

## TAXONOMIC NOTES ON ASCOMYCETES.

### VI. On the genus *Gibberidea* Fuck., and some alleged relatives.

BY

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The preceding paper in the present series (HOLM, 1967) dealt with *Cucurbitodithis pithyophila* (FR.) PETR. This fungus is more widely known as *Cucurbitaria pithyophila* (FR.) DE NOT., but the author vindicated the view that *Cucurbitodithis* should be kept as a genus of its own, not agreeing with VON ARX (1954) who united it with *Gibberidea*. The reasons for my opinion will be exposed in this article where most species ever assigned to *Gibberidea* will be considered.

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The genus *Gibberidea* was established by FÜCKEL (1870, p. 168) in order to accommodate his new species *Gibberidea Visci*, described simultaneously. Since then several fungi have been referred to *Gibberidea*, some already when described as new species, others transferred there later on by subsequent workers. In all about thirty combinations have been published in *Gibberidea*. (I leave out of account the large-scale manufacture of *Gibberidea*-names undertaken by OTTO KUNTZE (1898, p. 481) which was based on *Gibberidea* FR. 1849, p. 395. This Friesian name, however, applied to a subgenus of *Sphaeria* and FÜCKEL's generic name *Gibberidea* was published without any reference to FRIES. Thus *Gibberidea* (FR.) O. KUNTZE

is a younger homonym of *Gibberidea* Fuck. and the combinations made by KUNTZE are accordingly illegitimate.)

As will be demonstrated in this paper very different fungi indeed have been assigned to *Gibberidea*—with a slight exaggeration I would say that *Gibberidea* has served as a place of banishment for phragmosporous Pyrenomycetes with aggregated ascocarps. In my opinion the genus has to be restricted to the type species only, which, moreover, is not closely related to any fungus known to me. This interesting species will first be examined.

***Gibberidea Visci* FUCK. 1870, p. 168.**

Typus: SWITZERLAND, JURA, *Viscum album*, leg. MORTIER (Gl).  
Pl. Ia, b.

This is apparently a rare fungus, so far known only from a few collections from Central Europe (Germany, Switzerland, Czechoslovakia). Material has been distributed in one exsiccatum only, viz. PETRAK, Flora Bohemica et Moravica exsiccata II: 1 no. 2099. On the basis of this gathering PETRAK has published a valuable study of the species with a very full description to which I refer for details (1925, pp. 58–62). Here the main characters will be briefly pointed out:

*Gibberidea Visci* has a well-developed, originally subperidermal "hypostroma", attaining about 1 mm in height and a few mm in diameter, cf. Pl. I, a. The hypostroma is densely covered by clustered perithecium-like ascocarps, ab. 350  $\mu$  diam., intermixed with similar pycnidia. The stromatic "tissue" is pseudoparenchymatic, composed of  $\pm$  isodiametric cells, mostly 10–15  $\mu$ , with darkly pigmented but not or only slightly thickened walls.

The asci are bitunicate of ordinary type; the ascospores are 45–50  $\times$  6.5–7.5  $\mu$ , yellowish brown, almost cylindrical, with a marked submedian constriction, dividing the spore into two finally 4-celled parts (Pl. I, b). At times a longitudinal septum or two can be laid down.

The pycnidia contain one-celled, hyaline, often somewhat allantoid conidia, about 3–5  $\times$  1.5  $\mu$ .

The spore data given in the literature are not quite correct. In the original diagnosis FÜCKEL described the spores as 6-septate and he also gave a drawing of such a spore (tab. VI, fig. 17c) which apparently represents a reversed spore with the lower part still 3-septate. PETRAK (l.c.) claims the spores to have 3–5 septa; this must refer to immature spores, just as his spore measurements, which are too small.

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As just mentioned a pycnidial state is also met with. According to FÜCKEL our species is indeed a record holder as to conidial forms; he assigned to it no less than 4 different imperfect fungi, viz.:

1. "Fungus microstylosporiferus" — i.e. *Diplodia Visci* (DC.) FR.
2. "Fungus gigastylosporiferus" — i.e. *Sphaeropsis Visci* (SOLLM.) SACC.
3. "Fungus macrostylosporiferus" — according to FÜCKEL this unnamed state was found together with spermatia,
4. "spermatilsque commixtus".

PETRAK (l.c.) discussed these different conidial forms and claimed, partly following VON HÖHNEL (1919), that the two first-mentioned fungi are not connected with *Gibberidea Visci* but with *Phaeobotryon Visci* (KALCHBR.) v. HÖHN. Of the two remaining forms PETRAK considered no. 3 as probably and no. 4 as certainly belonging to *G. Visci*. The last statement is evidently correct as the pycnidia are formed from the same hypostroma as the ascocarps. PETRAK named this "spermatie" state *Pleurostromella Visci* (op. cit., p. 61). PETRAK's views have later been accepted and partly confirmed by MÜLLER (1953, p. 328).

Regarding no. 3 above, the "macrostylospore" form, it must be seriously questioned whether it is not a bit of a mystification. Certainly it belongs to *G. Visci*: "Die Schlauchform und Macrostylosporenform auf denselben Räschen, in fast gleichen Perithezien, letztere in den jüngeren, noch nicht durchbohrten" (FÜCKEL l.c.). But it appears from FÜCKEL's descriptions and illustration that these macrostylospores are remarkably like ascospores. I venture to suggest that FÜCKEL made a mistake here and that the alleged macrostylospores are in fact ascospores. It is also significant that no other investigator has ever seen them.

#### The taxonomic position of *Gibberidea*.

The relationships of *Gibberidea* have been discussed a few times, mainly by PETRAK, but also by SHEAR and VON ARX. In his important paper of 1925 PETRAK expressed the view that *Gibberidea Visci* is a Cucurbitariaceous fungus, closely akin to *Cucurbitodithis* and *Rosenscholdia*.<sup>1</sup> Later on (1941, pp. 265–267) he treated the last-mentioned genus anew, in connection with a study on *Naumovia abundans* DOBR., a species which PETRAK now transferred to *Rosen-*

<sup>1</sup> This spelling seems more appropriate than the customary "*Rosenscheldia*", as commemorating EBERHARD MUNK AF ROSENSCHÖLD.

*schoeldia*. Here he emphasized that this genus is allied to *Leptosphaeria*, at the same time as its kinship to *Gibberidea* was again pointed out. Obviously PETRAK was not aware of a paper by SHEAR (1937) where *Naumovia* and *Rosenschoeldia* had already been synonymized. Moreover, SHEAR had included both genera in *Gibberidea*. (In addition SHEAR argued that *Melogramma* is closely related, too, and "a connecting link between Pseudosphaeriaceae and the Sphaeriaceae" (op. cit., p. 360.) This idea had been hatched out by VON HÖHNEL (1911, p. 75) and is of course abortive, as PETRAK has pointed out).

VON ARX (1954) is, as far as I know, the last author who has discussed the taxonomic status of *Gibberidea*. Following SHEAR he includes *Naumovia* and *Rosenschoeldia* in *Gibberidea*, and furthermore even *Cucurbitothis*. He gives an account of PETRAK's statement about the close relationship between *Gibberidea* and *Leptosphaeria* but is himself more inclined to regard *Gibberidea* as a member of the *Dothiorales*. According to VON ARX (p. 91) "sind die Gehäuse oben mehr oder weniger flach und öffnen sich durch Wegbröckeln grösserer Scheitelpartien mit einem weiten Loch. Sie stimmen hierin mit den Vertretern der *Dothioraceae* oder *Botryosphaeriaceae* überein. Auch nach dem Baue der Fruchtschicht, der Asci und Sporen beurteilt ist *Gibberidea* ein typischer Vertreter der *Dothiorales*". I am unable to concur in any of these statements.

On the other hand I cannot fully agree with PETRAK either. No doubt *Gibberidea Visci* is a Pleosporaceous fungus and certainly bears a resemblance to *Cucurbitaria* which may be more than superficial. But I cannot share the view that it comes close to *Rosenschoeldia*. In order to give reasons for my scepticism it seems necessary to outline briefly that genus.

***Rosenschoeldia* SPERG.**, Anal. Soc. Cient. Argent. 16, p. 124 (1883).

This genus was erected for the only species, *R. paraguayana* SPERG., a parasite on *Hyptis* (*Labiatae*). It is a very spectacular fungus, almost covering large areas of the host stems. The ascocarps are densely crowded on a well-developed "hypostroma". Superficially there is a certain resemblance to e.g. *Gibberidea Visci*. However, the anatomy of the stroma is essentially different. In *Rosenschoeldia paraguayana* the stroma is composed of typical scleroplechtenchyma (cf. HOLM 1957, p. 11). This is not the case in *G. Visci*, cf. p. 218 *Sv. Bot. Tidskr.*, 62 (1968): 1

Thus PETRAK's statement: "*Gibberidea* stimmt daher in bezug auf den Bau des Stromas vollkommen mit den Rosenscheldien ... überein" (1925, p. 60) is not correct.

As to spore characters there is a substantial difference between *Rosenschoeldia paraguayana* and *Gibberidea Visci*. The first species has in fact a very peculiar spore type which has not yet been adequately described; this is comprehensible, as the spores are seldom seen mature. Well-developed material, however, is issued in SYDOW, *Fungi exotici* no. 1198. The spores are "vermiform" (cf. Pl. I c), about  $45 \times 2.5 \mu$ , when ripe with 2 septa dividing the spore into three subequal cells. The uppermost septum is laid down first, at least generally, but apparently the second one is formed almost simultaneously. Below the middle, about the lower septum, the spores are very slightly inflated. Certainly this spore type is highly advanced and has very little in common with *Gibberidea*'s.

In my opinion anatomical as well as sporological characters speak against the concept of a close relationship between *Gibberidea* and *Rosenschoeldia*. Hence we could well leave the latter genus, but some further remarks seem appropriate, including also a couple of other genera which have been associated with *Gibberidea*.

As mentioned above, PETRAK urged a near affinity between *Rosenschoeldia* and *Leptosphaeria*: "*Rosenscheldia* steht nämlich den *Leptosphaeria*-Arten vom Typus der *L. doliolum* (PERS.) CES. et DE NOT. sehr nahe und ist mit dieser Gattung sogar durch Übergangsformen verbunden. Eine solche ist vor allem *L. caespitosa* NISSL, die VON HÖHNEL mit einigen anderen Arten ganz verkannt und ... zu *Phaeoderris* gestellt hat". (1941, pp. 266-267). I can partly agree. It seems probable that *R. paraguayana*—in spite of the peculiar spore type—can be derived from a *Leptosphaeria* form. The pronounced resemblance in peridial anatomy is particularly convincing. I will even suggest *L. galeopsidicola* PETR.—a *Labiatae*-infesting fungus—as a possible connecting link.

It must be recognized, however, that *Rosenschoeldia* in the sense of PETRAK and others certainly is a heterogeneous taxon. This state of affairs goes back to the great *Dothideales* monograph of THEISSEN and SYDOW (1915). These authors considered *Rosenschoeldia* a dothideaceous genus—moreover, they made it the type of a new subfamily *Rosenschoeldiae* of the *Montagnelliaceae*, in consequence of which it was to play a certain role in the taxonomic and phylogenetic discussion. THEISSEN and SYDOW included a second species

in *Rosenschoidia*, viz. *R. Heliopsidis* (SCHW.) = *Montagnella Heliopsidis* (SCHW.) SACC. This is a parasite on various Composites and as to habit very like *R. paraguayana*. Likewise the stroma is composed of typical scleroplechtenchyma. The spore type is very different, however (4-celled, the primary septum is median), so I regard it as a parallel to *R. paraguayana* rather than a close relative. Instead its true affinity lies with some other Composite-infesting fungi, among them *Leptosphaeria caespitosa* justly mentioned by PETRAK, cf. above. PETRAK's assertion of the relationship between *Leptosphaeria caespitosa* (and its allies) and *Rosenschoidia* was obviously based on *R. Heliopsidis* and holds true for that species. The *L. caespitosa* group comprises i.a. a few species referred to *Gibberidea*, as will be demonstrated in this paper. But this necessitates another digression, to the genus *Syncarpella*.

***Syncarpella* THEISS. & SYD., Ann. Myc. 13, p. 631 (1915).**

This genus is typified by *Syncarpella tumefaciens* (ELLIS et HARKN.) THEISS. et SYD. = *Montagnella tumefaciens* (E. et H.) BERL. et VOGL. It is a spectacular parasite on *Artemisia*, provoking canker-like deformations of the stems. Type material was distributed in ELL. et EV., North Am. Fungi no. 1667. It bears a striking resemblance to *Montagnella Heliopsidis*, as underlined already by VON HÖHNEL (1909, pp. 875-876). He, as well as PETRAK, has also justly pointed out the affinity to *Leptosphaeria caespitosa*. PETRAK even considered (1934, pp. 360-361) that *Syncarpella* cannot be maintained as a genus of its own and consequently made the new combination *Leptosphaeria tumefaciens* (ELL. et HARKN.) PETR. The dropping of *Syncarpella* was, moreover, suggested already by CLEMENTS and SHEAR (1931, p. 273). At first sight it may seem a bit drastic to include such a peculiar stromatic form as *S. tumefaciens* in *Leptosphaeria* but there are good reasons for it and a line of demarcation would apparently be difficult to maintain. This is well illustrated by i.a. some species of "*Gibberidea*". In fact, we have here a remarkable evolutionary series whatever its direction. At one end we find *Leptosphaeria (Syncarpella) tumefaciens* and, still more pronounced *Gibberidea plagia*, both canker-provoking parasites. In the latter species the ascocarps form aggregates, several cm in length. *Montagnella Heliopsidis* is very reminiscent of these but does not form cankers (at least not in the material seen by me). At the other end

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we have such species as *Leptosphaeria Artemisiae* and *Gibberidea Artemisiae* with mostly discrete ascocarps without any "hypostroma". Intermediate forms with a more or less strongly developed hypostroma are, e.g., *Gibberidea arthrophyta* and *Leptosphaeria caespitosa*.

Thus there is a natural group of related species, restricted to Composites and with a strong tendency towards the forming of aggregates of ascocarps. It could well be kept as a genus of its own but I prefer to treat it as a section of *Leptosphaeria* for which the name *Syncarpella* seems appropriate. So I formally propose: ***Syncarpella*** (THEISS. et SYDOW) L. HOLM stat. nov. et sectio nova generis *Leptosphaeriae*. Basionymum: *Syncarpella* THEISSEN & SYDOW, Ann. Myc. 13, p. 631. Species typica: *Leptosphaeria tumefaciens* (ELLIS et HARKN.) PETRAK in Ann. Myc. 32, p. 361 (1934). To this section further belong: *Gibberidea Artemisiae*, *G. arthrophyta*, *G. plâgia*, *G. preandina*, *Montagnella Heliopsidis*, *Leptosphaeria caespitosa* as well as those species of *Leptosphaeria* which I have put together as "groupe *Artemisiae*" (HOLM, 1957, p. 16) viz.: *L. Artemisiae*, *L. compressa* and *L. helminthospora*.

***Phragmodothis*** THEISS. & SYDOW, Ann. Myc. 12, p. 179 (1914).

Even this generic name has, unfortunately, been associated with *Gibberidea*, by VON HÖHNEL who claimed two species of *Gibberidea* to be in fact members of *Phragmodothis*, vide infra p. 235. Apparently VON HÖHNEL did not know *Phragmodothis* by autopsy and this declaration of his could perhaps better be passed over in silence but a few remarks may be worthwhile.

*Phragmodothis* was originally monotypic, based on *Dothidea conspicua* GRIFF. (Type coll.: USA, Montana, Billings, *Yucca angustifolia*, VIII.1898 = GRIFF., West Amer. Fungi no. 43).

I will, however, seriously question whether THEISSEN and SYDOW did not fall victims to a confusion as there are pronounced discrepancies between their description of the fungus and GRIFFITHS' original one. Certainly THEISSEN and SYDOW claimed to have studied type material but the original gathering was possibly a mixture. These authors give the spores as 4-celled, 20–24 × 5–6  $\mu$ , in remarkable contrast to GRIFFITHS' statement about 2-celled spores, 13–18  $\mu$  × 5–6  $\mu$ . I have examined a part of the type collection (S), and another North American collection, too: Col., *Yucca* sp., III.1899, leg.

BAKER, S. All this material perfectly matches GRIFFITHS' diagnosis—it is a typical dothideaceous fungus, with dark 2-celled spores (quite mature)—it should properly be classified as a *Systremma* in the scheme of THEISSEN and SYDOW.

*Phragmodothis conspicua* has also been described and discussed by PETRAK (1929, pp. 339–340), on the basis of still other material (BRECKLE, Fungi dakot. no. 438). Apparently PETRAK's fungus is the same as that of THEISSEN and SYDOW. According to PETRAK it has "reichlich vorhandenen Paraphysen" and is thus not dothideaceous but a true member of *Thyridiaria*; consequently PETRAK declared *Phragmodothis* a synonym of *Thyridiaria*. This view was decisively dismissed by WEHMEYER in his monograph of *Thyridiaria* (1941, pp. 257–258). WEHMEYER, too, had examined type material of *Dothidea conspicua* (which was, however, immature), but he asserted that "the stroma was as described by GRIFFITHS and typically dothideaceous" (op. cit., p. 258). Apparently he examined the true *Dothidea conspicua*. I would guess that PETRAK also did though on another occasion: This species can form discrete monolocate ascocarps, too, and it may be such a form that PETRAK has described as *Phaeosphaerella weiriana* (in SYDOW & PETRAK 1924, p. 391).

#### Species e genere *Gibberidea* removendae.

*Gibberidea abundans* (DOBR.) SHEAR, Mycol. 29, p. 361 (1937).

*Naumovia abundans* DOBROZRKOVA, Morbi Plant. 16, p. 197 (1927). —  
*Rosenschoeldia abundans* PETR., Ann. Myc. 39, p. 266 (1941).

This species is no doubt a true *Rosenschoeldia* and closely akin to *R. paraguayana*. It was fully discussed by PETRAK l.c.

*Gibberidea adesmicola* SPEG., Anal. Mus. Nac. Buenos Aires, Ser. 3: 12, p. 385 (1909).

Typus: ARGENTINE: Mendoza, Puente del Inca, II.1908, on dead branches of *Adesmia* sp. (*Leguminosae*), leg. SPEGAZZINI (LPS!).

Apparently SPEGAZZINI referred this fungus to *Gibberidea* because of the clustered ascocarps. I can on the whole agree with his description though it has to be supplemented in some respects. There is a well developed "hypostroma", about 100  $\mu$  thick, just as is the case in some members of the *Syncarpella* group, discussed earlier, pp. 222–223, e.g. *Gibberidea arthroplyma*, and the general aspect is very  
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similar to that species. This resemblance is certainly more than accidental; no doubt *Gibberidea ademicola* is a true *Leptosphaeria*, as is also evident from the scleroplechtenchymatous peridium. As the epithet "*ademicola*" seems to be available in *Leptosphaeria* I propose the new combination *Leptosphaeria ademicola* (SPEG.) L. HOLM.

*Gibberidea alnea* (PECK) WEHM., Can. Journ. Res. 20 C, p. 586 (1942).

*Cucurbitaria alnea* PECK, New York State Mus. Rep. 28, p. 75 (1876). — *Othia alnea* SACC., Syll. 1, p. 740. — Typus: USA, N.Y., Center, twigs of *Alnus* sp., V.1874, PECK (NYSI).

(?) *Massaria Alni* OTTH ex JACZEWSKI, Bull. Herb. Boissier 2, p. 671 (1894). — "*Epiphegia Alni* (OTTH) NKE", Mitth. naturf. Ges. Bern 1870, p. 104 (1871) nom. nud. — *Massarina Alni* SACC., Syll. 11, p. 332 (1895). — Typus: SWITZERLAND, Steffisburg pr. Bern, "an Zweigen von *Alnus glutinosa*", leg. OTTH (BERNI).

WEHMEYER referred this species to *Gibberidea* on the basis of material collected by him in Nova Scotica, apparently without having seen PECK's type. As far as I know WEHMEYER's find is the only one ever reported for this fungus since PECK described it. The identification is no doubt correct; WEHMEYER's description fits well the type material examined by me. This is immature, as W. supposed, and the original diagnosis hence in some respects misleading. A revised description of the type material may thus be appropriate:

Ascocarps about 300  $\mu$  diam., epapillate, united into clusters of 10–20, erumpent through the lenticells. No hypostroma. The peridium, of varying thickness, is composed of a strongly pigmented small-called pseudoparenchyma.

Asci bitunicate. Spores attaining at least  $27 \times 5 \mu$ , hyaline, finally 3-septate, with a conspicuous oil drop in each cell, the 2nd cell slightly swollen. Spore membrane not noticeably gelatinous.

The present fungus has surely nothing to do in *Gibberidea*. It belongs to a group of mainly lignicolous *Pleosporaceae* with hyaline, or eventually pale brown, often gelatinous spores; these species have been referred to various genera, mainly *Massarina*, *Metasphaeria* and *Zignoella*. Certainly our fungus differs from most of these by its gregarious fruit bodies. This trait, however, is surely no fundamental one, and I think that our species is best accommodated in *Massarina* where related species are met with. I will particularly draw attention to *Massarina Alni* (JACZ.) SACC. which may even be conspecific.

The type material of *Massarina Alni* is unfortunately far from

mature but it is quite evident that it represents a species which comes very close to *Gibberidea alnea*, and as far as I can see nothing speaks against an identity. OTTH's diagnosis is on the whole correct. The ascocarps are clustered but there is no "hypostroma". The peridial anatomy is similar to that found in *G. alnea*. The spores seem to be quite similar; as JACZEWSKI has pointed out (l.c.) they will be 3-septate, with a large guttula in each cell. JACZEWSKI gives them as 20–23  $\times$  5  $\mu$ , but they attain at least 25  $\mu$ . I think that these two fungi are conspecific but I leave this particular problem to investigators with access to well developed material from both continents. Moreover, these fungi may be rare; apart from the collections mentioned it has been reported only once, as far as I know (REHM, 1906, p. 397).

It should be pointed out that if *Gibberidea alnea* and *Massarina Alni* are treated as synonyms, the epithet *alnea* will take precedence, in spite of OTTH's name being 5 years older. For there is a pretty intricate story of nomenclature involved here. *Epiphegia Alni* OTTH must obviously be regarded as a nomen nudum, rather paradoxically as the name was published with a full description. But the generic name *Epiphegia* was not validly published, hence all combinations in *Epiphegia* are nomina nuda according to Art. 39 (Edinburgh Code). Unfortunately the provisions for *descriptions generico-specificae* (Art. 42) are not applicable on account of this statement of OTTH: "Der Prototyp dieser neuen Gattung ist die *Sphaeria macrospora* DESM. ..." (l.c.). Consequently it seems undeniable that OTTH referred two species to his new genus *Epiphegia*, viz. *Epiphegia Alni* and *Sphaeria macrospora*, the latter being the type—though he did not explicitly make the due combination for it. Thus *Epiphegia* was not a monotypic new genus, and Art. 42 is out of consideration. Obviously OTTH's fungus got no name until 1894, viz. *Massaria Alni* JACZ. which is antedated by *Cucurbitaria alnea* PECK. The homonym rule will not forbid the use of PECK's epithet in *Massarina* as *alneus* and *Alni* are different words.

The above exposition may warrant the new combination *Massarina alnea* (PECK) L. HOLM n. comb. — Basionym *Cucurbitaria alnea* PECK.

MÜLLER and VON ARX (1962, pp. 276–277) have given a description of a fungus, claimed to be *Othia alnea* (PECK) SACC. However, as EMIL MÜLLER has kindly informed me *in litt.* this was due to a mistake; they wrongly identified PECK's fungus with *Melanopsam-*  
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*mina carinthiaca* VON HÖHN., and the description has reference to this species. (Moreover, *M. carinthiaca* seems to be hardly different from *Lentomita caespitosa* NIESSL, also discussed by MÜLLER and VON ARX (p. 278). Surely NIESSL's fungus is not identic with *Melanopsamma sphaerelloides* WEGEL. and *Melanopsamma umbratilis* WEGEL., which are true *Didymellae*.)

**Gibberidea** *alnicola* REHM, Ann. Myc. 5, p. 540 (1907).

Typus: SWITZERLAND: Graubünden, Fürstenalp, ad ramulum *Alni viridis*, 1903, leg. VOLKART (SI).

A glance at the type material is enough to make it clear that this is simply *Melanomma pulvis-pyrius*. REHM considered it a *Gibberidea*, because "die Perithezien sind durch ein schwärzliches Stroma in den Rindenrissen vereint". However, the ascocarps are  $\pm$  united as is normal for the species. There is no "stroma" apart from the substrate being blackened by hyphae which is often the case in *M. pulvis-pyrius*.

**Gibberidea?** *andina* SPEG., Anal. Mus. Nac. Buen. Aires 23, p. 59 (1912).

Typus: ARGENTINE, Mendoza, Potrerillos, 22.III.1910, *Tricycla* (= *Bougainvillea*) *spinosa*, "ad ramos dejectos subputrescentes", C. SPEGAZZINI (LPSI).

Pl. I d, e.

After examination of the type material I can on the whole agree with SPEGAZZINI's diagnosis though I have not seen the conidial form reported by him. I, too, will put a mark of interrogation after the generic name. Surely, it is no *Gibberidea*. Indeed, it is a remarkable fungus, the pseudothecia being immersed in a common stroma with their walls well differentiated from the stroma tissue (Pl. I d, e). This is a condition analogous to that encountered in the stromatic *Sphaeriales*, e.g. the *Xylariaceae*, where perithecia are united in a common stroma. But the present fungus has stromata with pseudothecia, thus a sort of compound stromata. This must be a rare phenomenon. It was claimed by MUNK (1953, p. 129) to occur in *Valsaria*, but this genus is apparently sphaeriaceous. It was recently reported for *Eudarlucia caricis* by O. ERIKSSON (1966, vide fig. 5 c).

I dare not express a decided opinion about the true taxonomic position of this fungus, but I think that it is probably related to *Trematosphaeria*. The structure of the pseudothecial wall is reminiscent of that genus, as are the brown ascospores, often with paler terminal cells.

*Gibberidea Artemisiae* EARLE, Bull. New York Bot. Gard. 3, p. 291 (1904).

Typus: USA, Nevada, King's Cañon near Carson, "on shredded bark of *Artemisia tridentata*", 3.VII.1902, leg. C. F. BAKER No 1233 a (NY!).  
Pl. II, b-e.

Apparently this fungus was referred to *Gibberidea* owing to its fruit bodies being sometimes "clustered, two or three to six or eight on a scanty brownish stroma" (l.c.). However, they are as a rule solitary, and an examination of the type material proves it to be a typical *Leptosphaeria* s.str. with scleroplechtenchymatous peridium, cf. HOLM 1957, p. 11. It is a true member of the "groupe *Artemisiae*", recognized by the author (op. cit., p. 16) though plainly different from the other species of that alliance by its 3-septate spores, with a median constriction, about  $20-25 \times 5-6 \mu$  (Pl. II, c). Accordingly the species has to be transferred to *Leptosphaeria* but must not keep its specific epithet due to the existence of *Leptosphaeria Artemisiae* (FUCK.) AWD. However, as far as I can judge from the material at hand it is conspecific with *Gibberidea preandina* SPEG., vide p. 235 and will thus be called *Leptosphaeria preandina*.

As far as I know the original collection is the only find ever reported for "*Gibberidea Artemisiae*". It is true that there is still another gathering in NY under this name (BAKER, Plants of the Pacific Slope No. 1805: Cal., Santa Clara Co., *Artemisia californica*, leg. COPELAND, det. FITZPATRICK), but this material with mostly 5-septate spores, apparently represents another, though related species.

*Gibberidea artrophyma* FAIRMAN, Mycologia 10, p. 246 (1918); "*Gibberidia*".

Typus: USA, New Mexico, vicinity of Ute Park, Colfax County; altitude 2200 to 2900 meters, on old stems of *Chrysothamnus graveolens*, 14.IX.1916, leg. P. C. STANDLEY no. 14782. (CUP!).  
Pl. II a.

The species is above all characterized by its spore type which is uncommon: a  $\pm$  median constriction divides the spores into one upper 3-celled part and one lower 2-celled part, as was pointed out by FAIRMAN in his good description. The ascocarps are "densely cespitose" (l.c.) and it could be added that they are often confluent, with a marked tendency towards the formation of a common basal stroma (Pl. II a). The peridium is composed of scleroplechtenchyma and there can be no doubt that the fungus should be referred to *Lepto-*  
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*sphaeria*; thus I propose the new combination *Leptosphaeria arthrophyma* (FAIRMAN) L. HOLM.

***Gibberidea Bresadolae* RICK, Ann. Myc. 5, p. 31 (1907).**

Typus: BRAZIL, São Leopoldo, on living leaves of *Cupania* sp. (*Sapindaceae*), VII.1906 (RICK, F. austro-americani n. 119) (SI).

This rather peculiar leaf parasite is apparently quite misplaced, being a stromatic member of the *Hypocreales* with violet-pigmented ascocarps. The original diagnosis is very meager and partly misleading, as the hyaline ascospores are reported as "fuscidulis". The asci are dissolved early.

In my opinion there can be no doubt that this fungus is closely related to *Gibberella Lagerheimii* REHM, also a South American leaf parasite and, as far as I am aware, only known from the type collection: Equador, on *Tessaria* sp. (*Compositae*) leg. LAGERHEIM (REHM, Asc. 1127). The resemblance is striking, and one would rather question whether they are really specifically distinct. This is probably the case: *Gibberidea Bresadolae* has more fusiform spores, often with pointed ends, "plerumque utrinque appendiculatis". They are moreover remarkably variable. I am not convinced that these fungi are properly placed in *Gibberella* either but that is a problem beyond the scope of this paper. Anyway, RICK's species should be removed from *Gibberidea* and from a practical point of view it seems reasonable to transfer it to *Gibberella* where it will have a better chance of being noticed by investigators on the *Hypocreaceae*. So I feel justified in proposing the new combination *Gibberella Bresadolae* (RICK) L. HOLM.

***Gibberidea cinerea* (KARST.) KIRSCHST., Hedwigia 81, p. 206 (1944).**

This is a case of confusion. KIRSCHSTEIN gives "*Sphaeria cinerea* KARST." as basionym. However, there is no such name, only a *Sphaeria cinerea* FUECK., which is a taxonomic synonym of *Sphaeria corticola* FUECK. = *Griphosphaeria corticola* VON HÖHN. Vide etiam HOLM 1957, p. 26.

***Gibberidea conjuncta* (PETR.) VON ARX, Acta Bot. Neerl. 3, p. 90 (1954).**

*Cucurbitodithis conjuncta* PETR., Ann. Myc. 20, p. 188 (1922). — Typus: USA, Idaho, Coolln, on bark of *Thuja plicata*, 18.IX.1919, leg. J. WEIR (BPII).

Pl. III a, b.

PETRAK (l.c.) supplied a detailed though somewhat labyrinthic description of this fungus, which according to him "gehört in die nächste Verwandtschaft von *C. pithyophila* (FR.) PETR." This opinion was obviously shared by VON ARX; however, the transfer to *Gibberidea* by the latter author was apparently not based on autopsy. Certainly the species is misplaced in either genus. I will briefly point out its main characters.

The ascocarps are clustered in small erumpent groups of about 10 on a common "hypostroma", mostly c. 1 mm diam. and 400  $\mu$  thick; laterally the peridium attains about 50  $\mu$ . The peridium is composed of thin-walled pseudoparenchyma: in the "hypostroma" the cells are mostly isodiametric up to 15  $\mu$  diam., in the lateral peridium the cells are usually smaller and more compressed. The pigmentation of the cell membranes is heavy but irregular, especially in the outer cell layers.

The spores are ellipsoid, constantly 3-septate, pale brown, and mostly 15-16  $\times$  6  $\mu$ .

As a matter of fact this fungus is very unlike *Cucurbitodithis pithyophila*. The stroma is not scleroplechtenchymatous and has no resemblance to the peculiar *Parmelia*-like thallus of *Cucurbitodithis*. The similarity is biological if any, as both fungi are (probably) restricted to conifers. If the present species had instead been found on some deciduous tree, I doubt that it would ever have been referred to *Cucurbitodithis*. Actually it is closely related to *Melanomma Rhododendri* REHM, discussed on pp. 235-237, and to judge from the material at hand, morphologically hardly distinct. Due to the very different host plants I hesitate to treat them as conspecific, and so I propose the new combination *Melanomma conjunctum* (PETR.) L. HOLM.

*Gibberidea Heliopsisidis* (SCHWEIN.) SHEAR, Mycol. 29, p. 361 (1937).

*Dothidea Heliopsisidis* SCHWEINITZ, Schrift. Naturf. Ges. Leipzig 1, p. 34 (1822). — *Montagnella Heliopsisidis* SACC., Syll. 2, p. 646.

This species was discussed above (pp. 222-223) and I concluded that it should be referred to *Leptosphaeria* subgen. *Syncarpella*. I here formally propose the new combination *Leptosphaeria Heliopsisidis* (SCHWEINITZ) L. HOLM.

*Gibberidea Hendersoniae* (FUCK.) KIRSCHST., Krypt.-Flora Mark Brandenburg 7 (2), p. 294 (1911).

*Cucurbitaria Hendersoniae* FUCK., Symb. Myc. p. 172 (1870).

As I have pointed out earlier (1957, p. 26) this species is a true *Leptosphaeria*.

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*Gibberidea Hippohaës* (FABRE) KIRSCHST., Hedwigia 81, p. 206 (1944).

*Melanomma Hippophaës* FABRE, Ann. Sci. Nat. Bot. VI: 9, p. 92 (1878).

I have not seen authentic material of this species, but the fungus which generally passes as *Melanomma Hippophaës* is very far from *Gibberidea*, and rather allied to *Griphosphaeria* (cf. MUNK 1957, p. 181). KIRSCHSTEIN referred it to *Gibberidea* because he thought it related to what he called *G. Lenarsii*, vide p. 232.

*Gibberidea Juniperi* MÜLLER et VON ARX, Phytopath. Zeitschr. 24, p. 359 (1955).

Typus: SWITZERLAND, "in alpihus raeticis, Ramosch, Vna, Palù lunga, 1900 m.s.m. 16.7.1949.", in foliis vivis *Juniperi nanae* (ZT).

Pl. III c, d.

This is a most remarkable fungus and apparently a systemic parasite. The ascocarps are formed in the axils of living needles and are attached by a taplike "hypostroma". It is amazing that this odd species was not reported until 1955 though occurring on a common host. Possibly it is rare.

Through the courtesy of Dr. EMIL MÜLLER I have had the opportunity of studying another collection of his: Switzerland, Wallis, Aletschreservat bei Brig, 23.9.1965. On the whole I can confirm the original description, adding the remark that the spores are minutely punctate. The taxonomic position of the fungus remains problematic, however. Surely, it has nothing to do with *Gibberidea*, especially not with *G. Rhododendri*, as was claimed by its godfathers. The only character in common is the "hypostroma" which seems to be a matter of coincidence only. *Leptosphaeria* can hardly be considered either, as the ascocarp wall has no scleroplektenchyma. The peridial anatomy, especially the somewhat irregular pigmentation, is reminiscent of *Trematosphaeria* and the spores, too, suggest an affinity to that genus. It would be unwise, however, to refer the species there, at least when *Trematosphaeria* is used in the emended sense of the author (1957). The present fungus is too different, especially in its biology, from that genus of mostly wood-inhabiting saprophytes; so it seems appropriate to establish a new genus in order to accommodate this peculiar species. It gives me great pleasure to name the genus after discoverer and to propose: **Muellerites**, genus Pleosporacearum, *Trematosphaeria* affinis sed differt modo parasitante, mycelio perennante, "hypostromate" bene evoluta. Species typica, adhuc unica, *Muellerites Juniperi* (MÜLLER et VON ARX) L. HOLM n. comb.

*Gibberidea Kalmiae* (PECK) M. BARR, *Canad. Journ. Bot.* 39, p. 311 (1961).

In my opinion a synonym of *Melanomma Rhododendri*, vide p. 236.

*Gibberidea Lennarsii* (WEST.) KIRSCHST., *Hedwigia* 81, p. 206 (1944).

As reported in my dissertation (1957, p. 54) WESTENDORP's fungus was simply *Melanomma pulvis-pyrius*.

*Gibberidea macrospora* (DESM.) SCHROETER in COHN, *Krypt.-Flora von Schlesien* 3:2, p. 315 (1894).

*Sphaeria macrospora* DESM., *Ann. Sci. Nat. Bot.* III: 10, p. 350 (1848). — *Massaria macrospora* SACC., *Syll.* 2, p. 10. — *Asteromassaria macrospora* VON HÖHN., *Fragm. z. Myk.* 1041 (1917).

This species has a vast synonymy (cf. e.g. MUNK 1957, p. 411). It has been referred to several genera, among them even *Gibberidea*, due to the crowded pseudothecia. The resemblance to this genus is superficial only, and it rather seems related to *Massaria*. VON HÖHNEL erected the genus *Asteromassaria* for this species.

*Gibberidea Nipae* HENNINGS, *Hedwigia* 47, p. 257 (1908).

Typus: THE PHILIPPINES; Luzon, Prov. Pampanga, San Esteban, on dead petioles of *Nipa fruticans*, IX.1905, leg. MERRILL No. 4255 (S!).

Pl. IV e.

A highly characteristic fungus, so far known only from the type collection. HENNINGS's diagnosis does not do it justice so I will provide a new description:

Pseudothecia large, attaining 1 mm in diam. and ab. 1200  $\mu$  in height, with a strong papilla, up to 300  $\mu$  high and 200  $\mu$  wide, solitary on the blackened substratum or more often confluent, forming dothideaceous groups.

Peridium strong, laterally c. 60  $\mu$ , of a pigmented prosenchyma, similar to "textura epidermoidea" (STARBÄCK 1895, p. 11).

Paraphysoides? (dissolved in this material).

Asci bitunicate, clavate, 150–160  $\times$  15–17  $\mu$ , 8-spored, J–.

Spores irregularly biserial, fusiform, 4(–5?)-septate, yellowish brown, finely verrucose, 42–45  $\times$  9  $\mu$ ; the basal cell is almost hyaline, and the lowest septum is laid down first.

The species is remarkable in several aspects, particularly its spore type, which is unique, as far as I am aware. Possibly its nearest relatives are to be found among the "*Dothideales*"; probably it cannot be accommodated in any genus so far described. Dr. EMIL Sv. Bot. Tidskr., 62 (1968): 1

MÜLLER has kindly examined the fungus and has informed me that it is unknown to him. "Es gibt immer wieder etwas Neues." As being unfamiliar with tropical fungi I will confine myself to these remarks.

*Gibberidea obducens* RICK ap. REHM, Ann. Myc. 2, p. 517 (1904).

Typus: BRAZIL, São Leopoldo, ad caules vivas *Menthae* sp., 1904, leg. RICK (= REHM, Asc. 1561. Sl).

THEISSEN & SYDOW (1915, p. 648) considered this species to be identical with *Rosenschoeldia paraguayana* and PETRAK and SHEAR have adopted this view which seems to be correct.

*Gibberidea paraguayana* (SPEG.) SHEAR, Mycol. 29, p. 361 (1937).

This is *Rosenschoeldia paraguayana* SPEG., cf. p. 220.

*Gibberidea parasitica* PETR., Sydowia 13, p. 124 (1959).

Type: IRAN, Kurdistan, "Quandil-Gebirge zwischen dem Kleinen und Grossen Zab, 2800 m, 31.VII. 1957, leg. K. H. RECHINGER. Parasitisch am Stroma von *Calonectria kurdica* PETR. und *Cucurbitaria kurdica* BUB. auf dicken Ästchen von *Astragalus* spec." (herb. PETRAK).

Pl. IV a.

Through the kindness of Dr. PETRAK I have had the privilege of examining the type material and can correct the detailed original description in some respects. Apparently this fungus is no parasite, at least not an obligate one. The ascocarps are, anyway as a rule, growing directly on the wood cylinder of the *Astragalus*. They are often intermixed with stromata of the above-mentioned *Cucurbitaria* but so far as I have seen, on cutting on the freezing microtome, the ascocarps of *Gibberidea* are never attached to the latter. Certainly I will not deny the possibility of such an association but then rather with dead or dying stromata. Surely it is generally a saprophyte. It seems appropriate to supply a new description.

Ascocarps large, solitary or some clustered, up to 500  $\mu$  diam. and 700  $\mu$  high, with a strong papilla, ab. 200  $\mu$  high, laterally compressed.

Peridium thick, ad 90  $\mu$ , of many layers rather small, irregularly pigmented thinwalled cells.

Asci numerous, clavulate, 120-150  $\times$  15-17  $\mu$ , 8-spored.

Spores irregularly distichous, fusiform-caudate, 23-32  $\times$  7-9  $\mu$ , 4-5(-6)-septate, pale brown, with terminal gelatinous appendages, the apical one up to 6  $\mu$ , the basal one at least 7  $\mu$ . A constriction at the primary septum which is suprmedian. Septation pattern 2-3, 3-3, 3-4, 3-5.

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The flattened papilla was noticed by PETRAK with the remark (op. cit., p. 126): "Legt man auf das Merkmal des gut entwickelten, von zwei Seiten mehr oder weniger zusammengepressten Ostiolums grösseren Wert, müsste der Pilz als *Lophiostoma* aufgefasst werden." He, however, rejected this idea: "Dieser Ansicht widerspricht aber das mehr oder weniger gut, oft kräftig entwickelte Stroma, dem die Perithezien auf- oder etwas eingewachsen sind." This seems to be a mistake of PETRAK's. The material examined by me is not stromatic, and I see no reason not to refer the species to *Lophiostoma*, in the vicinity of *L. appendiculatum*. It seems quite possible that it is already described as a *Lophiostoma* but it is beyond the scope of this study to unravel that question. In order that the fungus be observed in its true connection I transfer it to *Lophiostoma* even at the peril of creating a taxonomic synonym—besides this would be rather desirable as the epithet "*parasitica*" is spurious. So let it be *Lophiostoma parasitica* (PETRAK) L. HOLM n. comb.—Basionym *Gibberidea parasitica* PETR.

*Gibberidea pithyophila* (FR.) VON ARX, Acta Bot. Neerl. 3, p. 90 (1954).

This is *Cucurbitodithis pithyophila* (FR.) PETR., vide HOLM 1967, p. 449.

*Gibberidea plagia* (COOKE et MASSEE) SACC., Syll. Fung. 9, p. 820.

*Cucurbitaria (Melanomma) plagia* CKE et MASS. in Grevillea 17, p. 8 (1888).

Typus: AUSTRALIA, Victoria, Port Phillip, "on living twigs of *Cassinia aculeata*" (*Compositae*), leg. FRENCH.

Pl. IV *b, c*.

I have not seen type material but I have examined another more recent collection, also from Victoria (Warburton), and on the same host, II.1922, leg. et det. G. SAMUEL sub nom. *Gibberidea plagia*. There can be no doubt that the determination is correct. The species is very characteristic, provoking cankerlike deformations on the twigs. The fruitbodies are densely crowded, forming a common basal stroma. The peridium is composed of a scleroplechtenchyma resembling that of *Leptosphaeria*. It is apparent that this species is closely akin to the other "*Gibberideas*" on *Composite*. Like those it should be referred to *Leptosphaeria*, so I propose the combination *Leptosphaeria plagia* (COOKE et MASSEE) L. HOLM n. comb.

As stated in the original description *L. plagia* has large spores, *Sv. Bot. Tidskr.*, 62 (1968): 1

up to  $45 \times 10 \mu$ . They are 3-septate, pale brown, with lighter terminal cells (Pl. IV *b*).

*Gibberidea preandina* SPEG. in Anal. Mus. Nac. Buenos Aires 23, p. 59 (1912).

Typus: ARGENTINE, Mendoza, Potrerillos, dead stems of *Eupatorium saucechicoensis*, 23.III.1910, leg. C. SPEGAZZINI (LPSI).

Pl. V *a*.

The original description is somewhat misleading—at least judging from the material studied by me—when stating the ascocarps to be united in “caespituli minuti cucurbitaroidi”. Most of these are solitary, or partly more or less confluent. But there is no stroma and no reason for referring this species to *Gibberidea*. Actually it is in every respect a true *Leptosphaeria*, so I propose the new combination *Leptosphaeria preandina* (SPEG.) L. HOLM. As I have indicated (p. 228) it is hardly distinct from *Gibberidea Artemisiae* EARLE; possibly the ascospores ( $20\text{--}25 \times 6\text{--}7 \mu$ ) are somewhat more rounded terminally (cf. Pl. II *c* and Pl. V *a*). I think that these two species are identical but leave this problem to future investigators with access to more material.

*Gibberidea Rhododendri* (REHM) RETRAK in Kryptogamische Forschungen 2, p. 160 (1931).

*Melanomma rhododendri* REHM in Berichte Naturhist. Ver. Augsburg 26, p. 48 (1881). — Typus: AUSTRIA; pr. Kühteil in Tyrol, *Rhododendron ferrugineum*, rami sicci, VIII. 1872, leg. REHM (=REHM, Asc. n. 186a, UPS isol).

*Gibberidea Kalmiae* (PECK) M. BARR in Can. J. Bot. 39, p. 311 (1961) — *Leptosphaeria Kalmiae* PECK in New York State Mus. Rep. 39, p. 53 (1886). — Typus: USA, N.Y., Adirondack Mts, Grassy Pond, *Kalmia angustifolia*, rami sicci, VI.1885, leg. PECK (NYS).

*Gibberidea turfosa* SYD. in Ann. Myc. 6, p. 480 (1908) — *Phragmodothis turfosa* (SYD.) VON HÖHN., Mitt. Bot. Inst. Techn. Hochschule Wien 7: 3, p. 96 (1930) — Typus: GERMANY, Rhöngebirge, Rotes Moor, *Vaccinium uliginosum*, rami sicci, 6.VII.1907, H. Sydow (=SYD., Myc. germ. 690, UPS isol).

*Cucurbitaria Rhododendri* NIESSL in Verh. Naturf. Ver. Brünn 10, p. 50 (1871) fide auctt. plur. — *Phragmodothis Rhododendri* (NIESSL) VON HÖHN., Mitt. Bot. Inst. Techn. Hochschule Wien 8: 1, p. 2 (1931) — *Gibberidea Rhododendri* (NIESSL) PETRAK in Ann. Myc. 32, p. 330 (1934) nom. illeg.

A lengthy description of this species to which little can be added has been given by PETRAK (1931). It has been discussed by several

authors, most recently by MÜLLER (1959, p. 171) who, like PETRAK and KIRSCHSTEIN (1944, p. 206) referred it to *Gibberidea* on account of the clustered pseudothecia. The similarity to *Gibberidea*, however, is superficial only. It is no doubt related to *Melanomma pulvis-pyrius*, and I think it is more conveniently accommodated in *Melanomma* than in any other genus so far described. It should be emphasized that solitary pseudothecia are not at all rare, but there is a marked tendency towards coalescence of the ascocarps resulting in compound dothideaceous fruit bodies. Especially characteristic is the strong development of the basal peridium, the "Basalstroma" of PETRAK. The peridial anatomy is of the *Melanomma* type, a thin-walled pseudoparenchyma with irregular pigmentation. When also bearing in mind the similarity in spore type, it seems fully justified to follow REHM and keep the species in *Melanomma*. The assignment to *Phragmodothis*, by VON HÖHNEL, was discussed pp. 223-224.

*Melanomma Rhododendri* is biologically interesting as probably adapted to Ericaceous hosts. I have no doubt that *Gibberidea Kalmiae* and *G. turfosa* are conspecific. The agreeing descriptions indicate the synonymy which is confirmed by a study of material on different hosts. I have not seen the type material of *G. Kalmiae*, but MARGARET BARR's detailed description is based on it; moreover, she has kindly sent me material on *Kalmia angustifolia*, collected by her. Dr. BARR has justly remarked (1961, p. 311): "*G. kalmiae* appears to be close to *G. rhododendri* (NIESSL) PETRAK, according to description". Likewise, VON HÖHNEL pointed out the close affinity between *M. Rhododendri* and *G. turfosa*.

Another near relative is *Melanomma conjunctum* (vide p. 230) which is morphologically hardly distinguishable from it. The difference in host plants seems to justify their keeping as separate species, at least for the present.

The nomenclature of our fungus is a bit confused. Probably its oldest validly published name is *Cucurbitaria Rhododendri* NIESSL which, however, cannot be transferred to *Melanomma*, because of *Melanomma Rhododendri* REHM, based on another type. It could perhaps be argued that the latter name is illegitimate (according to Art. 63), as REHM quoted NIESSL's fungus in his protologue; however, REHM made this reference with the remark "sec. SACCARDO", which, I think, can be interpreted as a reservation on REHM's part.

I have seen in all 8 collections, on 5 different host genera:

On *Kalmia angustifolia*: CANADA; Québec, Gaspé Provincial Park, Mont Albert, Lac Diable, 19.VIII.1957. M. BARR.

On *Ledum groenlandicum*: USA, New Hampshire, Mt Washington, 19.VIII.1963, M. BARR-BIGELOW no. 4108 A. — CANADA; Québec, La Verendrye Park, 16.IX.1965, J. W. GROVES (DAOM no. 110717).

On *Menziesia ferruginea*: CANADA: Alberta, 85 miles S. of Goodwin, 30.IX.1965, J. A. BARANYAY (DAOM no. 110714).

On *Rhododendron ferrugineum*: AUSTRIA; Tyrol, Kühteil, VIII.1872 & VIII.1874 (=REHM, Asc. 186 a, b).

On *Rhododendron* sp.: ENGLAND: The Wrekin, II.1878 (=PLOWR., Sphaer. brit. no. 247).

On *Vaccinium uliginosum*: GERMANY; Rhöngebirge (type of *G. turfosa*, v. supra).

Apparently *Melanomma Rhododendri* has a world-wide distribution: PETRAK has reported it on *Rh. chrysanthum* from Altai, and on *Rh. hirsutum* from Bavaria (1931, p. 160). MÜLLER has recorded it from the Himalayas, on *Rh. campanulatum* (1959, p. 171).

[*Melanomma rhododendri* REHM f. *Alni* REHM, Ber. Nathist. Ver. Augsburg 26, p. 72 (1881) nom. nud.

This name was published with reference to REHM, Asc. no. 284; this exsiccatum was in sched. designated as "*Melanomma rhododendri* f. *alni viridis*", also a naked name. The material was collected on "dürren Aesten von *Alnus viridis* ... in Tyrol". It is a quite typical *Melanomma pulvispyrius*, as suggested by PETRAK (1931, p. 161).]

*Gibberidea Ribis* TRACY et EARLE in GREENE, Plantae Bakerianae 1, p. 28 (1901) (ut "Gibberidia").

Typus: USA, S. Col., Bob Creek, west of Mt. Hesperus, 10,500 ft, 28.VI. 1898, on *Ribes prostratum*, leg. BAKER, EARLE et TRACY n. 1101 (NYI).

Pl. IV d.

The original gathering is as far as I know the only collection ever reported for this species. As the original diagnosis is not very detailed I think it appropriate to supply a full description, based on the above-mentioned material:

Fruit bodies scattered, sometimes confluent, erumpent from the blackened wood, attaining 600  $\mu$  in diameter, with a short papilla, laterally compressed, about 200  $\mu$  broad. Peridium ab. 50  $\mu$  of ab. 10 layers rather small cells, isodiametric-prismatic, rarely exceeding 10  $\mu$ , with thin, somewhat irregularly pigmented membranes. Asci clavate, ad 120  $\mu$ , shortly pedicellate, 8-spored. Spores irregularly distichous, 27-35  $\times$  5-6  $\mu$ , 5-7-septate, fusiform, brown, with a (sub)median constriction, without(?) gelatinous appendages.

This species got astray when referred to *Gibberidea*. It is no doubt related to *Trematosphaeria* and probably rather close to *T. britzelmayriana*, the spores being very similar. The present species has smaller spores with generally fewer cells, the septation being of the type 3-3, 3-4 or 4-4, cf. HOLM 1957, p. 163. There are no gelatinous appendages visible in the type material.

The ascocarps of *G. Ribis* are characterized by their laterally compressed papilla—a trait not mentioned in the original description—which will formally place the species in Lophiostomataceae. It is quite possible that it has already been described as a *Lophiostoma* but an investigation in order to check this is outside the scope of the present study.

The *Lophiostomataceae* are obviously an unnatural taxon composed of species of different kinships. A taxonomic revision will certainly break up the family and many species will be referred to various pleosporaceous genera (or to their vicinity). As suggested above I think that the present species is related to *Trematosphaeria*. For the time being, however, it seems appropriate to refer it formally to *Lophiostoma*, in order that it will be considered by workers on that group, so I propose the new combination *Lophiostoma Ribis* (TRACY et EARLE) L. HOLM n. comb.—basionym see above.

*Gibberidea*(?) *Symphoricarpi* TRACY et EARLE in GREENE, Pl. Baker. 1, p. 28 (1901).

Typus: USA, S. Col., Bob Creek, west of Mt. Hesperus, 10,500 ft, 27.VI. 1898, on dead twigs of *Symphoricarpus*, leg. BAKER, EARLE et TRACY n. 173 (NYI).

Pl. V b.

The original description is essentially accurate but some details should be corrected. The ascocarps are not always "clustered" but often solitary and perhaps never coalesced. The "scanty stroma" is only a rather poor subiculum. As stated by the authors the spores are 3-septate, curved, somewhat reddish brown with lighter end cells; according to my measurements  $30-38 \times 6-7 \mu$ .

TRACY and EARLE had some doubt whether this fungus could be referred to *Gibberidea*. I have no doubts that it is definitely not a *Gibberidea* but am somewhat hesitant about its true generic place. Dr. MARGARET BARR has examined the type material and suggested that it is better considered as a species of *Herpotrichia*. In fact, the most characteristic trait of the present fungus is the vestiture of the  
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ascocarps which are densely clothed by mycelial hairs, giving the aspect of a *Herpotrichia*. This genus is probably heterogeneous; our species is perhaps not a close relative of the type, *H. Rubi*, but similar fungi have been assigned to the genus. In order that our species be considered in a future revision of *Herpotrichia*, I think it is wise to refer it there for the present. With the kind permission of Dr. BARR I credit the new combination to her and so publish the new name *Herpotrichia Symphoricarpi* (TRACY et EARLE) M. BARR n. comb.

*Gibberidea turfosa* SYDOW, Ann. Myc. 6, p. 480 (1908).

In my opinion a synonym of *Gibberidea Rhododendri*, vide p. 235.

*Gibberidea Zingiberacearum* RAC., Bull. Acad. Sci. Cracovie, Cl. Sci. Mat. Nat., 1909, p. 385.

Typus: JAVA, Bogor, in uredosori on leaves of *Amomum dealbatum*, 1899, leg. RACIBORSKI (KRAL).

As pointed out in the original diagnosis this fungus is uredinicolous. Examination of type material has proved that it is typical *Eudarlucacaricis* (FR.) var. *indica* (RAMAKRISHNAN) O. ERIKSSON in Arkiv f. botanik, ser. 2: 6, p. 391. It has been treated in detail by ERIKSSON (1966 & 1967). Apparently it is a common fungus in the tropics. According to RACIBORSKI the ascospores will be 3-septate and "hellbraunwandig" when fully mature. Most spores seen by me are 1-septate and hyaline or finally very pale yellow. The pseudothecia are immersed in a stroma, as described by ERIKSSON.

### *Species non vidi.*

*Gibberidea abutilonis* RICK, Broteria, sér. trimestr. 2(4), p. 183 (1933).

Typus: BRAZIL, "in ramo Abutilonis mortuo".

*Gibberidea Leguminis* REHM ex RICK, op. cit., p. 184.

Typus: BRAZIL, "in vaginis Leguminaceae".

### *Nomina nova in hoc opere publicata.*

*Gibberella Bresadolae* (RICK), p. 229.

*Herpotrichia Symphoricarpi* (TRACY & EARLE) M. BARR, p. 239.

*Leptosphaeria* sect. *Syncarpella* (THEISS. & SYD.), p. 223.

*Leptosphaeria ademicola* (SPEG.), p. 225.

*L. arthroplyma* (FAIRMAN), p. 229.

*L. Heliopsisidis* (SCHW.), p. 230.

- L. pldgia* (COOKE & MASSEE), p. 234.  
*L. preandina* (SPEG.), p. 235.  
*Lophiostoma parasitica* (PETR.), p. 234.  
*L. Ribis* (TRACY & EARLE), p. 238.  
*Massarina alnea* (PECK), p. 226.  
*Melanomma conjunctum* (PETR.), p. 230.  
*Muellerites* n. gen., p. 231.  
*Muellerites Juniperi* (MÜLLER & VON ARX), p. 231.

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### Explanation of the Plates.

#### Plate I.

- a. *Gibberidea Visci*; section through "hypostroma" and two ascocarps. —  $\times 80$ .
- b. do.; ascospores at different stages of septation. —  $\times 530$ .
- c. *Rosenschoeldia paraguayana*; ascospore. —  $\times 1300$ .
- d. *Gibberidea andina*; section through stroma with immersed ascocarps. —  $\times 80$ .
- e do.; ascospores. —  $\times 530$ .

#### Plate II.

- a. *Gibberidea arthropHYma*; section of ascocarps ( $\times 80$ ), ascospores ( $\times 530$ ).
- b. *Gibberidea Artemisiae*; section of ascocarps. —  $\times 80$ .
- c. do.; ascospores. —  $\times 530$ .
- d. do.; peridium in cross-section, well developed scleroplechtenchyma. —  $\times 530$ .
- e. do.; detail of d., a pore can be seen in some cells. —  $\times 1300$ .

#### Plate III.

- a. *Gibberidea conjuncta*; cross-section of "hypostroma" with two ascocarps. —  $\times 80$ .
- b. do.; ascospores. —  $\times 530$ .
- c. *Gibberidea Juniperi*; section of ascocarp. —  $\times 80$ .
- d. do.; ascospores. —  $\times 530$ .

#### Plate IV.

- a. *Gibberidea parasitica*; ascospores. —  $\times 530$ .
- b. *Gibberidea plagia*; ascospores. —  $\times 530$ .
- c. do.; section through ascocarps on "hypostroma". —  $\times 35$ .
- d. *Gibberidea Ribis*; ascospores. —  $\times 530$ .
- e. *Gibberidea Nipae*; ascospores. —  $\times 530$ .

#### Plate V.

- a. *Gibberidea preandina*; ascospores. —  $\times 530$ .
- b. *Gibberidea Symphoricarpi*; ascospores. —  $\times 530$ .
- c. *Gibberidea Rhododendri*; ascospores. —  $\times 530$ .
- d. do.; cross-section of ascocarp. —  $\times 80$ .









