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coagulates in the quickest and most complete way, when after dilution with water, the amount of  $\text{CaCl}_2$  is brought from 0.1 to 0.5 pCt. When yet more lime-salt is added, so that by this alone without the aid of other salts; the nucleoproteid-lime-combination might be dissolved, then the coagulation does not take place at all.

The arguments which I have on a former occasion brought forward in order to defend the view, that the nucleoproteids themselves and no admixtures, act, with the aid of lime, as a fibrin ferment, have been confirmed, I think, by the investigation of Mr. HUISKAMP. Chloride of calcium influences the action of ferment, at those very degrees of concentration, which render it capable of altering the state of the nucleoproteids.

The supposition, that that influence should be in relation with perfectly unknown admixtures, which should occur in the now very purely prepared nucleoproteids of the thymus, is, I think, not confirmed by a single observation.

The supposition, suggested by SCHÄFER<sup>1)</sup>, in connexion with HORNE'S results, that the interference with the coagulation by calcium-, strontium- and baryumsalts is founded on the capability of salts of dissolving fibrin, is disproved by the observations of numerous investigators, also by those of Mr. HUISKAMP, from which it is evident, that a corresponding quantity of chloride of sodium does not bring about any delay or incompleteness of the coagulation.

**Botanics.** — "*Contributions to the knowledge of some undescribed or imperfectly known Fungi*" (4<sup>th</sup> Part and end)<sup>2)</sup>. By Prof. C. A. J. A. OUDEMANS.

## † † MELANCONIEAE.

### *α. Hyalosporae.*

#### GLOEOSPORIUM Desmazières et Montagne.

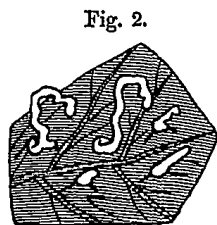


Fig. 2.  
*Gl. Aucubae* Oud.  
Upper face.

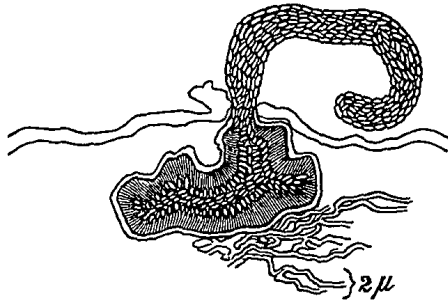
85. GLOEOSPORIUM AUCUBAE Oud. n. sp. — On the leaves of *Aucuba japonica*. — Bussum, July 1900. — Mr. C. J. KONING.

Epigenum. In foliis necatis nigrefactis globuli vel cirrhi subtilissimi, dilute straminei, conspicui fiunt, qui, officia epidermidis minima obturantes et e cavernulis infra-epidermoidalibus, 500  $\mu$  latis,

<sup>1)</sup> Textbook of Physiol., I, p. 170.

<sup>2)</sup> For 3<sup>rd</sup> Part see these Proceedings p. 332.

Fig. 3.



id. on vertical section.

200  $\mu$  altis, propulsi, statimque coagulati, ex mere conidiis consistunt. Sunt haec conidia elliptica vel parum oblongata, 4—7  $\times$  2—3  $\mu$ , hyalina, continua, biocellata, basidiisque acicularibus, 35  $\mu$  altis, e strato prolifero fuligineo oriundis, fulciuntur.

\*GLOEOSPORIUM ANTHERARUM

Fig. 4.



id. Basidia with conidia and conidia separately.

Oud. n. sp. N. K. A. 3, I, 506 and Hedw. XXXVII (1898) p. 179. — On weakened anthers of *Calystegia sepium*. — Leimuiden, July 1894; Mr. L. VUYCK.

MYXOSPORIUM Link.

\*MYXOSPORIUM CORYLI Oud. n. sp. N. K. Arch. 3, I, 507 and tab. VI f. 10. — On branches of *Corylus Avellana*. — Nunspeet, March 3, 1898; Mr. BEINS.

86. MYXOSPORIUM JUGLANDINUM Oud. n. sp. — On the branches of *Juglans regia*. — Scheveningen, 1894.

Pustulae prominentes, sub peridermate occultatae, tandem, peridermate irregulariter rupto, hiantes glebulamque griseam exponentes. Continet haec conidia fusiformia, hyalina, continua, ad polos anguste rotundata, biocellata, 8—10  $\times$  2—2 $\frac{1}{3}$   $\mu$ , primitus basidiis tenerrimis, 20—25  $\times$  1  $\mu$ , suffulta. Differt a *Myxosporio Juglandis* Allescher (Ber. Bayer. bot. Ges. V (1897) p. 21 et Sacc. Syll. XIV, 1015) conidiis biocellatis, minoribus (8—10  $\times$  2—2 $\frac{1}{3}$   $\mu$  contra 10—14  $\times$  3 $\frac{1}{2}$ —4 $\frac{1}{2}$   $\mu$ ) et basidiorum bene evolutorum praesentia (Pl. IV, fig. 14).

*$\beta$ . Scoleco-Allantosporae.*

CRYPTOSPORIUM Kunze.

87. CRYPTOSPORIUM SIPHONIS Oud. n. sp. — On branches of *Aristolochia Siphon*. — Nunspeet, April 12, 1898; Mr. BEINS.

Pustulae numerosas, inaequaliter distributae, parum prominentes, sub peridermatis portiunculo nigrefacto, postremo centro perforato,

occultatae,  $\frac{1}{5}$  mill. in diam. Conidia hyalina, bacillaria, ad polos rotundata, continua,  $10-20 \times \frac{1}{3} \mu$ .

### LIBERTELLA Desmazières.

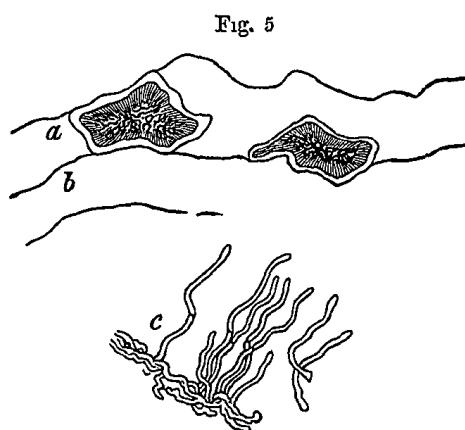
88. *LIBERTELLA AUCAPARIAE* Oud. n. sp. — On branches of *Sorbus Aucuparia*. — Naaldwijk, Dec. 1866; the late Dr. J. E. VAN DER TRAPPEN.

Pustulae valde numerosae, dense aggregatae, peridermate velatae, difformes, saepe confluentes, p.m. inflatae, intus nigrae. Conidia valde subtilia, falcata,  $14-16 \times 1\frac{1}{6} \mu$ , ad polos acicularia, hyalina, basidiis aequilongis et aequilatis, hyalinis, rectis suffulta.

Differt a *Libertella Ariae* Allescher, Ber. Bayer. bot. Ges. IV (1896) p. 37 et Saccardo Syll. XIV, 1035, pustularum colore neutiquam rubente, conidorumque longitudine paullo majore ( $18-25 \times 1 \mu$  contra  $4-16 \times 1\frac{1}{6} \mu$ ).

89. *LIBERTELLA OPULI* Oud. n. sp. — On the young branches of *Viburnum Opulus*. — Nunspeet, April 3, 1899.

Acervuli sparsi, peridermate velati, paullo inflati, aurantiaci, elliptici vel oblongi,  $\frac{1}{2}-1\frac{1}{2} \times \frac{1}{2}-\frac{3}{4}$  mill. Conidia cylindrica, botuliformia, ad polos rotundata, continua, singula hyalina, aggregata pallide aurantiaca, basidiis aequilongis suffulta.



*Libertella Syringae* Oud.  
a. cork-layer.  
b. bark.  
c. basidia and conidia.

90. *LIBERTELLA SYRINGAE* Oud. n. sp. — On branches of *Syringa vulgaris*. — Bussum, July 1900; Mr. C. J. KONING.

Acervuli numerosi, quoad formam et dimensiones maxime variabiles, nigri, saepe confluentes, nunc poro, tunc vero rima dehiscences, lateque aperti. Conidia cavernulas septis spuris radiantibus varie divisas, periderma inter et parenchyma corticale collocatas, implentia, filiformia, curvata vel flexuosa, hyalina, utrim-

que rotundata, eguttulata,  $20-24 \times 1.4 \mu$ . Basidia acicularia,  $10-12 \times 1.5 \mu$ , e strato prolifero fuligineo oriunda, post conidorum lapsum hamato-curvata.

\*LIBERTELLA ULMI SUBEROSI Oud n. sp. N. K. A. 3, I, 507 et Hedw. XXXVII, 180. — On branches of *Ulmus suberosa*. — Scheveningen, Dec. 1894.

γ. *Phaeosporae*.

MELANCONIUM Link.

\*MELANCONIUM PERSICAE Oud. n. sp. N. K. A. 3, I, 508 et Hedw. XXXVII, 180. — On the youngest internodes of *Persica vulgaris*. — the Hague, April 1889.

δ. *Didymosporae*.

MARSONIA Fischer.

\*MARSONIA SECALES Oud. n. sp. N. K. A. 3, I, 509 et Hedw. XXXVII, 181. — On the leaves of *Secale cereale*. — Winschoten, June 1897. — Sent by Prof. RITZEMA BOS.

SEPTOMYXA Saccardo.

91. SEPTOMYXA ARIAE Oud. n. sp. On the branches of *Sorbus Aria*. — Scheveningen 1894.

Pustulae numerosae, dense aggregatae, peridermate velatae, eoque rupto hiantes et globulum conidiorum fuliginosum exponentes. Conidia fusiformia, ad polos rotundata, bilocularia, non constricta, hyalina,  $8-11 \times 2-2\frac{1}{3} \mu$ , basidiis brevibus suffulta.

92. SEPTOMYXA CORNI Oud. n.sp. — On the branches of *Cornus alba*. — Nunspeet, March 5, 1899; Mr. BEINS.

Pustulae valde prominentes, orbiculares vel ellipticae, irregulariter dispersae, longitudinem 2, latitudinem 1 mill. attingentes, primo peridermate velatae, postremo, peridermate secundum longitudinem fisso, fissuraque usque ad circuitum dilatata, hiantes, conidiorumque glebulam griseam, humectatam caseosam, in parenchymate corticali immersam, exponentes. Conidia sinuose ordinata, fusiformia, hyalina, bilocularia, ad polos anguste rotundata,  $14-19 \times 2\frac{1}{2} \mu$ .

\*SEPTOMYXA NEGUNDINIS Oud. n. sp. — Cf. N. K. A. 3, I, 510;

Hedw. XXXVII (1898) p. 180. — On the branches and petioles of *Negundo fraxinifolia*. — Apeldoorn, Aug. 1896; O.

ε. *Phragmosporae*.

CORYNEUM Nees.

CORYNEUM POPULI Oud. n. sp. — Cf. N. K. A. 3, I, 510; Hedw. XXXVII (1898) p. 181. — On branches of Poplars. — Scheveningen, Oct. 1894.

SEPTOGLOEUM Sacc.

93. SEPTOGLOEUM CORNI Oud. n. sp. — On branches of *Cornus sanguinea*. — Naaldwijk, April 1867; the late Dr. J. E. VAN DER TRAPPEN. — On branches of *Cornus alba*. — Nunspeet, March 8, 1899; Mr. BEINS.

Pustulae valde numerosas, dense congestae,  $\frac{1}{4}$  mill. in diam., paullo prominentes, primo peridermate velatae, postremo perforatae, in cortice immersae. Conidia solito robustiora,  $40-50 \times 2\frac{1}{3} \mu$ , cylindrica, curvula vel flexuosa, pluriseptata, ad polos rotundata, hyalina. Cirrhi albi.

† † † **MUCEDINEAE.**

α. *Amerosporae*.

OOSPORA Wallroth.

\*OOSPORA ABIETUM Oud. n. sp. — Zittingsversl. Kon. Akad. v. Wetensch. Januari 1897; N. K. A. 3, I, 511; Hedw. XXXVII (1898) p. 181. — On the leaves of *Abies excelsa* and other species of this genus. — Apeldoorn and Laren, Oct. 1896. — O. and Prof RITZEMA BOS.

SPOROTRICHUM Link.

94. SPOROTRICHUM HELLEBORI Oud. n. sp. — On dying leaves of *Helleborus foetidus*. — Hortus bot. at Amsterdam, Febr. 1890. — Oud.

Maculae amphigenae, valde extensae, fuligineae, fertiles in utraque

pagina. Conidiorum conglomerationes orbiculares, albae,  $\frac{1}{2}$  cent in diam. Hyphae substrato applicatae, valde ramosae, laxe intertextae, septatae, ramulis ultimis subtilissimis. Conidia solitaria, fusiformia, continua, hyalina, ad polos acuta,  $3-3.5 \times 2 \mu$ .

MONOSPORIUM Bonorden.

\*MONOSPORIUM GALANTHI Oud. n. sp. — Zittingsversl. Kon. Acad. v. Wetensch. 21 April 1897; N. K. A. 3, I, 514; Hedw. XXXVII (1898) p. 181. — On rotting bulbs of *Galanthus nivalis*; Tessel, Febr. 1897; Prof. RITZEMA BOS.

BOTRYTIS Micheli et Link.

\*BOTRYTIS PAEONIAE Oud. n. sp. — Zittingsversl. Kon. Akad. v. Wetensch. 21 April 1897; N. K. A. 3, I, 516; Hedw. XXXVII (1898) p. 182. — On young sprouts of a cultivated *Paeonia*. — Rijswijk, April 14, 1897.

OVULARIA Saccardo.

\*OVULARIA RANUNCULI Oud. n. sp. — N. K. A. 3, I, 521; Hedw. XXXVII (1898) p. 182. — On the leaves of *Ranunculus acer*. — Apeldoorn, Sept. 1897; O.

*β. Didymosporae.*

HORMIACTIS Preuss.

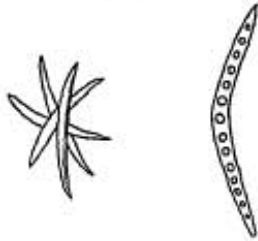
\*HORMIACTIS HEMISPHAERICA Oud. n. sp. — N. K. A. 3, I, 521; Hedw. XXXVII (1898) p. 182. — On the weakened anthers of *Iris Pseudacorus*. — Leiden, June 1894; Mr. L. VUYCK.

*γ. Phragmosporae.*

FUSOMA Corda.

\*FUSOMA GALANTHI Oud. n. sp. — Zittingsversl. Kon. Acad. v. Wetensch. 21 April 1897; N. K. A. 3, I, 522; Tessel, Febr. 1897; Prof. RITZEMA BOS.

Fig 6.

*Fusoma Heraclei* Oud.

95. *FUSOMA HERACLEI* Oud. n. sp. — On the leaves of *Heracleum Sphondylium*. — Nunspeet, July 8, 1899; Mr. BEINS.

Epiphylla. Maculae sparsae, parvae, saepe autem confluentes et majorem superficiei partem occupantes, niveae vel roseo-variegatae, absque mycelii vestigio. Basidia nulla. Conidia in maculas congesta, varie accumulata, fusiformes, curvata, basi truncata, vertice acuta, primo continua, protoplasmate granuloso repleta, deinde serie longitudinali guttularum ornata, postremo septata (?),  $45-60 \times 4 \mu$ . Partes dextrorsum et sinistrorsum a curvatura divergentes quoad longitudinem dissimiles.

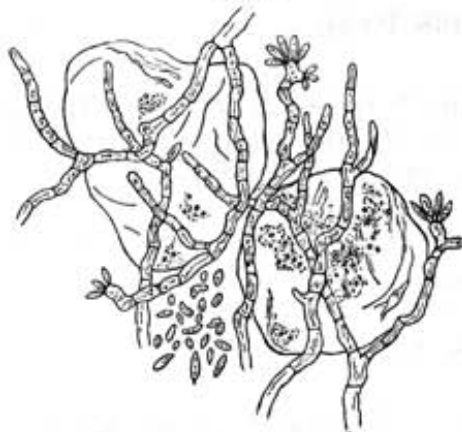
## SEPTOCYLINDRIUM Bonorden.

\**SEPTOCYLINDRIUM MORCHELLAE* Oud. n. sp. — N. K. A. 3, I, 522; Hedw. XXXVII (1898) p. 183. — On putrified *Morchella esculenta*, Leiden, April 24, 1894; Mr. L. VUYCK.

96. *SEPTOCYLINDRIUM SECALIS* Oud n. sp. — On the leaves of germinating rye-plants (*Secale cereale*). — Diepenheim, March 30, 1899. — Sent by Prof. RITZEMA BOS.

Maculae pallescentes in parte dimidia anteriore foliorum viridium vel rubescentium. Hyphae albae, late extensae, hyalinae, ramosae, septatae. Conidia cylindrica, ad polos rotundata,  $20-50 \times 2\frac{1}{2}$ , primo continua, postremo 3-7-septata. Haec in exemplis junioribus in series simplices vel ramosas ordinata offenduntur.

Fig 7.



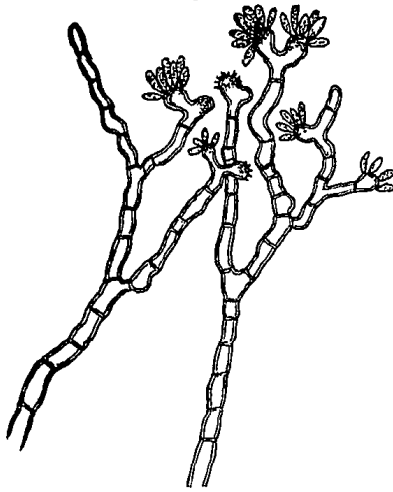
*Phymatotrichum baccharum* Oud.  
Fruit-pulp with fructifying  
mould-filaments.

97. *PHYMATOTRICHUM BACCARUM* Oud. n. sp. — In the nearly ripe fruits of *Ribes Grossularia*. — Wormerveer, July 1900. — Sent by Prof. Dr. J. RITZEMA BOS and Mr. C. J. J. VAN HALL.

This Mucedinea begins and closes its life in the fruit-flesh of the just now mentioned shrub, and thus forms an exception to the common rule for all Mucedineae that the conidia-bearing hyphae do not fructify before the moment they have come beyond

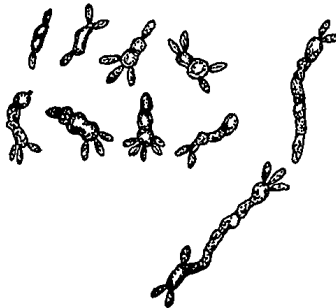


Fig 8.



Idem. Fructifying mould-filaments separately.

Fig. 9



Idem Germinating conidia

Fig 10



Conidia separately.

the surrounding in which their mycelium filaments developed.

The greenish but not quite ripe berries, manifest their less favorable condition by the forming of light ocre-yellow spots, mostly close to the insertion of the fruit-stalk, by which the supposition gets some probability that the point of attack of the fungus is at the base, and not at the summit of the fruit, notwithstanding the latter, by the presence of a little hole at that place, surrounded by the remnants of the calix, might justify the idea that this would be the very place to

cause the conidia of an earlier generation to germinate.

The yellow spots soon become brown and seem by preference to follow the course of the nerves or vascular bundles; still it is not well possible to state whether the surrounding parenchyma would be spared by the fungus.

The expectation that the hyphae hidden

in the fruit-flesh, shortly after the affected

fruits had been removed under favorable conditions

to a glass-bell, would produce fertile little cushions

at the surface, was by no means realised. There

appeared indeed slits which gave the sap within an

opportunity to come out in drops charged with inde-

pendent conidia, but instead of the expected cushions there appeared nothing else but very common moulds and these soon took hold of the greater part of the surface of the berries.

This result induced Mr. VAN HALL to set in a renewed examination of the hyphae hidden in the fruit, whence arose the certainty that the conidia were exclusively produced within the fruits, between the parenchyma-cells and remained confined in the epidermis of the berries.

The hyphae which amid the fruit-pulp cross in all directions, have a sinuous course and are, by rather closely succeeding partitions, divided into cells of various sizes. Mostly they are in the middle or thereabout a little swollen. The lower branches, springing from

the main hyphae, appear at different heights and resemble the former, with this difference however, that they degrade in width. Higher up they become shorter and bifurcate so as to form branchlets which are either both fertile or sterile, or one fertile and the other sterile. In the latter case the sterile branch is now straight, now crooked, and besides, mostly surpasses the fertile one in length. The fertile branches always end in a vesicle-shaped cell charged with the task of forming the conidia. The latter repose on short basidia whose number varies from 3—10. They are oblong, colourless,  $7-12 \times 2\frac{1}{3}-5 \mu$ , and undivided. When ripe they let go hold of the basidia, which then remain sticking as little pricks to the vesicles.

The conidia can be very well cultivated in a moist chamber. After a short time Mr. VAN HALL saw them germinate, i.e. either without the intervenience of a mycelium form new conidia; or at one extremity produce secondary conidia and at the other a sterile mycelium; lastly, also: at one pole form secondary conidia, and at the other push forward a fertile mycelium, of which the top-cell swells up into a vesicle, which gives birth to a certain number of tertiary conidia reposing on short basidia. It may be conceived that in this way the number of conidia must so prodigiously increase that the exuding drops can be partly filled with them. The mother-spore always remains recognisable by its 1 or 2 large vacuoles.

*Diagnosis:* Caespitibus nullis, sed hyphis in ipsis baccarum parenchymate succulento fructificantibus, intricatis, hyalinis, valde flexuosis, septatis, ex articulis ut plurimum curtis, saepe p.m. torulosis, compositis; infra vage ramosis, sursum semel vel pluries bifurcatis; ramis ultimis nunc ambobus, tunc alterutro sterilibus; ramis fertilibus apice globuloso-inflatis, muriculato-conidiophoris; sterilibus apicem versus angustioribus, obtusis, rectis vel curvatis. Conidiis oblongis, utrimque obtusis, hyalinis, continuis,  $7-12 \times 2\frac{1}{3}-5 \mu$ , protoplasmate denso, guttulisque 1 ad 2 voluminosis repletis. Articulis hypharum  $7-10 \mu$  crassis.

† † † † **DEMATEAE.**

*α. Didymosporae.*

**FUSICLADIUM** Bonorden.

98. **FUSICLADIUM CARPOPHILUM** Oud.; *Cladosporium carpophilum* Thüm. Oest. bot. Zeits. 1877, p. 12; Thüm. Wiener Landwirthsch.

Wochenblatt 1877. p. 480; Thüm. Fgi pomicoli 1855, p. 13; Sacc. Syll. IV, 353. — On the young fallen fruits of *Persica vulgaris*, in company of *Monilia fructigena*. Raamsdonk, June 25, 1898. — Sent by Prof. J. RITZEMA BOS.

Maculae orbiculares,  $\frac{1}{2}$  cent in diam., primo sub epidermidis lanugine occultatae et imperceptibiles, postea vero, colore magis saturato fucatae, facilius distinguendae. Observantur in iis hyphae erectae, curtae, rectae vel flexuosae, fuscescentes, 1—3-septatae, ex mycelio superficiali repente sursum tendentes. Conidia acrogena, ovoidea vel fusiformia, vulgo continua, rarius bilocularia, conidiophoris pallidiora,  $20 \times 5-6 \mu$ .

\*FUSICLADIUM FAGOPYRI Oud. n. sp. Zittingsversl. Kon. Akad. v. Wet. 26 Juni 1879; Ned. Kr. Arch. 3, I, 524; Hedw. XXXVII (1898) p. 183. — On leaves of *Fagopyrum esculentum*. — Goor, June 26, 1837; sent by Prof. J. RITZEMA BOS.

In Hedwigia *Pisum sativum* was also mentioned as the foster-plant. This name should however be blotted out.

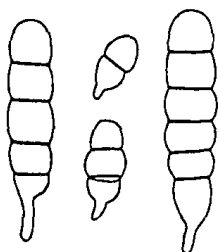
*β. Phragmosporae.*

CLASTEROSPORIUM Schweinitz.

\*CLASTEROSPORIUM IRIDIS Oud. n. sp. — Hedw. XXXVII (1898) p. 318. — On the leaves of *Iris xyphoides*, by gardeners mostly called *I. anglica*. — Leiden June 17, 1898. — Sent by Prof. J. RITZEMA BOS. (Pl. IV, fig. 16).

99. CLASTEROSPORIUM LINI Oud. n. sp. — On the roots of *Linum usitatissimum*. — Wageningen, Febr. 1900; sent by Prof. RITZEMA BOS.

Fig. 11.



*Clasterosporium Iridis*  
Oud. — Conidia

Conidia superficialia, solitaria, cylindrica, satis regulariter distributa, a mycelio in telis internis abscondito producta, pallide umbrina, recta vel curvata, ad polos rotundata, versus basin in pedicellum breve ( $7-10 \times 2-3 \mu$ ), hyalinum, continuum attenuata, vulgo 4-septata, vix constricta. Conidia 4-septata mensuris respondent  $35-40 \times 10-12 \mu$  compartimentaue ostendunt fere aequalia. Membrana conidiorum ad septorum circuitum profundius tincta.

## CRYPTOCORYNEUM Fuckel.

100. CRYPTOCORYNEUM OBOVATUM Oud. n. sp. — On mouldering wood of *Quercus Robur*. Valkenburg (L.), April 1900; Mr. J. RICK. — Caespituli suborbiculares,  $\frac{1}{8}$ — $\frac{1}{6}$  mill. in diam., numerosi, p. m. dense congesti, aterrimi. Conidia late-obovata, 4-septata, fuliginea, fere opaca, ad septa non constricta,  $35-46 \times 16\frac{1}{3}-18\frac{2}{3} \mu$ , cellula basilari minima prorsus hyalina aucta.

Cellularum omnium tinctorum — numero 4 — duae supremae in corpus late-ellipticum vel late obovatum conjunctae, maximae, duae infimae contra, cum cellula basilari hyalina in pedunculum brevem quasi colalitae. Septum supremum conidium vesiculiforme proprio dictum in partes 2 valde inaequales: superiorem nempe minorem, inferiorem contra majorem dividit (Pl. IV, fig. 15).

## HELMINTHOSPORIUM Link.

101. HELMINTHOSPORIUM GRAMINEUM Rabh. et Oud. — Cf. Zittingsv. Kon. Ak. v. Wet. 26 Juni 1897; Hedw. XXXVII (1898), p. 183. — Synonymous with *H. teres* Sacc. Fgi ital. del. tab. 833 and Syll. IV, 412, and with *H. gramineum* Eriksson „Ueber eine Blattfleckenkrankheit der Gerste” a<sup>o</sup>. 1885, taken over as an extract Botan. Centralblatt XXIX, 1887, p. 83 and in Frank, „Die Krankheiten der Pflanzen” 2<sup>e</sup> Ed. p. 316 (a<sup>o</sup>. 1895). — Rabenhorst's fungus, published in 1857, in his Herb. mycologicum Ed. 2<sup>a</sup> n<sup>o</sup>. 332, does not differ from the two other mentioned and, accordingly, the name given by him must be preserved by right of priority.

## BRACHYSPORIUM Saccardo.

\*BRACHYSPORIUM PISI Oud. n. sp. — Cf. N. K. A. 3, I, 527; Hedw. XXXVII (1898) p. 183. — On the leaves of *Pisum sativum*; Warfum, June 17, 1897. Sent by Prof. J. RITZEMA Bos.

## CERCOSPORA Fresenius.

102. CERCOSPORA SPINACEAE Oud. n. sp. — On the leaves of *Spinacea oleracea*. — Nunspeet, June 9, 1899. — Mr. BEINS.

Maculae amphigenae, utrimque fertiles, pallide viridescentes vel stramineae, variae extensionis (1—10 mill.), saepe confluentes; hyphae simplices, fere bacilliformes, continuae vel versus apicem 1-septatae,

fuligineae, ad polos rotundatae,  $40-70 \times 3\frac{1}{2} \mu$ . Conidia acrogena, primo elliptica, denique oblonga vel bacillaria, nodosa; postremo cylindraceo-fusiformia, curvata, ad polos rotundata vel acuta, medio septata, hyalina,  $16-20 \times 3 \mu$ .

Differt a *C. dubia* Wint. conidiis multo brevioribus et angustioribus ( $16-20 \times 3 \mu$  contra  $60-70 \times 8-9 \mu$ ) et a *C. beticola* conidiis multo brevioribus ( $16-20$  contra  $70-120 \mu$ ) et 1- neque dense septulatis.

### HETEROSPORIUM Klotzsch.

103. HETEROSPORIUM ALLII Ellis et Martin, Journ. of Mycol I, 100, var *Polygonati* Oud. n. v. — On the leaves of *Polygonatum multiflorum*. — Nunspeet, Oct. 2, 1899; Mr. BEINS.

Caespites amphigeni, irregulariter distributi in partibus foliorum polymorphis, satis extensis, zona purpurascens variae latitudinis circumscripti; hyphae simplices vel ramosae, septatae, p. m. nodosae,  $140-190 \times 7 \mu$ , olivaceo-fuliginosae. Conidia acrogena, primo hyalina, ovoidea, continua; denique elliptica vel oblonga, pallide-fuliginea; postremo oblonga, 2- vel 3-septata, subtilissime muriculata, pallide olivacea,  $28 \times 11-12 \mu$ , ad septorum altitudinem leviter constricta.

104. HETEROSPORIUM AVENAE Oud. Hedw. XXXVII (1898), p. 318. — On the leaves of *Avena sativa* (Ulrum) and *Hordeum vulgare* (Dordrecht). — Sent by Prof. J. RITZEMA BOS. — Though in a letter to Prof. RITZEMA BOS I changed the above name into *H. Cerealium* (see his account concerning the informations given in 1899, issued from the phytopathological Laboratory WILLIE COMMELIN SCHOLTEN at Amsterdam), because the fungus was found, besides on Oats, later also on Barley, I have still come back to my first denomination by reason of rights of priority.

\*HETEROSPORIUM SYRINGAE Oud. n. sp. — N. K. A. 3, I, 529; Hedw. XXXVII (1898), p. 183. — On branches and fruits of *Syringa vulgaris*. Nunspeet, Nov. 1896; Mr. BEINS.

### *γ. Dictyosporae.*

### CONIOTHECIUM Corda.

\*CONIOTHECIUM MUGHI Oud. n. sp. Hedw. XXXVII (1898) p. 318,

— On the peltate summits of the fruit-scales of *Pinus Mughus*. — Nunspeet, April 11, 1898; Mr. BEINS.

105. CONIOTHECIUM PSAMMAE Oud. n. sp. — On the leaf-sheaths of *Psamma littoralis* (*Ammophila arenaria*). — Downs near Brielle. Sept. 1871; Oud.

Caespites minimi, punctiformes, in sulcis foliorum longitrorsum seriati, solitarii vel confluentes. Conidia pluricellularia, h.e. in varias directiones divisa, polymorpha, variae dimensionis; cellulae componentes glebularum globulosae vel multangulares, ferrugineae,  $4\frac{2}{3}$ — $7\ \mu$  in diam.

### † † † † † **STILBEAE.**

#### **HYALOSTILBEAE.**

##### *Amerosporae.*

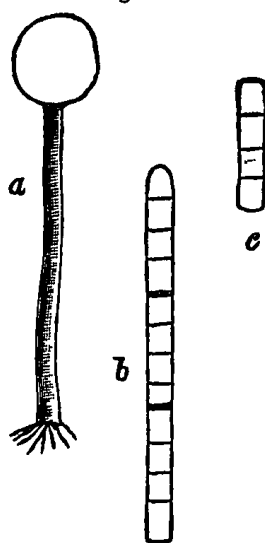
#### **STILBUM Tode.**

106. STILBUM TOMENTOSUM Schrad. Journ. 1799, II, p. 65 et tab. III, fig. 2; Grev. Scott. Cr. Fl. tab. 281; Stilbum parasiticum. Ditmar in Sturm. Cr. Fl. Bd. I, 93 et tab. 46; Sacc. Syll. VII, 566. — Valkenburg (L.) 1899; Mr. J. RICK. — On *Hemiarcyria clavata*, sticking to mosses and liverworts.

Myxomycetis sustentaculum praebentis color naturalis non distinguendus, quippe qui tota planta fungi parasitantis mycelio involvitur. Stilbi exempla omnia e pedunculo et capitulo terminali composita, cum ipso tegumento concolaria. Pedunculus et capitulum a se invicem distincta persistunt. Superficies pedunculi tomentosa ad nomen specificum constituendum a Schradero adhibita est, neque vero fila tenuia quae ex eo assurgunt cum glandulis comparanda, uti passim ab auctoribus factum est. Sistunt enim hyphas periphericas a corpore axili extrinsecus divergentes, singulas conidio minimo terminatas.

Pedunculos longos invenimus  $\frac{1}{2}$  mill., crassos  $35\ \mu$ ; capitula vero  $120\ \mu$  in diam. Conidia perfecte globosa, hyalina, continua,  $1\frac{1}{6}\ \mu$  in diam. Hyphae pedunculum constituentes filiformes ad capituli basin divergunt, corpusculumque formant globosum, cujus superficies farina quasi obducta, conidia innumera ostentat.

Fig. 12.



*Arthrobotryum coprophilum*  
Oud. — a. Stalk with capitulum, b. 3 chained conidia, c. conidium separately.

**PHAEOSTILBEAE.***Phragmosporae.***ARTHROBOTRYUM.**

107. **ARTHROBOTRYUM COPROPHILUM** Oud.  
n. sp. — On horse-turds. Amsterdam, Oct.  
1899. — Mr. C. J. J. VAN HALL.

Laxe gregarium. Stipites conidiophori cylindracei, alti  $\frac{1}{2}$  ad  $\frac{3}{4}$  mill., lati 60—80  $\mu$ , stricti, laeves, glabri, nigri, ex hyphis filiformibus pallide fuscis, septatis formati. Capitula globulosa, lactea,  $\frac{1}{6}$ — $\frac{1}{4}$  mill. in diam. Conidia catenulata, cylindrica, hyalina, ad polos truncata, excepto tamen polo anteriore conidii ultimi, omnia 3-septata,  $16-28 \times 4-5\frac{1}{2} \mu$ .

† † † † † **TUBERCULARIEAE.****TUBERCULARIEAE MUCEDINEAE.***Amerosporae.***HYMENULA** Fries.

\***HYMENULA PSAMMAE** Oud. n. sp. Cf. N. K. A. 3, I, 532; Hedw. XXXVI (1898), p. 184. — On the stems of *Psamma littoralis* (*Ammophila arenaria*). — Loosduinen, 1894.

*Phragmosporae.***FUSARIUM** Link.

\***FUSARIUM OPULI** Oud. n. sp. Cf. Hedw. XXXVII (1898), p. 318. — On branches of *Viburnum Opulus*. — Nunspeet, June 15, 1898; Mr. BEINS.

**TUBERCULARIEAE DEMATIEAE.***Amerosporae.***CHAETOSTROMA** Corda.

\*CHAETOSTROMA CLIVIAE Oud. n. sp. Zittingsversl. Kon. Akad. v. Wetensch. 28 Nov. 1896, p. 226; Ned. Kr. Arch. 3, I, 533; Hedw. XXXVII (1898), p. 184. — On the leaves of *Clivia nobilis*. — Hees near Nijmegen; October and November 1896. — Prof. RITZEMA BOS.

† † † † † † **MYCELIA STERILIA.**

108. ECTOSTROMA TRIGLOCHINIS Oud n. sp. — On the stems of *Triglochin palustre*. — Nunspeet, Oct. 8, 1899; Mr. BEINS.

Maculae nigrae, juxta longitudinem ad superficiem caulium extensae, structurae parenchymaticae, e seriebus cellularum partim longiorum, partim breviorum, nunc alternatim tunc vero absque ordine dispositarum, semper vero arctissime inter se cohaerentium, stomatibus exceptis sine meatuum intercellularium vestigio contextae. Maculae, vel potius membranae longitudinem attingunt 3 centim. internodiaque vel caulem perfecte involvunt. Sporulae non visae.

**Chemistry.** — Prof. C. A. LOBRY DE BRUYN presents, also on behalf of Mr. W. ALBERDA VAN EKENSTEIN a paper entitled: "*A new kind of formal-(methylene-)compounds of some oxy-acids.*"

In the preparation of the formal-compounds of polyhydric alcohols and of oxy-acids it has been necessary up to now to call in the aid of a strong mineral acid to effect the condensation. The change which then occurs takes place between the formaldehyde and the hydroxyl groups which possess an alcohol function; in the case of the oxy-acids the carboxyl groups take no part in the reaction so that the formed compounds still remain acids.

In the case of several oxy-acids, namely those which contain in their molecule only one alcoholic hydroxyl group, the efforts to prepare



