

THE NOMENCLATORIAL STATUS OF THE GENUS DIMERIELLA SPEG. ¹

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Among the genera comprising the family Perisporiaceae of the ascomycetous order Perisporiales, no other genus has been subjected to a wider range of interpretations, than *Dimeriella*. This is one of the genera included by Theissen (24) under the general term Dimerinae. The Dimerinae comprises a small number of forms characterized by minute fruiting bodies, light colored, thin, non-hyphopodiate mycelium, and small, two-celled, hyaline or light brown spores. The majority of these forms occur as parasites on leaves or on the mycelium of other fungi and include species formerly assigned to *Dimerosporium* Auct. (not Fuckle).

From a study of the existing literature it is evident that the various authors who have studied species of *Dimeriella* do not have a clear understanding of the genus-concept. For some has had a Sphaeriaceous, Microthyriaceous or Perisporiaceous meaning; while for others, it has been even Capnodiaceous. One wishing to offer a comentary for such discrepancies has only to consider the original description and the species mentioned under it. The vagueness expressed by Spegazzini's (21) concept "genus e Dimerosporio excerptum", lay oneself open to a misunderstanding of its true meaning; and a comparative study of the eight species placed originally under *Dimeriella*, leaves no doubt that its author did not have a clear picture of the older genus *Dimerosporium* Fuckle. In order to illustrate the writer's point the folowing synopsis of the disposition of Spegazzini's species of *Dimeriella*, made by later authors, is presented.

TABLE I—SYSTEMATIC ARRANGEMENT OF THE ORIGINAL SPECIES

Spegazzini's species of <i>Dimeriella</i>	Other Author's Disposition	
	Transfer to	Author
<i>dubiosa</i>	<i>Gibbera-Antenularia</i>	Von Hohnel
<i>Asterinarum</i>	<i>Phaeodimeriella</i>	Theissen
<i>guarapiensis</i>	<i>Phaeodimeriella</i>	Theissen
<i>solanicola</i>	<i>Phaeodimeriella</i>	Theissen
<i>Elliotti</i>
<i>coronata</i>	<i>Acanthostoma</i>	Theissen
<i>Meyer-Hermani</i>	<i>Dimerium</i>	Theissen
<i>hirtula</i>	<i>Asteromyza</i>	Theissen and Sydow

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As is shown in the above table, only one of the eight species originally placed in the genus has been retained, and this is known only from the description, the specimen having been lost. However, any consideration of the validity of *Dimeriella* rests upon an appreciation of whether the first mentioned, or the first described, species is the type. This necessitates a discussion of the circumstances involving *D. dubiosa* (Speg.) Speg. and *D. hirtula* Speg., respectively.

Dimeriella dubiosa (Speg.) Speg. (Pl. Paraguay, Balansa No. 3539) was originally described as *Dimerosporium ? dubiosum* Speg. and later it was transferred as the first species under his genus *Dimeriella*. The fungus forms compact, indefinite, black, subiculate, raised, separate spots on leaves of *Bambos*. The long, densely stromatoid, brown mycelium which is septate, is fastened to the subcuticular layer of the leaf tissue. The few to many round, perithecia or picnidia are brown, ostiolate and adorned at their lower portion, with short, thick, closely septate setae. Paraphyses accompany the cylindrical asci. The two-celled, hyaline spores are elliptico-lanceolate.

Dimeriella hirtula Speg. (Uster, Ipiranga, Brazil) is the first species which has been described and figured. It occurs on leaves of *Baccharis*, where it forms loose colonies. The fruiting bodies are dimidate thyriothecia with thin, septate setae radiating from their lower portions. The mycelium is scanty, brown pellucid, thin and not stromatoid as in *D. dubiosa*. The egg-shaped asci are immersed in a gelatinous paraphysoid body; while the two-celled spores are hyaline at first, becoming light brown with age.

Of the eight original species included under *Dimeriella*, the two just mentioned and five others have been transferred to other genera. *Dimerosporium ? dubiosum* Speg. became *Antennularia ? dubiosa* (Speg.) Th. (24). *Dimeriella hirtula* Speg. was made the type of the genus *Asteromyxa* Th. et Syd. (27) and the remaining species were placed in the genus *Phaeodimeriella* Speg. and others. Later Theissen & Sydow (27:462) restored the name *Dimeriella* Speg. as a genus of the Perisporiaceae, broadened its concept and selected as its type a different species, *Dimerosporium Cordiae* P. Henn. It is in this last sense that recent authors use the name.

It is altogether evident that there has been expressed three different concepts of *Dimeriella* and, therefore, the validity of the genus is rather doubtful. If the first described species is to be considered as the type, then *Dimeriella* Speg. belongs to the Microthyriaceae and *Asteromyxa* Th. & Syd. becomes a synonym. If on the other hand,

we designate the first species mentioned as the type, the genus becomes a synonym of *Gibbera* Fckl. Theissen (l.c.) in his revision of the genus *Dimerosporium* transferred the species mentioned by Spegazzini to *Antennularia* ? *dubiosa* (Speg.) Th. with the caption "Ist eine *Gibbera*-*Antennularia*". Already v. Hohnel (9) has shown that *Antennularia* Reich. is one of the fungi imperfecti representing pycnidial stages of *Coleroa* or *Gibbera*. We have compared Spegazzini's specimen and it agrees with the latter genus. Whether *Dimeriella* Speg. could be accepted as a valid generical name depends on the justification of Theissen and Sydow (l.c.) in selecting a new type. We believe this is contrary to the accepted rules of nomenclature and therefore the name should be discarded. The present species can be distributed among the already existing genera of the ascomycetes.

A consideration of the systematic position of the group to which *Dimeriella* Speg. has been assigned, seems appropriate at this time. The genus has been considered a member of the order Perisporiales, as established by Lindau (13). This order consisted of three families, namely: Erysiphaceae, Perisporiaceae and Microthyriaceae. In the light of our present knowledge of these families, it is evident that its author merely regarded the group as a temporary resting place and considered the fructifications as perithecia borne on aerial mycelium. The absence of an evident ostiolum justified their treatment together. Subsequent works on the group, tending to clarify the situation, has thrown much light on the subject.

The Microthyriaceae, on account of their shield-shaped, inverse radiate fruiting bodies were first segregated by Theissen (26) and placed in a new order, the Hemisphaeriales. Furthermore, Theissen and Sydow (l.c.) subdivided the Perisporiaceae of Lindau into three families, Capnodiaceae, Perisporiaceae and Englerulaceae, and together with the Erysiphaceae treated them under the Perisporiales.

The term Perisporiales has been a matter of discussion. The name is based on the genus *Perisporium* Fr. whose type species has been shown to belong to the Imperfecti genus *Crociareas* by Saccardo (20) while Petrak and Sydow (16) consider it to be a juvenile stage of a Discomycete. In view of this fact, Gwynne-Vaughan (8) has proposed the name *Erysiphales* for the order, basing the proposition on *Erysiphe*, the next oldest genus name. In this she has been followed by Bessey (4). However, Fitzpatrick (5) has elevated the Erysiphaceae to ordinal rank, restricting the term *Erysiphales* to this family. Such change is based upon Miller's (14) recent studies on the differences in origin of the ascocarps. The Capnodiaceae have been investigated by Arnaud (3) and regarded as Sphaeriaceae

related to the Lophiostomataceae. Woronichin (29) however, insists that the Capnodiaceae form a well delimited group of ordinal rank for which he proposes the name Capnodiales. All of the genera of the Periosporiaceae and Englerulaceae so far investigated have been shown to belong to the Pseudosphaeriaceae or to the Dothidiales (7) (19) (14).

This has resulted in a great deal of shifting of the genera originally included in the Perisporiales. This situation caused Petrak (18) to say that "weil man heute noch gar nicht weiss, was weine Perisporiazee ist und wie ein Pilz beschaffen sein muss, um als Perisporiazee geten zu können." Furthermore, Nannfeldt (15) in his very complete discussion of the morphological relationships existing among the Ascomycetes, failed to treat the Perisporiales as such, but remarks in a foot-note "Der Ordnung Perisporiales fehlt jedlich Existenzberechtigung." Arnaud (1) also considers the Periosporiaceae as a "groupe sans valeur aucune".

The writer's own observations on species of *Meliola* Fr. and of the *Dimeriella*, herein discussed, have convinced him that both these genera do not correspond with the definition of Theisse and Sydow (l.c. 447) "angiocarpen Askomyceten mit mundunglossen kugeligen Gehäusen". These authors include in the Family Periosporiaceae 19 genera and four additional doubtful ones. Of these *Lasiobotrys* Kunze was studied by v. Höhnel (11), Arnaud (1) and Petrak (17) and all agree on its exclusion from the Family. Arnaud (2) transferred *Parodiopsis* Maubl. and *Perisporina* P. Henn. to his family Pariodiellinaceae, while *Chrysomyces* Th. & Syd. and *Piline* Th. are given as synonyms of the former. *Meliola* Fr., *Irene* Th. & Syd. and *Meliolina* Syd. are certainly related to the Dothideales (1) (7) (14). As will be shown in a subsequent paper, the asci are borne in a locule and the fruit body is a stroma. Arnaud (1) points out that *Dimerium* Sacc is Sphaeriaceous.

Though natural relationships among the Ascomycetes can only be obtained through studies of their life histories, these are not possible in general classificational work. The taxonomist must depend on the gross morphology of the species in question for its determination. From the few life history studies on this group, certain facts have been obtained which help in correlating characters of asci, paraphyses and spores with the type of development. It has been demonstrated by Killian (12), Frey (6), Miller (14) and others that in the Pseudosphaeriaceae the ascogenous hyphae lie from the beginning enclosed in a stromatic tissue and gradually by pressure or

resorption this tissue is pushed away to permit the development of asci. Each ascus is separated from the other by intervening remnants of stromatic tissue which forms elongate, compressed, paraphyses-like threads. When the asci are close together, as in this group, this tissue can be easily mistaken for paraphyses; except for the fact that is fastened above and below to the inner wall of the fruiting body. This is especially evident in young ascocarps.

Correlated with this structure is the arrangement of the asci in a parallel layer standing more or less close together and at the same height. On account of having to push their way thru the tissue and the subsequent formation of the locule, the asci in this group are thick walled, especially so at the apices. This condition causes them to be either ovoid or clavate and their dehiscence is by rupturing of the walls. Certainly they are never thin walled in the main body and slightly thicker at the apex or operculate. However, there is no uniformity in spore size or shape.

The crucial structure in the group is the fruiting body, which, though called a perithecium by most mycologists, it is a stromatic organ of vegetative origin. Miller (l.c.) has demonstrated that the perithecium, the typical structure of the pyrenomycetes, has its origin in the sexual apparatus. It is usually of light color and in the majority of the cases is protected by a stroma. Therefore most of the pyrenomycetes are stromatic. The typical pyrenomycete is well illustrated in Weston's figures of *Loramycetes* (28). Their asci are elongated, thin walled and separated by free-ending paraphyses. There is an ostiolum lined by short threads called peryphyses. On the other hand, though the fruiting bodies of our present Perisporiales are globose and perithecium-like, they nevertheless, are the product of special development in the vegetative cells of the mycelium. At the beginning, the fruiting bodies, which v. Hohnel (10) calls pseudothecia, are astomous, but with age, the central portion of the apex breaks away giving them the appearance of ostiola. This phenomenon has been a matter of confusion and has led to the establishment of a number of so-called Sphaeriaceous genera.

According to Arnaud's (2) interpretation the species which are at present included in the genus *Dimeriella* and its related genera *Dimerina*, *Phaeodimeriella* and *Dimerium* show a very close relationship to the group Parodipsideae. However, there are certain features which justify their consideration as distinct genera of this group. This paper discusses only the *Dimeriella* forms, the remaining genera will be discussed later.

The fruit body of the *Parodiopsis*es consists of a single layer of colored cells. The abundant mycelium is superficial; setae are either present or absent and the ascospores are light brown and two-celled. The principal difference between this group and the present *Dimeriella* lies in the size, color and consistency of the ascocarps. The *Dimeriellas* have very small fruiting bodies which are light or dark brown when young, and more or less fleshy. However, *Parodiopsis* ? *manihotis* (P. Henn.) Arn. can be regarded as a *Dimeriella* without setae.

As a basis for the separation of *Parodiopsis* Maubl. and *Dimeriella* Auct. (nec. Speg.) the writer is considering the presence of setae, color of the young ascocarps, and the absence of a recognized conidial stage in the latter.

SYSTEMATIC CONSIDERATIONS

As already stated *Dimeriella* Speg. is one of those concept-genera which, on account of undefiniteness in characterization, has given rise to a variety of meanings, according to the interpretation given to the fundamental genus *Dimerosporium* Fekl. However, this genus is an *Asterina* with a gelatinous dehiscence. The revision of the genus *Dimerosporium* by Theissen (24), showed that the species included under it belong to more than half a dozen genera and that *D. veronicae* Fekl., its type, was its only true representative.

From the present study of the *Dimeriellas* the writer has found that they can be separated in two rather distinct genera, i.e., *Lasiotemma* Th. & Syd., related to Arnaud's *Paradiopsis*es, including most of the species, and *Neohoechniella* Th. & Syd., which shows affinities with the present *Capnodiaceae*.

1. LASIOTEEMA Th. & Syd. Anal. Myc. 15:218. 1917.
Dimeriella Auct., nec. Speg., p.p.
Chaetostigme Syd. Anal. Myc. 15:199. 1917.
Capnodimula Speg. Physis 4:288. 1918.
Pseudoperisporium Toro, Sci. Surv. P. R. 8²:42. 1926.

Leaf parasite. Mycelium superficial, thin, brown pellucid, straight, septate, branched, without hyphopodia. Ascocarp globose, somewhat papillate rather small, superficial on the mycelium, adorned with numerous setae arising from the outer, somewhat blackened layer of parenchymatous cells, dehiscence by rupture of the thin, brown apical cells. Asci eight spored, clavate, thick tunicate above, numerous, each one separated by a thin septate, hyaline tissue. Spores two-celled, hyaline at first, becoming olivaceous or yellowish with age. Conidial stage unknown.

Type species: *Lasiostemma melioides* (B. and C.) Th. & Syd.

In Clements & Shear's "Genera of Fungi" p. 54 and 67 this genus is placed in the Perisporiaceae and also in the Sphaeriaceae. In the first family it lies between *Dimeriella* and *Chaetostigme*, while in the second, it is next to *Apiosporina* from which it differs in the absence of an ostiolum. The first relation is to my mind the right one. In a forthcoming article on the status of the genus *Phaeodimeriella* Speg. the writer considers in extenso, his views on the relationships of *Apiosporina*.

It has already been pointed out why *Dimeriella* Speg. ought to be discarded. Although *Chaetostigme* Syd. antedates *Lasiostemma* Th. & Syd., the former genus was established, with a very meager description, as one of those concept-genera. No type specimen was designated at the time, and its only description was "*Dimeriella* aber mit Paraphysen". Later, while discussing a specimen from New Zealand, on *Lagenophora Billardieri*, Sydow (22) takes Berkely and Curtis' species *melioides*, which had been already assigned as the type of *Lasiostemma*, and makes it the type of *Chaetostigme*. He further remarks that *melioides*, in the sense of Theissen, is a composite species and that his specimen probably constitutes a distinct one. This observation strengthens our conclusions that *L. melioides*, is a collection of well defined and distinct species. Since Sydow selected a species which has already been assigned to a well defined genus we are forced to consider his genus *Chaetostigme* as a synonym. Clements and Shear's recognition of *Chaetostigme* and their selection of another species as its type has no justification.

Capnodinula Speg. is based on *Asterella trichodea* Rehm. which Theissen included as a synonym of *L. melioides*. Because it differs from the latter in the character of the colonies and color of the spores, the writer considers it here as a distinct species.

The genus *Pseudoperisporium* Toro and along with it, the order Pseudoperisporiales has no right of existence. Miller (l. c.) has already defined an ostiolum, on the light of our present knowledge, and the pore formed by resorption of the apical cells to let escape the mature spores, can not certainly be homologize with the canal in the pyrenomycetes.

As originally indicated *Lasiostemma* differs from *Dimeriella* on the position of the setae. *Dimeriella* species are described as with setae on the lower portion of the ascocarps and these are rather short;

while *Lasiostemma* was supposed to include those *Dimeriellas* with long setae on the upper part of the fruit bodies. That this character is a rather weak one to differentiate among genera is shown by *D. Cordiae* P. Henn. which sometimes has ascocarps with setae above the upper middle part; in *D. coronata* Sp. a great number of the setae are on the lower portion. We are extending the characterization of *Lasiostemma* to include not only those whose setae are on the upper part but also those whose setae are located at any place on the ascocarp as previously stated. Their position and length, however, serve to differentiate between species or group of species.

KEY TO SPECIES

- A. Fungus not producing leaf discolorations.
- I. Setae mycelium-like
- a. Setal length about twice the diameter of ascocarp, on Carduaceae.
1. Setae mostly occurring at the apex of ascocarp.
- “ Colonies small, black, smooth 1. *L. melioides*
 ‘ Colonies large, brownish-velutinous 2. *L. distans*
2. Setae occurring at any place 3. *L. coronata*
- b. Setal length not exceeding diameter of ascocarp.
- “ Spores $10-12 \times 4-5\mu$, on Borriginaceae. 4. *L. cordiicola*
 ‘ Spores $15-20 \times 5-7\mu$, on Poaceae 5. *L. disseminata*
- II. Setae spine-like, on Ericaceae. 6. *L. maculosa*
- B. Fungus producing reddish discolorations on leaf, on Carduaceae. 7. *L. gnaphali*
1. *LASIOSTEMMA MELIOLOIDES* (B. & C.) Th. & Syd. Ann. Myc. 15: 218. 1917.
- Asterina melioides* B. & C., Grevillea 4: 10. 1875.
- Meliola baccharidis* B. & Rav., Grevillea 4: 158. 1876.
- Dimerosporium melioides* (B. & C.) Martin, Journ. Myc. 1: 146. 1885.
- Dimerosporium baccharidis* (B. and Rav.) Sacc., Syll. Fung. 1: 53. 1882.
- Dimerosporium melioides* (B. & C.) Ell. & Ev., N. Am. Pyr. 1892: 32.
- Dimerosporium vestitum* Earle, Bull. N. Y. Bot. Gard. 2: 338. 1902.
- Dimeriella melioides* (B. & C.) Th. Ann. Myc. 10: 1. 1912.
- Chaetostigma melioides* (B. C.) Syd., Ann. Myc. 22: 295. 1924.

Spots none; colonies epiphyllous, separate, rarely confluent, more or less round, black, shiny, compact, forming a superficial easily detachable crust, 5–2mm. diam; mycelium not spreading beyond the individual colonies, septate, yellowish-brown, straight, never anastomosing, without hyphopodia, rather scanty, without setae, 3–4 μ thick; ascocarps thickly distributed on the colony, astomous at first, later perforating at the apex by disintegration of the weaker cells there, made up of a layer of dark brown polygonal cells, smooth, 80–100 μ in diameter; ascocarpic setae at the summit only, surrounding the pore and oriented toward the leaf surface, 150–200 μ long; asci numerous, separated by a thin, hyaline, septate, soon breaking tissue of parenchymatous cells which is attached, above and below, to the inner wall of the ascocarp, clavate, thick-walled, tunicate at the upper portion, sessile or very short pedicellate, 8-spored, 46–50 \times 8–11 μ ; spores mostly biseriate, sometimes triseriate, two-celled, slightly constricted, greenish to light yellow, 9–12 \times 2.5–4 μ .

TYPE SPECIMEN: In Curtis Herbarium No. 1355.

DISTRIBUTION: United States (South Carolina to Florida), Bermuda.

MATERIAL EXAMINED: On *Baccharis halamifolia* L.

Curtis Herbarium No. 1355 (*Co-type*); Roland Thaxter, No. 2474 and 3831, Daytona, Fla., Jan. 1898; Anastasio Island, St. Augustine, Fla.; Collected by E. A. Rau, 1885. (In Herbarium N. Y. Bot. Garden.)

On *Baccharis glomerolifera* Pers.

Plants of the Gulf States, Collected by S. M. Tracy, Manatee, Fla. No. 7279; R. Thaxter, Daytona, Fla. 1898 (In Herb. N. Y. Bot. Garden); G. Nelson, Sebastián, Fla. (In Herb. N. Y. Bot. Garden.)

2. *Lasiostemma distans* (Rehm) comb. nov.

Asteridium distans Rehm, Hedwigia 40:157. 1901.

Asterella trichodea Rehm. Ibid. 159.

Capnodinula trichodea (Rehm) Speg. Physis 4:288. 1918.

Dimeriella caracaensis Maubl. Bull. Soc. Myc. France 36:34. 1920.

Spots none, colonies epiphyllous, round, often confluent but always regular, velutinous, brownish-black, dull, 3–7 mm. across; mycelium superficial, scanty, yellowish, pellucid, septate, branched, about 3 μ thick; fruiting bodies scattered black dull, perforated by a pore which is surrounded by long, septate, dark brown, setae measuring 200–300 μ long, 114 μ in diameter; asci ellipsoid, thick tunicate, short pedicellate, separated by a similar tissue as above, two-celled, slightly constricted, upper cell a little wider than the lower, hyaline or dilute brownish, 13–17 \times 5–6 μ .

TYPE SPECIMEN: H. Patzche No. 2127.

DISTRIBUTION: South America (Brazil and Ecuador).

ILLUSTRATIONS: G. Arnaud, Les Asterines I. Pl. III as *D. melioides*

B. & C.

MATERIAL EXAMINED: On Composite.

H. Patzsch No. 2127 (*type*). Ule Fungi Amazonici No. 1857.

On *Baccharis genitillioides* Pers., Theissen Decades Braziliensis No. 238.

On *Baccharis* sp., A. Maublanc, Fungi Brasiliensis No. 327, Caraca, Minas Geraes, Sept. 18, 1913.

This species, though occurring on the same host genus as the above species, differs from it in the character of the colonies, the length of the setae and its geographic distribution.

3. *Lasiostemma coronata* (Speg.) comb. nov.

Asteridium coronatum Speg., Anal. Cien. Argentina 26:18. 1888.

Dimerosporium Puiggarii Speg., Bol. Acad. Nac. Cien. Córdoba 11:485. 1889.

Asterella Conyzae Pat., Bull. Soc. Myc. France 8:127. 1892.

Dimerosporium annulatum Rehm, Hedwigia 35:53. 1896.

Asterella longiseta Starb., Bih. K. Svensk. Vet. Akad. Handl. Stockholm 253:25. 1899.

Dimeriella horridula Syd., Ann. Myc. 7:352. 1909.

Dimeriella longiseta (Starb.) Th., Broteria. 9:12. 1910.

Dimeriella Conyzae (Pat.) Th., Ann. Myc. 10:183. 1912.

Dimeriella erigeronicola Stev., Trans. Illinois Acad. Sci. 10:166. 1917.

Dimeriella claviseta Doidge. Trans. Roy. Soc. South Africa 56:717. 1917.

Pseudperisporium erigeronicolum (Stev.) Toro, Sci. Surv. Porto Rico 8¹:41. 1926.

Chaetostigme erigeronicola (Stev.) Illinois Biol. Monog. 11²:169. 1927.

Chaetostigme horridula (Syd.) Clements & Shear, Genera Fungi 1930:250.

Colonies epiphyllous, forming small, round, hardly distinguishable or larger, concentric, colonies 1-4 mm. in diameter; crusts black, dull, widely scattered; mycelium sinuous, septate, yellowish-pellucid, hyaline at the extremities, sometimes anastomosing, 1.5-2.5 μ wide; ascocarps black-brown, numerous in each colony, globose, perforated at the apex, composed by one layer of polygonal, parenchymatous cells, 60-115 μ in diameter, adorned at the base or lower middle part by 9-15, septate, long clavate, sometimes uncinuate, truncate or lobed, setae about 200 μ long 2-7 μ wide; asci cylindric-clavate, apex tunicate, numerous and separated from each other by long, septate, hyaline, thin strands of pseudoparenchymatous tissue which soon disintegrate,

8-spored; sessile or short pedicellate, $35-55 \times 10-20\mu$; spores conglobate or biseriata, 2-celled, slightly constricted, hyaline at first, yellowish with age, $8-15 \times 3-7\mu$.

The distinguishing character of this species is the arrangement of the individual colonies in concentric rings. Its spore character is very variable, sometimes being definitely two-celled, while others appear as if three septate by the formation of a false septum at one of the cells, thus dividing the spore into three unequal cells. Sometimes the content is granular. The mature spores are yellowish, though this character is not constant. The variability of this species is better expressed in the comments of Theissen (25) “. . . In formis modo relatis varii coloris gradus hyalinis flavi viriduli et fusci exhibentur et saepe quidem in aedem matrice”.

TYPE SPECIES: *B. Balansa Fungi Paraguayensis* No. 3925.

ILLUSTRATIONS: Bih. t. Kongl. Sevenska Vet. Akad. Handl. 25, pl.

I fig. 43. Trans. Roy. Soc. South Africa 56: pl. LVII figs. a, b, c.

DISTRIBUTION: South America, South Africa, West Indies.

MATERIAL EXAMINED: On Composite.

B. Balansa, Fungi Paraguayensis, Paraguari, No. 3925, Aug. 1883.
No. 3582, Caayazu.

On *Bacharis* sp.

Theissen Decades Brasiliensis No. 722, Sao Paulo, Rio Grande do Sul.

On *Leptilon pusillum* (Nutt.) Britton.

Cornell University Explorations of Porto Rico Whetzel, Kern & Toro No. 2637, Ciales, P. R., July 20, 1924. Fungi of Venezuela, Kern & Toro No. 1709, Ocumare de la Costa.

On *Senecio* sp.

Puiggari No. 2586. Apiaphy, San Pablo, Brazil, April 1888.

On *Leptilon bonariensis* (L.) Small.

F. L. Stevens, Puerto Rico Fungi No. 189.

H. Sydow, Fungi Venezuelani, No. 249 Pto. La Cruz, Jan. 16, 1928.

F. L. Stevens, Fungi British Guiana No. 204, Fumatumari, July 11, 1922.

On *Leptilon chinense* (Jacq.) Britton.

F. L. Stevens, Puerto Rican Fungi No. 2048, Quebradillas, P. R.

4. *Lasiostemma cordicola* (P. Henn.) comb. nov.

Dimerosporium cordicolum P. Henn., Hedwigia 43: 355. 1904.

Dimerosporium cordiae P. Henn., Hedwigia 43: 4. 1908.

Dimeriella cordiae (P. Henn.) Th., Beih. Bot. Cent. 26: 67. 1912.

Dimerium Stevensii Garman, Mycologia 7: 337. 1915.

Chaetostigme cordiae (P. Henn.) Stev. Illinois Biol. Monog. 11: 169. 1927.

Colonies epiphyllous, indistinct, widely spreading mycelium branched, wavy, septate, brown-pellucid, forming a faint pellicle over the leaf surface, without setae or hyphopodia, 2–3 μ thick; ascocarps scattered over the mycelium round or somewhat egg-shaped, at the apex with a round pore about 18 μ in diameter, dark brown, 60–70 μ in diameter; beset at the center of the lower portion by short, septate, entire or toothed, numerous setae 40–50 μ long; asci clavate, thick-walled, intersperse by thin, septate, hyaline tissue which soon disintegrates resembling paraphyses, tunicate above, somewhat saccate at the base, sessile or short pedicellate, 8-spored, 30–45 \times 14–18 μ ; spores biseriate or triseriate, somewhat ellipsoid, 2-celled, slightly constricted, hyaline at first, light brown with age, 10–15 \times 5–7 μ .

Though *Dimeriella Cordiae* (P. Henn.) Th. has been generally accepted by all workers as the proper name for this species, a comparison of the type specimens of *cordicolum* and *cordiae*, showed that they are identical, the former name having priority. However, the material on which the species was based is immature and that accounts for the differences encountered by the author of both species. *D. Cordiae* was selected by Theissen and Sydow (l. c.) as the new-type of *Dimeriella* but on the assumption that it contains hyaline spores. Subsequent studies of abundant material from different localities has revealed that the spores are brown. Garman's placement of the Porto Rican material under *Dimerium* illustrates this fact. In its general appearance the species resemble a *Coleroa* or *Gibbera* with superficial mycelium. However, its superficiality and lack of conidial form makes it unlike any of these genera.

TYPE SPECIMENS: E. Ule's Herbarium Brasiliensis No. 2950.

ILLUSTRATIONS: Illinois Biol. Monog. 11, pl. III, fig. 18; Monog. Univ. of Porto Rico, series B. No. 2, pl. 27, fig. 1–2.

MATERIAL EXAMINED: On *Cordia* sp.

Ule's Herb. Brasilensis No. 2950, Jurua, Est. Amazonas, Sept. 1901. Steven's Trinidad Fungi, St. Clair No. 892, Oct. 15, 1912; Port of Spain, No. 863, Oct. 14, 1912. Plants of Costa Rica, Paul C. Standley, El Limón, No. 48380, Feb. 20, 1926. Fungi Brasilensis, Putemans No. 640, Sao Paulo, Feb. 1903. Explorations of Venezuela, Kern & Toro No. 1835, Monai, May 1934. Chardón & Toro No. 502 and 495. Road from Turmero, July 9, 1932.

On *Cordia cylindrostachya* R. & S.

Fungi Venezuelani, H. Sydow No. 802, Antimano, Dec. 12, 1927. Chardón and Toro Explorations of Venezuela No. 754, Los Teques, July 29, 1932. Cornell University, Explorations of Puerto Rico, Whetzel and Olive 611, Yauco, March 30, 1916.

On *Cordia corymbosa* (L.) G. Don

Porto Rico Fungi, Stevens, No. 934, College Grounds, Mayagüez; Fungi Venezuelani, H. Sydow, No. 41, Catia, Dec. 16, 1927. Explorations of Colombia, Chardón, No. 425, near Buga, June 4, 1929. Herbarium, C. E. Chardón, Whetzel & Olive's Fungi of Puerto Rico, No. 6637, Mayagüez, March 13, 1916; Coamo, August 24, 1920, collected by C. E. Chardón, No. 855.

On *Cordia microcephala* H. B. K.

Fungi Venezuelani, H. Sydow, No. 197, El Limón, Pto. La Cruz, Jan. 9, 1928.

On *Cordia ferruginea* (L.) R. & S.

Explorations of Colombia, Chardón No. 265, Jamundi, May 15, 1929.

5. *Lasiostemma disseminata* (Sydow) comb. nov.

Dimeriella disseminata Sydow, Ann. Myc. 28: 66. 1930.

Colonies hypophyllous, forming no spots; mycelium thin, covering large areas of the leaf surface, septate, branched, light brown, 2–4 μ thick; fruit bodies widely distributed over the mycelium, round when young, perforated at the apex at maturity and then conic, 75–130 μ wide, about 150 μ high, adorned at the base with radiating hypha which form a subiculum while from about the center there are one or two rows of long, septate, obtuse setae reaching about 150 μ long; asci numerous, clavate, thickly tunicate, sessile or short stipitate, with separating pseudo-parenchymatous tissue, 8-spored 40–65 \times 12–18 μ ; spores sub-biseriate, fusoid, straight or slightly curved, ends round, hyaline at first, olivaceous with age, two-celled, constricted, 14–20 \times 5–8.

MATERIAL EXAMINED: On *Lasiacis sorghoidea* (Desv.) Hitch y Chase., Fungi Venezuelani, H. Sydow, No. 260b (Type), El Limón, Pto. La Cruz, Jan. 16, 1928.

6. *Lasiostemma maculosa* (Ellis) comb. nov.

Venturia maculosa Ellis in N. Am. Fung. No. 200.

Meliola maculosa Ellis, Bull. Torrey Bot. Club. 8: 91. 1881.

Dimerosporium Ellisii Sacc., Syll. Fung. 1: 53. 1882.

Dimeriella maculosa (Ell.) Th., Beih. Bot. Cent. 29: 37. 1912.

Colonies hypophyllous, numerous, dull black, frequently anastomosing, 8–10 mm., round or irregular; mycelium brown-pellucid, septate, straight, about 3μ wide; ascocarps globose, black, astomous or perforated at the apex, 100–120 μ in diameter, setae hair-like, surrounding the upper portion of fruit bodies, rather thick, dark brown, acute, somewhat twisted or straight, 100–160 μ long, 8–10 μ wide; asci cylindrical, thick walled, intersperse by hyaline, pseudoparenchymatous tissue, short pedicellate, tunicate in the upper portion, 40–50 \times 10–14 μ ; spores inordinate, light olivaceous, two-celled, slightly constricted, cells unequal, 10–12 \times 5–6.

MATERIAL EXAMINED: On *Andromeda* sp.

Ellis North American Fungi No. 200 (*Type*), New Field, N. J. 1878.

DISTRIBUTION: United States; (New Jersey, Mississippi, Michigan).

7. *Lasiostemma Gnaphali* (P. Henn.) comb. nov.

Dimerosporium Gnaphali P. Henn. Hedwigia 41: 297.

Asterina microtheca Pat. Soc. Myc. France 18: 301. 1902.

Spots amphigenous, brown, irregular, extending beyond the individual colonies, usually confluent; colonies superficial, round or irregular, 2–4mm. in diameter; mycelium thin, brown pellucid, septate, straight, 3μ wide; ascocarps gregarious, black, small, round, usually perforated at the apex, 70–100 μ in diameter, setae-radiating from the base, septate, darker than the mycelium, tips obtuse, 80–123 μ long; asci clavate, sessile or short pedicellate, tunicate above, thick-walled throughout, 8-spored, 20–30 \times 8–12 μ ; spores sub-biseriate, 2-celled, fusoid, or clavate, apex acute, slightly constricted, olivaceous, 6–8 \times 3 μ .

TYPE SPECIES: Putteman's Fungi Sao Paulensis No. 458.

DISTRIBUTION: South America (Brasil).

MATERIAL EXAMINED: On *Gnaphali* sp.

Fungi Sao Paulensis, Putteman No. 458, Pedra Branca, Nov 1901.

On *Leucopsis Tweediae* Baker

Patouillard's Herbarium, No. number, Leg. Glaziou, Brasil.

2. *NEOHOEHNELIA* Th. & Syd. Ann. Myc. 15: 476. 1917.

This genus is incorporated by the authors among the Capnodiaceae. Its general character and relationships will not be discussed here for such procedure would involve a consideration of the affinities of *Dimerosporina* v. Höhn., *Henningsiomyces* v. Höhn. *Dystychnis* Clem., and other Capnodiaceous genera. Such discussion is outside of the scope of this paper. Mention is only made because the well known

and widely distributed *Dimeriella Olyrae* is a synonym of *Meliola oligotricha* Mont, type of the genus. We will refer again to this genus when considering the Capnodiaceae.

8. *Neohoechniella oligotricha* (Mont.) Th. & Syd., Ann. Myc. 15: 576. 1917.
Meliola oligotricha Mont., Syll. Crypt. 1856: 254.
Dimerosporium oligotrichum (Mont.) Sacc. Syll. Fung. 1: 54. 1882.
Dimerium oligotrichum (Mont.) Sacc. Syll. Fung. 17: 537. 1905.
Parodiella setulosa P. Henn. Hedwigia 43: 357. 1905.
Henningsomyces oligotrichum (Mont.) v. Höhn., Sitz. K. Akad. Wis. Wien. 119: 460. 1910.
Pseudoparodia setulosa (P. Henn.) Th. & Syd. Ann. Myc. 15: 139. 1917.
Dimerosporina setulosa (P. Henn.) Th. & Syd., Ann. Myc. 15: 167. 1917.
Asterina fumagina Dearn & Barth., Mycologia 9: 349. 1917.
Dimeriella fumagina (Dearn. & Barth.) Stev. in Stevenson, Journ. Dept. Agric. Porto Rico 2: 36. 1918.
Dimeriella Olyrae Stevens, Trans. Illinois Acad. Sci. 10: 167. 1917.

Colonies epiphyllous, abundant, black dull, round, usually anastomosing, 1–3 mm. in diameter, mycelium dematioid in the vicinity of the fruiting bodies, straight toward the ends, septate, crooked, 3–4 μ thick; ascocarps numerous, black, rugulose, astomous with 1–3 straight, septate, obtuse setae; mycelial setae also present, 200–300 μ long; asci 8-spored, clavate, tunicate, 50–70 \times 25–30 μ ; spores inordinate, septate, hyaline at first, light yellowish with age, 15–18 \times 7–8 μ .

TYPE SPECIMEN: Fungi of Cayenne, Leprieur. No number.

ILLUSTRATION: Hedwigia 43: 358. 1904.

MATERIAL EXAMINED: On *Olyra latifolia* L.

Herbarium of F. v. Höhnel slide collection; Ule Fungi Brasilensis No. 3308, Tarapoto, Peru; Porto Rican Fungi, Bruce Fink No. 453, Río Piedras, Nov. 30, 1915; No. 1265, Dec. 23, 1915, Mayagüez.

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