. 2028, 2044.)

Menispora hyalina, *Cke. fy 711.*

Effusum, albidum. Hyphis tenuis, erectis, hyalinis. Sporis ad apicem fasciculatis, cylindricis, rectis vel leniter curvulis, utrinque rotundatis, continuis, hyalims (-014--016 x '002 mm.).

On dead wood of *Mucalyptus,* mixed witli a green Alga. (No. 2159.)

Hardly conformable with the usual character in this genus ; the threads are very delicate and colourless, bat the spores are clustered at the apices of the thrends.

Monilia vixido-flava, *Cke. & Hh.*

Cæspitulse hemisphericee, virido-flaiæ. Ityphia vepentibus, laxe ramosis, ramulis assurgentibus, hyalinis. Sporis concatenates, globosis (·003 nnn.) hyalinis.

On dead *Eucalyptus* leaves. (No. 2163.)

Tufts *1-2* mm. broad, then confluent. Spores in chains at the tips of the branchLts.

Septosporium acyphophorum, *Cke. & Hark.*

Effusum, atrum. Hyphis erectis, flexuosis, npdulosis, liinc illic sc fphffi-formibus ; sporis ellipticis, obtusissimis, merertcbymaticis, atro-oliraceis (-02--04 X -01G--018 nun.)

On bark 0f *Eucalyptw.* (No. 2019.)

Threads closely resembling those of *Cladotrichum scyphophorum,* Cke.

Fezizalute o-zube lla, *Nyl.*

On *Eucalyptus* bark. ('No. 2008.)

Fezlza (lttollisia) carneo-rosea, ***Cie.*** *% Hark.*

Disco idea, sessilis, carneo-rosea, subcarnosa (⅓ mm. diam.). Ascis cylindraceis. Sporidiis **ellipticis** (-005 *X* '003 mm-) Paraphysibus linearibns.

On twigs of *Eucalyptus,* **(No.** 2164.)

Peziza. (Dasyscypha) mfo-olivacea, ***A.*** *$> S.*

On twigs of ***Eucalypti*** **(No. *2*** 2017.)

Peziza (Basyscypha) eerina, *P.*

On *Eucalyptus* bark. (No.- 2026.)

No. 21-17 is a Lichen,

Dermatea eucalypti, ***Cke.*** *& Hark.*

Parra, erunpens, **araea, cupulis** subsessilibus, solitariis, extus obscurioribus (^ mm.). Ascis cavatis. Sporidiis subfusoideis utnnque **obtnsis (-02--03 x t)l-*012** mm.), quadrii. ucleatis, dein pseudo-tris**eptatis, byalinis. Paraphysibns flavidis.**

On *Eucalyptus.* (No. 2148.)

Propolis versicolor, ***Fr.***

On old bark **of** *Eucalyptm.* (No. 2004.)

Stictis xadiata, ***Fr.***

On Eucalyptus bark. (No 2024.)

Hystexium pulicare, *Fr.*

On bark **of** *Eucalyptus.* (No. 2143.)

No. 2158 is a *IFysterium* without fruit, **on le**aves of *Eucalyptus.*

Bypoctea consimilis, *Ellis.*

On decorticated *Eucalyptus.* (No. 2038.)

Valsa eucalypti, *Che.* <f ***R***.

On twigs of ***Eucalypti*** **(No**s. 2016, 2033, 2157.)

Lasiosphaeria ovina, *fPj*

Oil decorticated *Eucalyptus.* (No. 2166.)

Sphaetia mutila, /'y. var. **Eucalypti.**

On twigs of *Eucalypti*s. (No. 2013.)

Sphaeria tecedens, ***Nietsl.*** *in* ***11****um. Mye. Univ., No.* 1748.

On bark of *E ucalyptus.* Portugw\.

It niay be mentioned here the difficulty which wi have experienced in determining what is thi species which Niessl had in viBW. Our coj y, as well as another which we examined, contains a *Sphæria* with asci one-1enth of a millemetre long, and biseriate, hyaline, narrow, fusiform uniseptate sporidia, breaking easily at the septum. The sporidia Bre ·018-·02 × ·003 mm. This is *not* the *Sphæria* of the description, which has "asci ·18-·25 mm. long," and "sporidia cylindrical, unicellular, hyaline, ·005 mm. long, and scarce ·001 mm. wide." If the description is accurate, then are the specimens published quite a distinct species, and should have another name. It is much to be regretted that published types are not more accurate.

FUNGI MACOW ANIANI.

By **REV. C. KALCHBRENNER.**

(Continued from p. IIQ.)

Ag. (Crepidotus) pogonatus, *K,*

Pileis e resupinato reflexis, ochraceis, mycelio byssoideo, late effuso, albido-ochraceo insidentibus; lamellis in puncto excentrico concurrentibus, latiusculis, carneo-ochraceis, acie dilutioribus. Sporse minutaB, subglobosse.

In ramis emortuis, huini jacentibus mont. Boschberg ad Somers. E. (MacOw., No. 1075).

Pileus -|-1 cent, latus, estrius. *Ag. epicrocino,* B. et Br. (Fang, of Ceyl., No. 257), proximus et fors bujus varietas.

Ag. (Crepidotus) applanatus, *P. Fr. Ep.* 210.

In ligno humido, fabrefacto, vites hortoruin fulciente.

Somers. E. (McOw. No. 1202).

Ag. (Psalliota) silvaticus, *Sohaff. Fr. Ep.* 214.

Somerset E. (MacOw., Nos. 1192, 1432).

Stipes gracilis, sequalis ; caro tenuis rufescens.

Ag. (Psalliota) pxatensis, *L.* var. **Australis. *Berk.*** *Fung. Uitenhage,* ***Ko.* 9.**

In acervis destructis formicarum. Somerset E. (MacOw., No. 1421).

Speciosus, amplus, pileo ovato-hemispberico, albo, in squamas latas, polygonales, concolores diffracto insignis, siccitate flavescens, sed ob lamellas postice rotundatas, cinereas demumve umbrinas certe buc referendus, licet a descriptione Bcrkeleyi 1. c. in quibusdam differat,

Ag. (Psalliota) campestris, *L. Fr. Ep.,* 213.

Somers. E. Boschberg. 2500' altid., frequentior adhuc in planitiebus mari propioribus (MacOw., 1010). Ad Bazuja Caffrariae (Baur.).

(b) Praticola, pil. rufo squamoso (MacOw., No. 1428).

Ag.(Stropharia) melaspermus, *Bull. Fr. Ep.* 219.

Somerset East (MacOwan, No. 1389).

Ag. **(Stropharia) olivaceo-flavus,** *K. et M.Ow.*

Pileus carnosus, convexus, obtusus depressusve, Icevis, glaber, olivacea-flavus; stipes cylindricus, farctus, basi turgescens, subbulbosus, et fibris validis solo affixus, ceteram fibroso striatus, pileo pallidior; annulus distans, lacerus persistens ; lamellas piano adnataB, confertse, albido-purpurese, demum purpureo-nigricantes. Caro lenta, alba. Sapor et odor nullus.

In arenosis saspe inundatis ad fluv. Klyn Viscli River ; McOw., Nos, 1324, 1385). P. Natal (Wood, No. 244).

Pileus (viscosus ?) 4-6 centm. latus; stipes 5-8 cent, long, 2-5

mm. crassus. **Epidermi** pilei **hand raro disrurapeiis, in** quibus-**dam snbrii'i**descens, exsiccatione umbrina fit. Statura *Ag. ster*rco~ *rani,* **Fr,,** sed lamella) **an**gustæ.

Ag. (Stropharia) obturatus, *F. Ep.* 219.
Somerset East (SfacOw.).

Ag.(Stroph-aria) seraiglobatu-, *Batsch. Fr. Ep.* 220.
In fiuio pr:torum, ad Somers. E. (MacOw., No. 1006).
Ut videtur, tibique terrarum obvius !

Ag. (Hypholoma) fascicularis, *Zluds. Fr. £//.* 122,
P, Natal (Wood, No. 193).

Ag. (Hypholoma) capnolepis. *K.*
Pi lens **earn**osus, hemisphærico expansus, alutaceus, strato sub-**tili fibrilli**so, fumoso vestitus, et hoc arcolatim disrumpente, squa-**mulosus;** stipes soli**ins, elon**gatus ; æqualis, basi bulbosus, fibrillis **striatus,** palliJus; laiuell.e adnatæ, ventricosæ, latissimæ, confertæ (in siccis) **faliginfi**æ.
' **P.** Natal (**Wood,** No. 3**37).**

Piletia 2-3 un**s. latin**, stipes fere spit**tiamacei**s (5-7 unc.) 2 lin. erassus. Fungi!s nobilis a proximo *Ag. storea,* Fr., et aliis hujus gregis, **indumc**nto pilei et lamellis latissimis optime distinctus.

Ag. (Hypholoma) Candolleanus, ***I***Fr. Ep. 224.
Somerset E., ad pedem mont. Boschberg (MacOw., No. 1229).

Ag. (Psilocylje ?) taediosus, *Kalch.,* in "Grevillea" IX., p. 18.
Natal ad [nan*la (Wood, No. A. 393).

Ag. sarcocephalo, Fr. proximus, sed tei erior et stipite Laud rob I sto distinctus.

Ag. (Psilocybe) semilanceatus, *j*Fr. Ep. 231.
In solo pinqui m ont. Boschberg ;; inte] arbusta (MacOw.).

Ag. (Psilocybe) squalens, *Fr. Ep.* 226.
P. Natal (Wood, No. 383).

Ag. (Psilocybe) atzorufas, *Schæff. Fr. Ep.* 230.
P. Natal (Wood, No. 193). Somerset E. (MacOw., No. 1373), var. *Montanus,* Pers. Fr. Ep. I. c. (Wood, No. 182).

Ag. (Psilocybe) faemsecii, iv*rs. Fr. Epi.* 227.
In hortis. Somers. E. (MacOw., No. 1006, *b.* 1368, 1372).
In **gmauno**sis stercoratis ad fluv. Klyn Visch River (No. 1323).
Sincere fatendum distinctionem fungorum siccatoru**tu hnju**s gre-**gi**s difficillimam esse nec indubiam !

Ag. rPsilocybe) udus, *Fr. Ep.* 228.
In inundatis, arenosis ad Visch
(MacOw., No. 1366, 1367 Jlav. Klvi River.

Fr. Ep. 228.

Ag. (Psilocybe) ezicaeus, *P. 1*

Fr. Ep. 2

Ag. (Psathyra) corrugis, *Pert.* J|.
P' granulato-rrente (atomato) fragili, er exsiccationem, cinereo-brunneo." **Ma**cOwan, in Sched.
In hum**tdis, un**brosis, arenosis ripis flumin. Klyn Visch River, **inter frutic**es (MacOw., No. 1322 e**i 13(J1).**

Ag. (Psathyxa) spadiceo-gxiseus, *Schceff. Fi\ Ep,* 233.

« Fragilis, udus, pileo campanulato, demum applanato, fisso, brunneo (MacOwan, in Sched.).

In ligno putrido. Somerset East (MacOw., No. 1306).

P. Natal (Wood, No. 323, 336).

Ag. (Panaeolus) sepaxatus, *Linn. Fr. Ep.* 234.

In vetusto stercore silvarum, montis Boschberg. (MacOw., No. 1007).

Ag. (Panaeolus) papilionaceus, *Fr. Ep.* 236.

In fimo. P. Natal, Inanda (Wood, Nos. **379,** 385).

Ag. (Panaeolus) campanulatus, *Linn. Fr. Ep.* 236.

In terra stercorata, ad rnontem Boschberg, inter frutices (MacOw., No. 1012).

Ag. (Panaeolus) fimicola, *Fr. Ep.* 237.

Somerset East (MacOw., Nos. 1089, 1183).

Ag. (Psathyxella) gxacilis, *Fr.*

In pinquibus, ad Somers. E. (MacOw., Nos. 1202, 1379).

Ag. (Psathyxella) disseminatus, *Pers. Fr. Ep.* **244.**

P. Natal. In pascuis humosis (J. M. Wood, Nos. 102, 400).

An *Ag. subtilis ? ob stationem* ?

Ag. (Psathyrella).

In solo liumoso, locis apertis silvarum. Somerset E. (MacOw., Nos. 1373, 1376).

P. Natal (Wood, No. 382).

Copxinus punctatus, *K. et Cke.,* in " Grevillea-" ix., p. 18.

Natal, leg. (Wood, No. 415).

Copxinus ovatus, *Fr. Ep.* 242.

In arena humida, **post inundationem** fluvii, Klyn **Visch** River (MacOwan, No. 1046).

Copxinus micaceus. *Fr. Ep.* 247.

Ad Bazuja Caffrarise (Rev. Baur).

Copxinus txuncoxum. *Frl **Ep.*** 248.

Ad truncos emortuos, juxta ripas fluminis, Klyn Visch River, pr. Somerset East (MacOw., No. 1214). P. Natal (Wood, No. 333).

Copxinus cinexeus, *Sclicvff. Fr, Kp.* 24(3.

In fimo vaccino, Somerset E. (MacOw., 1214 pr. p.).

Copxinus cuxtus. *K. et M. O.*

E minimis, gregarius, fragilis. Pileo conico-campanulato, 5-15 mm. alto, striatulo, primnm-snb lente-rubiginoso-furfuraceo, dein pulverulento, albido-griseo; stipite fistuloso, glabro, in majoribus 15 mm., in atris 3-5 mm. alto, albo, lamellae egriseo-nigrae, acie albicantes.

In solo humoso et fimo yetnsto, inter frutices, ad pedem mont. Boschberg (MacOw., No. 1014).

Copxinus xadiatus, *Desm. Fr.Ep.2hl.*

Somerset East, in fimo(M.Ow.).

Coprinus plicatilis, *Curt. Fr, Ep.252.*

Soraers. E. **(Mac.Ow.** No. 1375). P. Natal (Wood No. 867).

Ag. <Cop*inus) ephemeras, *Bull. Fr. Ep.* **252.**

In velusto stercore ad fiuv. Klyn Visch River (M.Ow. No. 1375). Berkl. Fung. Uitenhage, No. 12.

Bjlbitius Boltoni. *Fr. E}*>. 254.

Affinibus robustior, piieo dnaa uncias et ultra lato, sulmicm-branaceo, margine, dense striato ; stipite sequali, basi inodo incrae-sato, G-IO cent, alto 4-5 mm. crasso, sicci! ate ex imie striato ; lamellis fermgin eis.

In fimcto antiquo, prope Somere. E.(MacOw. No. 1242).

Lamella rum colore a typo tantisper recedit.

Bolbitius fragilia, *Linn. Fr. Ep.* 254.

Somerset East (M.Ow.).

Bolbitius buIbiUoaus. *Fr. Eym. cur.* 334.

Somerset East (MacOw.).

Bolbitius laitraBfoxmiR, *Sarv.* Berkl. Fnng Dccatl in Hook, Lond. Journ, iii., 1877-

In vetusto stercose, fore in humiim mutato in apricis grauiinosis silvarum varo.

Somerset East (MacOw., No. 1002).

Paxillus panuoides. *Fr.*

Afr. Austral leg. H.Owau.

Hygrophorus virglneus, *Jacq. Fr. Ep,* **327-**

Somerset E. (M.Ow., No. 1364.)

Hygrophorus atro-coccineus. *K.*

Pilous convex us **depr , lam ell decurrentibne obscnrioribas.**

P. Natal (Wood No. **364).**

Habitus H. co**ccinei, aut H. miniati.**

Hygrophoxus **discolor.** *K, etM.i*

Pileusmembranacens,fragiMs,(convexus, umbonatus, >1 dipressus, rubro-anrantiacos; stipi s cylind fistulosns, albns ; lamollw rot andato-Hberae, snbdiatantes, latoe, ventrii osæ, albæ, hinc inde lutescentes.

In-campis, propo Somerset East (MacOw.j 1231).

Habitus Hygr, conici, sed hoc minor, hand conicus. Siccus atrocinereus potius quam niger, nec nitens!

Jantharellns foliolum, *K.*

Pileua meml ranaceus, e resupinato reflexus, suborbicu**ilarie**, gl fltl er, albidus, siccitate pallide ochraceus vt'i *nv* escens, stipitello, exce ntrico vel sublaterati, evanescente ; lamellæ obtusæ, paucæ (4-5) vagæ, maxime distantes, venosæ, reticulatim conjunctæ.

In ramentis siccis, ad Somers. E. (MacOw).

Siccatus, colore et venis parum prominentibus, creberrime anastomosantibus folium aridum haud male refert. Cum Canth. retir ago Fr.inquibu sdam congruit ; at lignatilis est, et nihil cinerei labct.

MarasmiuB Oreadoides, *Passer. F?\ Hym. cur.* 467.

In graminosis mont. Boschberg (MacO.).

Mar. Oreadi oinnino similis, sed minor, et ob stipitem basi *I*-.rcemorsum, albovillosum hue pptissimum referendus.

HHarasmius splachnoides.

Somerset East (MacOw.

Maxasmius xotula. ***Fr. Ep.*** 385.

In foliis putridis (MacOw.).

IVIaiasmius filaris. *K.etM.Ow.*

Pileo membranaceo, conico-campanulato uinbilicato papillato, 3-4 mm. lato, fuscescente, snlcato ; stipite institio, filiform!, pro ratione altisimo (6-7 cent.) e flocculoso glabrato, pileo obsbscuriore rufo-fusco, apice pallido ; lamellis adnatis, distantibus, angustis, albis.

In foliis putridis, ad radices fruticum, montis Boscliberg (MacOw., No. 1100). ^

Circa papillam apicalem depressus et saepe insupor annulo nm-minente ornatus.

Maiasmius sacchaiinus. *Fr. Ep.* 380.

In fol. putridis (MacOw.).

Lentinus Lecomtei. *Fr. Ep.* 36^.

A descriptione I.e. differt stipite valde excentrica, brevi, coloreque subochraceo potius quam cervino; sed Berkeley monet, se Lent. Lecomtei ex Hungaria habere ; bungaricus vero fungus de quo sermo esse potest, nil alind est -quam multum ille vexatus Panus rudis 8cer.= Panus Hoifmanni Fr. in litt.= Ag. Sainsonii Lev. (non Pan. rudis Quelet champ, de Jura tab. 17, fig 1) quern ad Lentinos pertinere jam pridem suspicabamur. Hie vero cum fungo Africano exacte congruit. Idem etiarn in Rossia obvius est.

Xientinus Zeyhezi. *Bevhl, Uitenh., No.* 13. *(sub.* **I*, capronato.** ***Fr. Ep.*** 389.)

Inligno mucido humi jacenti in silvis Boschberg (MacOw., No. 1078). P. Natal (Wood, 97).

A Berkeleyo I.e. optime descriptus ! Pileus saturate castaneo-brunneus, fasciculato strigosus, squamosus vel fere nudus (== L. hemipsilus Kalchbr. olim.). Hand rarus videtur.

Lentinus fastuosus. ***K. et 31. Ow.***

Pileo coriaceo, late infundibutiformi vel urceolata, margine involuto, velutino-villoso setulosoque, saturate fusco-purpureo, stipite solido, lento, gracili, villoso, subconcolore ; lamellae decurrentes, angustie, sub-confertae, acie integrae, basi et ad mar-ginem anastomosantes, purpurascentes.

In ligno fabrifacto udo, sub tegmine stramineo casulas cujusdam pr. Somers. E. (MacOw., No. 1333).

Pileus 4-7 cents, latus, stipes 6-9 cent, longus 4-5 mm. crassus, sursum incrassatus. Yilli vel polius seta3 molles, **baud** inordinate strigosaa vel fasciculate sed strictre, comtaj, *nitidulce.*

tenUnus Murray!. *Ket. M.Ow.*

E Cornucopioideis.—Pileo carnoso-coriaceo, tenui, primum fragili demum rigido, profunde infundibuliforaii, margine inflexo, subobliquo, hevi, glabro, dilute cervino, infundo fere umbrino; stipite solido, breyissimo, subajqnali, nudo; lamellae in conum inversum longe decurrentes, sublineares, vix anastomosantef, acie integras, pollidae, siccitate rnfescentes. Garo alba, Odor subanisatus.

C. B. Sp. ad., East London, leg. A. E. Murray (M.Ow., Nc. 1297).

Pileus 8-14 cent, latus; stipes 1-1| cent, longus 5 mm. crassus. Lentino SajorCaju = Fr. Ep. *I*93, pro»ximu8 ; differt tamen pileo haud striato, aut fisso et vere infimdibuliformi, nee modo umbilicatc

Lentinus miseirculus. ***I'.***

Pusillus, pileo coriaceo, rigido, corvexo vel leviter modo umbilieato, concentrice rogoso tuberculatove, margine crenatt- plicato, glabro, ferrugineo; stipite curto, tenui,: subesc ente, sal- concolori; lamellis adnatis, ventricosis, acie subserratis pallid is.

Somerset East (MacOw.), No. 1296.

Pileus 1 cent, latua, stipes -|-1lcent. long1is, vix 2 mm. crassuE. Nnnnunqnam testudineo-squamosus.

Lentinus Woodii. ***Kalchbr.***

Pileo cori:iceo-lento, snbexcentrico vol i prorsus laterali,irn gulari, lobato, leviter striolato, glabro, albo-flavei. te ; stipite solido, curto, deorsum incrassato, nudo, subtoruloso ; lamellis longisisime decur- rentibus, confertis, augustis, strictis, acie integris, concoloribus.

P. Natal. Inanda (Wood, No. 118).

Proximus L. flori Meyer (Fr. *E*\ . 393), se ! stipes non villosvis neo lamella? nndolatae,

Lentinus hyracinus. A".

Pileus earnoso-L ntus, sessilis, semiorbicularis, basi angustatu*, 2 ce nt. longus latusque, la1 vis, ; ostice rugulosus, subtomentosus, antice glaber, umbrinus; lamella1 adnatæ, confertæ, angustæ, dentatte, cr uastooj eberrime a osantes, pileo pallidiores.

tmerset East (. MacOw ,).

Inter Lent, ursimuu F. et L. i castoreum F. medius, a priore lamellis angnstiSj dentati s, nec laceris, a posteriore pileo liav id elongato, vel margine involute distinct' is.

Xerotus caffiorum. *Ket M.Ow.*

Pileus menabram iceo-coriaceus, integer, convexus, late umbilicatns^ radiatim rugosus, glaber, alutaceus; stipes farctus, subæq nalis, concolor; lamellæ adnato-decurrentes, distantes, crassæ, obt *i*\&&, ramosae, ii mixtis paucis brevioribus, pallidæ.

In densis silvis, sub frutic ibus mont. Boschberg (Mac.Ow., No. 1218, 1132, 1186). P. Natal, No. 371.

Ilena 2-4 cent. latus., stipes 4-9 cent. longus, 2-5 mm. crassus. —Sohtarins et sub. cæspitosus.

Schizophyllum commune. *Fr. Ep.* 403.

Somerset hast, ad truncuin KL ois villosæ (MacOw.).

Schizophyllum flabellaxe. ***Fr. Ep.*** 403.
P. Natal (J. M. Wood, No. 93) .

{Lnthracophyllum *de Cesat n.g. (Mycetum in itinere Borneensi a cl. JBeccari lectorun Etiumeratio. Neapol.,* 1879.)

Genus Marasmus affine, hymenio extus iutusque nigrescente, lamellis arescentibus, exsiccatione immutatis et ipso cultro duris, corneis (Cesat. I.e.). Genus hocce (= Plagiotus Kalch in Sched.) hoc ternpore unicam niodo speciem complectitur, quam eel. E. Fries ad Panum, cet. Leveille ad Xerotum relegavit, inter quos ob sporas nigras habitum que alienum non sine difficultate intruditur.

Anthiacophyllum nigrita, *Lev. K. Panus melanophyllus, Fr.* Natal, p. 6. *Xerotus nigrita. Lev. Anthriwphyllum Beccarianum* de Cesat, I.e.*

Pileo tenui, tenaci, subsessili, orbiculari vel sublobato, radiatim sulcato, alataceo-rufescente; stipitello brevissimo, evanescente; lamellis firmis, strictis simplicibus et furcatis, distantibus fuligineo-nigricantibus. Spor^e minima, globosas nigras.

P. Natal (Wood, No. 198).

Pileus 2-4 cent, latus, sulcis parallelis, ad modam Schizophylli in lobos radiantibus ornatus.

Tilotus lenzitifoxxnis. *K. (provisj.*

Stet liic,—ut ulteriori attentioni commendetur, sub nomine hoc fungus maxime paradoxus, Lenzitein simulans, sed ab hoc tota structura diversissimus.—Pileus *fomentarius,* suborbicularis, basi dilatata adnatus, azonus, mollissime velutino tomentosus; lamellis latis, distantibus, simplieibas dimidiatisve, fuligineo-nigricantibus, *ceque ac])ilens tomentosis !* Sporce ?

P. Natal. (J. M. Wood, No. 94).

Pileus planiusculus, pollicaris, *cervinus una cum lamellis* (!) e fibris solidis, parce ramosis nodulosisque, contextus est. Procul dubio novi generis typus, sed-proh dolor unicum modo specimen adest et sporarum nullavestigia ! Ceterum cum Lenzite umbrina Fr. multa habet communia.

Lenzites Palisoti. *Fr. Ep.* 1 p. 404. *Sub varies, formis.*

In truncis, montis Boschberg leg.M.Ovy., ^1874 (No. 1066, 1065).

DR. LUDWIG RABENHORST died at Meissen, on the 24th April, in his 76th year. Although his original work was very small, he will be remembered for the excellent exsiccati that he issued, for " Hedwigia," which he established and conducted, and **for** the useful manuals he edited.

THE CEDAR APPLES OF THE UNITED STATES.*

The scattered memoirs and observations of Professor Fartow on United States Fungi, and the careful manner in **which** he is known to pursue his investigations, at once obtains attention and respect for his communications. As a philosophical and scientific mycologist, he holds a position **in** his own country in which he is without a rival, and in **Europe** he finds a ready and willing audience whenever he speaks. Under these circumstances we welcome his monograph on the " Gymnosporangia of the United States," whether or no we agree with his conclusions. It is, unfortunately, too much the habit in these days to seek for **the** *new* rather than the *true,* and it becomes quite a relief to turn to writings like the present, in which novelties are forgotten in a patient investigation in search of the truth. If we open any rccent Continental memoir, of only two or three pages, on a mycological subject, we find new theories, new genera, new combinations, new fancies, in nearly every paragraph, until we are driven to the conclusion that these authors can believe in nothing but that which is *new.* The " Lady Audley's Secret" and " Woman in White " type of science may have ardent admirers, as the originals have, but there still remain a few who have not " bowed the knee to Baal," and these **will** welcome the writings of Dr. Farlow.

The memoir before us commences with a history of the modern theory of alternation of generations as applied to the Uredineaa, in which it is remarked—" The views of De Bary and Tulasne were, as a general rule, accepted by all the leading mycolog-ists of the Continent, but wore not so readily received by those of Great Britain ;" and again, referring to the connection between Uredo and other final forms, &c, "but British botanists remain more or less sceptical on the subject." Undoubtedly this is the fact, not because we are insensible to evidence, or are unduly prejudiced, but because, on the one hand, we recognise how easy it is for the eye to see that which it wishes to see, and, on the **othi**r, because our temperament *do*s not lead us to catch up any new theory and try to shape facts into accordance with it, rather than judicially to balance facts, independently of theory. It may be true that evidence presents itself with **different** force to different minds. We have not accepted certain conclusions, because the evidencehas not presented itself to our mil; ds as conclusive. Take an example—that which is quoted by Professor Farlow is *Puccinia ip'aminis* - it will serve as wej as any other, by way oi illustration. It is contended that the sporidia do not grow except on the ltarberry, and thereon produce *Æcidium Berberidis* ; also that *i]lQ*

* "The Gymnosporangia, or Cedar Appleg of the United State.," by W. G. Farlow. "Anniversa Memoi n Society of Natural History," 1880; 4to., p. 38.

spores of ^*Ecidium Berberidis* germinate on grasses, producing rust (*Uredo),* and finally *Puccinia.* We must admit that in all grasses there is an undoubted tendency to produce the *Uredo* and *Puccinia,* although many miles distant from a barberry, or even in countries wl ve no barberry is known. Also, if any parasite at all is to be found on the living barberry, *it is sEcidium Berberidis.* Supposing that, experimentally, the *Puccinia* is sown on the barberry, and the result is the production of *JEcidium Berberidis,* what does this prove ? Absolutely nothing ! No one can possibly contend that it proves anything. Sow the spores of *Uredo Jilicum* on leaves of the gooseberry, and the result may be the production of *JEcidium Grossularice.* What is the inference ? Absolutely nothing ! In the one case, as in the other, the chain is broken. The toad spawn produces a newt or a lizard. It is *not* like producing like, and hence the evidence *must* be indisputable, and not problematical. There must be stronger evidence necessary to establish the fact of the development of an *JEcidium* from a *Uredo* spore than of an ^*Ecidium* from an *Jficidium* spore. In like manner there must be stronger evidence of a lizard being developed from the ova of a toad than from the ova of a lizard. Is there stronger evidence that the *Puccinia* sown on barberry really produces an *JEcidium* than would be required to prove that the *AZcidium* spores produced the *sEcidium* ? It cannot be forgotten, it must not be ignored, that the parasite of the barberry naturally is the very one which is said to be produced experimentally. We contend that it would have made its appearance even had not the *Puccinia* spores been sown ; that the supposed cause is not a true cause; that the true cause acted in opposition to the supposed cause. And what evidence is there to oppose to our allegation ? For the sake of argument (as it applies to all those cases in which one supposed condition of a Uredine is passed on plants of one genus, and the ultimate condition upon another), we have an undoubted right to demand—not that the theory should be assumed, but that the fact should be incontrovertibly established—that *Puccinia* spores sown on barberry produce *jEcidium Berberidis*; that *JScidium Berberidis* would *not* have been produced on that plant but for the sowing of the *Puccinia.* The same argument applies to the grasses and the *s&cidium* spores. Sow spores of the *JEcidium* upon young wheat, protect it from all other influences, and the result is the common *Uredo,* succeeded by *Puccinia.* This may well be the case, and yet the spores of the *sEcidium* may *not* have produced the *Uredo.* It is useless repeating the argument again. Every blade of wheat gives evidence of the presence of the *Uredo* without any sowing of *JEcidium ;* and why multiply causes ? If the sowing of the germs of one kind of parasite upon a host results in the production of another kind of parasite, and *not* the one sown, then the evidence must be produced in an unbroken chain, and must be positive, and not problematical, or the assumed cause cannot be accepted as a true cause. It is useless to call people

prejudiced or fools, because their minds are so constituted that they cannot believe contrary to evidence, or because they will not give up a belief, at command, without satisfactory evidence. It matters nothing to us which is the truth ; we hold to that which we conscientiously believe to be true until we are convinced of our error. If in our garden we sowed oats, and they persistently grew up and produced wheat, we do not think that we should be in haste to condemn any who dared to donbt our affirmation of such an extraordinary phenomenon, even if we had unusually strong evidence in our own support. Once, and for all, let us emphatically repudiate any insinuation that in these observations we have Dr. Farlow in view. We know each other better, and we have only taken advantage of this opportunity to justify our scepticism. It applies even move thoroughly to the *Gymnosporumjia* and *R'cestelia,* and sotmething of this Dr. Farlow must himself have felt when he wrote the last sentence of his memoir :—" If it should be shown that several of our *Jia'stelics* are perennial—a fact true with regard to most of our *Gymnosporangia*—and to grow in regions remote from species of *Juniperus* and *Cupressus*, then one could not help feeling that any connection between the two genera was probably accidental rather than genetic." We have all possible respect and esteem fur many of the men who have written their experiences on this subject. We have every belief in their integrity, that they fully believed every word that they have written ; and yet, with our own experience of the difficulties—the superlative difficulties—in experimental cultures, we are bound, to accept the possibility of their having been deceived.

It is by far the most pleasant part of our duty to revert to the monograph before us, and to give it our unqualified approbation, Would that a few more of the mycologists of the day could be induced to forego their species-mongering ami inordinate multiplication of synonomy—which is a burden and hindrance, and not a benefit—and devote themselves to work like this. Not a single species, and only one solitary name of a variety, has "*Farlow*" at the end of it. This is certainly not a consummation which would meet with the approval of our Continental friends. Here, perhapa, is. the valid and substantial reason why the "sensational" is preferred to the "true." Our sympathies are with the latter.

At page 12 is an observation which we most cordially endorse. It is to the following effect :—" In spite of the fact that in certain details *G. Ellisii* differs from the majority of the other species of *Gymnosporangium*, it seems to me that Korni ^o is not warranted in establishing a new genus *Hamaspora*, founded on two species—(?. *Ellisii*, growing on *Cupressus thyoides*, and *ihragmidiumh mgissimum* (Thüm), growing on *Rubus rigidus* at the Cape of Good Hope"-and so on to the end of the paragraph. certainly the two species are not eongeneric, and this would be £ S V ° a T " i e*aminin» *«? free of prejudice, ai with any natural afcmty, as distinguished from artificial analog/

Although not disposed entirely to concur in regarding *Phragmidium longissimum* as a good *Phragmidium,* we are prepared to contend for *Gymnospofangium Ellisii* as a *Gymnosporangium* with which the other has no natural relationship. Finally, we hope that Dr. Farlow will " go on and prosper " with the other and allied Fungi of the United States.

ILLUSTRATIONS OF BRITISH FUNGI.

The first part of this work contained 20 plates, in colours, principally of species in the subgenus *Amanita.* The second part, already issued, included 16 plates, principally of *Lepiota* and *Armillaria.* The third part, now being published, consists of *Lepiota* and part of *Tricholoma.,* The fourth part, now in preparation, is almost entirely of *Tricholoma.* It is expected that a fifth part, including some of *Tricholoma,* and a portion of *Clitocybe,* will be issued during the current year. This will represent about 84 plates, and the same number of species of *Ilymenomycetes.* An increased sale, of about fifty copies, per part, would warrant an accelerated issue of six parts per annum, which the present sale would not justify. It is hoped that British Mycologists will, in this manner, show their appreciation of the practical value of such a publication, the like of which has never before been attempted at so moderate a price.

" MYCOGRAPHIA."—Enquiries have been made from time to time whether this work is intended to be proceeded with, and when? It has certainly been our intention to go on with the second volume, for which the drawings are made, but we have hesitated to venture on such a serious pecuniary undertaking, inasmuch as nearly fifty of the original subscribers to the first volume are either dead, removed, or from some other reason have ceased to stand as subscribers to Volume II. This would reduce the number to fifty *less* than for Volume I., and even *that* was inadequate. We are willing to forego any pecuniary return for the labour and anriety of * preparing such a work, but do not feel, justified in being ou- of pocket in addition. As soon as we are put in possession of the names of fifty subscribers, so as to raise the number to a sufficient amount to cover the major expenses, we are quite ready to proceed with ^ and complete the second volume. When it is remembered that we have laboured for twelve years on mycological publications, and never yet realized the cost of production (leaving remuneration entirely out of the question), the course now adopted will be admitted as prudent and justifiable.—M, C, COOKE,

AUSTRALIAN FUNGI.

By M. C. **COOKK.**

An enumeration of the species hitherto recorded as occurring h Australia, Tasmania, Lord Howe's **Island,** &c.—exclusive of New Zealand—with figures of some of the species described by the lie*. 0. Kalchbreimer.

HYMENOMYCETES, **Fr.**

Ord. 1. AGAAICINI, **Fr.**

Gen. 1. AGARICCS, *Linn.*

Ag, (Amanita) Preissii, *Fr.* *PI. Preiss.p.* **131.**
West Australia.

Ag. (Amanita) ananaeceps. *Berk.* *Hook.* ***Jottm. vii>,p.*** 572.
Tasmania.

Ag. (Amanita) raginatus, *Bull. Fr. Hym.* ***Ew.,p,*** **27. *Cotike,*** *III* ust., *t.* 12.
N. S. Wales, **Queensland.**

Ag. (tepiota) piocexus, *Smp. Fr. Hym. Eur.f p.* 29, *CooJke, 111* ust. t. 21,
Tasmania. Victoria, N. S. Wales, Queenslai

Ag. (tepiota) aaieoziatiu, *Schff.* ***Fr. gym.*** *Eur.,p.* **SO. *Choke, Must.,* *t.* 23.**
W. Australia, Victoria, N. S. **Wales,** Queensland.

Ag. (Lepiota) clypeolaxius, *Bull. Fr. Hym. Eur., p. i* 12. *Cooke, Must,* ***t.*** 38.
Queensland.

Ag. (Lepiota) subclypeolaxius, *B. fy C. journ. Lint). Soe.,* x. p. 283.
Victoria.

Ag. (Lepiota) cxiatatus, *A. 4c 8.* ***Fr.*** *Ilym.* ***Eur.,p.*** **33.** Cooke, Illust. 3. ***t.*** **2**
Tasmania,

Ag, (Lepiota) lepidophoms, *Beri.* <f *Br. F<-* ngi Ceylon, >, 49^.
N. S. Wales.

Ag. (Lepiota) Ieontoderes, *Berk. & Br. Fun* gi Ceylon, p. 499.
Queensland.

Ag. (Lepiota) rhyparophorus, *Berk. $ Br. Fungi Ceylon, p.* 500.
N. 8. Wai es.

Ag. (Lepiota) granulosus, *Batsch. Fr.* ***hym,.*** *Eur., p.* 30 *Coote, lllutt.,t.* 18.
Queensland.

Ag. (Lepiota) mesomorphus, *Bull.* ***t.*** **606,/ 1. *Fr. II*** ym. Eur., p. 38.
ictona.

Ag v J L ? pi(>ta) aT * s traIius, *V. *Ft,* *Preits.p.* 13!.
W. Australia.

Ag. (Lepiota) Beckleri, *Berk. Linn. Journ. xiii. p.* 156.
N. S. Wales.

Ag. (Lepiota) bubalinus, *Berk. Linn. Journ. xiii.,* p. 156.
W. Australia.

Ag. (Lepiota) rhizobolus, *Berk. Hook. Joum.,* 1845, *p.* 42.
W. Australia.

Ag. (Lepiota) cheimonoceps, *Berk. & Curt. Cuban F*
Queensland.

Ag. (Lepiota) aspratus, *Berk. Hook. Journ.,* 1847, 1.
N. S. Wales, Queensland.

Ag. (Armillaria) melleus, *Vahl. Fr. Hym. Eur., p.* 44. *Cooke, Illust. t.* 32.
N. S. Wales.

Ag. (Armillaria) subannulatus, *Batsch. Camp., f.* 17. *Fr. Hym. Eur.,* p. 41., sub. *A. robustus.*
Victoria.

Ag. (Tricholoma) nudus, *Bull., t.* 439. *Fr. Hym. Eur., p.* 72.
W. Australia, Tasmania.

Ag. (Tricholoma) maculentus, *Berk. Hook. Journ.,* 1845, p. 48.
W. Australia.

Ag. (Tricholoma) gxossus, *Berk. Ft. Taim., ii.,* 212.
Tasmania.

Ag. (Clitocybe) gilvus, *Pers. Fr. Hym. Eur.,* 95. *Fl. Dan., t.* 1011.
W. Australia.

Ag. (Clitocybe) inversus, *Scop. Fr. Hym. Eur.,* 97. *Bull., t.* 553.
Victoria, Tasmania.

Ag. (Clitocybe) schizophyllus, *Berk. Fl. Tasm.* p. 242.
Tasmania.

Ag. (Clitocybe) curtipes, *Fr. Hym. Eur. p.* 81, *Fr. Icon., t.* 48, *f.* 5.
Tasmania.

Ag. (Clitocybe) laccatus, *Scop. Fr. Hym. Eur.,* 108. *Bull. t.* 570, *f.* 1.
Victoria, Tasmania.

Ag. (Collybia) radicatus, *Afzel. Grev. Fl. Scot., t.*
W. Australia, S. Australia, Tasmania.

Ag. (Collybia) radicatus, *Berk. Fl. Tasm. t.* 151.
N. S. Wales.

Ag. (Collybia) morulus, *Berk. Fl. Tasm. t.* 181, *f.* 1.
Tasmania.

Ag. (Collybia) laccatinus, *Berk. Linn. Journ. xv.,* 383.
Moreton Bay.

Ag. (Collybia) esculentus, *Wulf., in Jacq. Coll. ii., t.* 14, *f.* 1. *Fr. Hym. Eur.,* 121.
Victoria.

Ag. (Collybia) lepidopus, *Fr. Pl. Preiss, p.* 131.
W. Australia.

Ag. (Mycena) trachycephalus, *M. & Kalch. Grev. viii., p.* 151; (*Pl.* 142, *fig.* 1.)

Ag. (Mycena) tuberigena, *Berk. Linn. Journ. xiii., p.* 156. Victoria.

Ag. (Mycena) crinalis, *Berk.* W. Australia. »* *-», 1846, p. 44.

Ag. (Mycena) debilU, *Bull. t.* 518, *f. P. Fr. Hym. Eur., p.* 145. *Fr. Icon., t.* 82, *f.* 4. N. S. Wales.

Ag. (Mycena) corticola, *Schum. t Fr · ,,ym. Eur Icon.,* N. S. Wales. . «·/· ² - 1 3 2 > *

Ag. (Mycena) speireus, *Fr. Hym. Eur.,* 147. *Fr. Icon., t.* 78, *f.* 2. N. S. Wales.

Ag. (Mycena) capillaris, *Fr. Hym. Eur.,* 153. *Fr. Icon., t.* 84, *f.* 6. Victoria, Tasmania.

Ag. (Mycena) juncicola, *Fr. Hym. Eur.,* 154. *Fr. Icon., t.* 85, *f.* 6. Victoria.

Ag. (Mycena) cohsrens, j *& S. Fr. Hym. Eur.' '» Fr. Icon., t.* 80, *f.* 1. **Tasmania.**

Ag. (Mycena) gal MicuUtus, *Scop. Fr. Hym. Eur.,* 138. *Schæff. Icon., t.* 52. Tasmania.

AS. (Mycena) atrocyaneus, *BttUch— Cons t.* 8 7' * ^ " - *Eur.,* Tasmania. ?• W. '"

Ag. (Mycena) interruptus, *Berk. Fl. Tasm., t.* 151, *f.* 2. Tasmania.

Ag. (Mycena) silenus, *B. & Br., in Linn. Journ , xi., p.* 524. Queensland.

Ag. (Omphalia) scyphiformis, *Fr. Hym. Eur,* 159. *Fr. Icon., t.* 75, *f.* 3. Queensland.

Ag. (Omphalia) oniscus, *Fr. Hym. Eur.,* 158. *Fr. Icon., t.* 76, *f.* 3. Queensland.

Ag. (Omphalia) pyxidatus, *Bull., t.* 568, *f.* 2. *Fr. Hym. Eur., p.* 157. S. Australia.

Ag. (Omphalia) umbell f u *Linn. Fr. Hym. Eur.,* 160. *Fl. D n ,* 1015. W. **iustralk T** ' "" "' *• **-nuisnaiia, lasmania.**

Ag. (O- ... scripes, *Fr. Hym. Eur.,* 164. *Bull., t.* 560, *f.* 2. Victoria, N. S. Wales.

Ag. (Omphalia) fibula, *Bull., t.* 186 ; 550, *f.* 1. *Fr. Hym. Eur.* 164. W. Australia, S. Australia.

Ag. (Omphalia) hydrogrammus, *Fr. Hym. Eur.,* 154. *Fr. Icon.,* t. 71. N. S. Wales.

Ag. (Omphalia) pumilio, *Kalch. Grev. viii., p.* 151, (*Pl.* 142, *fig,* 2.) N. S. Wales.

Ag. (Omphalia) epichysium, *Pers. Ic. Pict., t.* 13, *f.* 1. *Fr. Hym. Eur., p.* 158. Tasmania.

Ag. (Omphalia) caxneo-xufulus, *Berk* Fl. Tasm., t.* 181, /. 3.
Tasmania.

Ag. (Omphalia) flavo-cxoceus, *Berk. Fl. Tasm. ii.,* 244.
Tasmania.

Ac (Omphalia) integxellus, *Pers. lc. et Desc, t.* 13, /. 1. *Fr. Hym. Eur., p.* 165. *Fr. Icon., t.* 75,/. 0.
Tasmania.

Ag. (Omphalia) gomphomoxphus. *Berk. Linn. Jourtu xviii.,* p. 383«
Queensland.

Ag. (Omphalia) Mullerianus, *Ber~k., in Herb, Berkeley,*
Gipps' Land.

Ag. (Omphalia) gracillimus, *Weinni. Ir. Hym. Ewr.,* 165. *JBr* Icon.j t.* 75, /. 6.
Victoria.

Ag. (Pleurotus) lampas, *Berk. Boole. Journ,f* 1845, *p-* 44.
Ag. Noctilvcus, Berk.
W*. Australia, Tasmania.

Ag. (Fleuxotus) candescens, *Mull. Linn. Journ. xiii., p.* 157.
Victoria.

Ag. (Pleurotus) illuminans, *Mull. Linn. Journ. xiii., p.* 157.
Victoria, N. IS. Wales, Queensland.

Ag. (Pleurotus) Gardneii, *Berlc. Hooh Journ.,* 1840,^;. 427.
Queensland.

Ag. (Pleurotus) coxticatus, *FT. Hym. Eur., p.* 166.
Queensland.

Ag. (Pleurotus) atrocaxruleus, *Fr. Hym. Eur.,* 179. *Saund. $ 8m,, t.* 6, *f.* 1.
W. Australia.

Ag. (Pleuxotus) applicatus, *Batsoh., Consj?., t.* 125. *Fr. Hym. Eur.* 180.
W. Australia, Tasmania, Queensland.

Ag. (Pleuxotus) scabxiusculus, *Berk. Linn. Journ. xiii.,* 157.
Victoria.

Ag. (Pleuxotus) eucalyptorum, *Fr. Fl, Preiss, p.* 131.
W. Australia.

Ag. (Pleuxotus) limpidus, *Fr. Hym. Eur.,p.* 177. *Fr. Icon.,t.88,f.z.*
N. S. Wales.

Ag. (Pleuxotus) caryophyllus, *Berlt. Linn. Journ. xiii.,* **157,**
N. S. Wales.

Ag. (Pleuxotus) Guilfoylei, *Berk. Linn. Journ. xiii.,* 158.
N. S. Wales, Queensland.

Ag. (Pleurotus) pexpusillus, *Fr. Hym. Eur.,* 181. *FL Dan., t.* 1295,/. 1.
W. Australia.

Ag. (Pleuxotus) sordulentus, *B. & Br. in Herb. Berkeley.*
Queensland.

Ag. (Pleuxotus) chioneus, *Pers. Myc. Eur. Hi.,* *, 26,/. 10,11. Fr. *Hym. Eur.,* p. 181.
W. Australia.

Ag. (Pleuxotus) lenticula, *Kalch. Grew viii.,p.* 151, *(PI. H2,fig.* 3).
Queensland.

Ag. (Pleuiotug) laeticolor, *K&kh. Grev. viii.,J>.* **151,** *(PI. H2.Jtg.* **4),** N. S. Wales.

As, (Pleurotus) luteo-aurantius, *Kalch. Grev. vii\.,p.* 151, *(PI.* 3 42, **N. S.** Wales.

Ag. (Pleurotus) imberbis, *Kalch. Q* *rev. viii-,p.* 152, **(Pi.** 142, *fig.* 6). **N. S. Wall**es.

Ag. (Pleurotus) abbreviates, ZalcA. (*rev. viii,, p.* 152, (PZ- **142,J** *ig.* 7). N. S. **Wa**les.

Ag. (Pleurotus) tephiophanus, Berfe P?. **ro«l. ii., 214.** Tasmania.

Ag. (Pleurotus) phosphoreus, *Berh Hook. Jouri.*, *vii., p.*572. **Tasmai**ia.

Ag. (Pleurotus) diversipes, Bert. *FL, Ta**sm. t.* 181, *f.* 4. Tasmania.

Ag. (Pleurotus) Tasmanicus, *Berk.* *Fl. Tasm. ii.,* **245.** Tasmania.

Ag. (Pleurotus) bursaeformis, *Berk. Fl. Ta**sm. ii.,* 245. **Tasmania.**

Ag. (Pleurotus) affixus, ***Berh*** *in Herb. Bethel*y. On *Eu**tptus amygdalina.* Tasmania,

Ag. (Pleurotus) Baileyi, *B. & Br. in Herb. Be**rk.*

(= *Ltntinus fulvo-atomatus,* B, & Br.)

Brisbane.

Ag, (Pleuxotus) semisupinus, *B. <t Br. Linn. Jaunt. x%.,* 529.

(= *Ag. nidulu*, B. & C.)

Brisbane.

Ag. (Pleurotus) Thozetii, *Berk.* *Linn. **Jotti**n. xviii* **., *p.*** 383. Queensland.

NOTE.—*Agaricvs palmatus.* Bull., t, 216, is transferred to *Crepidotus,* on account of the colour of the spon**s.**

Ag aricus hepatotrichu 8, Berk., is a species of *Lentinus.*

Agaricus arenicola, Berk,, is *Panus.*

Ag. (Volvaria) xanthocephaluss, *Berk. Hook. Journ.* (1845), *y.* 45. W. Australia.

Ag. (Volvaria) Taylori, *Bert. Outl. p.* HO. *Fr. lit/m. Eur.,* p. 18; *Saund. & Sm. t.* 33, *f.* 1. Tasmania.

Ag. (Pluteus) cerviuus, *Schvff. t.* If). *Fr. It**ym. Eur., p.* 185. Tasmania.

Ag. (Eutoloma) panniculus, *Berk. Fl. Tasm. t.* 181, *f.* 5. Tasmania.

Ag. (Nolanea) pascuus, *Pert., >n Schæff. t.* 22'. *Fr. Hym. Eur.,* ***ji. 2***06. Ta**s**mania.

Ag. (Acetabulaua) cycnopotamia, fl*erk. in Linn. Journ. xviii., p.* 389.

Ag. (Pholiota) præcox, *Pers. Fr. Hym. Eur. p.* 217 *Laiell. t.* 608. W. Australia.

Ag. (Pholiota) allantopus, *Berk. Hook. Journ.* (1845), *p.* 45.
W. Australia.

Ag. (Pholiota) pudicus, *Fr. Hym. Eur. p.* 218. *Bull. t.* 597, *f.* 2, *R.S.*
Victoria.

Ag. (Pholiota) pumilus, *Fr. Hym. Eur. p.* 226. *Fr. Icon. t.* 105, *f.* 4.
N.S. Wales.

Ag. (Pholiota) mutabilis, *Schæff. t.* 9. *Fr. Hym. Eur. p.* 225.
Tasmania.

Ag. (Pholiota) eriogenus, *Fr. Pl. Priess. p.* 132.
W. Australia.

Ag. (Pholiota) coagestus, *Kalch.* (*Pl.* 145, *f.*
Fascicolariit
magnitude (ia speoimjne ^ ws «"»<>«,«, campanulatus, pisi

Annnlus floccosus. Lame]}•» ,, , suM„rl„-accus, fuscosceas.
confertæ,

Australia, Daylesford.

Habitus. *Ag. squarrosi* (Müll.), sed hoc multe minor. Indumentum floccoso-furfuraceum facile detergitur.

Ag. (PholooU)effusuS| *Kalch.*
carnosus, subglobosus, obtusus, in arcotas
verr abiens, albus ; stipes concolor, solidus,
cylindricus sursum leviter attennatus lævis, basi in mycelium
membranaceum, latum effusus. Annulus mbranaceus, per-
sistens, albus luteo-ferrugineæ.
Kalchb. in litt

Australia, Dajlesford.

Ag.
. *Hym. Eur.* . 242, *Kalch. Hung.*
Queensland.

Ag. (Inocybe) lanuginosus, *Fr. Hym. Eur. p.* 227 (*nec. Bulliard*).
W. Australia.

Ag. (Inocybe) gomphodes, *Kalch. Grev*
N.S. Wales.

Ag. (Flammula) sapineus, *Fr. Hym. Eur. p.* 251.
N.S. Wales, Queensland.

Ag. (Flammula) penetrans, Hym. E
S. Australia, Victoria, N.S. ^ les.

Ag. (Flammula) picreus, *Fr. Hym. Eur. p.* 251.
Queensland.

Ag. (Flammula) flavidus, *Fr. Hym. Eur., p.* 248.
N.S. Wales.

Ag. (Flammula) peregrinus, *Fr. Pl. Preiss., p.* 132.
W. Australia.

Ag. (Naucoria) frusticola, *Berk. Linn. Journ. viii., p.* 158.
S. Australia.

Ag. (Naucoria) Drummondi, *Berk. Hook. Journ.* (1845), *p.* 46.
W. Australia.

Queensland. *Journ. Hi., p.* 128.

Ag. (Naucoxia) anguineus, ***Fr. Ey*** *m. Eur.,* **p. 255.**
Queensland.

Ag. (Naucoxia) nasutus, *Kaleh. Grew viiu,* 152, *(PI.* 142,/. 9).
N.S. Wales.

Ag. (Naucoxia) pediadea, *Fr.* ***Hym.*** *Eu,\, p.* 260.
Australia.

Ag. (Galera) tener, ***Schag. 1.10, f.*** **6-8.** ***Fr.*** *Hym, Eur.,* ***p.*** 267.
Victoria, Tasmania,

Ag. (Galera) hypnorum, *Bats, h. Consp. f.* 96. *Fr. Hym. Eu r.,p.* 270.
S. Australia.

Ag. (Galexa) conocephalua, ***Bull t.*** **563,/. I. Fr.** ***Spie.,*** 205.
N.6. Wai.

Ag. (Tubaxia) fuxfuxaceus, Pc/s. */ r. Hym. Eur., p.* 272.
Tasmania, Victoria.

Ag. (Tubaxia) inquilinua, *Pas,* ***I*** *r. Hym. Eur., p.* 274.
X.S. Wai.[38].

Ag. (Crepidotus) globigera, L' *erk. Linn. Journ. xiii., p.* 158.
Victoria.

Ag.|(Crepidotus) lepton, *Berk. Hook. Ju>.<* (•), *p.* 46.
W. Australia.

Aj. {Crepidotus) mollis, *Schæff. t.* 213. ***Fr. Hym.*** *Bur.,* ***p.*** **275.**
W. Australia, Victoria.

Ag. (Crepidotus) hepatochrous, ***Berk.*** *Hook. Journ* **vtt.,** 574.
Tasmania.

Ag. (Crepidotus) iriterceptus, *Berk.* ***Fl.*** *Tasm, 1.***181,** /. 6.
Tasmania.

Akg. (Crepidotus) auricula, *Berk. Fl. Tasm., p.* 246.
Tasmania.

Ag. (Crepidotus) insidiosus, *Bert.* ***Hool.*** *Journ. rii,t* 574. ***Fl.*** *Tasm. ii., p.* 246.
Tasmania.

Akg. (Crepidotus) cassiaecolox, *JJ erk. Fl. Tasm. ii., p.* 246.
Tasmania.

Ag. (Crepidotus) leptomorphus, */Berk. Fl. Tasm. ii., p,* 246.
Tasiuanta,

g. (Crepidotus) turbidulus, *Ber k. in Herb. Berkeley.*

g. (Cxepidotus) palmatus, B *ull. t.* 216. *Fr. Hym. Eur., p.* 275.

g. (Psalliota) campestris, */ inn. Fr. Hym. Eur., p.* **^79.**
tralia, Victoria, Tasmania, N.S. Wales, Queensland.

Ag. (Psalliota) axvensis,,S' *chæff. t.* 310-311. *Fr. Hym. Eur., p.* 278.
Tasmania.

Ag. (Psalliota) versipes, ***Berk*** **ot J5** *r. (?)*
ueensland.

AS. (Stxopharia) aemiglobatus *Batsch. f.* 110. *Fr. Hym. Eur., p.* 287.
W« Austral] *a, S. Austr*$_{u}$**U**$_{;t|}$ **Victoria,** Tasmania, N.S. Wales.

Ag. (Bypholoma) disperse, */r. Hym. Eur., p.* 292.
W, Australia, 8, Australia, Tasmania.

Ag. (Hypholoma) fasicularis, *Ii*udSk *Fr. Hym. Eur.*, *p.* 291. *Sow. t.* 225.
o. Australia, Tasmania.

Ag. (Psathyra) Sonderianu *un. Journ. wi*«., **169.**
S. Australia.

Ag. (Psilocybe) spadiceus, " *æff., t.* 60, /• 4.6. *Fr. Hym. Eur., p.* 302.
Tasmania.

Ag. (Psilocybe) ericæus, *Pers. Fr. Hym. Eur., p.* 298. *Fr. Pl. Preiss. p.* 132.
W. Australia.

Ag. (Psilocybe) atrorufus, *Schæff. t.* 234. *Fr. Hym. Eur., p.* 300. *Fr. Pl. Preiss, p.* 133.
W. Australia.

Ag. (Panæolus) papilionaceus, *Bull. t.* 561, *f.* 2. *Fr. Hym. Eur., p.* 311.
Victoria.

Ag. (Panæolus) phalænarum, *Bull. t.* 58. *Fr. Hym. Eur., p.* 310.
S. Australia.

Ag. (Panæolus) campanulatus, *Linn. Fr. Hym. Eur., p.* 311 *t.* 561, *f.*, 2 L.

Ag. (Psathyrella) trepidus, *Fr. Hym. Eur., p.* 314. *Pers. Myc. Eur. iii. t.* 29, *f.* 1.
S. Australia.

Ag. (Psathyrella) hiascens, *Fr. Hym. Eur.*, ?. 314. *Bull. t.* 552[1] /• ^, F.G.
Queensland.

Ag. (Psathyrella) disseminatus, *Pers. Syn.*, 403. *Fr. Hym. Eur., p.* 316.
W. Australia, Tasmania, Queensland.

BWTISH PALMELLACE-E.

It appears to us that *a* *n*, eliminary list **o f tbe** ∧ ∧ ∧ **o S** pores, **hitherto** recorded **for th* BriSh** Isles, wou for a more complete ami p *e*rfLt catalogu **0 Xt is **?*′ white** acknowledged amongst u th-we a de f **i ∧' Wld its** **Fresh** Water Algio **have** Len fomwl / Plo T ∧ 7 i ∧ nora » ∧ ∧ Wld Its since the time of HaSSl' wort i 6 ? 8 ? De8mids ftnd ∧ S ∧ ecie8 an imperfect one, but without **a fi**rst **f** T* 8t<*P will « ****&*** ff «e second. » we can scarce **hope.** ∧ **fan gi**

Chlorosphæra Oliv

Pleurococcus vulgaris, **21 ∧ ∧ B5I▷** , p. 25.
g. iii., p. 24.
Chlorococcus vulgare, Grev. Sc. Crypt. Fl., t. 262.
Protococcus vulgaris, Kutz. Hass. t. 81, f. 5.

Pleurococcus mucosus, *Rabh. Alg. iii.*, 26.
Hæmatococcus theriacus, Hass. t. 78, f. 9.

Glœocystis ampla, *Kutz. Rab. Alg. iii.*, 29.
Pleurococcus superba, Micr. Journ., 1866, p. 63.

Glceocystis adnata *(Una's,). Bab.* ***Alg. in.*****, 31.**
Berkeley's Gleanings, **t. xv., f. 2.**

Glteocystis vesiculosa, *Nag.* *Bab. Alg.* ***Hi.*****, 29,**
Requires **confirmation.**

Uiococcus Hookerianus, *Berk.* *Babh. Alg. Hi.*, **31.** *Hats*

Vxococcus insignis, *Has., t.* 80,/. G a. **b.,** under *IIa>matococcus.*
Rabh. Alg. iii., p. 81.

Vxococcus Allmanui, *Bass., t.* 80, /. 3., under *Htematococcus.*
Babh. Alg. iii., **p. 32,**

Vrococcus cryptophilus, *Hass.,t.* 80,/. **1., un**
Babh. Alg. iii., p.

Palmella mucosa. *Kutz. Bab. Alg. Hi*

Palmella Mooreana, *Harv.* *Rabh.* *M.*
Mooreah **. t. 78, f. 1. *a, b.***

Palmella hyalina, *Breb.* ***Babh.*** *Alg.* ***Hi., p.*** **33.** ***(6***
¥1., t. **247?)**

? Zoogloea teimo, Co/<«. *Babh, Alg,* **iii., 35.**

Tetxaspoia bullosa, JIJ. 7foJA, >l^. iii.,^. 38. *Eng.Bot., t. I*
Viva bv.ilo-

Tetraspora gelatlnosa, *Desr. Jtabh. Alg, iii,,* p.40.

Tetxaspoxa lutiica, *A* **, *p.* 41.** *Eng.* ***1*** **-407**
Ha ***f.*** **10.**

Tetxaspoxa flava, *llass.,t* **.** ***Babh.*** 42.

Botxyococcus Braunii, ^(^2, i/rtt//. A?j. tii, ***p*** ***t'n.,***

Apiocystis Brauniana, *Kay.* ***Ba*** *Alg. iii., 43. Fresen. Beitr.,* ***t.***
xi., f, Y-±vK Henfrey . Jlior. Junrn.,* 1856, *t. ie., f.* 20, *27.*

Khaphidium aciculaxe, *Brt* *hh. Alg.* ***Hi., p.*** **46.**

Ag. ***Ankislrodesm*** Arch. **(1861), t, ii. f. 44-56.**

^ ap hidium falcatum *(Gtrda).* ***Ba bh.*** **, 1** *g. iii., p. 45.*
lus, **Rail**

Ag. (Crepid h i d l u m d u p l e J t) ^ B f e
Tasmania.[1] **Ug.** iii., **p. 45.**

Ag. (Crepido **t** (**i, f. 17.**
Tasmania.

ihaerium **Ehxenbexgianum,** *Nag, Babh. Alg.* iii.,47. *Micr.*

Ag. (Cxepidotus igo6, p. 127,
mania. ,hiexium xenifoxme. *Buln.* ***BabA.*** *Alg.* iii., *p.* 47. ***Uier.***

S-(Cxepidotus ***j*** *o v rn.,* 1868, *p.* 65.
mn- **phaurium constxictum,** *Archer. Micr. Journ.,* 1866, ***p.*** 127.

g. {Psalliot-" *Micr.J,-.*
>. Atlst;} **xmospoxa xamosa,** 7V(H. **7^J.** *Alg. iii., p. 49. Harv. Phyc. Britt.,*
t. 213.

Hormospoxa txaasvexsalis, *Brfb.* ***1*** *Babh. Alg. iii., p. 49. Micr. Journ.,* 1867, *p.* 172. 1871, p. 98.

Hydxuxus Ducluzelii, *Ag.* *BuU . Alg.* iii., 50. EDIM. ^. 77, /. 3.

Hephxocytium Agatdhianum, *Nag, Babh. Alg.* iii., 52. *Micr. Jo.* ^ . ,
1866, *p.* **72.**

Oocaxdium cmataceum **(** *Hass.)*
^ ^ *ionema crustaceum,* Hass., **t, 05, L** 3.

Coamoeladium saxonicum, *BBary.* ***Babh, A*** *ly.* iii., 54. *Micr. Jour*
1867, *p.* 298.

Mischococcus confervicola, *Nag. Itabh. Alg** iii., 54.
Specimen from Rev. R. C. Douglas.

The Editor solicits well authenticated additions to tl*e foregoing list, with enumeration of localities.

MIMICRY IN FUNGI.

By THE EDITOR.

For thirty or forty years the term "mimicry" has been applied to certain resemblances in plants to those of other species often widely separated from them. It has been objected that the term implies a conscious imitation, of which plants are incapable, and hence another term, that of "homoplasy," has been proposed, but not generally adopted; therefore, with all its imperfections, we prefer to adhere to the one which is best known. We will not assume that the resemblances to which we wish to, call attention are other than remarkable coincidences, but even as such they are worthy of note. Although a number of instances have been indicated amongst flowering plants, very slight attention has been paid to these coincidences in cryptogams. Nevertheless, several instances have been adduced by Mr. Worthington Smith,* to which others may be added. These are chiefly confined to the Agaric family, and although some of them striking, they are scarcely so satisfactory as they would have been had the resembling plants been further removed from each other. Thus, one poisonous species, *Agaricus, Hebeloma, fastibilis,* greatly resembling in appearance the edible mushroom, *Agaricus, Psalliota, campestris,* came up in great numbers upon a mushroom bed, and might have caused a disastrous result, had not the fact been detected by an adept. Another instance was that of a mass of fungi which also made their appearance on a mushroom bed. At first sight these closely resembled the variety of an edible species which not unusually comes up in clusters on old beds. It has white spores, with a lobed and undulated white pileus *{Agaricu3} Clitocybe, dealbatus).* The imitating fungus had the same wavy cap, white colour, and fungoid odour, but the spores were pink, and its structural features were distinctly those of quite a different species *(Agaricus, Clitopilus, orcella).* In this instance both species were quite innocuous. Two wholly distinct but very similar fungi commonly grow together on wood ashes, or scorched places, where charcoal has been burnt; these are *Cantharellus carbonarius* and *Agaricus, Collybia, atratus.* In similar localities, and under like conditions, two other diverse fungi are ordinarily found growing together, *Agaricus, Flammula, carbonarius* and *Agaricus, Flammula, spumosus,* but these are very closely allied species. Similarly also the closely allied *Agaricus, Hypholoma, fascicularis* **and** *Agaricus, Hypholoma, capnoides,* or another pair, *Agaricus Flammula, alnicola,* **and** *Agaricus, Flammula, conissans,* are

* "Gardener's Chronicle," February 10, 1877.

Scarcely unexceptional instances, as compared with each other, but either of the first may be taken with either of the last pair, and the coincidence of colour, form, size, mode of growth, and even habitat, is complete. With any of these the recently described *Agarieus, Clitocyh, Sadleri*, with white spores, have a striking resemblance. So that here we have five yellow species found growing on wood, to which three or four others might be added, were they not so closely allied to those already named,* and an ordinary observer would regard all as the same species. There is, however, a small Agaric which is known to the majority of mycologists from its strong odour of stinking fish *{Agarieus cucumis).* It grows on the ground and upon fragments of dead wood, and has red-brown spores. Yet there ia an imitator in a small fungus with white spores found in just the same localities with the identical fishy odour. According to all authority and experience the difference in the colour of the spores is not a mere difference of species, but indicates quite a separate and distinct group of species.

Two other species, one having white spores *(Agaricus, CHtocybe, amrilis)* and the other pink spores *(Agaricus, Clitopilus, popinalis),* have very strong external resemblances, and yet they are often found growing together. And two very similar forms, each with an excentric stem, found growing on trunks, are so much alike in general aspect, that it is absolutely impossible to distinguish the one from the other, except by the colour of the spores, which, in one instance, are white *(Agaricus, Pleurotus, ostreatus),* and the other rosy *(Agaricus, Claudopus, euosmux).* They will grow together on the same tree, and in the same season of the year, whereas the white spored species is edible, and the pink spored one is said to be deadly.

We have also instance *Agarkus, Tricholoma, nudus, a* handsome violet species, which, when well grown, is scarce to be distinguished from *Cortinttrius violaceua,* except that, in the former, the spores are white, and in the latter rusty. Then also there are *Agaricus, Tricholoma, russxda,* and *Hygrophorus erubescens,* often so much alike that some mycologists contend that both are the same species. A similar remark applies also to *Agaricus, Mycena, balaninus* and *Marasmius erythropus.* In fact, we need not multiply instances, as every mycologist knows from experience that very nearly any of the species have their analogues in other sections from which, at a casual glance, it is difficult to distinguish them.

Taking a still wider range of comparison, the *Balanophoreæ,* a family of flowering plants, are in their parasitic habits, form, colouring, and odour, close imitators of fungi. And even if we confine ourselves to the Cryptogamia, we find amongst Algæ, in the species *Nostoc,* a great likeness to *Tremella* amongst fungi. And so again in Lichens, we have *Lecidea* scarcely distinguishable, except by experts, from *Patellaria,* a genus of fungi. And *Bæomyces* amongst Lichens resembles *Stilbum* in Fungi, as also the Graphikous Lichens are imitated by *Hysterium,* and *Platygrapha* in

* As *Ay. inopug, Ay, epixemtJma* and *Ag. elxodes.*

Stictia. Equally startling are the resemblances between widely separated groups of fungi, as particularly the curious Hypogæous *Gasteromycetes*, which in form, size, odour, habit, and all save fructification, imitate the Truffles (*Tuberacei*). *Podaxon* again, in appearance, resembles *Coprinus*; and *Hypolyssus* might be mistaken for an immature *Crucibulum*. *Verpa* has the form of a *Phallus*, but deficient in a volva. The largest species of *Wynnea* might almost be mistaken for a *Sparassis*, if the fruit were not examined. And *Clavaria* has its club-shaped form repeated in *Cordyceps* and *Geoglossum*, with its branched forms in *Lachnocladium*. The species of *Craterellus* are not unlike large *Pezizæ*, and the smaller forms of the latter genus are represented in *Cyphella*, where some correspond to *Hymenocypha*, others to *Mollisia*, and others to *Dasyscyphæ*.

We have not designed to do more than to suggest a subject for reflection, and not by any means to exhaust it. Neither shall we attempt to demonstrate the "why and wherefore" of such coincidences. For the present we are content to regard them simply as *coincidences*, although, in some cases, so striking that we are led to consider them not accidental, but that they have a cause, and that cause a mystery which we are at present unable to account for or explain.

GENETIC RELATIONS OF ALGÆ.

The Editor of the "Royal Microscopical Journal" has given* a resumé of P. Richter's suggestions†" as to the genetic connection of certain Unicellular Phycochromaceæ, which will be read with interest, in connection with our list of Palmellaceæ. "Whether various forms of unicellular algæ, hitherto considered distinct, and ranged under the genera *Glœocapsa*, *Chroococcus*, *Aphanocapsa*, *Glæothece*, and *Aphanothece*, are not really genetically connected, displaying a kind of polymorphism; a form with but slightly encysted cells (*Aphanocapsa*) intervening between one with encysted spherical (*Glæocapsa*) and one with encysted cylindrical cells (*Glæothece* and *Aphanothece*). A similar relationship has, in fact, already been suggested by Naegeli in his 'Einzelligen Algen.'"

The form previously described by the author under the name *Aphanothece caldariorum*, presents an intermediate form between that genus and *Glæothece*, and would appear to be completed in its cycle of development with two other forms named by A. Braun *Glæothece inconspicua* and *Aphanocapsa nebulosa*, being a mature condition of the first of these two. In the same way A. Braun's *Aphanocapsa biformis* may be shown to occur in three different forms.

The lowest form of the Phycochromaceæ is the naked *Aphanocapsa* condition, corresponding to *Palmella* among the Chlorophyllophyceæ. From this naked or only slightly encysted condition is

* "Journal of Royal Microscopical Society," 2nd ser., vol i. p. 291.
† "Hedwigia," 1880, pp. 169-171 and 191-6.

developed the *Glœocapsa* or *Glœocystis* form with several gelatinous envelopes; the *Chroococcus* type, when the investment is altogether wanting, or when there is only a single vesicular envelope, the cœnobium types. The *Glœocapsa* type is specially adapted for exposure to the air, and growth upon a comparatively dry substratum; the cœnobium type is developed in water; the *Chroococcus* type in water, or on a moist substratum in the air. With this is connected the cylindrical form, a higher stage, because it displays a differentiation in the direction of growth, and a development towards the filiform condition. This is not always developed, and may be distinguished into stable and unstable forms; the latter may occur in two or three varieties, and may go through the following successive conditions:—

1.—Stable *Aphanocapsa* and *Palmella*.

2.—*Aphanocapsa* and *Palmella* which have attained to *Glœocapsa*, *Glœocystis*, or cœnobium type, but which always revert to the naked solitary spherical form.

3.—Stable *Glœocapsa*, *Glœocystis*, *Chroococcus*, and cœnobium forms, without reversion (*Merismopedia*).

4.—Cylindrical forms, the generations of which pass through the solitary spherical (*Aphanocapsa* and *Palmella*) condition, as well as the *Glœocapsa* and similar forms.

5.—Cylindrical forms which pass through only the *Glœocapsa* and similar forms.

6.—Cylindrical forms, the generations of which revert to the *Aphanocapsa* and *Palmella* condition, while the *Glœocapsa* or any similar form is suppressed.

7.—Stable cylindrical forms (*Synecococcus*.)

No reference is made in the above to the passage of *Glœocapsa* into the encysted filiform conditions of *Sirosiphon* corresponding to *Palmodactylon* and *Hæmaspora* among the Chlorophyllophyceæ.

There is an undoubted feeling amongst Algologists in favour of some such relationship as that indicated by Richter, and any satisfactory demonstration of such genetic connection in the *Phycochromaceæ* and the *Chlorophyllophyceæ*, would obtain adhesion.

CRYPTOGAMIC LITERATURE.

WOLLNY, R. Die Meersalgen von Heligoland, in "Hedwigia" 1 and 2, 1881.

NYLANDER, W. Addenda nova ad Lichenographiam Europæam, "Flora," No. 1, 1881.

RICHTER, P. Form cycle of Glœocystis in "Amer. Mon. Micr. Journ.," Feb. 1881.

WINTER, Dr. G. Rabenhorst's Kryptogamen Flora, Pilze, Part 2.

SACCARDO, Dr. P. A. Bibliografia della Micologia Italiana, in "Michelia," No. 7.

SACCARDO, Dr. P. A. Fungi Veneti, part xii, in "Michelia," No. 7,

COBELLI, R. I funghi della Valle Lagarinai in "Michelia," No. 7.

NKOVILLE, G. Des Eanx de Paris, cssai di analyse micrc- jphiqne.

UHLWORM, Dr. Botanisclies Centralist, Nos. 7 to 20, 1881.

REHM, *Dr.* Ascomyc c. xii.

PHILLIPS, W. Helvellacei Britannici, fasc. *iv.*

THUMBS, F, de. Mycotheca Universalis, Cent. xix.

NORDSTBDT, 0. De algis nonmillis prawipuc Desmidieis, inter [arias, " Trans. Univ. Lund.," xvi.

NORDSTKDT, O. Chara fovas Zelandiae, " Trans, Univ. xvi.

, W. New British Lichens, in " Journ. Botany," April, 18

SPRUCE, R, Morphology of the leaf of Fisi In " Journ. jtany, ,1881.

JERKELEY, M. J., and BROOMK, C. E, Notices of British , in "Ann. Nat. If bruary, 1881.

. C. Illustrations of British Fungi, Part *2* and 3.

WARD, H. MARSHALL, Second Report on Coffee Leaf Disease.

, G. Remarks on Fungoid \>'

JUST, Dr. Botanisch.er Jsthresbericht for 1878, Part 2.

WRIGHT, Dr. E. P. On Blodgettia con fervo ides of Harvey, in "Trans. Roy. Irish Acad.," Vol. 28.

WRIGHT, Dr. E. P. On a New Genus and Species of Unicellular Alga; *(Si/kidion Dyeri),in* "Trans. Hoy. Ir. Acad.," 28.

ARESCHOHO, E. J, On *Pelagophycus,* in " Botaniska Notiscr," ?ril, 1881.

DT. Additamenta ad Algologiam Dacicam, in lagya. ytani Lapok " for 1880.

T2, G. AJgologiai aprosagok, in " Magyar Noventytani pok," for 1880.

MIEA, K. on *Pistillaria pusllia,* Fr., in " Magy. atvtani apok" for 1880.

TOMOSVARTT, O. 1 acoas iu Obserratas " Magyar Noventytani Lapok" for 18i

WIKTKR, (J. Einenei: tomyxa, in ** Botanischeu Ce Wattes," 1881.

ELLIS, J. B., and HAIIKNEWS, H. W. few;- ics of American Fungi, in " Bulletin Torrey Bot. Club," Mar., 1881.

ELLIS. J. B, Development of Sphasria Solidaginis, in " Bullet .T Bot. Club," Mar., 1881.

GERARD, *W.* R. Some Fungi f-om Now Mexico, iu *' Ballet Torrey Bot. Club," Mar., 18

MULLEU, Dr. J. Les Characees genevoiscs, in " Bulletin de la Soc. Bot, de Geneve," Feb., 1881.

-OK«, H. C. On some Desroids new to Britain, in " Jourr Quekett Micro, Club," March, 1881.

LIMBKICUT, G. Ueber *Oymnomitrivm adustum, m u* Pi ora,"

MULLER, Dr. J. Lichenologische Beitrage, in " Flora/' Feb. 21>Mar. 1, 1881.

ARNOLD, Dr, F. Liclienologische Fragmente, in " Flora," Mar. 11,21,1881.

BERKELEY, M. J. Australian Fungi, m " Journ. Lran. Society," April, 1881.

PHILLIPS, "W. Revision of Genus *VibriBSea*, in "Journ. Linn. Society," April, 1881.

WINTER, G. Fungi Helvetici Novi, in " Hedwigia," April, 1881.

PECK, C. H. TWO new species of Fungi, in " Bull. Torrey, Jot. Club," May, 1881.

ELLIS, J. B. and HARKNESS, H. W. New species of North American Fungi, in « Bull. Torr. Bot. Club," May, 1881.

RICHON, Dr., and PETIT, P. Plante Cryptogame des murs de jnac, in Brebissonia, Feb., 1881.

IIAARSCHMIDT,' J. Specimen Phycologise Aquatoriensis, in " Magyar Koveuytani Lapok," Feb., 1881.

BOLLE, G., and Tn F. Contribuzioni allo studio dei funghi del Litorale, in "Bollet. della Soc. Adriatica," Vol. vi, 1880.

THUEMEN, F. Symbols; ad floram mycologiam Austriacum, Pt. iv,in " (Estr. Bot.Zeit.,' 1880, No. 10.

BRAITHWAITE, Dr. R. Britisli MOSB Flora, Part iv, Fiss tacese.

FITZGERALD, C, and BOTTISI, A. Prodromo della briologia dei bacini del Serchio c dellaMagra, in " Nuovo. Giorn. Bot.Ital.," Ap., 1881.

MASSALONGO, G. Duai i novse e < jeunia(B Ayres), in " Nuovo Giorn. Botltal.," Ap., I

PICCONB, A. Septoria Castanea;, in " Ital.," Ap., 1881.

PASSERINI, G. Sulla Puccinia Lojkaiana, in "Nuovo. Giot Bot. Ital.," Ap., 18

PIIIOTTA, K, Delia *Peziza Fuck-* Nuovo. Giorn. Bot. Ital.," Ap., 1881.

WOLLB, F, ! v., in ' Bullet. Torrey. Bot 31ub," April, 1881.

MUELLER, F. V. Snpplementum xi, Fri orui tograpbise Austral lie, (

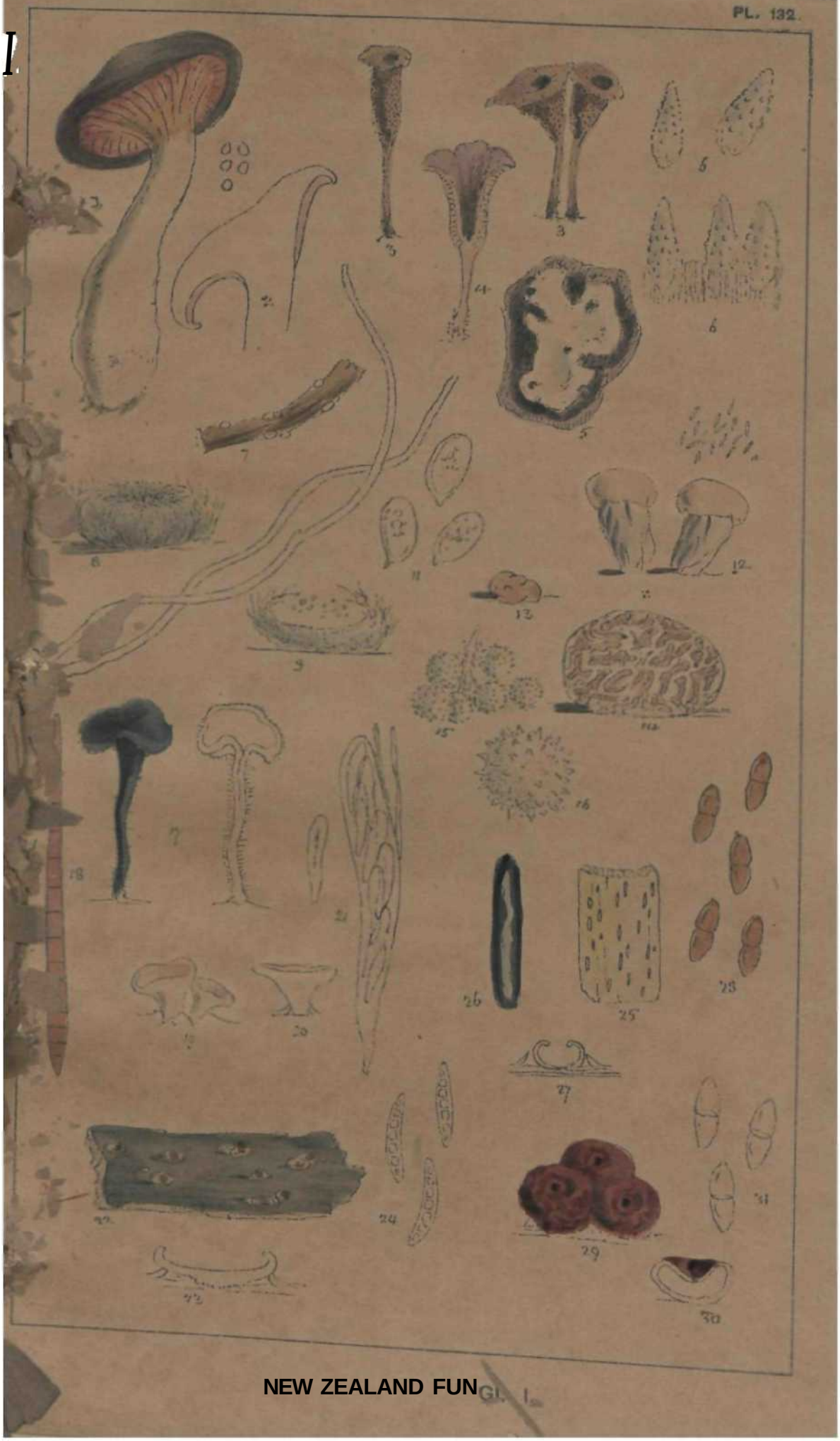
FAKLOW, W. G. Tli Inited States, in M<

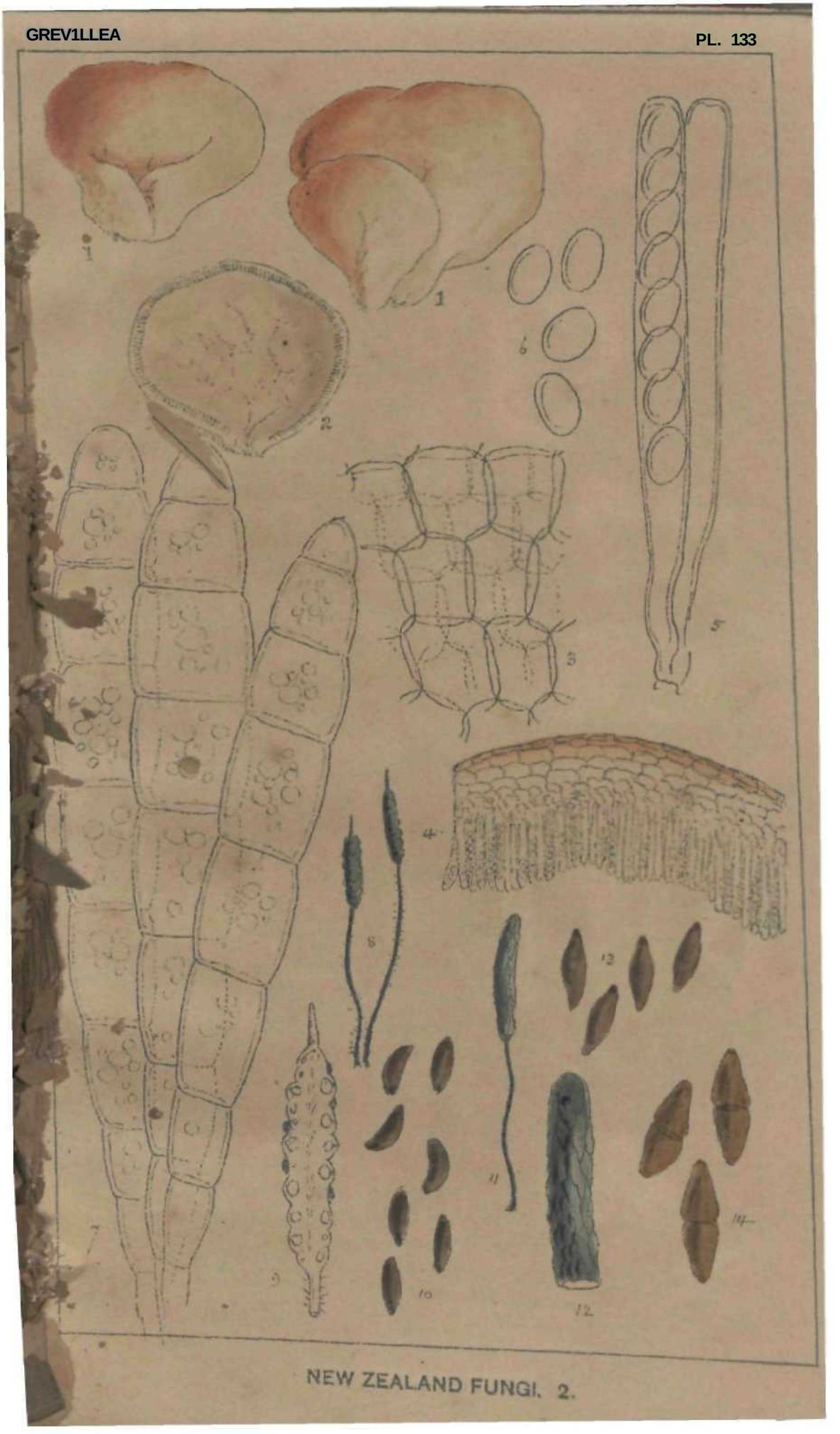
THEURY, J. Tli tus *PI* Re vi Uycologiquc," April, la

QUELET, Moi and FERIIT, Champignons observes dans in « Revne My< t, xv, xvi.

ica; C iv, xv.

LLE-KENT, X. iS or M a, in " Popular April, 1681.





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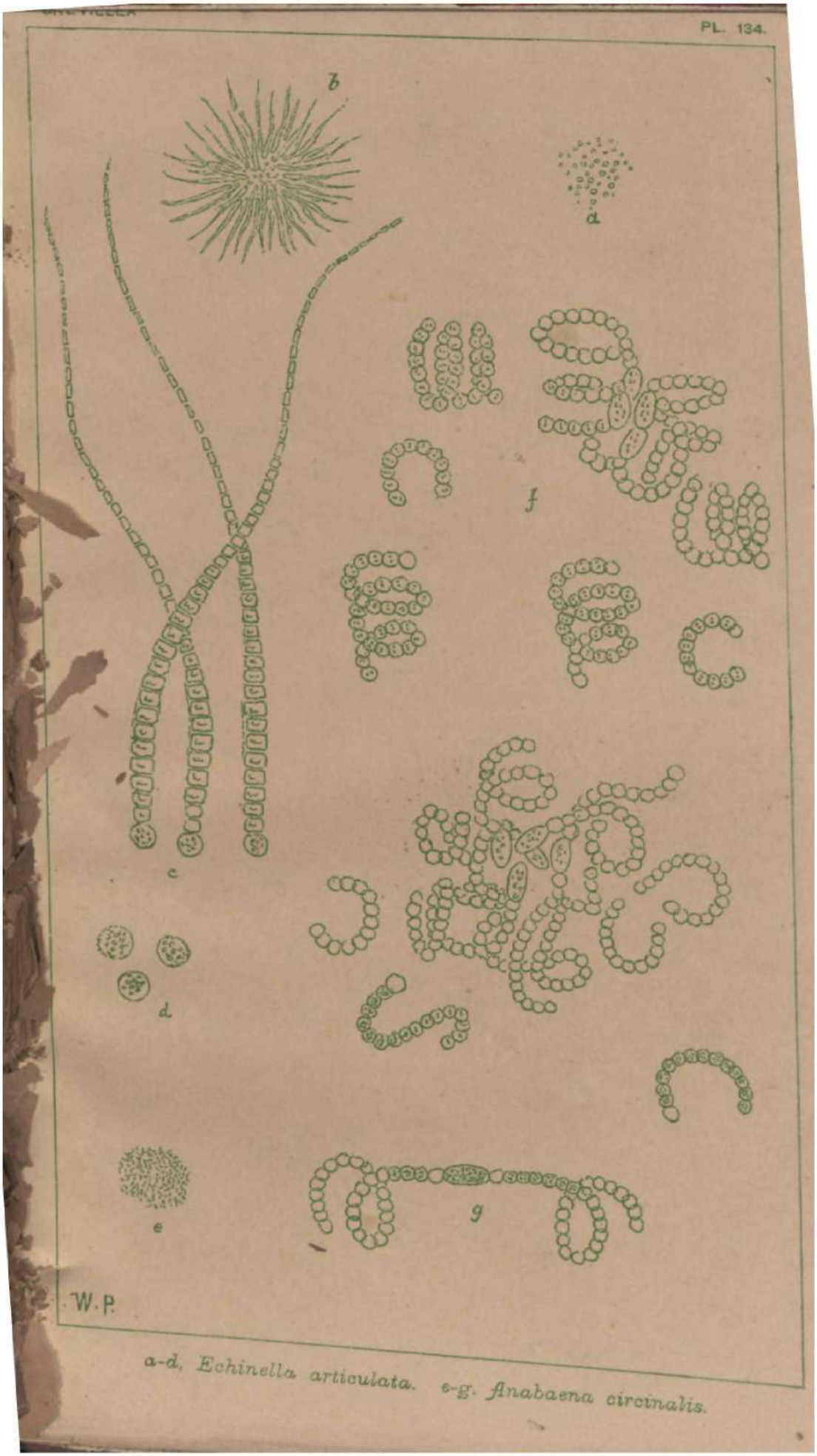
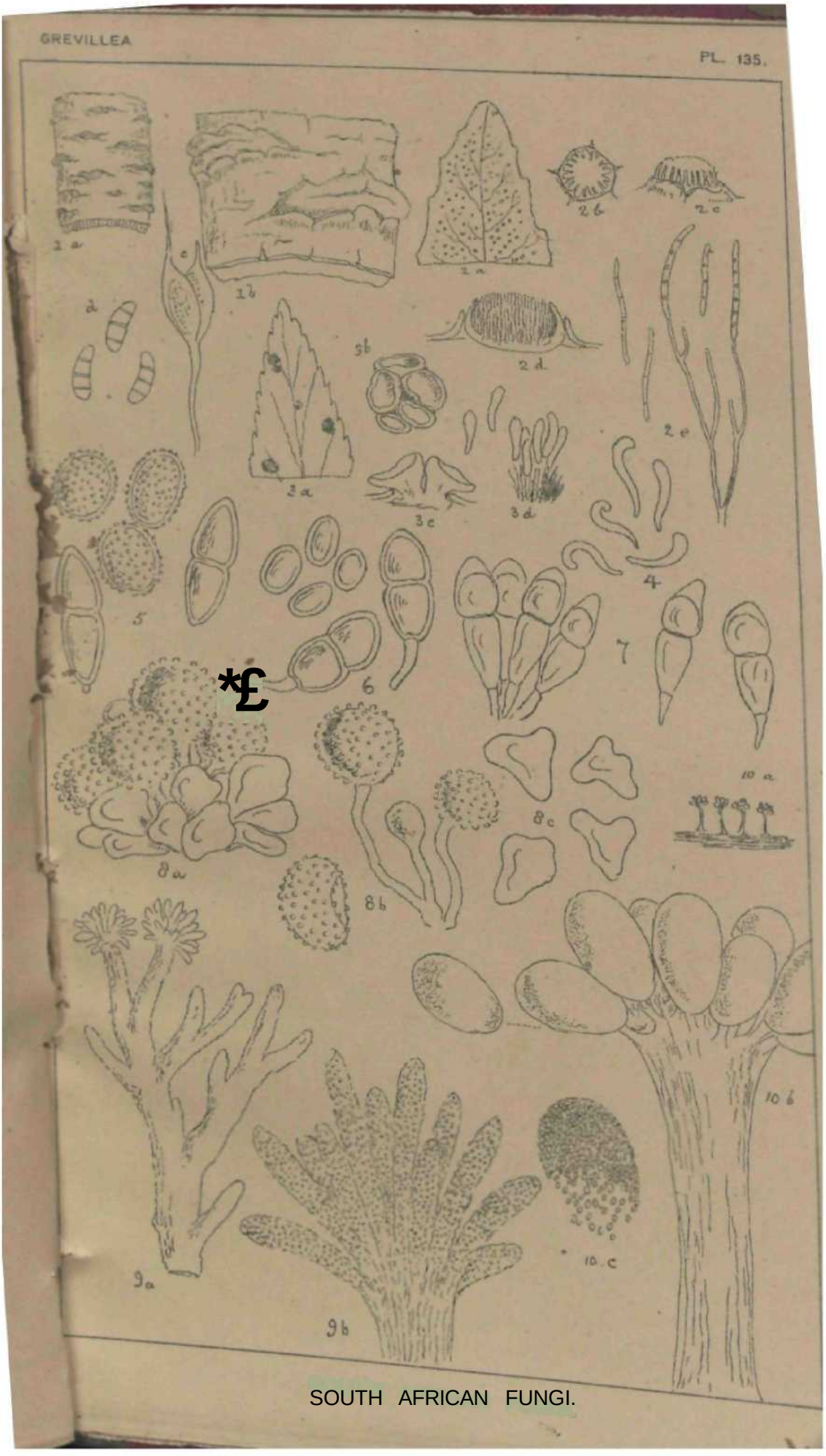


a-d. *Echinella articulata.* e-g. *Anabaena circinalis.*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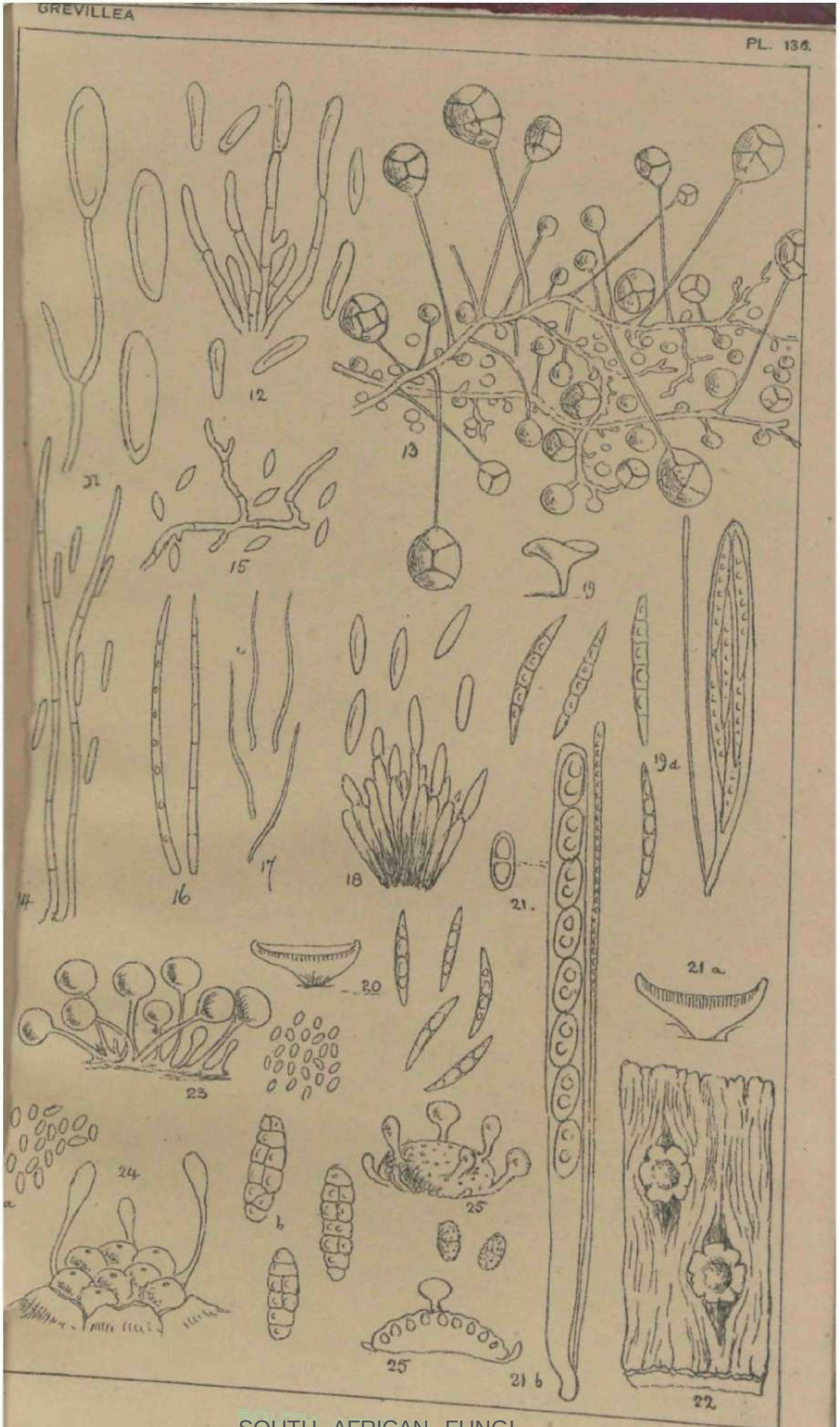
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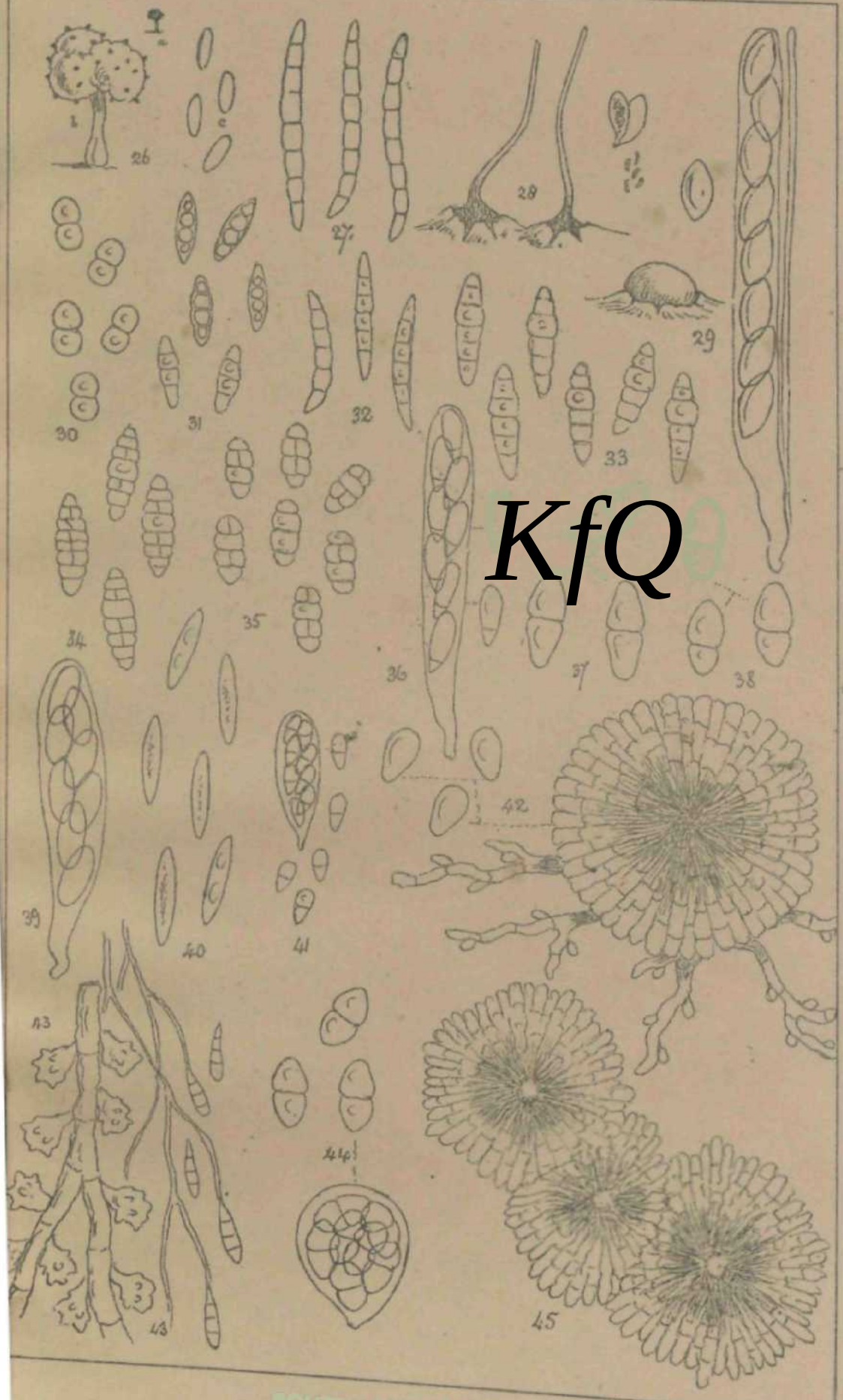

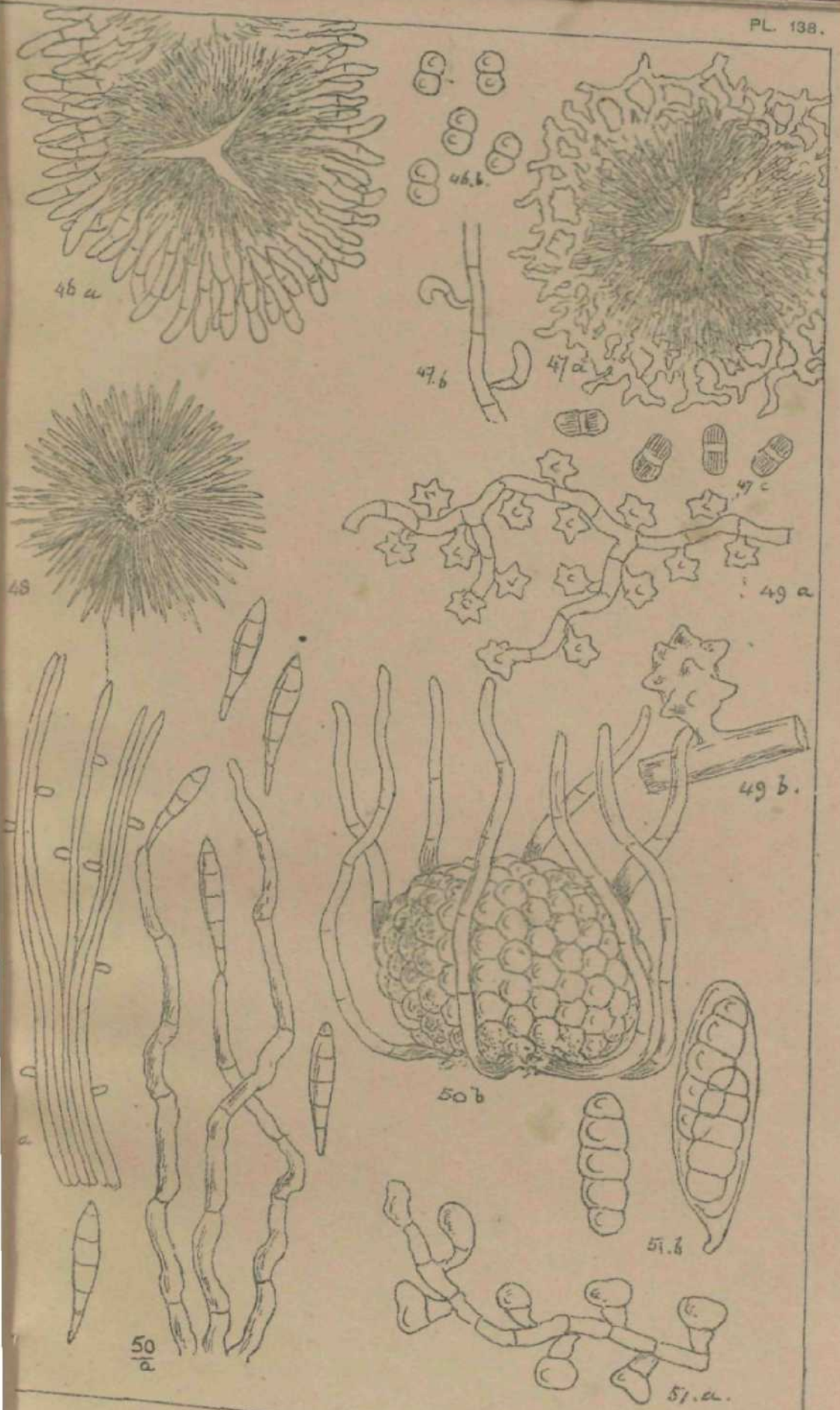

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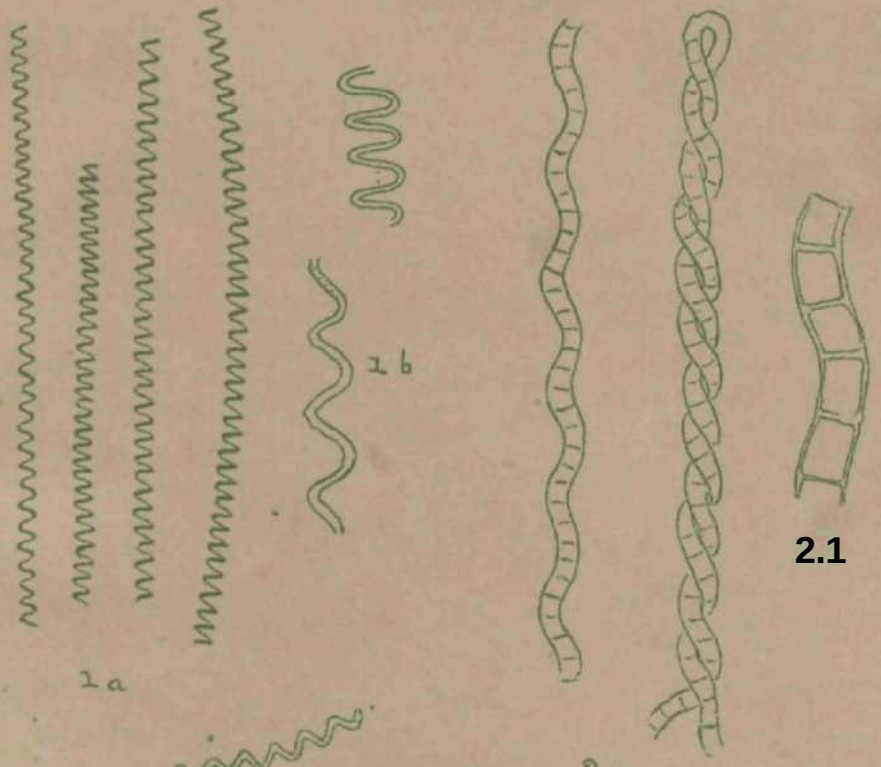
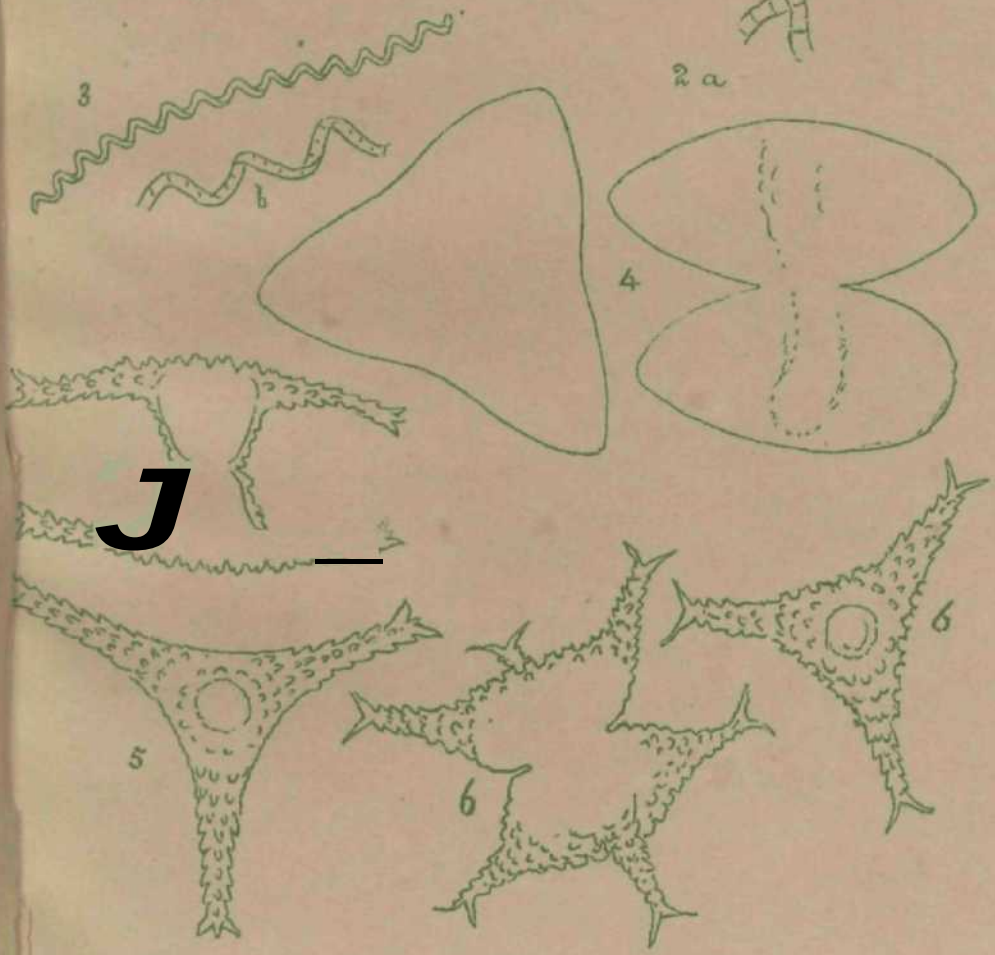
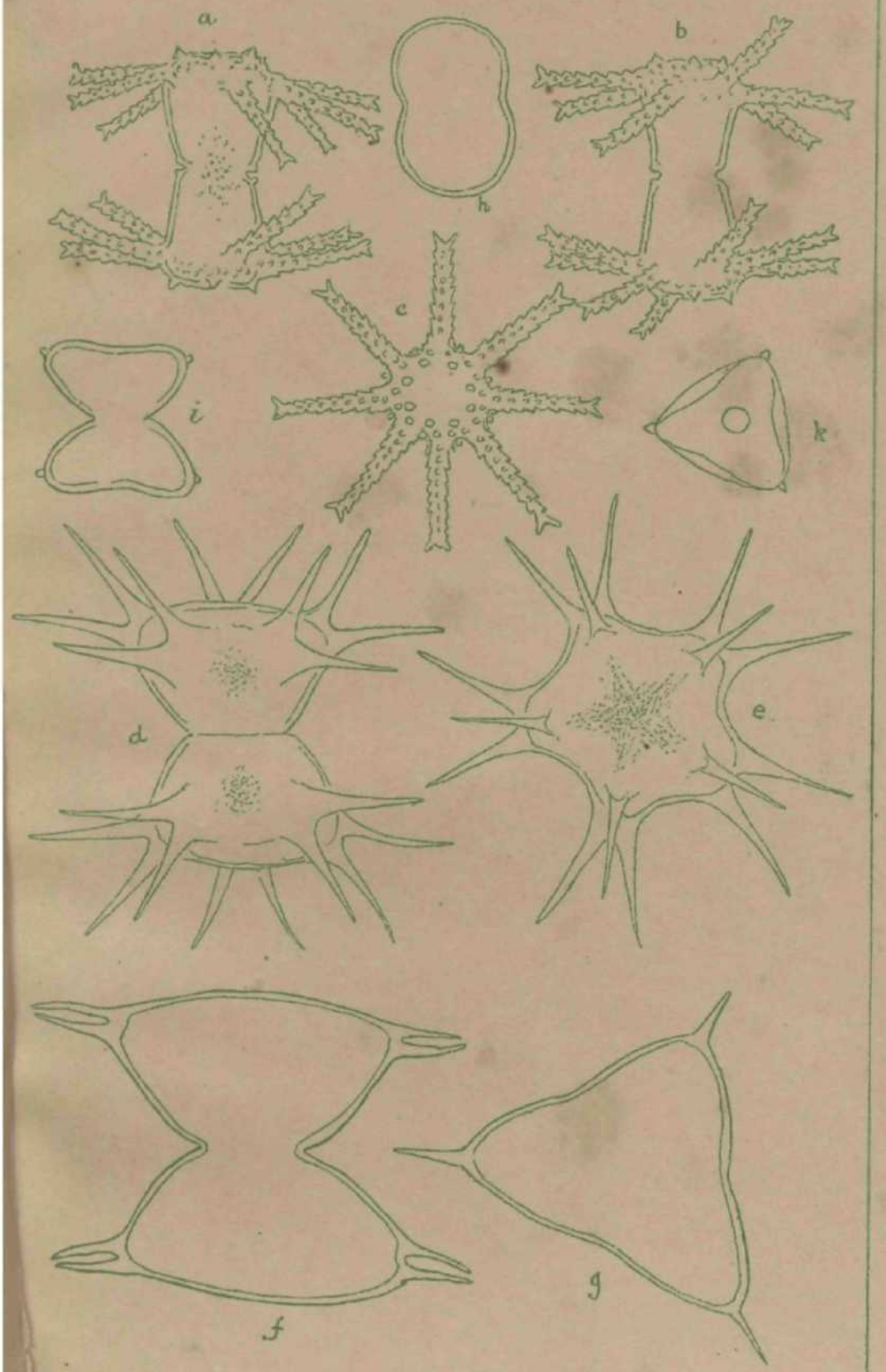
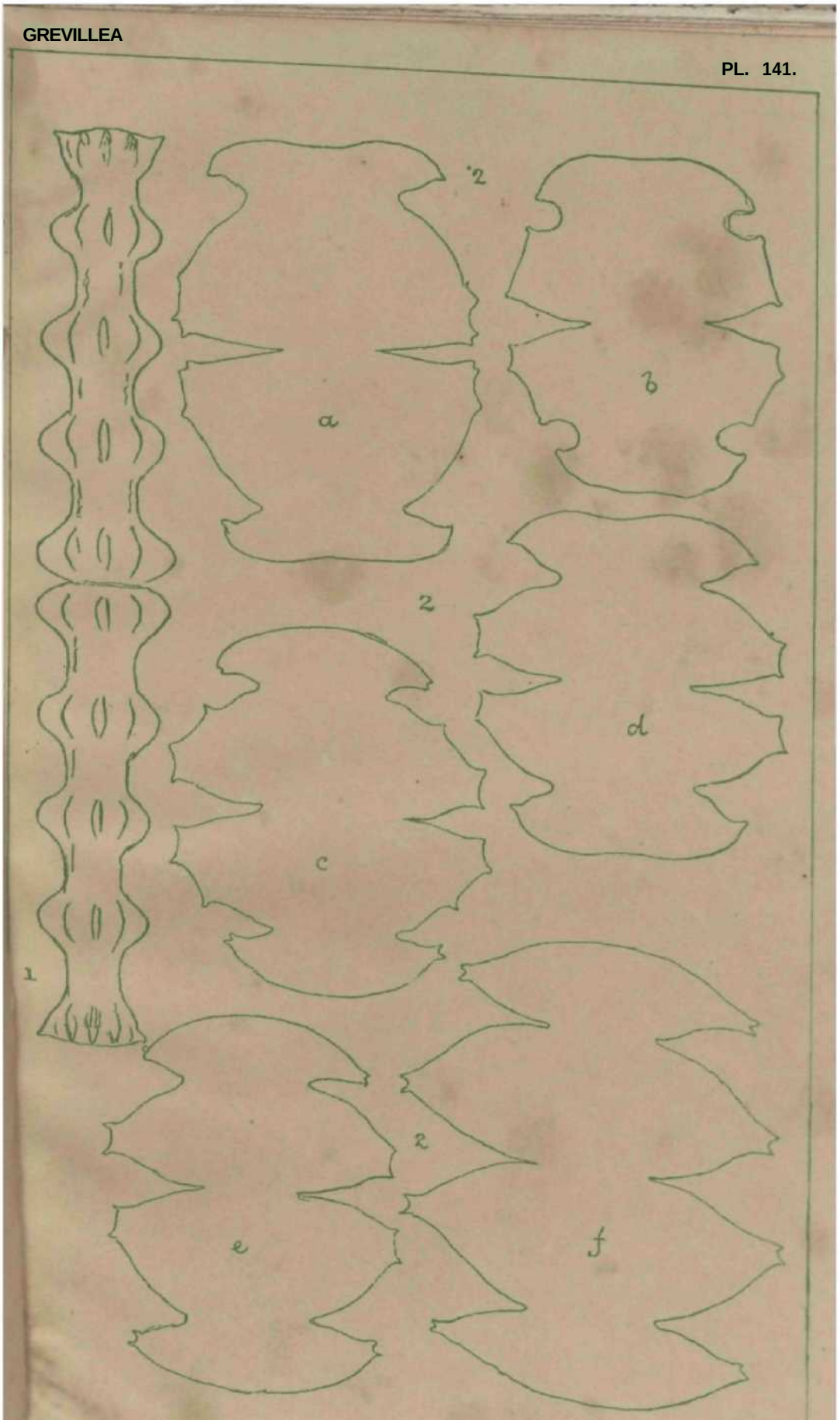




SPIRULINA and Staurastrum.



a. b. c. Staurastrum ophiura. d-e. Staurastrum brasiliense.
f-g. Staurastrum longiopinum
h. Cosmarium pseudoconnatum. i-k. Staurastrum aversum



1. Docidium nodosum 2. Tetrachastrum.

AUSTRALIAN FUNGI.

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