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Tropical Fungi — V

New Species and Revisions.

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The present paper continues No. IV of this series, (Proc. Linn. Soc. London, 165: in press. 1954) and deals with specimens forwarded to me for examination from the herbaria of Stockholm, Kew, Paris and Harvard.

(239) **Amazonia piperis** (Syd) Hansf., comb. n. (3101.32×0)

Syn.: *Actinodothis piperis* Syd., Phil. Journ. Sci. Bot.,

9: 175, 1914.

Colonies epiphyllous, black, dense, crustose, to 4 mm diam., causing a blackening of the underlying epidermis and evagination of the leaf, apparently strongly parasitic. There is no penetration of the host, save for the epidermal haustoria typical of this genus. Mycelium of substraight closely radiating, dark brown hyphae 5—7 μ thick, the cells mostly 8—12 μ long, branching alternate or irregular, the whole forming almost a continuous pellicle of a single layer. Capitate hyphopodia alternate, antrorse, 12—15 μ long; stalk cell cuneate, 3—6 μ long; head cell globose to wide ovate, entire, 7—11 μ long. Mucronate hyphopodia not seen. Setae none. Perithecia commencing as flat plates of radiate hyphae, becoming raised in the centre, immature. Spores brown, oblong, obtuse, 4-septate, rather deeply constricted, 34—38 μ long, 13—15 μ wide.

On *Piper* spec., Amboina, Robinson 2208, det. Sydow as *Actinodothis piperis* Syd.

(240) **Irenopsis cornuta** (Rehm) Hansf., comb. n. (3401.3220)

Syn.: *Meliola cornuta* Rehm, Hedwigia 40: 163. 1901.

Herb. Kew contains a specimen on *Dicksonia* sp., Santa Catharina, Brazil, Ule, Herb. brasil. 860:

Colonies amphigenous, mostly hypophyllous, thin, spreading over the leaflets. Mycelium of straight to flexuous dark brown hyphae

6—7 μ thick, the cells mostly 25—40 μ long, branching opposite or irregular, loosely reticulate. Capitate hyphopodia alternate only, straight or bent, 15—30 μ long; head cell widely ovate to piriform, entire, widely rounded at apex, 10—15 $\Rightarrow$ 9—11 μ ; stalk cell cylindric, 5—15 μ long. Mucronate hyphopodia mixed with capitate, opposite or alternate, bent ampulliform, 15—20 $\Rightarrow$ 6—8 μ , neck 3 μ thick. Setae none on mycelium. Perithecia loosely scattered, black, globose, verrucose, up to 160 μ diam., above with 0—6 erect-spreading setae up to 120 $\Rightarrow$ 7—8 μ , simple, obtuse, bent or uncinata to loosely coiled at the apex, indistinctly 1—2-septate, thick-walled, smooth. Spores dark brown, cylindric to subellipsoid, 4-septate, constricted, obtuse, 35—39 $\Rightarrow$ 11—13 μ .

(241) **Irenopsis hoheriae** Hansf., sp. n. (3401. 4220).

Plagulae epiphyllae, subtenues, usque ad 2 mm diam., subinde confluentes. Mycelium ex hyphis atrobrunneis, undulatis, 6—7 μ cr. (cellulis plerumque 15—20 μ longis), opposite vel irregulariter ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, antrorsa, recta, 16—21 μ longa, cellula basali cylindracea, 4—7 μ longa, cellula apicali irregulariter lobata vel angulosa, 10—14 $\Rightarrow$ 10—13 μ . Hyphopodia mucronata opposita vel alternata, ampullacea, curvata, 14—22 $\Rightarrow$ 7—9 μ , collo 3—4 μ crasso. Setae myceliales nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 190 μ diam., superne setis 8—12, erecto-patentibus, rectis vel leniter flexuosis, simplicibus, obtusis vel acutis, dilute brunneis, continuis, levibus, usque ad 110 $\Rightarrow$ 7—8 μ ornata. Sporae atrobrunneae, ellipsoideae, obtusae, 4-septatae, constrictae, 38—45 $\Rightarrow$ 17—19 $\Rightarrow$ 14—15 μ .

Hab. in foliis *Hoheriae sexstylosae*. New Zeland, Colenso b-133, in Herb. Kew.

(242) **Irenopsis malpighicola** Hansf., sp. n. (3401. 5220).

Plagulae hypophyllae in tomento folii, tenues vel subdensae, leves, usque ad 1 mm diam. vel numerosae confluentesque. Mycelium ex hyphis atrobrunneis, undulatis vel flexuosis, 7—9 μ cr. (cellulis plerumque 20—30 μ longis), opposite vel irregulariter ramosis, subdense reticulatis compositum. Hyphopodia capitata alternata, recta vel curvula, 20—27 μ longa, cellula basali cylindracea vel cuneata, 5—9 μ longa, cellula apicali globosa vel late piriformia, integra vel raro leniter rotundato-angulosa, 15—20 $\Rightarrow$ 12—16 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 16—22 $\Rightarrow$ 7—9 μ , collo suberecto, 3—4 μ crasso. Setae myceliales nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 190 μ diam., superne setis 2—12, erecto-patentibus, usque ad 140 $\Rightarrow$ 6—7 μ , simplicibus, obtusis, saepe spiraliter contortibus, 1—2-septatis, sursum sparse granulosus ornata. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 45—53 $\Rightarrow$ 16—19 $\Rightarrow$ 13—15 μ .

Hab. in foliis *Malpighiacearum* spec. indet., Santa Catharina, Brazil, U l e, Herb. brasil. 479, typus in Herb. Stockholm.

(243) ***Irenopsis omphaleae*** Hansf., sp. n. (3401. 5330).

Plagulae amphigenae, tenuissimae, effusae, confluentes, leves. Mycelium ex hyphis subrectis vel undulatis, atrobrunneis, 7—9 μ cr. (cellulis plerumque 20—30 μ longis), opposite vel irregulariter ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, plus minusve antrorsa, recta vel curvata, 22—30 μ longa, cellula basali cylindracea, 5—9 μ longa, cellula apicali oblonga, piriforme, rotundato-angulosa vel irregulariter palmato-lobata, 18—23 $\Rightarrow$ 10—17 μ . Hyphopodia mucronata illis capitatis commixta, ampullacea, curvata, 20—40 $\Rightarrow$ 6—9 μ , collo elongato, 3 μ cr. Setae myceliales nullae. Perithecia laxe dispersa, atra, globosa, verrucosa, usque ad 215 μ diam., superne setis 0—10, erecto-patentibus, simplicibus, obtusis, uncinatis, levibus, continuis, usque ad 130 $\Rightarrow$ 7 μ , ornata. Sporae ellipsoideae, obtusae, atrobrunneae, 4-septatae, constrictae, 45—50 $\Rightarrow$ 22—25 μ .

Hab. in foliis *Omphaleae pauciflorae*, San Domingo, Ciferri, Mycofl. doming. exs. 269 p. p.; typus in Herb. Kew.

This differs very markedly from *Meliola (Irenina) funebris* Cif., as described in Ann. Myc. 36: 240. 1938, with which it is mixed in the above specimen, which forms part of the type of Ciferri's species.

(244) ***Irenopsis quercifolia*** Hansf., sp. n. (3401. 3220).

Plagulae epiphyllae, subdensae, leves, usque ad 4 mm diam., subinde confluentes. Mycelium ex hyphis atrobrunneis, leniter undulatis, 6—7 μ cr. (cellulis circa 15—20 μ longis), opposite ramosis, laxe reticulatis compositum, in centro plagularum subdense intertextum. Hyphopodia capitata alternata, plus minusve curvata, saepe reflexa, 15—22 μ longa, cellula basali cylindracea, 3—7 μ longa, cellula apicali oblonga, apice rotundata, vel saepe irregulariter angulosa, subinde sublobata, 12—18 $\Rightarrow$ 8—11 μ . Hyphopodia mucronata numerosa, alternata, opposita vel interdum ternata, ampullacea, curvata, 15—23 $\Rightarrow$ 7—9 μ , illis capitatis commixta, collo suberecto, 3 μ cr. Setae myceliales nullae. Perithecia laxe dispersa, atra, globosa, verrucosa, usque ad 180 μ diam., superne setis 3—12, erecto patentibus, atrobrunneis, obtusis, levibus, crasse tunicatis, 2—3-septatis, usque ad 110 $\Rightarrow$ 6—7 μ , apice rectis, curvatis vel leniter spiraliter incurvis ornata. Sporae atrobrunneae, subellipsoideae obtusae, 4-septatae, constrictae, 34—39 $\Rightarrow$ 15—18 $\Rightarrow$ 12—14 μ .

Hab. in foliis *Querci nigrae*, Baton Rouge, Louisiana, Jan. 1907, leg. H. R. Fulton (typus in Herb. Farlow); in foliis *Querci* spec. indet., Eustis, Florida, Sept. 1897, R. Thaxter, in Herb. Farlow.

(245) **Irene aucubae** (P. Henn.) Hansf., comb. n. (3101. 5330).

Syn.: *Meliola aucubae* P. Henn., Englers Bot. Jahrb., **29**: 150. 1901. — *Irenina aucubae* (P. Henn.) Stev., Ann. Myc., **25**: 455. 1927.

The type specimen, on *Aucuba japonica*, Tse, Japan, June 1899, leg. M. Shirai, in Herb. Stockholm, has been re-examined:

Colonies hypophyllous, rather dense, 2–4 mm diam., not usually confluent. Mycelium of somewhat crooked to undulate, dark brown hyphae 7–9 μ thick, the cells mostly 25–35 μ long, branching usually opposite at wide angles, loosely reticulate, becoming denser in older colonies. Capitulate hyphopodia alternate or unilateral, or sometimes more scattered, often in groups of 3–4 along the hyphae, antrorse-bent, 25–35 μ long; stalk cell cylindric to cuneate, 7–13 μ long; head cell irregularly rounded-angulose to shallowly lobate, 18–26 μ $\Rightarrow$ 17–22 μ . Mucronate hyphopodia mixed with capitulate, opposite or alternate, bent ampulliform to lageniform, 13–22 μ $\Rightarrow$ 7–10 μ , neck 3 μ thick. Mycelial setae none. Perithecia scattered, black, globose, very rough, up to 270 μ diam.; surface cells bent conoid, projecting to 25 μ , about 40–50 μ diam. at the base. Spores dark brown, cylindric, obtuse, 4-septate, constricted, 45–51 μ $\Rightarrow$ 18–21 μ $\Rightarrow$ 14–18 μ .

(246) **Irene brachycera** (Syd.) Hansf., comb. n. (3101, 4220).

Syn.: *Meliola brachycera* Syd., Ann. Myc. **24**: 297. 1926.

True mycelial setae are absent from this species, but many hyphae are more or less ascending, though their tips often again fall down to the leaf surface, where they continue as normal hyphopodiate hyphae. The mycelium penetrates through and below the dense tomentum of the leaf, the hyphae have cells 25–50 μ $\Rightarrow$ 4–7 μ , flexuous to geniculate, branching irregular. Capitulate hyphopodia alternate or thinly scattered, up to 40 μ long; stalk cell cylindric, often irregularly bent, 5–25 μ $\Rightarrow$ 5–8 μ ; head cell subglobose, ovate, clavate or irregularly angulose, 9–20 μ $\Rightarrow$ 9–16 μ . Mucronate hyphopodia few, scattered, opposite or unilateral, elongate, irregularly bent, 25–33 μ $\Rightarrow$ 5–8 μ . Perithecia loosely scattered, black, globose, to 200 μ diam., surface cells bluntly conoid or mammillate, or sometimes produced into bent cylindric processes up to 25–30 μ high with obtuse conoid tips and irregularly transversely furrowed sides. Spores bent ellipsoid, obtuse, 4-septate, 38–45 μ $\Rightarrow$ 15–18 μ $\Rightarrow$ 15 μ .

On *Conostegia lanceolata*, Costa Rica, Sydow, Fungi exot. exs. 616; Sydow, Fungi costaric. 250.

In both specimens this species is always hypophyllous; on the upper surface of both is *Irenopsis conostegiae* Stev.

(247) **Irene forschhammerlae** Hansf., sp. n. (3103. 4230).

Plagulae amphigenae, densae, leves, usque ad 3 mm diam., vel numerosae et confluentes. Mycelium ex hyphis atrobrunneis, sub-

rectis, 6—8 μ cr. (cellulis plerumque 15—25 μ longis), opposite acuteque ramosis, dense radianto-reticulatis compositum. Hyphopodia capitata alternata vel circa 5—10% opposita, recta vel curvata, antrorsa, 14—23 μ longa, cellula basali cylindracea, 3—9 μ longa; cellula apicali oblongo-clavulata, apice rotundata, recta vel curvata, interdum subangulosa vel sublobata, 10—16 μ $\approx$ 8—11 μ . Hyphopodia mucronata numerosa, illis capitatis commixta, opposita, alternata vel raro ternata, ampullacea vel conoidea, 14—21 μ $\approx$ 6—8 μ , collo 3—4 μ cr. Setae nullae. Perithecia laxae aggregata, atra, globosa, verrucosa, usque ad 260 μ diam., cellulis parietis obtuse conoideis, usque ad 50 μ alt. Sporae subellipsoideae, atrobrunneae, obtusae, 4-septatae, constrictae, 36—44 μ $\approx$ 15—17 μ $\approx$ 13—15 μ .

Hab. in foliis *Forschhammeriae lucidae*, Manzanillo, Mexico, Palmer 1366 (typus in Herb. Farlow); in foliis *F. pallidae*, Agiatampo, Mexico, Palmer, s. n. in Herb. Farlow.

(248) **Irene guioae** Hansf., sp. n. (3103. 4320).

Plagulae epiphyllae, tenuissimae, leves, usque ad 3 mm diam. Mycelium ex hyphis atrobrunneis, rectis, 6—7 μ cr. (cellulis plerumque 20—25 μ longis), opposite lateque ramosis, laxae vel subdense reticulatis compositum. Hyphopodia capitata opposita vel circa 10% alternata, patentia, recta, 11—16 μ longa, cellula basali cylindracea, 2—5 μ longa, cellula apicali cylindracea, apice late rotundata, 10—13 μ $\approx$ 6—8 μ . Hyphopodia mucronata illis capitatis commixta, haud numerosa, opposita vel alternata, ampullacea, 13—18 μ $\approx$ 6—8 μ , collo erecto 3—5 μ cr. Setae nullae. Perithecia dispersa, globosa, atra, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae vel subellipsoideae, obtusae, 4-septatae, constrictae, 38—48 μ $\approx$ 18—21 μ .

Hab. in foliis *Guioae perrottetii*, Rizal, Luzon, Philippines, Phil. Bur. Sci. 21921, leg. Ramos, in Herb. Pretoria et Herb. Stockholm.

(249) *Irene inermis* (K. & C.) Theiss. & Syd., Ann. Myc. **15**: 194. 1917.

Syn.: *Meliola inermis* Kalchor. & Cke., Grevillea 9: 34. 1880. — *M. quinqueseptata* Rehm, Ascomycetes no. 492.

Theissen & Sydow made this species the type of their new genus *Irene*, defining this as a *Meliola* without setae; and this represented the first genus segregated from *Meliola* Fr. In Sitzb. K. Akad. Wiss. Wien, **128**: 556, 1919, Hoehnel made a further division of *Irene*, by splitting off his new genus *Appendiculella* for those species having „larviform appendages“, with *A. calostroma* (Desm.) Hoehnel as type. Stevens, Ann. Myc. **25**: 420, 1927, introduced confusion into this separation of the genera, by stating that *Irene inermis* possessed larviform appendages, and hence concluded that *Appendiculella* was a synonym of *Irene*; he then

erected the new genus *Irenina* for the group of species not having these appendages.

Both Dr. E. M. Doidge and myself have examined a wide range of collections of *I. inermis* in South Africa, and we are agreed that there are no elongate „larviform appendages“ on its perithecia, but merely obtusely conoid surface cells, which occasionally reach up to 25–30 μ high. Hence Stevens was in error in his synonymy, as also in his application of the generic name *Irene*. As *I. inermis* is the type species of this genus, the latter must be reserved for all species having neither setae nor appendages, and hence Stevens' genus *Irenina* is a synonym. Since 1927 many other species have been described in „*Irenina*“, which must be transferred to *Irene*. Those species which Stevens included in *Irene* all belong to *Appendiculella* Hoehn., as well as many others described since 1927.

Irene inermis occurs on *Buddleia* spp. and *Chilianthus* spp. in South Africa, and what I regard as identical is present on *Buddleia* sp., Sierra Geral, Santa Catharina, Brazil, Ule, Herb. brasil. 1716, in Herb. Kew; this represents the only specimen of this species I have seen collected outside South Africa.

From this the following are distinct:

(a) ***Irene acervata*** (Ell. & Ev.) Hansf., comb. n.

Syn.: *Meliola acervata* Ell. & Ev., Bull. Torr. Bot. Club, **24**: 126. 1897. — *Irenina acervata* (Ell. & Ev.) Hansf., Proc. Linn. Soc. London, **160**: 131. 1948.

(b) ***Irene anthoclelstae*** (Hansf. & Deight.) Hansf., comb. n.

Syn.: *Irenina anthoclelstae* Hansf. & Deight., Mycol. Paper **23**: 51. 1948, C.M. I. Kew.

(c) ***Irene buddleyicola*** (P. Henn.) Hansf., comb. n.

Syn.: *Meliola buddleyicola* P. Henn., Hedwigia **44**: 61. 1904. — *Irenina buddleyicola* (P. Henn.) Stev., Ann. Myc., **25**: 455. 1927.

(d) ***Irene buddleiae*** (Hansf.) Hansf., comb. n.

Syn.: *Irenina buddleiae* Hansf., Farlowia **3**: 270. 1948.

(e) ***Irene implicata*** Doidge, Bothalia **1**: 206. 1924.

Syn.: *Irenina implicata* (Doidge) Stev., Ann. Myc. **25**: 465. 1927.

(f) ***Irene nuxiae*** Syd., Bothalia **2**: 433. 1928.

Syn.: *Irenina nuxiae* (Syd.) Hansf., Proc. Linn. Soc. London **157**: 174. 1946.

Hitherto the only specimen I have encountered under the name *Meliola obducens* Gaill., which Stevens also transferred to *Irenina*, is a collection by Ule, on *Buddleia* sp., Brazil, in Herb. Stockholm ex Herb. Sydow; this collection corresponds closely with Ule 1716, mentioned above as being *Irene inermis*, and it may even be part

of the same original collection, which is probaly the source of Rehm's report as *M. obducens* Gaill., in Hedwigia 40, 1901.

(250) ***Irene sapotacearum*** Hansf., sp. n. (3101. 3220).

Plagulae epiphyllae, tenues, leves, plus minusve confluentes. Mycelium ex hyphis atrobrunneis, subrectis, 6—7 μ cr. (cellulis plerumque 20—30 μ longis), opposite lateque ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, antrorsa, 12—18 μ longa, cellula basali cuneata vel cylindracea, 3—6 μ longa, cellula apicali subglobosa, integra, 9—13 μ $\Rightarrow$ 9—11 μ . Hyphopodia mucronata, numerosa, illis capitatis commixta, opposita vel alternata, ampullacea, 14—23 μ $\Rightarrow$ 6—9 μ , collo 3 μ cr. Setae nullae. Perithecia atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-spetatae, constrictae, 35—39 μ $\Rightarrow$ 12—15 μ .

Hab. in foliis *Sapotacearum* spec. indet., Santa Catharina, Brazil, Ule, Herb. brasil. 92 (typus in Herb. Stockholm).

In this collection the species occurs mixed with the following variety.

(251) ***Irene sapotacearum*** Hansf. var. ***longipoda*** Hansf., var. n. (3101. 3220).

Ab typo ita differt: Hyphopodia capitata alternata antrorsa, subrecta, 20—27 μ longa, cellula basali cylindracea vel cuneata, 5—11 μ longa, cellula apicali ovata, integr, 13—17 μ $\Rightarrow$ 9—12 μ .

Hab. in foliis *Sapotacearum* spec. indet., Santa Catharina, Brazil, Ule, Herb. brasil. 92 (typus in Herb. Stockholm).

(252) ***Irene thwaitesii*** Berk. ex Hansf., sp. n. (3101. 4220).

Syn.: *Meliola thwaitesii* Berk. in Herb. Kew, ined.

Plagulae epiphyllae, densae, leves, effusae et late confluentes. Mycelium ex hyphis atrobrunneis, undulatis vel flexuosis, 8—10 μ cr. (cellulis plerumque 15—30 μ longis) opposite vel irregulariter ramosis, laxe vel subdense reticulatis compositum. Hyphopodia capitata alternata, recta, patentia, 20—32 μ longa, cellula basali cylindracea, 7—15 μ longa, cellula apicali globosa, ovata vel lenissime angulosa, 13—20 μ $\Rightarrow$ 12—17 μ . Hyphopodia mucronata in hyphis distinctis evoluta, plerumque alternata, ampullacea, curvata, 20—28 μ $\Rightarrow$ 8—10 μ , collo elongato, 3 μ crasso. Setae nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 170 μ diam., cellulis parietis rotundatis, vix prominentibus. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 40—47 μ $\Rightarrow$ 15—18 μ .

Hab. in foliis *Acrotremae* spec. indet., Ceylon, Thwaites s. n., typus in Herb. Kew.

(253) ***Irene werdermannii*** Hansf., sp. n. (3101. 5340).

Plagulae hypophyllae, usque ad 3 mm. diam., subdensae, leves. Mycelium ex hyphis atrobrunneis, subrectis, 8—10 μ cr. (cellulis

plerumque 30—40 μ longis), opposite vel irregulariter ramosis, subdense reticulatis compositum. Hyphopodia capitata alternata, plus minusve antrorsa, recta vel curvata, 25—43 μ longa, cellula basali cylindracea, 7—15 μ longa, cellula apicali globosa, piriforme, oblonga vel lenissime angulosa, 19—29 $\Rightarrow$ 12—20 μ . Hyphopodia mucronata in hyphis distinctis evoluta, opposita vel alternata, ampullacea, curvata, 17—25 $\Rightarrow$ 8—10 μ , collo 4 μ cr. Setae nullae. Perithecia laxe gregaria, atra, globosa, verrucosa, usque ad 350 μ diam., cellulis parietis conoideis vel mammillatibus, circa 40 μ diam. et usque ad 12 μ alt. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, 50—57 $\Rightarrow$ 22—26 μ .

Hab. in foliis *Drymidis winteri*, Chiloe Is., Chile, Feb. 1924, Werdermann, in Herb. Stockholm.

(254) **Mellola alternipes** (Speg.) Hansf., comb. n. (3123. 4232).

Syn.: *M. falcatiseta* Speg. var. *alternipes* Speg., Anal. Mus. Nac. Buenos Aires 32: 374. 1924.

On *Castela coccinea*, Oran, Argentine, Lorentz 26, Oct. 1873, in Herb. Stockholm.

Colonies amphigenous, dense, velvety, 1—2 mm. diam. or confluent. Mycelium of substraight to somewhat crooked dark brown hyphae 7—10 μ thick, the cells mostly 15—25 μ long, branching alternate, less commonly opposite, at wide angles, densely reticulate and almost solid. Capitata hyphopodia alternate or about 2% opposite, usually antrorsely bent, 20—29 μ long; stalk cell bent cylindric, 3—10 μ long; head cell ovate, clavate or cylindric, often irregularly rounded-angulose, rarely sublobed, 13—19 $\Rightarrow$ 9—15 μ . Mucronate hyphopodia few, scattered, usually alternate, 25—30 $\Rightarrow$ 8—10 μ , neck elongate, 3 μ thick. Mycelial setae numerous, opaque black, erect, simple, arcuate to uncinata, up to 350 $\Rightarrow$ 11—13 μ , apex acute when mature. Perithecia scattered, black, globose, verrucose, to 230 μ diam. Spores dark brown, cylindric, obtuse, 4-septate, constricted, 40—48 $\Rightarrow$ 15—17 μ .

(255) **Mellola apiculata** Hansf., var. *minor* Hansf., var. n. (3111. 42XX)

Plagulae amphigenae, subdensae, usque ad 3 mm. diam. Mycelium ex hyphis atrobrunneis, subrectis vel flexuosis, 5—7 μ cr. (cellulis plerumque 15—20 μ longis), alternatim vel irregulariter ramosis, dense reticulatis compositum. Hyphopodia capitata alternata, recta vel curvata, 16—22 μ longa, cellula basali cuneata vel cylindracea, 3—9 μ longa, cellula apicali versiforme, plerumque irregulariter subglobosa vel varie angulosa, 10—18 $\Rightarrow$ 10—17 μ . Hyphopodia mucronata in hyphis distinctis evoluta, alternata vel opposita, ampullacea, 17—23 $\Rightarrow$ 7—10 μ , collo 3 μ cr. Setae et perithecia non visa. Sporae atrobrunneae, cylindraceae, utrinque apiculatae, 4-septatae, constrictae, 43—50 $\Rightarrow$ 14—16 $\Rightarrow$ 10—12 μ .

Hab. in foliis *Cladii occidentalis*, Cuba, Wright 609 in Herb. Kew. (mixed with *Meliola circinans* Earle).

(256) *Meliola argentina* Speg., var. **africana** Hansf., var. n. (3411. 4224)

Ab typo ita differt: perithecia minora, usque ad 170 μ diam., sporae 38—42 $\Rightarrow$ 13—15 μ .

Hab. in foliis *Cyperi flabelliformis*, Bwamba, Uganda, Hansford 2731, leg. Thomas; in foliis *Cyperacearum* spec. indet., Semliki Valley, Congo Belge, Hendrickx 2744.

These specimens were formerly determined by me as *Meliola circinans* Earle, but have recently been compared with a specimen from Herb. Stockholm of *M. argentina* Speg., on Cyperaceae indet., Riodiuleo, Argentine, Jan. 1880 (possibly part of the type collection). This has spores 50—62 $\Rightarrow$ 15—18 μ , with rounded to somewhat attenuate ends, the middle cell often being larger than the others, so that the spores often appear subfusoid; perithecia to 210 μ diam.

[(257) **Mellola asperipoda** Hansf., sp. n. (3111. 4231).

Plagulae amphigenae, usque ad 2 mm. diam., subtenuis vel densae. Mycelium ex hyphis undulatis, atrobrunneis, 8—9 μ cr. (cellulis plerumque 20—25 μ longis), alternatim acuteque ramosis (raro oppositis), laxe vel subdense reticulatis compositum. Hyphopodia capitata alternata, antrorsa, 23—40 μ longa, cellula basali sinuoso-cylindracea, 5—16 μ longa, cellula apicali irregulariter fortiter lobata, versiforme, 15—28 $\Rightarrow$ 12—22 μ . Hyphopodia mucronata pauca, alternata, ampullacea, curvata, 20—25 $\Rightarrow$ 6—8 μ . Setae myceliales tenuiter dispersae, etiam juxta perithecia aggregatae, erectae, rectae, simplices, obtusae, usque ad 250 $\Rightarrow$ 8—10 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 250 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae constrictae 40—46 $\Rightarrow$ 15—17 $\Rightarrow$ 14 μ .

Hab. in foliis *Bignoniacearum* spec. indet., Pedras Grandes, Brazil, Ule 1719 p. p., in Herb. Stockholm.

This occurs mixed with *M. newbouldiae* Hansf. & Deight.

(258) **Mellola besleriae** Hansf., sp. n. (3111. 3121).

Plagulae hypophyllae, tenues, usque ad 6 mm. diam., vel confluentes, tenuiter velutinae. Mycelium ex hyphis brunneis, sinuosis, 4—6 μ cr. (cellulis plerumque 20—35 μ longis), oppositis ramosis, laxe reticulato-intertextis compositum. Hyphopodia capitata alternata vel distantia, antrorsa, subrecta, 12—20 μ longa, cellula basali cylindracea 2—6 μ longa, cellula apicali subglobosa vel ovata, apice rotundata vel leniter attenuata, integra, 9—16 $\Rightarrow$ 7—10 μ . Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel unilaterialia, ampullacea, curvata, 13—20 $\Rightarrow$ 6—8 μ , collo 3 μ cr. Setae myceliales laxae dispersae, erectae, rectae vel curvulae, simplices, obtusae, usque ad 280 $\Rightarrow$ 6—7 μ .

Perithecia dispersa, atra, globosa, verrucosa, usque ad 135 μ diam. Sporae atrobrunneae, cylindraceo-ellipsoideae, obtusae, curvatae, 4-septatae, constrictae, 26—32 $\Rightarrow$ 9—10 μ .

Hab. in foliis Besleriae longipedis, Trinidad, Baker, Nov. 1950, in Herb. Kew.

(259) *Meliola bidentata* Cooke, var. **minor** Hansf., var. n. (3131. 3222)

Plagulae epiphyllae, tenues vel subdensae, usque ad 3 mm. diam., saepe confluentes. Mycelium ex hyphis atrobrunneis subrectis vel undulatis, 6—7 μ cr. (cellulis plerumque 20—25 μ longis), oppositae acuteque ramosis, laxae vel subdense reticulatis compositum. Hyphopodia capitata alternata, antrorsa, subrecta, 18—26 μ longa, cellula basali cuneata vel cylindracea, 4—9 μ longa, cellula apicali elongato-ovata, integra, apice late vel attenuato-rotundata, 11—17 $\Rightarrow$ 8—10 μ . Hyphopodia mucronata in hyphis distinctis in centro plagularum evoluta, opposita vel alternata, ampullacea, 13—22 $\Rightarrow$ 6—8 μ , collo 3 μ cr. Setae myceliales dispersae, erectae, rectae, usque ad 480 $\Rightarrow$ 7—9 μ , apice 2—4-dentatae usque ad 12 μ . Perithecia dispersa, atra, globosa, verrucosa usque ad 170 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 34—39 $\Rightarrow$ 12—13 $\Rightarrow$ 9—10 μ .

Hab. in foliis Bignoniacearum spec. indet., Guarapi, Paraguay, Balansa 2730 in Herb. Kew.

(260) *Meliola brooksii* Hansf., sp. n. (3121. 5232).

Plagulae amphigenae, usque ad 3 mm. diam. densae, crustosae, adhaerentes, velutinae. Mycelium ex hyphis subrectis vel leniter undulatis, atrobrunneis, 6—9 μ cr. (cellulis plerumque 10—15 μ longis), oppositae vel irregulariter ramosis, densissime reticulatis compositum, subsolidum. Hyphopodia capitata alternata, recta vel antrorsa, 12—18 μ longa, cellula basali cylindracea, 2—5 μ longa, cellula apicali globosa vel late ellipsoidea, integra, 10—14 $\Rightarrow$ 9—12 μ . Hyphopodia mucronata non visa. Setae myceliales numerosae, erectae, opacae, simplices, acutae, usque ad 350 $\Rightarrow$ 8—10 μ , sursum late arcuatae vel subuncinatae. Perithecia dense aggregata, atra, globosa, leniter verrucosa, usque ad 220 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 44—51 $\Rightarrow$ 16—19 $\Rightarrow$ 12—14 μ .

Hab. in foliis Fagraeae fragrantis, Kuala Pilah, Malaya, Brooks 95 in Herb. Kew.

(261) *Meliola burgosensis* Hansf., sp. n. (3111, 32x3).

Plagulae hypophyllae, tenuissimae, effusae. Mycelium ex hyphis subrectis vel undulatis, atrobrunneis, 5—7 μ cr., (cellulis plerumque 30—40 μ longis), oppositae vel irregulariter lateque ramosis, laxae reticulato-radiantibus compositum. Hyphopodia capitata alternata, recta vel curvata, 25—35 μ longa, cellula basali cylindracea, 7—13 μ longa,

cellula apicali oblonga, apice rotundata, integra vel varie lobata, recta vel curvata, $15-23 \Rightarrow 9-13 \mu$. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, recta vel curvata, $20-25 \Rightarrow 6-9 \mu$, collo elongato, 3μ crasso. Setae myceliales praecique juxta perithecia evolutae, erectae, rectae, simplices, acutae, usque ad $800 \Rightarrow 9-11 \mu$. Perithecia laxe dispersa, atra, globosa, verrucosa, immatura. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, $36 \Rightarrow 13 \mu$.

Hab. in foliis *Bauhiniae* spec., Burgos, Luzon, Philippines, Phil. Bur. Sci. 27801 p. p.

This occurs mixed with *M. bauhiniae* Yates; very few spores were found in the specimen examined, which contained no mature perithecia.

(262) **Mellola carludovicae** Hansf., sp. n. (31 $\frac{1}{3}$. 5332)

Plagulae epiphyllae, densae, 1—4 mm. diam., vel confluentes. Mycelium ex hyphis atrobrunneis, subrectis, $7-9 \mu$ cr. (cellulis plerumque $20-30 \mu$ longis), opposite lateque ramosis, dense reticulatis compositum, subsolidum. Hyphopodia capitata opposita vel alternata, antrorsa, $15-24 \mu$ longa, cellula basali cylindracea, $3-7 \mu$ longa, cellula apicali ovata vel cylindracea, $3-7 \mu$ longa, cellula apicali ovata vel cylindracea, apice rotundata, $10-16 \Rightarrow 8-11 \mu$. Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel alternata, ampullacea, $15-22 \Rightarrow 7-10 \mu$. Setae myceliales sparse dispersae, erectae, rectae, simplices et acutae, vel apice 2—3-dentatae (-8μ), usque ad $400 \Rightarrow 10-12 \mu$. Perithecia dispersa, atra, globosa, verrucosa, usque ad 240μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, $45-52 \Rightarrow 17-20 \mu$.

Hab. in foliis *Carludovicae* spec., Rio de Janeiro, Brazil, U l e 2231 in Herb. Stockholm.

This specimen was originally determined by R e h m as *M. bidentata* Cooke.

(263) **Mellola caseariae-gulanensis** Hansf., sp. n. (3113. 4223).

Syn.: *M. ambigua* Pat. & Gaill., var. *caseariaecola* Cif., Mycopathologia 7: 93. 1954.

Plagulae epiphyllae, atrae, tenues, 1—3 mm. diam., subinde confluentes. Mycelium ex hyphis atrobrunneis, subrectis vel leniter undulatis, $7-8 \mu$ cr. (cellulis plerumque $20-30 \mu$ longis), opposite vel irregulariter lateque ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata vel circa 1% opposita, recta vel curvula, antrorsa, $18-25 \mu$ longa, cellula basali cuneata, $4-9 \mu$ longa, cellula apicali clavata vel subglobosa, integra, apice late rotundata, recta vel curvula, $12-16 \Rightarrow 10-13 \mu$. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, $15-25 \Rightarrow 7-9 \mu$, collo elongato, suberecto, $3-4 \mu$ cr. Setae myceliales tenuiter dispersae, etiam

juxta perithecia aggregatae, erectae, rectae, simplices, acutae vel subacutae $360-560 \Rightarrow 8-9 \mu$. Perithecia laxe gregaria, atra, globosa, leniter verrucosa, $160-200 \mu$ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, $40-46 \Rightarrow 15-18 \mu$.

Hab. in foliis *Caseariae guianensis*, San Domingo, Ciferri 2776 in Herb. Stockholm.

Ciferri, l. c., gives the perithecia as reaching 250μ diam., and the setae as up to 1000μ long. The same species occurs in Stevens 7688 on *C. ramiflora*, Manati, Porto Rico; it differs from *M. caseariae* in smaller hyphopodia and spores.

(264) **Meliola catherinensis** Hansf., sp. n. (3113. 3221).

Plagulae epiphyllae, usque ad 1 mm. diam., subtenues, Mycelium ex hyphis atrobrunneis, undulatis vel flexuosis, $6-7 \mu$ cr. (cellulis plerumque $15-20 \mu$ longis), opposite vel irregulariter ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata vel opposita, patentia, recta vel curvata, $11-15 \mu$ longa, cellula basali cylindracea, $3-4 \mu$ longa, cellula apicali globosa vel late piriforme, integra, $8-11 \Rightarrow 8-10 \mu$. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, curvata, $14-18 \Rightarrow 7-9 \mu$, collo $3-4 \mu$ cr. Setae myceliales dispersae, etiam juxta perithecia aggregatae, erectae, rectae, simplices, acutae, usque ad $230 \Rightarrow 8-9 \mu$. Perithecia in centro plagularum laxe aggregata, atra, globosa, verrucosa, usque ad 190μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, $34-38 \Rightarrow 13 \mu$.

Hab. in foliis *Aristolochiae triangularis*, Santa Catharina, Brazil, Ule, Herb. brasil. 971, p. p.

(265) **Meliola cibaoensis** Hansf., sp. n. (3113. 4223).

Plagulae epiphyllae, tenues, effusae, saepe confluentes, indeterminatae. Mycelium laxe reticulatum, ex hyphis atrobrunneis, subrectis, $6-7 \mu$ cr. (cellulis plerumque $20-40 \mu$ longis), opposite acuteque ramosis compositum. Hyphopodia capitata alternata vel usque ad 1% opposita, recta vel curvata, $15-23 \mu$ longa, cellula basali cylindracea, $3-7 \mu$ longa, cellula apicali ex subglobosa cylindracea, apice rotundata, integra vel subglobata, $11-19 \Rightarrow 8-12 \mu$. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, $15-23 \Rightarrow 7-9 \mu$, collo $3-4 \mu$ cr. Setae myceliales praecipue juxta perithecia, erectae, rectae, raro curvulae, simplices, acutae, usque at $800 \Rightarrow 9-11 \mu$. Perithecia laxe dispersa, atra, globosa, verrucosa, usque ad 180μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, $34-42 \Rightarrow 14-17 \Rightarrow 12-14 \mu$.

Hab. in foliis *Byrsonimae* spec. indet., San Domingo, Ciferri, Mycofl. Doming. exs. 46-ter, socio *Meliola byrsonimae* Stev.

(266) *Meliola circinans* Earle, var **rhynchosporae** Hansf.
var. n. (3411. 3223)

Plagulae amphigenae, usque ad 1 mm. diam. vel confluentes, subtenues. Mycelium ex hyphis subrectis vel undulatis, atrobrunneis, 5–7 μ cr. (cellulis plerumque 20–25 μ longis) alternatim ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, plus minusve antrorsa, recta vel curvata, 16–25 μ longa, cellula basali cylindracea, 5–10 μ longa, cellula apicali curvato-cylindracea, apice rotundata, vel irregulariter rotundato-angulosa, 11–17 $\Rightarrow$ 7–15 μ , versiforme. Hyphopodia mucronata pauca, illis capitatis commixta, alternata, raro opposita, ampullacea, 17–20 $\Rightarrow$ 7–9 μ . Setae myceliales dispersae, erectae, rectae, simplices, acutae, usque ad 600 $\Rightarrow$ 7–9 μ . Perithecia sparsa, atra, globosa, verrucosa, usque ad 160 μ diam., superne setis 0–4, erectis, incurvatis, simplicibus, acutis, usque ad 120 $\Rightarrow$ 6–7 μ , ornata. Sporae atrobrunneae, cylindraceae utrinque apiculatae, 4-septatae, constrictae, 32–41 $\Rightarrow$ 13–15 μ .

Hab. in foliis *Rhynchosporae dodecandrae*, Eustis, Lake Co., Florida, Nash. Plants of Florida 1803, in Herb. Kew and Herb. Stockholm.

(267) ***Meliola coccolobis-nodosae*** Hansf., sp. n. (3113. 5222).

Plagulae epiphyllae, densae, velutinae, usque ad 2 mm. diam. vel confluentes. Mycelium ex hyphis atrobrunneis, subrectis vel leniter undulatis, 7–9 μ cr. (cellulis plerumque 20–25 μ longis), opposita ramosis, dense reticulatis compositum. Hyphopodia capitata alternata vel rarissime opposita, plus minusve antrorsa, recta, 15–20 μ longa, cellula basali cuneata vel cylindracea, 2–6 μ longa, cellula apicali subglobosa vel late piriforme, integra, 10–14 $\Rightarrow$ 10–16 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 13–20 $\Rightarrow$ 8–10 μ , collo erecto, 3 μ cr. Setae myceliales numerosae, dispersae, erectae, rectae, simplices, acutae, usque ad 500 $\Rightarrow$ 8–10 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 170 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 44–50 $\Rightarrow$ 17–20 $\Rightarrow$ 14–16 μ .

Hab. in foliis *Coccolobis nodosae*, San Domingo, Ciferri, Mycofl. Doming. exs. 257.

This was originally determined as *M. coccolobis* Stev. & Tehon, but both the spores and the hyphopodia are too large for that species.

(268) ***Meliola cunoniae*** Hansf., sp. n. (3111. 4233).

Plagulae amphigenae, usque ad 1.5 mm. diam., densae, subvelutinae. Mycelium ex hyphis atrobrunneis, flexuosis vel tortuosis, 7–8 μ cr. (cellulis plerumque circa 20 μ longis), alternatim vel irregulariter ramosis, dense reticulatis compositum. Hyphopodia capitata alternata, patentia, recta vel curvata, 21–32 μ long, cellula basali cylindracea,

5—12 μ longa, cellula apicali irregulariter leniter rotundato-lobata, varie curvata, elongata, 12—22 $\Rightarrow$ 8—16 μ . Hyphopodia mucronata alternata, ampullacea, 15—20 $\Rightarrow$ 7—10 μ , collo brevi, subrecto 3—4 μ cr. Setae myceliales numerosae, erectae, simplices, acutae, usque ad 520 $\Rightarrow$ 10—12 μ . Perithecia in centro plagarum aggregata, atra, globosa, verrucosa, usque ad 280 μ diam. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, 40—48 $\Rightarrow$ 17—20 $\Rightarrow$ 14—15 μ .

Hab. in foliis *Cunoniae capensis*, South Africa, Mac Owan 1262 in Herb. Kew.

(269) *Meliola dichotoma* B. & C. in Proc. Amer. Acad. Arts & Sci. **4**: 130. 1860. (3143. 5231)

The type specimen in Herb. Kew, on *Hedera* sp., Japan, Wright 171, has the following characters: —

Colonies hypophyllous, velvety, dense, to 1.5 mm. diam. or numerous and confluent. Mycelium of substraight dark brown hyphae 6—8 μ thick, the cells mostly 16—25 μ long, branching opposite at wide angles, closely reticulate. Capitate hyphopodia about 90% opposite, somewhat antrorse, usually straight, 14—21 μ long; stalk cell cylindric, 2—6 μ long; head cell widely ovoid to piriform, entire, 10—16 $\Rightarrow$ 8—11 μ . Mucronate hyphopodia few, mixed with capitate, alternate or opposite, bent ampulliform, 10—23 $\Rightarrow$ 7—9 μ , neck 3 μ thick. Mycelial setae numerous, closely scattered, 180—260 μ high, 9—10 μ thick below, 1—2-dichotomous above, the branches widely divergent-reflexed, primary to 100 μ long, secondary when present to 60 μ long, apices pale and obtuse. Perithecia closely scattered, black, globose, verrucose, up to 250 μ diam. Spores dark brown, cylindric to narrowly ellipsoid, 4-septate, constricted, 44—50 $\Rightarrow$ 17—19 $\Rightarrow$ 12—14 μ .

The description and drawings of *M. hederiae* Yamamoto, in Trans. Nat. Hist. Soc. Formosa, **31**: 53. 1941, suggest that this is a synonym of *M. dichotoma*, and this has been confirmed from a portion of the type collection in Herb. C.M.I., Kew.

(270) *Meliola didymopanax* P. Henn., Hedwigia **34**: 106. 1895. (3123. 4221).

What appears to be a portion of the type specimen, on *Didymopanax* sp., Minas Geraes, Brazil, Glaziou, 1893, has become available to me from Herb. Stockholm, ex Herb. Sydow: —

Colonies epiphyllous, to 5 mm. diam., or numerous and widely confluent, dense, thinly velvety. Mycelium of substraight radiating hyphae, dark brown, 5—8 μ thick, the cells mostly 20—30 μ long, branching usually opposite at acute angles, closely reticulate. Capitate hyphopodia alternate or about 5% opposite, more or less antrorse, straight or bent, 16—23 μ long; stalk cell cylindric, 3—7 μ long; head

cell subglobose to ovate-piriform, entire, broadly rounded at the apex, $11-16 \rightleftharpoons 8-11 \mu$. Mucronate hyphopodia mixed with capitate, opposite or alternate, ampulliform, $16-23 \rightleftharpoons 7-9 \mu$, neck $3-4 \mu$ thick. Mycelial setae numerous, erect, up to $300 \rightleftharpoons 8-9 \mu$, broadly arcuate to merely bent in upper half, simple obtuse. Perithecia scattered, black, globose, verrucose, up to 180μ diam. Spores dark brown, cylindric, obtuse, 4-septate, constricted, $43-48 \rightleftharpoons 15-17 \mu$.

This specimen corresponds to another collected by Noack (?no. 669) on *Didymopanax*, Minas, Geraes, Brazil, now in Herb. Pretoria, ex Engler. I had previously determined this as *M. polysciatis* Hansf. This latter species is now seen to differ from *M. didymopanax* mainly in the crooked mycelium and absence of opposite hyphopodia, which are also slightly smaller. It seems best to reduce its status to *Meliola didymopanax* P. Henn., var. **polysciatis** Hansf. comb. n.

(271) *Meliola didymopanax* P. Henn., var. **domingensis** Hansf., var. n. (311/3. 3221).

Plagulae epiphyllae, usque ad 5 mm diam., densae, velutinae, subinde confluentes. Mycelium ex hyphis subrectis, atrobrunneis, $6-7 \mu$ cr. (cellulis plerumque $15-35 \mu$ longis), opposita acuteque ramosis, dense reticulatis compositum. Hyphopodia capitata alternata vel usque ad 30% opposita, subrecta, $12-18 \mu$ longa, cellula basali cylindracea, $2-6 \mu$ longa, cellula apicali ovata, integra, apice rotundata vel leniter attenuata, $10-15 \rightleftharpoons 7-10 \mu$. Hyphopodia mucronata illis capitatis commixta, pauca, opposita vel alternata, ampullacea, $16-20 \rightleftharpoons 7-8 \mu$, collo erecto $3-4 \mu$ cr. Setae myceliales numerosae, erectae, atrae, simplices, obtusae, usque ad $280 \rightleftharpoons 6-8 \mu$, sursum subrectae, late arcuatae vel uncinatae. Perithecia subgregaria, atra, globosa, verrucosa, usque ad 180μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, $34-39 \rightleftharpoons 14-16 \mu$.

Hab. in foliis *Didymopanax morototoni*, San Domingo, Ciferri, Mycofl. doming. exs. 264.

This differs from the type mainly in the unbranched setae, smaller spores and rather more pointed capitate hyphopodia, which are more often opposite.

(272) *Meliola didymopanax* P. Henn., var. **stevensii** Hansf., var. n. (3113. 4234).

Plagulae amphigenae, plerumque hypophyllae, atrae, velutinae, usque ad 10 mm. diam., subdense. Mycelium ex hyphis subrectis, atrobrunneis, $7-9 \mu$ cr. (cellulis plerumque $20-30 \mu$ longis), opposita acuteque ramosis, radianto-reticulatis compositum. Hyphopodia capitata alternata vel usque ad 60% opposita, antrorsa, $12-18 \mu$ longa; cellula basali cylindracea, $2-4 \mu$ longa, cellula apicali subglobosa

vel ovata, integra, $10-12 \rightleftharpoons 8-11 \mu$. Hyphopodia mucronata illis capitatis commixta, pauca, ampullacea, plerumque unilateralia, $18-24 \rightleftharpoons 7-10 \mu$, collo curvato, $3-4 \mu$ cr. Setae myceliales numerosas, erectae, rectae, simplices, acutae, usque ad $1000 \rightleftharpoons 9-12 \mu$. Perithecia dispersa, atra, globosa, verrucosa, usque ad 210μ diam., Sporae atrobrunneae, cylindratae, obtusae, 4-septatae, constrictae, $30-45 \rightleftharpoons 14-16 \mu$.

Hab. in foliis *Dendropanaxis arborei*, Porto Rico, Stevens 7647 (in Herb. Kew and Herb. Pretoria).

The setae here are quite different from those of the type, and the capitata hyphopodia more often opposite and rather more squat in shape.

(273) *Meliola diospyri* Syd., var. **leonensis** Hansf., var. n. (3112. 4223).

Ab typo ita differt: Hyphopodia capitata circa 90% opposita, antrorsa, subrecta, $14-18 \mu$ longa, cellula basali cylindrata, $3-6 \mu$ longa, cellula apicali ovata vel subconoidea, apice attenuato-rotundata, integra, $10-15 \rightleftharpoons 7-9 \mu$.

Hab. in foliis *Diospyri heudelotii*, Rokupr. Magbema, Sierra Leone, Deighton M. 1927, p. p.

(274) *Meliola ehretiae* Hansf., sp. n. (3112. 4221).

Plagulae amphigenae, plerumque hypophyllae, subtenues, numerosae et effusae. Mycelium ex hyphis atrobrunneis, subrectis vel undulatis, $5-6 \mu$ cr. (cellulis plerumque $20-25 \mu$ longis), oppositae lateque ramosis, laxae vel subdense reticulatis compositum. Hyphopodia capitata circa 95% opposita, patentia, recta vel curvula, $12-16 \mu$ longa, cellula basali cylindrata, $2-5 \mu$ longa, cellula apicali cylindrata apice rotundata, integra, $9-12 \rightleftharpoons 6-8 \mu$. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea $16-25 \rightleftharpoons 6-8 \mu$, collo elongato, 3μ cr. Setae myceliales tenuiter dispersae, etiam juxta perithecia aggregatae, erectae, rectae, simplices, acutae vel subacutae, usque ad $230 \rightleftharpoons 6-8 \mu$. Perithecia laxae dispersae, atra, globosa, verrucosa, usque ad 170μ diam. Sporae atrobrunneae, cylindratae, obtusae, 4-septatae, constrictae, $40-47 \rightleftharpoons 15-18 \mu$.

Hab. in foliis *Ehretiae nunesii*, Mt. Maquiling, Los Banos, Philippines, Baker 94 in Herb. Stockholm ex Herb. Rehm, sub *M. cylindrophora* Rehm.

(275) *Meliola falcatiseta* Speg. var. **khasiensis** Hansf., var. n. (3123. 4222).

Plagulae hypophyllae, densissimae et subcrustosae, usque ad 2 mm diam. vel confluentes, velutinae. Mycelium ex hyphis atrobrunneis, subrectis, $8-9 \mu$ cr. (cellulis plerumque $12-15 \mu$ longis), oppositae lateque ramosis, dense reticulatis compositum, subsolidum.

Hyphopodia capitata circa 90% opposita, leniter antrorsa, 12–18 μ longa, cellula basali cylindracea, 2–6 μ longa, cellula apicali globosa vel oblonga integra, 8–14 $\Rightarrow$ 7–11 μ . Hyphopodia mucronata non visa. Setae myceliales numerosae, erectae, simplices, obtusae vel acutae, usque ad 500 $\Rightarrow$ 10–12 μ , sursum arcuatae, uncinatae vel tortuosae. Perithecia aggregata, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 42–49 $\Rightarrow$ 17–19 μ .

Hab. in foliis *Ilicis* spec. indet., Khasia, India, in Herb. Kew.

No details are given of collector and date.

(276) *Meliola garryae* Hansf., sp. n. (3111. 3223).

Plagulae numerosae, densae, velutinae, usque ad 5 mm diam., saepe confluentes. Mycelium ex hyphis atrobrunneis, subrectis vel undulatis, 7–8 μ cr. (cellulis plerumque 20–30 μ longis), alternatim vel irregulariter ramosis, dense radianto-reticulatis compositum. Hyphopodia capitata alternata, antrorsa, recta vel curvata, 20–30 μ longa, cellula basali cylindracea, 5–15 μ longa, cellula apicali irregulariter clavata, angulosa vel leniter lobata, 15–20 $\Rightarrow$ 11–16 μ . Hyphopodia mucronata praecipue in hyphis distinctis evoluta, opposita vel alternata, 18–26 $\Rightarrow$ 8–11 μ , ampullacea, collo elongato 3–4 μ . Setae myceliales numerosae, dispersae, erectae, rectae, simplices, acutae, usque ad 600 $\Rightarrow$ 9–10 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 190 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 44–50 $\Rightarrow$ 17–19 $\Rightarrow$ 12–14 μ .

Hab. in foliis *Garryae* spec. indet., Texas, USA, Lindheimer 3644 in Herb. Kew.

(277) *Meliola geniculata* Syd. & Butl., var. **minor** Hansf. var. n. (3133. 3221).

Plagulae amphigenae plerumque epiphyllae, atrae, subdensae, tenuiter velutinae, usque ad 3 mm diam., vel numerosae et confluentes. Mycelium dense reticulatum, ex hyphis atrobrunneis, subrectis, 6–7 μ cr. (cellulis plerumque 15–25 μ longis), opposita ramosis compositum. Hyphopodia capitata alternata vel usque ad 2% opposita, recta vel curvata, 12–16 μ longa, cellula basali cylindracea, 2–5 μ longa, cellula apicali cylindracea vel piriforme, apice late rotundata, integra, 9–12 $\Rightarrow$ 8–10 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea 12–17 $\Rightarrow$ 7–9 μ , collo brevi, 3–4 μ cr. Setae myceliales dispersae etiam juxta perithecia aggregatae, erectae, rectae, usque ad 280 $\Rightarrow$ 7–9 μ , apice 2–4-dentatae (–10 μ). Perithecia sparsa, atra, globosa, verrucosa, usque ad 150 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae 29–35 $\Rightarrow$ 12–14 $\Rightarrow$ 11–12 μ .

Hab. in foliis *Anacardiacearum* spec. indet., Tarapoto, Peru, U l e, Herb. brasil. 3264 in Herb. Kew.

(278) *Meliola groteana* Syd. var. **ardisilicola** Hansf., var. n. (3113. 4222).

Plagulae epiphyllae, in maculas rubidas, tenues vel densae, usque ad 4 mm diam. vel confluentes. Mycelium ex hyphis subrectis, atrobrunneis, 6—7 μ cr. (cellulis plerumque circa 25 μ longis), opposite ramosis, dense reticulatis compositum. Hyphopodia capitata opposita vel alternata, patentia, recta, 9—13 μ longa, cellula basali cylindracea, 2—4 μ longa, cellula apicali globosa, integra, 8—11 μ diam. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 12—16 $\Rightarrow$ 7—9 μ , collo elongato, 3 μ cr. Setae myceliales numerosae, erectae, rectae, simplices, acutae, usque ad 330 $\Rightarrow$ 9—11 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 190 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 35—42 $\Rightarrow$ 13—14 $\Rightarrow$ 11—12 μ .

Hab. in foliis *Ardisiae perrottetianae*, Mt. Maquiling, Los Banos, Philippines, Baker 254 in Herb. Kew.

(279) *Meliola kibirae* Hansf. & Stev., var. **domingensis** Hansf., var. n. (3111. 3223).

Plagulae epiphyllae, tenues, usque ad 2 mm diam., vel confluentes. Mycelium ex hyphis atrobrunneis, subrectis, 6—7 μ cr. (cellulis plerumque 20—30 μ longis), opposite ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, patentia, 17—25 μ longa, cellula basali cylindracea, 5—10 μ longa, cellula apicali oblonga vel ovata, apice late rotundata, 11—16 $\Rightarrow$ 9—11 μ . Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel alternata, ampullacea, 15—22 $\Rightarrow$ 7—9 μ , collo suberecto, 3—4 μ cr. Setae myceliales tenuiter dispersae, erectae, rectae, simplices, acutae, usque ad 550 $\Rightarrow$ 7—9 μ . Perithecia sparsa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 32—38 $\Rightarrow$ 13—15 $\Rightarrow$ 11—12 μ .

Hab. in foliis *Guettardae pungentis*, San Domingo, Ciferri, Mycofl. doming. exs. 43 (typus in Herb. Kew).

This was originally determined as *M. seminata* B. & C.

(280) **Meliola kigellae** Hansf., sp. n. (3131. 5222).

Plagulae hypophyllae, densae, velutinae, usque ad 3 mm diam., vel numerosae et confluentes. Mycelium ex hyphis atrobrunneis, undulatis vel tortuosis, 7—8 μ cr. (cellulis plerumque 30—40 μ longis), opposite vel irregulariter ramosis, dense reticulatis compositum. Hyphopodia capitata alternata, recta vel curvata, 20—33 μ longa, cellula basali cylindracea, 4—13 μ longa, cellula apicali cylindracea vel clavulata, apice late rotundata, integra, recta vel curvata, 15—21 $\Rightarrow$ 8—11 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 18—24 $\Rightarrow$ 7—9 μ , collo suberecto, 3 μ cr. Setae

myceliales numerosas, dispersae, etiam juxta perithecia aggregatae, erectae, rectae, $280-480 \Rightarrow 7-9 \mu$, apice 2—4-dentatae, usque ad 17μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 170μ diam. Sporae atrobrunneae, cylindratae vel subellipsoideae, obtusae, 4-septatae, constrictae, $44-51 \Rightarrow 16-18 \Rightarrow 13-15 \mu$.

Hab. in foliis *Kigeliae moosae*, Kyalama, Uganda, D u m m e r, 2829 in Herb. Kew.

Many spores are slightly wider towards one end.

(281) *Meliola longistipitata* Stev. var. **wakefieldii** Hansf. var. n. (3132. 3222).

Plagulae amphigenae, usque ad 6 mm diam., densae, velutinae. Mycelium ex hyphis atrobrunneis, subrectis vel undulatis, $5-7 \mu$ cr. (cellulis plerumque circa 20μ longis), opposite lateque ramosis, dense reticulatis compositum. Hyphopodia capitata opposita, recta vel curvata, $10-14 \mu$ longa, cellula basali cylindrata, $2-4 \mu$ longa, cellula apicali globosa vel ovata, integra, $7-10 \Rightarrow 7-10 \mu$. Hyphopodia mucronata pauca, illis capitatis commixta, ampullacea, $12-15 \Rightarrow 7-8 \mu$, collo suberecto, 3μ cr. Setae myceliales tenuiter dispersae, etiam juxta perithecia aggregatae, erectae, rectae, usque ad $500 \Rightarrow 7-9 \mu$, apice 3—5-dentatae (-8μ) vel 2-furcatae (-15μ), ramulis dentatis. Perithecia dispersa, atra, globosa, verrucosa, usque ad 140μ diam. Sporae atrobrunneae, cylindratae, obtusae, 4-septatae, constrictae, $28-34 \Rightarrow 9-11 \mu$.

Hab. in foliis *Costi* spec. indet., Trinidad, W a k e f i e l d 204 in Herb. Kew.

The capitate hyphopodia are without the long stalk cells described for the type, but this is considered to be probably related to the configuration of the host cuticle.

(282) ***Meliola malpighiacearum*** Hansf., sp. n. (3131. 3221).

Plagulae amphigenae, tenues, 1 mm diam. vel confluentes. Mycelium ex hyphis atrobrunneis, undulatis $5-7 \mu$ cr. (cellulis plerumque $25-40 \mu$ longis), opposite lateque ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, antrorsa, $16-27 \mu$ longa, cellula basali cuneata vel cylindrata, $3-10 \mu$ longa, cellula apicali ovata vel subcylindrata, integra, $12-18 \Rightarrow 9-12 \mu$. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, $15-20 \Rightarrow 7-8 \mu$, collo 3μ cr. Setae myceliales praecipue juxta perithecia evolutae, erectae, incurvatae vel rectae, usque ad $250 \Rightarrow 7-8 \mu$, apice obtusae vel 2—3-dentatae (-6μ), raro furcatae (-15μ). Perithecia dispersa, atra, globosa, verrucosa, usque ad 170μ diam. Sporae atrobrunneae, cylindratae, obtusae, 4-septatae, constrictae, $31-38 \Rightarrow 13-14 \Rightarrow 11-13 \mu$.

Hab. in foliis *Malpighiacearum* spec. indet., Pedras Grandes, Brazil, Ule 1835 in Herb. Stockholm, ex Herb. Rehm, sub *M. bidentata* Cke.

(283) **Meliola mauritiana** Hansf., sp. n. (3113. 5334).

Plagulae hypophyllae, densae, velutinae, usque ad 6 mm diam. vel late confluentes. Mycelium ex hyphis atrobrunneis, subrectis, 9–10 μ cr. (cellulis plerumque 20 μ longis), opposite lateque ramosis, dense reticulatis compositum. Hyphopodia capitata alternata, raro etiam opposita, recta vel curvata, 25–35 μ longa, cellula basali cylindracea, 5–11 μ longa, cellula apicali ovata, cylindracea vel late piri-forme, integra vel lenissime rotundato-angulosa 19–24 μ $\approx$ 11–14 μ . Hyphopodia mucronata illis capitatis commixta, ampullacea, 19–26 μ $\approx$ 9–11 μ , collo 4 μ cr. Setae myceliales numerosae, erectae, rectae, simplices, acutae, usque ad 1100 μ $\approx$ 13–15 μ . Perithecia dispersa, atra, globosa, verrucosa usque ad 230 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 52–59 μ $\approx$ 22–25 μ .

Hab. in foliis *Antidesmae* (? *rotundifoliae*), Mauritius, no. 12, in Herb. Kew.

(284) **Meliola mimosacearum** Hansf. sp. n. (3131. 3221).

Plagulae plerumque epiphyllae, tenues vel densae, usque ad 1 mm diam. Mycelium ex hyphis atrobrunneis, subrectis, 6–7 μ cr. (cellulis plerumque 20–25 μ longis), opposite acuteque ramosis, subdense reticulatis compositum. Hyphopodia capitata alternata, plus minusve antrorsa, recta vel curvata, 14–20 μ longa, cellula basali cylindracea, 3–6 μ longa, cellula apicali globosa vel oblonga, integra, 11–13 μ $\approx$ 9–13 μ . Hyphopodia mucronata in hyphis distinctis evoluta, alternata vel opposita, ampullacea, 12–16 μ $\approx$ 7–8 μ , collo 3 μ cr. Setae myceliales praecipue juxta perithecia evolutae, erectae, rectae, usque ad 230 μ $\approx$ 7–9 μ , apice 2–3-dentatae vel breviter furcatae, usque ad 18 μ . Perithecia gregaria, atra, globosa, verrucosa, usque ad 195 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 31–37 μ $\approx$ 12–13 μ $\approx$ 10–11 μ .

Hab. in foliis *Mimosacearum* spec. indet., Brazil, Ule 1840 in Herb. Stockholm, det. Rehm sub *Meliola denticulata* Wint.

(286) **Meliola pauciseta** Hansf., sp. n. (3113. 3222).

Plagulae epiphyllae, tenues, usque ad 2 mm diam. Mycelium ex hyphis atrobrunneis, 6–7 μ cr., undulatis, cellulis plerumque 15–25 μ longis, opposite lateque ramosis subdense reticulatis compositum. Hyphopodia capitata alternata vel usque ad 2% opposita, antrorsa, 12–19 μ longa, cellula basali cylindracea, 2–6 μ longa, cellula apicali late ovata vel oblonga, integra, 9–14 μ $\approx$ 7–10 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 13–19 μ $\approx$ 7–9 μ , collo suberecto, 3–4 μ cr. Setae myceliales dispersae,

erectae, rectae, simplices, apice acutae, vel 2-dentatae ($-12\ \mu$), usque ad $350 \Rightarrow 8-9\ \mu$. Perithecia dispersa, atra, globosa, verrucosa, usque ad $150\ \mu$ diam. Sporae atrobrunneae, cylindratae, obtusae, 4-septatae, constrictae, $29-35 \Rightarrow 13-14\ \mu$.

Hab. in foliis *Solani* spec. indet., Rio de Janeiro, Brazil, Ule, Herb. brasil. 2386, in Herb. Stockholm ex Herb. Rehm, sub *Meliola fuscidula* Gaill.

(287) **Meliola perae** Hansf., sp. n. (3111. 4231).

Plagulae amphigenae, plerumque hypophyllae, tenues, usque ad 2 mm diam. vel confluentes. Mycelium ex hyphis atrobrunneis, subrectis, $7-8\ \mu$ cr. (cellulis plerumque $20-30\ \mu$ longis), opposita acuteque ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, antrorsa, recta, $15-22\ \mu$ longa, cellula basali cylindrata, $3-10\ \mu$ longa, cellula apicali oblonga, apice rotundata, $11-15 \Rightarrow 8-10\ \mu$. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, $12-19 \Rightarrow 7-9\ \mu$. Setae myceliales juxta perithecia evolutae, subrectae, simplices obtusae vel acutae, usque ad $280 \Rightarrow 8-9\ \mu$. Perithecia in centro plagularum laxe gregaria, atra, globosa, verrucosa, usque ad $220\ \mu$ diam. Sporae atrobrunneae, cylindratae, obtusae, 4-septatae, constrictae, $40-46 \Rightarrow 15-16\ \mu$.

Hab. in foliis *Perae leandri*, Rio de Janeiro, Brazil, Ule, Herb. brasil. 2541, in Herb. Kew.

(288) **Meliola philodendricola** Hansf., sp. n. (3123. 4221).

Plagulae amphigenae, usque ad 3 mm diam., subdensae velutinae. Mycelium ex hyphis atrobrunneis, subrectis, $5-7\ \mu$ cr. (cellulis plerumque $20-30\ \mu$ longis), opposita acuteque ramosis, subdense radiato-reticulatis compositum. Hyphopodia capitata alternata vel opposita, patentia, $14-20\ \mu$ longa, cellula basali cylindrata, $2-6\ \mu$ longa, cellula apicali subglobosa vel oblonga, integra, $11-15 \Rightarrow 9-12\ \mu$. Hyphopodia mucronata pauca, illis capitatis commixta, alternata vel opposita, ampullacea, $13-25 \Rightarrow 8-10\ \mu$, collo $3-4\ \mu$ cr. Setae myceliales numerosae, dispersae, erectae, simplices, obtusae vel subacutae, usque ad $290 \Rightarrow 7-9\ \mu$, sursum late arcuatae vel hamatae. Perithecia dispersa, atra, globosa, verrucosa, usque ad $190\ \mu$ diam. Sporae atrobrunneae, cylindratae, obtusae, 4-septatae, constrictae, $37-45 \Rightarrow 14-16\ \mu$.

Hab. in foliis *Philodendri* spec. indet., Pedras Grandes, Santa Catharina, Brazil, 1891, Ule, Herb. brasil. 1753 in Herb. Kew.

(289) **Meliola picrasmae** Hansf., sp. n. ($31\frac{3}{4}$. 4222).

Plagulae hypophyllae, illis *Asterinae lobatae* Syd. commixtae, densae, velutinae, usque ad 2 mm diam. vel confluentes, raro etiam epiphyllae minores. Mycelium ex hyphis atrobrunneis, subrectis vel undulatis, $6-8\ \mu$ cr. (cellulis plerumque $25-35\ \mu$ longis), opposita

lateque ramosis, dense reticulatis compositum. Hyphopodia capitata alternata vel circa 20% opposita, patentia, recta vel curvata, 14—25 μ longa, cellula basali cylindracea, 3—7 μ longa, cellula apicali cylindracea apice rotundata, recta vel curvata, 12—18 $\Rightarrow$ 7—9 μ , Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 20—24 $\Rightarrow$ 7—9 μ , collo 3—4 μ cr. Setae myceliales numerosae, dispersae, erectae, subrectae, usque ad 450 $\Rightarrow$ 7—9 μ , apice 2—4-dentatae (—15 μ) vel breviter reflexo-2-furcatae, ramulis 2-dentatis. Perithecia dispersa, atra, globosa, verrucosa, usque ad 185 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 40—46 $\Rightarrow$ 15—16 $\Rightarrow$ 12—13 μ .

Hab. in foliis *Picrasmae javanicae*, Mt. Apo, Davao, Mindanao, Philippines, Elmer, Phil. Bur. Sci. 10842 p. p.

(290) **Meliola pictetiae** Hansf., sp. n. (3113. 4223).

Plagulae amphigenae, usque ad 3 mm diam., subdensae, tenuiter velutinae. Mycelium ex hyphis atrobrunneis, subrectis, 6—7 μ cr. (cellulis plerumque 15—25 μ longis), opposite acuteque ramosis, laxae vel subdense reticulatis compositum. Hyphopodia capitata alternata vel opposita, leniter antrorsa, recta, 15—19 μ longa, cellula basali cylindracea, 3—6 μ longa, cellula apicali subglobosa, ovata vel late piriforme, integra, 10—14 $\Rightarrow$ 8—10 μ . Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel alternata, ampullacea, 15—20 $\Rightarrow$ 8—11 μ , collo 3 μ cr. Setae myceliales laxae dispersae, etiam juxta perithecia aggregatae, subrectae, simplices, acutae, usque ad 600 $\Rightarrow$ 9—10 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 190 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae 36—45 $\Rightarrow$ 17—19 $\Rightarrow$ 13—15 μ .

Hab. in foliis *Pictetiae spinifoliae*, San Domingo, Ciferri, Mycofl. doming. exs. 188 (typus in Herb. Kew).

This was originally determined as *M. abrupta* Syd.; it is close to *M. ostryoderridis* Hansf. & Deight., but differs in its longer setae and wider spores.

(291) **Meliola pittospori** Hansf., sp. n. (3113. 5221).

Plagulae amphigenae, densae, velutinae, usque ad 4 mm diam. vel confluentes. Mycelium ex hyphis atrobrunneis, subrectis, 7—8 μ cr. (cellulis plerumque 15—20 μ longis), opposite acuteque ramosis, dense reticulatis compositum, subsolidum. Hyphopodia capitata opposita vel alternata, antrorsa, recta vel curvata, 14—20 μ longa, cellula basali cylindracea, 2—6 μ longa, cellula apicali globosa vel ovata, integra, 12—16 $\Rightarrow$ 9—14 μ . Hyphopodia mucronata non visa. Setae myceliales numerosae, erectae, rectae, simplices, acutae, usque ad 300 $\Rightarrow$ 8—10 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 47—54 $\Rightarrow$ 17—18 μ .

Hab. in foliis *Pittospori senaciae*, Mauritius, typus in Herb. Kew.

(292) ***Meliola pseudocapensis*** Hansf., sp. n. (31 $\frac{1}{3}$. 4223).

Plagulae epiphyllae, numerosae, subtenues, usque ad 3 mm diam., vel confluentes, tenuiter velutinae. Mycelium ex hyphis atrobrunneis, subrectis, 7—8 μ cr. (cellulis plerumque 20—30 μ longis), opposite ramosis, laxe reticulatis compositum. Hyphopodia capitata opposita, patentia, 15—21 μ longa, cellula basali cylindracea, 2—5 μ longa, cellula apicali cylindracea, apice rotundata vel lenissime attenuata, recta vel curvata, 11—15 μ $\Rightarrow$ 8—11 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 15—22 μ $\Rightarrow$ 8—9 μ , collo 3 μ cr. Setae myceliales dispersae, etiam juxta perithecia aggregatae, rectae, usque ad 800 μ $\Rightarrow$ 11—13 μ , apice acutae vel 2—3-dentatae usque ad 5 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, ellipsoideae, obtusae, 4-septatae, constrictae, 38—45 μ $\Rightarrow$ 17—20 μ .

Hab. in foliis ?*Aegiphilae* spec. indet., Jurua, Brazil, U l e, Append. Mycoth. Brasil. 17.

This resembles *M. capensis* (K. & C.) Theiss., but the capitate hyphopodia are considerably larger and the setae longer.

(293) ***Meliola regiae*** Hansf., sp. n. (31 $\frac{1}{3}$. 4332).

Plagulae hypophyllae, tenues, usque ad 3 mm diam. Mycelium ex hyphis atrobrunneis, subrectis vel leniter undulatis, 7—8 μ cr. (cellulis plerumque 20—30 μ longis), opposite vel irregulariter lateque ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, patentia, recta vel curvata, 18—29 μ longa, cellula basali cylindracea, 5—12 μ longa, cellula apicali irregulariter clavata, angulosa vel sublobata, saepe curvata, 12—18 μ $\Rightarrow$ 11—15 μ . Hyphopodia mucronata in hyphis distinctis evoluta, opposita vel alternata, ampullacea, 15—20 μ $\Rightarrow$ 7—9 μ , collo brevi, 3—4 μ cr. Setae myceliales tenuiter dispersae, etiam juxta perithecia aggregatae, rectae, simplices, obtusae, vel raro 2-dentatae (—4 μ), usque ad 400 μ $\Rightarrow$ 8—9 μ , sursum scabridae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 220 μ diam. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, 40—49 μ $\Rightarrow$ 18—22 μ $\Rightarrow$ 14—16 μ .

Hab. in foliis *Oreodoxae regiae*, San Domingo, C i f e r r i, Mycofl. doming. exs. 247.

Towards the apex the setae are scabrid with small cylindrical projections up to 3 μ high.

(294) *Meliola rhois* P. Henn. var. *flexuosiseta* (Speg.) Hansf., Arq. Inst. Biol. Sao Paulo, 12: 242. 1941.

I have examined the type of *M. cookeana* Speg. forma *duvauae* Sacc. & Syd., in Herb. Stockholm, ex Herb. S y d o w, on *Duvaue*

dependens, Chile, N e g e r, July 1891, and find it to be inseparable from the above.

[(295) **Meliola rickiana** Hansf., sp. n. (3123. 5332).

Plagulae amphigenae et petiolicolae, densae, usque ad 2 mm diam., velutinae. Mycelium ex hyphis atrobrunneis, subrectis, 6—8 μ cr. (cellulis plerumque 20—30 μ longis, oppositae lateque ramosis, dense reticulatis compositum. Hyphopodia capitata alternata vel circa 3% opposita, antrorsa, subrecta, 15—19 μ longa, cellula basali cylindravea, 3—5 μ longa, cellula apicali subglobosa, ovata vel cylindracea, apice rotundata, integra, 10—14 $\Rightarrow$ 8—11 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 15—20 $\Rightarrow$ 7—9 μ , collo 3 μ cr. Setae myceliales numerosae, dispersae etiam juxta perithecia aggregatae, erectae, atrae, late arcuatae vel uncinatae, usque ad 350 $\Rightarrow$ 10—12 μ , apice acutae vel raro minute 2-dentatae (—3 μ). Perithecia dispersa, atra globosa, verrucosa, usque ad 220 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 46—53 $\Rightarrow$ 18—21 $\Rightarrow$ 15—16 μ .

Hab. in foliis *Xanthoxyli* spec. indet., Sao Leopoldo, Rio Grande do Sul, Brazil, R i c k 35, in Herb. Stockholm.

(296) **Meliola sclerolobii** Hansf., sp. n. (3131. 5221).

Plagulae epiphyllae, raro etiam hypophyllae, numerosae sed raro confluentes, usque ad 5 mm diam., densae, velutinae. Mycelium ex hyphis atrobrunneis, subrectis vel leniter undulatis, 7—9 μ cr., (cellulis plerumque 15—25 μ longis), oppositae acuteque ramosis, dense reticulatis compositum. Hyphopodia capitata alternata, antrorsa vel patentia, recta vel curvata, 17—22 μ longa, cellula basali cylindracea, 3—7 μ longa, cellula apicali globosa vel late piriforme, integra, 12—16 $\Rightarrow$ 11—14 μ . Hyphopodia mucronata in hyphis distinctis evoluta, opposita vel alternata, ampullacea, 15—20 $\Rightarrow$ 7—9 μ , collo 3 μ cr. Setae myceliales numerosae, dispersae, etiam juxta perithecia aggregatae, erectae, rectae, usque ad 290 $\Rightarrow$ 8—9 μ , apice breviter 2—5-furcatae (—25 μ), ramulis varie plurie dentatis usque ad 15 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 240 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 45—52 $\Rightarrow$ 17—19 $\Rightarrow$ 14—15 μ .

Hab. in foliis *Sclerolobii* spec. indet., Tarapoto, Rio Huallega, Peru, U l e, s. n., in Herb. Stockholm, ex Herb. Sydow.

This specimen was originally determined by Hennings as *M. denticulata* Wint., and reported as such in Hedwigia 44: 57. 1905.

(297) **Meliola sparsipoda** Hansf., sp. n. (3111. 6332).

Plagulae hypophyllae, tenues, usque ad 35 $\Rightarrow$ 15 mm. Mycelium ex hyphis atrobrunneis, subrectis vel undulatis, 7—8 μ cr. (cellulis plerumque 30—50 μ longis), oppositae vel irregulariter ramosis, laxae

reticulatis compositum, dein intertextum et densum. Hyphopodia capitata laxè dispersa, alternata vel unilateralia, saepe irregulariter curvata, 30–40 μ longa, cellula basali cuneata vel cylindræa, curvata, 10–25 μ longa, sursum 9–15 μ cr., cellula apicali subglobosa, angulosa vel irregulariter lobata, versiforme, saepe curvata, 20–25 μ 14–23 μ . Hyphopodia mucronata in hyphis distinctis evoluta, dispersa, opposita vel saepe alternata, ampullacea, 18–25 μ 7–8 μ , collo elongato, 3 μ cr. Setae myceliales dispersae, etiam juxta perithecia aggregatae, erectae, subrectae, simplices, acutae, usque ad 350 μ 8–10 μ . Perithecia sparsa, atra, globosa, verrucosa, usque ad 240 μ diam. Sporae atrobrunneae, cylindræae, obtusae, 4-septatae, constrictae, 55–64 μ 20–25 μ 15–18 μ .

Hab. in foliis *Palmarum* spec. indet., Kartabo, British Guiana, Stevens, Fungi of B. Guiana 367, typus in Herb. Farlow.

The colonies are normally thinly velvety, but most are parasitised by *Helminthosporium*, and then are covered with a felt of conidiophores of this parasite.

(298) **Meliola tridentata** Hansf., sp. n. (3133. 4232).

Plagulae amphigenae, densae, crustosae, 1–2 mm diam. vel confluentes, facile secedentes, velutinae. Mycelium ex hyphis atrobrunneis, subrectis, 6–9 μ cr. (cellulis plerumque 20–30 μ longis), opposite lateque ramosis, dense reticulato-intertextis compositum. Hyphopodia capitata alternata vel opposita, recta vel curvata, antrorsa vel patentia, 13–18 μ longa, cellula basali cylindræa, 3–5 μ longa, cellula apicali subglobosa vel clavulato-cylindræa, integra, 10–13 μ 8–11 μ . Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel alternata, ampullacea, 14–20 μ 6–9 μ , collo 3 μ cr. Setae myceliales numerosae, erectae, atrae, usque ad 330 μ 9–11 μ , apice raro acutae, saepius 3-dentatae usque ad 18 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 225 μ diam. Sporae atrobrunneae, cylindræae, obtusae, 4-septatae, constrictae, 40–48 μ 16–18 μ 14–15 μ .

Hab. in foliis *Scutiae arenicolae*, Rio de Janeiro, Brazil, Ule 2263 in Herb. Stockholm.

(299) **Meliola viburnicola** Hansf., sp. n. (3112. 5222).

Plagulae amphigenae, subdensae, velutinae, usque ad 5 mm diam. vel confluentes. Mycelium ex hyphis atrobrunneis subrectis vel undulatis, 5–6 μ cr. (cellulis plerumque circa 20 μ longis), opposite lateque ramosis, subdense reticulatis compositum. Hyphopodia capitata opposita, recta vel curvata, patentia, 12–16 μ longa, cellula basali cylindræa, 2–5 μ longa, cellula apicali oblonga apice rotundata, vel lenissime rotundato-angulosa, recta vel curvata, 10–13 μ 6–9 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alter-

nata, ampullacea, $13-20 \Rightarrow 6-9 \mu$, collo suberecto, 3μ cr. Setae myceliales paucae vel numerosae, erectae, rectae, simplices, acutae, usque ad $400 \Rightarrow 7-9 \mu$. Perithecia sparsa, atra, globosa, verrucosa, usque ad 170μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, $44-51 \Rightarrow 16-19 \mu$.

Hab. in foliis *Viburni odoratissimi*, Luzon, Philippines, Phil. Bur. Sci. 4960 in Herb. Kew.

On the lower surface of the leaf the mycelium is much more crooked, with many alternate hyphopodia, more variable in size and shape and more angulose.

(300) *Meliola zig-zag* B. & C., Journ. Linn. Soc. London, 10: 392. 1869.

A number of specimens dating from the time of the original description are held at Kew under this name, but the only „zig-zag“ character common to them is that of the conidiophores of the parasitic *Helminthosporium*! The type is Wright 882, Cuba, on an unknown host, and the same fungus and host are also represented by Wright 478, also from Cuba.

Colonies hypophyllous, to 15 mm diam. or confluent, rather thin, thinly velvety. Mycelium of substraight dark brown hyphae $6-7 \mu$ thick, the cells mostly $15-25 \mu$ long, branching usually opposite at acute angles, closely radiating-reticulate. Capitate hyphopodia opposite or up to 50% alternate, more or less antrorse, usually straight, $12-16 \mu$ long; stalk cell cylindric, $2-5 \mu$ long; head cell globose, regular, $9-12 \mu$ diam. Mucronate hyphopodia mixed with capitate, opposite or alternate, bent ampulliform, $18-24 \mu$ long, $7-10 \mu$ thick, the neck upturned, 3μ thick. Mycelial setae thinly scattered, black, erect, straight, simple, acute, up to $1100 \Rightarrow 9-11 \mu$. Perithecia scattered, black, globose, verrucose, up to 210μ diam. Spores dark brown, cylindric, obtuse, 4-septate, constricted, $38-44 \Rightarrow 15-17 \mu$.

The B e e l i formula is therefore 3113. 4234.

Hitherto I have been unable to match these collections with any more recent ones from any part of the world

[(301) **Amazonia piperis** (Syd.) Hansf., comb. n. (3101. 4230).

Syn.: *Actinodothis piperis* Syd., Phil. Journ. Sci., C., Bot., 9: 174. 1914; Theissen & Sydow, Ann. Myc., 13: 254. 1915.

Colonies epiphyllous, sometimes also hypophyllous, scattered, superficial, black, smooth, dense, 1.5–3 mm diam., discoid, closely adherent. Mycelium almost a solid plate of radiating dark brown hyphae $7-9 \mu$ thick, the cells mostly $9-20 \mu$ long, closely and irregularly branched. Capitate hyphopodia in mature colonies scarcely recognisable due to compression between the hyphae, save by the presence of a pore in the lower surface of the head cells; in younger colonies alternate, closely antrorse, $11-18 \mu$ long, usually straight;

stalk cell cuneate-cylindric, 2–7 μ long; head cell globose to ellipsoid, entire, 9–13 $\Rightarrow$ 7–11 μ . Mucronate hyphopodia not seen. Ascomata few in each colony, developing beneath the mycelial layer and remaining covered by its radiate structure, flattened conic, black, smooth, up to 250 μ diam. and 150 μ high in the centre; with several layers of dark brown parenchyma below the mycelial layer on the upper side, on the lower side the wall very thin and often of only one layer of lighter brown parenchyma, surrounding the fibrous, hyaline soft „nucleus“, in the base of which the asci develop. The hyphae of the „nucleus“ are attached all round the wall of the stroma, which eventually opens at the apex by a central pore lined with short pale brown periphyses, and appearing from the exterior as an irregularly angular fracture in the outermost mycelial layer, enlarging by radial splitting. Asci 2-spored when mature. Spores dark brown, cylindric, obtuse, 4-sepate, strongly constricted, 33–40 $\Rightarrow$ 14–17 $\Rightarrow$ 11–14 μ .

In the host leaf are minute globose haustoria in the epidermal cells, connected singly to the capitate hyphopodia by fine fibrils through the cuticle. Theissen & Sydow described a hypostroma in the leaf, but I have failed to observe any trace of such structure.

On *Piper retrofractum*, Philippines, PBS 8819, 8851, 9092, 21843, 21928, 23925, 25380, 27751, 27718, all represented in Herb. Farlow.

This is the type species of the genus *Actinodothis* Syd., which is therefore reduced to synonymy with *Amazonia*.

(302) ***Amazonia stevensii*** Hansf., nom. nov. (2101. 4230).

Syn.: *Actinodothis perrottetiae* Stev., Bishop Mus. Bull. **19**: 51. 1925.

This is represented in the Farlow Herb. by Stevens 1055 and Degener 3923, on *Perrottetia sandwicensis*, Hawaii. I find no character in either of these to separate this species generically from *Amazonia*:

Colonies amphigenous, more or less circular, dense, crustose, easily secedent, black, smooth, to 2 mm diam. Mycelium of dark brown hyphae 6–8 μ thick, the cells 10–15 μ long, substraight; in young colonies the branching is usually opposite at wide angles, but in mature colonies the hyphae, especially towards the margin, are numerous and parallel-radiating, with few hyphopodia, the branching obscure, the older colonies being solid plates with crenulate margin. Capitate hyphopodia alternate or more distant, spreading, straight or bent, very variable in form and size, 12–27 μ long; stalk cell cylindric, straight or bent, 2–7 μ long; head cell irregularly lobed, often bend and distorted, 10–20 $\Rightarrow$ 10–18 μ . Mucronate hyphopodia few, mixed with capitate, alternate, bent ampulliform, 13–17 $\Rightarrow$ 6–8 μ , the neck upturned, short, 3–4 μ thick. Setae none. Young perithecia

more or less orbicular, convex, black, smooth, the upper surface a solid plate of opaque brown radiating hyphae. Spores dark brown, bent cylindric to ellipsoid, obtuse, 3-septate, constricted, $40-45 \Rightarrow 16-18 \mu$.

In section the original single layer of mycelium and hyphopodia of the young colony is thickened by the addition of layers representing the radial extension of the ascoma, of which the locule is surrounded by a pale brown to subhyaline fibrous inner wall, passing above into the mass of radiating black prosenchyma overlying it; locule about 280μ diam. and about 150μ high in the centre, with an apical central pore through the inner wall, lined with short pale brown periphyses, opening on the surface by an irregular fissure or by radial fissures through the uppermost mycelial layer. In the leaf the epidermis is penetrated by pale brown hyphae individually connected to the capitate hyphopodia and to minute haustoria in the underlying palisade cells; no further penetration of the leaf was observed. Beneath the colony the leaf tissues turn brown, by the death of the epidermal and mesophyll cells, many of the latter being filled with brown granular matter. There is no vestige of any hypostroma; Stevens showed the internal hyphae penetrating deeper over a leaf vein, between the mesophyll cells, but none of my sections showed them, and I assume they connect with haustoria deeper within the mesophyll in these situations. I regard these „hyphae“, which are $1-1.5 \mu$ wide, as mere extensions of the normal filaments between hyphopodia and haustoria, similar to those of *Balladyna* spp.; they are non-septae and hence can hardly be termed an „internal mycelium“.

(303) **Amazonia suttoniae** (Stev.) Hansf., comb. n. (3101. 6340).

Syn.: *Actinodothis suttoniae* Stev., Bull. Bishop Mus., **19**: 51, 1925.

Colonies hypophyllous, dense and crustose, circular, to 1 mm diam., usually smaller and crowded. Mycelium a solid plate of dark brown, radiating hyphae, nearly opaque $7-9 \mu$ thick, the cells mostly $10-15 \mu$ long, branching close, irregular, at acute angles. Capitate hyphopodia alternate or more scattered, closely antrorse, straight or bent, $14-22 \mu$ long; stalk cell cylindric, $2-8 \mu$ long; head cell entire, globose to cylindric with rounded apex, $10-16 \Rightarrow 8-14 \mu$. Mucronate hyphopodia very few, scattered, alternate, bent ampulliform, $15-20 \Rightarrow 7-8 \mu$, the neck $3-4 \mu$ thick. Setae none. Perithecia flattened-radiate with irregular central apical pore, up to 500μ diam. Spores dark brown, cylindric, obtuse, 4-septate, constricted, $53-61 \Rightarrow 21-24 \mu$.

On *Suttonia* sp., Hawaii, Stevens 1088 in Herb. Farlow.

(304) **Appendiculella acaenae** Hansf., sp. n. (2201. 4230).

Plagulae plerumque epiphyllae, usque ad 1 mm diam. vel confluentes, subdensae, leves. Mycelium ex hyphis atrobrunneis,

flexuosis, 6—7 μ cr. (cellulis plerumque 25—30 μ longis), opposite vel irregulariter ramosis, dense reticulato-intertextis compositum. Hyphopodia capitata alternata, subantrorsa, recta vel curvata, 20—40 μ longa, cellula basali cuneata vel cylindracea, 6—20 μ longa, cellula apicali irregulariter rotundato-angulosa vel lenissime lobata, 12—21 μ longis. Hyphopodia mucronata pauca, illis capitatis commixta, alternata, conoideo-ampullacea, curvata, 15—20 μ longis, collo suberecto, 3—4 μ cr. Setae nullae. Perithecia in centro plagularum aggregata, atra, globosa, usque ad 280 μ diam., superne appendicibus larviformibus numerosis ornata; appendices obtuse conoideae, atrobrunneae, transverse striatae, apice subuncinatae, subpellucidae, leves, usque ad 70 μ longis, sursum gradatim attenuatae. Sporae atrobrunneae, curvato-fusoideae, utrinque obtuse conoideae, 3-septatae, leniter constrictae, 34—43 μ longis, 12—13 μ cr.

Hab. in foliis *Acaenae* spec., Pichincha, Ecuador, Lagerheim in Rehm, Ascomyceten 1121, sub *Meliola manca*.

(305) **Appendiculella doliocarpi** Hansf., sp. n. (3201. 6330).

Plagulae epiphyllae, raro etiam hypophyllae, densae, usque ad 3 mm diam., leves, atrae. Mycelium ex hyphis atrobrunneis, subrectis, 7—8 μ cr. (cellulis plerumque 25—35 μ longis), opposite lateque ramosis, radiato-reticulatis, compositum. Hyphopodia capitata alternata, plus minusve antrorsa, recta vel curvata, 22—40 μ longa; cellula basali cylindracea vel cuneata, 5—18 μ longa; cellula apicali raro subglobosa, integraque, plerumque rotundato-angulosa vel lenissime lobata, 15—23 μ longis, 11—20 μ cr. Hyphopodia mucronata in hyphis distinctis in centro plagularum evoluta, opposita vel plerumque alternata, ampullacea, 15—20 μ longis, 7—9 μ cr. Setae myceliales nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 300 μ diam.; cellulis parietis obtuse conoideis vel in processibus conoideis atrobrunneis subopacis curvatis, usque ad 40 μ alt. et basi 30 μ diam., levibus vel lenissime verrucosis, obtusis productis. Sporae atrobrunneae, curvato-ellipsoideae, constrictae, 50—61 μ longis, 19—22 μ cr., cellula media crassiora.

Hab. in foliis *Doliocarpi* spec. indet., France Field, Panama, Stevens, Fungi of Panama 233, in Herb. Farlow.

This was originally determined by Stevens as *Irene papillifera* Syd.

(306) **Appendiculella echinus** (P. Henn.) Hoehn., var. **domingensis** Hansf., var. n. (3201. 4220).

Plagulae amphigenae, tenues vel subdensae, leves, atrae, usque ad 4 mm diam. Mycelium ex hyphis brunneis, in epiphyllis subrectis, 6—9 μ cr. (cellulis plerumque 20—35 μ longis) alternatim vel opposite ramosis, laxe reticulatis compositum; in hypophyllo hyphis tortuosis, subdense reticulatis. Hyphopodia capitata alternata, plus minusve

antrorsa, in epiphylo plerumque recta vel subcurvata, in hypophyllo tortuosa, 18—40 μ longa; cellula basali 5—20 μ longa, cylindracea; cellula apicali in epiphylo late clavata, margine sinuata vel sublobata, in hypophyllo versiformi, raro ovata integraque, plerumque irregulariter angulosa vel lobata, curvata, 13—25 μ $\approx$ 10—20 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel unilateralia, curvato-ampullacea, 13—20 μ $\approx$ 6—8 μ . Setae nullae. Perithecia dispersa, atra, globosa, usque ad 210 μ diam., cellulis parietis numerosis in appendicibus larviformibus productis; appendices pellucide brunneae, continuae, obtusae, apice plus minusve curvatae vel uncinatae, tenuiter tunicatae, leves vel indistincte transverse striatae, usque ad 80 μ longae et basi 15 μ crassae, sursum attenuatae, facile secedentes. Sporae atrobrunneae, cylindraceae vel subellipsoideae, obtusae, 4-septatae, constrictae, 35—41 μ $\approx$ 17—18 μ .

Hab. in foliis *Cecropiae peltatae*, San Domingo, Ciferri, Mycofl. doming. exs. 261, typus in Herb. Kew.

The perithecial appendages easily fall from the more mature perithecia, which then appear as merely verrucose. The collection was determined originally by Ciferri as *Irene tonkinensis* var. *cecropiae* Stev., from which it differs in very much larger hyphopodia, the perithecia are larger with much longer appendages, which are also more numerous, the spores are larger than those I have measured from Steven's Panama collections, which are only 32—36 μ $\approx$ 14—15 μ , though mixed with other larger ones, which are definitely foreign.

(307) *Appendicullela larviformis* (P. Henn.) Hoehn., var. **major** Hansf., var. n. (3203. 5320).

Plagulae amphigenae, plerumque hypophyllae, usque ad 10 mm. diam., tenues vel subdensae, leves. Mycelium ex hyphis atrobrunneis, subrectis vel leniter flexuosis, 6—9 μ cr. (cellulis plerumque 15—25 μ longis) opposita ramosis, laxe vel subdense reticulatis compositum. Hyphopodia capitata alternata vel usque ad 10% opposita, plus minusve antrorsa, recta vel curvata, 16—28 μ longa, cellula basali cylindracea, 4—8 μ longa, cellula apicali subglobosa integraque vel elongato-ellipsoidea et leniter rotundato-angulosa, 10—22 μ $\approx$ 10—14 μ . Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, 15—22 μ $\approx$ 6—8 μ , collo suberecto, 3 μ cr. Setae myceliales nullae. Perithecia laxe gregaria, atra, globosa, usque ad 180 μ diam., superne appendicibus larviformibus 2—6 ornata; appendices usque ad 120 μ longae et basi 25 μ cr., sursum attenuatae, apice curvatae vel subuncinatae, 10 μ cr., transverse striato-annulatae, pellucide dilute brunneae vel luteo-hyalinae, continuae, tenuiter tunicatae, extus minute granulosae. Sporae atrobrunneae, ellipsoideae, obtusae, 4-septatae, constrictae, 41—50 μ $\approx$ 17—20 μ $\approx$ 13—15 μ .

Hab. in foliis *Acalyphae diversifoliae*, Honduras, Standley 56839 (typus in Herb. Farlow); Standley 55320, 53662; Panama, Stevens 699, 1070; in foliis *Acalyphae* sp., Costa Rica, 328, 366; Panama, Stevens 689, 1291.

On the type host the colonies are strongly parasitic, producing a brown spot.

(308) **Appendiculella perrottetiae** (Stev.) Hansf., comb. n.

Syn.: *Amazonia perrottetiae* Stev., Bull. Bishop Mus., **19**: 47. 1925. (2101. 3220).

Colonies hypophyllous, thin, smooth, to 1 mm. diam. or confluent. Mycelium of substraight to sinuous dark brown hyphae 6—7 μ thick, the cells mostly 15—25 μ long, branching alternate or irregular, not opposite, at acute angles, loosely reticulate. Capitate hyphopodia alternate, more or less antrorse, straight or bent, 15—25 μ long; stalk cell cuneate to cylindric, 4—9 μ long; head cell clavate-triangular, straight or bent, the angles rounded, or very shallowly lobate, 9—15 μ 8—14 μ . Mucronate hyphopodia mixed with capitate, alternate or unilateral, ampulliform, 12—16 μ 6—7 μ , the neck upturned, short, 3—4 μ thick. Setae none. Perithecia few, scattered, black, globose, up to 160 μ diam., the surface cells varying from conoid-mammillate to extended out into larviform appendages which are bent to uncinat, pale translucent brown, transversely striate, continuous, obtuse, up to 45 μ long by 13—15 μ wide at the base. Spores dark brown, bent cylindric with obtuse ends, 3-septate, constricted, 33—38 μ 12—13 μ .

On *Perrottetia sandwicensis*, Kauai, Hawaii, F. L. Stevens 474 p. p. (mixed with *Amazonia stevensii* Hansf.)

(309) **Appendiculella vernoniae** (Stev.) Hansf., comb. n. (3201. 3220).

Syn.: *Irene sororcula* (Speg.) Stev. var. *vernoniae* Stev., Ann. Myc. **25**: 424. 1927.

Colonies epiphyllous, to 1 mm. diam., thin, smooth. Mycelium of brown hyphae 6—7 μ thick, the cells mostly 20—30 μ long, substraight to flexuous, branching opposite or irregular, at acute angles, loosely radiating-reticulate. Capitate hyphopodia alternate, more or less antrorse, straight or bent, 12—18 μ long; stalk cell cylindric, 2—5 μ long; head cell globose, entire, 10—12 μ diam. Mucronate hyphopodia mixed with capitate on some hyphae, opposite or alternate, bent ampulliform, 12—15 μ 7—8 μ , neck 3 μ thick. Setae none. Perithecia few, loosely scattered, black, globose, verrucose, up to 150 μ diam., with 0—4 larviform appendages on upper half, nearly smooth, pale clear brownish, obtuse and slightly swollen at apex, continuous, straight or bent, up to 60 μ 10—15 μ , in middle only about 8 μ thick, thin-walled. Spores dark brown, cylindric to subellipsoid, obtuse, 4-septate, 31—36 μ 13—15 μ 10—12 μ .

On *Vernonia* spp., Panama, Stevens 1132 (type), 308, 465, 1171, 1319, 1047; Costarica, Stevens 706; all in Herb. Farlow.

(310) *Irene acervata* (Ell. & Ev.) Hansf., var. **major** Hansf., var. n. (3101. 4230).

Plagulae epiphyllae, numerosae, subconfluentes, usque ad 2 mm diam., subdensae, leves. Mycelium ex hyphis atrobrunneis, sinuosis, 6—7 μ cr. (cellulis plerumque 20—30 μ longis), opposite ramosis, dense reticulato-intertextis compositum. Hyphopodia capitata alternata, recta, plus minusve antrorsa, 12—17 μ longa, cellula basali cylindracea 2—6 μ longa, cellula apicali globosa, integra, 9—13 μ longa. Hyphopodia mucronata illis capitatis commixta, opposita, alternata vel interdum ternata, ampullacea, 12—18 μ longa, collo 3 μ cr. Setae myceliales nullae. Perithecia in centro plagarum gregaria, atra, globosa, verrucosa, usque ad 210 μ diam., cellulis parietis obtuse conoideis vel mamillatibus, usque ad 18 μ alt. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 33—48 μ longae, 12—14 μ cr.

Hab. in foliis *Solanacearum* spec. indet., Caaguazu, Paraguay. Balansa 3583, typus in Herb. Kew.

This differs from the type in its larger spores, smoother perithecia and slightly larger hyphopodia.

(311) *Irene alchorneae-incurvae* Hansf., sp. n. (3101. 5320).

Plagulae epiphyllae, dispersae, tenues, leves, usque ad 3 mm diam. Mycelium ex hyphis undulatis vel flexuosis, atrobrunneis, 7—9 μ cr. (cellulis plerumque 30—40 μ longis), opposite vel irregulariter ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata vel dispersa, saepius curvata, 30—40 μ longa, cellula basali cylindracea, 10—14 μ longa, cellula apicali subglobosa vel oblonga, integra vel subangulosa, rarius sublobata, apice rotundata vel truncata, 18—29 μ longa, 13—17 μ cr. Hyphopodia mucronata illis capitatis commixta, alternata, ampullacea, 23—30 μ longa, collo elongato suberecto, 3—4 μ cr. Setae nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. (? imatura), cellulis parietis obtuse conoideis. Sporae atrobrunneae, subellipsoideae, obtusae, constrictae, 4-septatae, 53—59 μ longae, 20—25 μ cr., 18—21 μ cr.

Hab. in foliis *Alchorneae incurvae*, Santa Catharina, Brazil, Ule, Herb. brasil. 916, in Herb. Stockholm.

(312) *Irene caaguazuensis* Hansf., sp. n. (3103. 4330).

Plagulae epiphyllae, dispersae, atrae, densae, leves, usque ad 1 mm. diam. Mycelium ex hyphis atrobrunneis, subrectis, 7—9 μ cr. (cellulis plerumque 15—20 μ longis) opposite acuteque ramosis, dense reticulatis compositum, subsolidum. Hyphopodia capitata alternata vel circa 5% opposita, plus minusve antrorsa, recta vel curvata,

14—23 μ longa, cellula apicali subglobosa vel late clavata, integra vel rotundato-angulosa, 9—17 $\Rightarrow$ 9—13 μ . Hyphopodia mucronata illis capitatis commixta, ampullacea, opposita vel alternata, 18—28 $\Rightarrow$ 7—9 μ , collo elongato, suberecto, 3 μ cr. Setae nullae. Perithecia in centro plagularum aggregata, atra, globosa, verrucosa, usque ad 280 μ diam., cellulis parietis rotundatis vel obtuse conoideis, usque ad 12 μ alt. Sporae atrobrunneae, late ellipsoideae, 4-septatae, constrictae, 40—48 $\Rightarrow$ 20—25 μ .

Hab. in foliis *Rutacearum* spec. indet., Caaguazu, Paraguay, Balansa 3585, in Herb. Kew.

(313) **Irene cecropicola** Hansf., sp. n. (3101. 4220).

Plagulae epiphyllae, tenuissimae, usque ad 5 mm. diam. vel confluentes, leves, aegre perspicues. Mycelium ex hyphis atrolongis), opposite acuteque ramosis, laxe reticulatis compositum. Hybrunneis, subrectis, 7—9 μ cr. (cellulis plerumque 25—40 μ phopodia capitata alternata, plus minusve antrorsa, recta vel curvata, 23—35 μ longa, cellula basali cylindracea vel cuneata, 6—15 μ longa, cellula apicali subglobosa vel late piriformi, margine plus minusve crenulata, haud integra, 15—23 $\Rightarrow$ 14—20 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, curvato-ampullacea, 17—25 $\Rightarrow$ 8—10 μ collo 3 μ cr. Setae nullae. Perithecia laxe dispersa, atra, globosa, verrucosa, usque ad 180 μ diam., cellulis parietis obtuse conoideis vel submammillatibus, usque ad 18 μ alt. Sporae atrobrunneae, cylindraceae vel subellipsoideae, obtusae, 4-septatae, constrictae, 38—45 $\Rightarrow$ 17—19 μ .

Hab. in foliis *Cecropiae* sp., Mana, Rio de Janeiro, Brazil, Ule, Herb. brasil. 2411, typus in Herb. Kew.

(314) **Irene guatemalensis** Hansf. sp. n. (3103. 4220).

Plagulae epiphyllae, densae, usque ad 2 mm. diam., leves. Mycelium ex hyphis atrobrunneis, rectis, 7—9 μ cr. (cellulis plerumque 12—20 μ longis) opposite ramosis, dense regulariter reticulatis compositum. Hyphopodia capitata circa 90% opposita, leniter antrorsa, subrecta, 14—18 μ longa, cellula basali cylindracea, 2—4 μ longa, cellula apicali cylindracea apice late rotundata, integra, 10—14 $\Rightarrow$ 7—9 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel unilaterialia, curvata, ampullacea, 15—20 $\Rightarrow$ 7—9 μ , collo suberecto 3 μ cr. Setae myceliales nullae. Perithecia in centro plagularum subdense aggregata, atra, globosa, usque ad 190 μ diam., cellulis parietis obtuse conoideis, subpellucide atrobrunneis, usque ad 30 μ alt. Sporae atrobrunneae, late ellipsoideae, 4-septatae, leniter constrictae, 34—40 $\Rightarrow$ 17—19 $\Rightarrow$ 12—15 μ .

Hab. in foliis *Cupaniae glabrae*, Long Mountain, Jamaica, Dennis J. 109, typus in Herb. Kew; in foliis *C. guatemalensis*, Costa

Rica, Sydow, Fung. exot. exs. 625 in Herb. Pretoria sub *Irene glabroides* forma.

The latter specimen was the first known to me, but in view of the presence of a much higher proportion of opposite hyphopodia in the Jamaica specimen, I have chosen this as the type.

(315) ***Irene mirlopoda*** (Cif.) Hansf., comb. n. (3103. 5320).

Syn.: *Meliola (Irenina) miriopoda* Cif., Ann. Myc., **36**: 215. 1938.

In the original description this species was confused with the mycelium of a species of *Asterina* occurring on the same leaves; the Herb. Kew portion of the type collection, contains only this *Asterina*, but both fungi are represented in the Herb. Stockholm portion of Ciferri 2893, on *Wallenia laurifolia*, San Domingo: —

Colonies amphigenous, crustose, solid, black, to 10 mm diam., easily secedent, scattered or sometimes confluent. Mycelium of sub-straight dark brown hyphae 7—10 μ wide, cells mostly 10—15 μ long, branching opposite or irregular, close, at wide angles, very densely reticulate and becoming solid. Capitulate hyphopodia alternate or rarely opposite, subantrorse, straight or bent, 15—28 μ long; stalk cell cylindric, 2—14 μ long; head cell subglobose and entire, or variously angulose to lobed, straight or bent, 10—18 $\Rightarrow$ 8—17 μ . Mucronate hyphopodia few, scattered, opposite or alternate, bent ampulliform, 16—20 $\Rightarrow$ 7—9 μ , neck 3—4 μ thick. Setae none. Perithecia globose, verrucose, black, to 180 μ diam. Spores dark brown, cylindric, obtuse, 4-septate, constricted, 48—52 $\Rightarrow$ 22—24 μ .

Most colonies are parasitised by *Trichothyrium* sp.

[(316) ***Irene nectandrae*** Hansf., sp. n. (3101. 5320).

Plagulae amphigenae, usque ad 3 mm. diam., vel confluentes, in epiphylllo parvae tenuesque, in hypophyllo majores densae, interdum in maculas brunneas sitae, leves. Mycelium ex hyphis sinuosis atrobrunneis, 6—9 μ cr. (cellulis plerumque 15—25 μ longis) opposite vel irregulariter lateque ramosis, laxe vel subdense reticulatis compositum. Hyphopodia capitata alternata, plerumque irregulariter curvata, in hypophyllo 17—30 μ longa, in epiphylllo usque ad 35 μ longa, cellula basali cylindracea, 6—10 μ longa, cellula apicali irregulari, curvata, leniter rotundato-lobata, 12—24 $\Rightarrow$ 11—19 μ . Hyphopodia mucronata pauca, illis capitatis commixta alternata vel opposita, curvato-ampullacea, 14—20 $\Rightarrow$ 6—8 μ , collo suberecto 3—4 μ cr. Setae nullae. Perithecia dispersa, atra, globosa verrucosa, usque ad 150 μ diam., cellulis parietis obtuse conoideis, usque ad 20 μ alt. Sporae atrobrunneae, ellipsoideae, obtusae, 4-septatae, constrictae, 46—52 $\Rightarrow$ 19—22 μ .

Hab. in foliis *Nectandrae* sp., Wismar, British Guiana, Stevens 315, typus in Herb. Kew.

(317) *Irene sapii* Hansf., sp. n. (3101. 4220).

Plagulae epiphyllae, tenuissimae, usque ad 1 mm. diam., numerosae confluentesque. Mycelium ex hyphis atrobrunneis, subrectis 7—8 μ cr. (cellulis plerumque 20—30 μ longis), opposita vel irregulariter ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, subantrorsa, plerumque recta, 18—27 μ longa; cellula basali cuneata vel cylindracea, 4—9 μ longa, cellula apicali subglobosa vel piriformi, integra, 13—18 $\Rightarrow$ 12—15 μ . Hyphopodia mucronata numerosa, illis capitatis commixta, opposita vel alternata, ampullacea, 14—20 $\Rightarrow$ 6—8 μ , collo 3 μ cr. Setae nullae. Perithecia in centro plagarum laxe gregaria, atra, globosa, verrucosa, usque ad 170 μ diam., cellulis parietis rotundatis vel obtuse conoideis, usque ad 12 μ alt. Sporae atrobrunneae, cylindraceae vel subellipsoideae, obtusae-4-septatae, constrictae, 38—44 $\Rightarrow$ 18—19 μ .

Hab. in foliis *Sapii* spec., Para, Brazil, Baker, Plants of Amazon 194, typus in Herb. Kew.

(318) *Irene solanacearum* Hansf., sp. n. (3101. 3230).

Plagulae epiphyllae, subdensae, usque ad 1.5 mm. diam., leves. Mycelium ex hyphis atrobrunneis, flexuosis, vel tortuosis, 6—7 cr. (cellulis plerumque 20—30 μ longis) alternatim vel irregulariter ramosis, dense reticulatis compositum. Hyphopodia capitata alternata, recta vel curvata, 13—24 μ longa, cellula basali cylindracea, 3—7 μ longa, cellula apicali raro subglobosa integraque, plerumque irregulariter rotundato-angulosa, 10—15 $\Rightarrow$ 8—13 μ . Hyphopodia mucronata in hyphis distinctis evoluta, alternata, raro opposita, ampullacea, 14—18 $\Rightarrow$ 6—8 μ , collo brevi, 3 μ cr. Setae nullae, Perithecia in centro plagulae laxe gregaria, atra, globosa, verrucosa, usque ad 215 μ diam., cellulis parietis conoideis, usque ad 30 μ alt. et 20—25 μ diam. Sporae atro-brunneae, cylindraceae, obtusae, 4-septatae, constrictae, 31—38 $\Rightarrow$ 14—15 μ .

Hab. in foliis *Solanacearum* spec. indet., S. Miguel Ecuador, Stevens, Fungi af Ecuador 229, typus in Herb. Farlow.

(319) *Irene vilis* Syd., var. *citharexyl* Hansf., var. n. (3101. 4220).

Plagulae numerosae, amphigenae, usque ad 1 mm. diam., densae, leves, subinde confluentes. Mycelium ex hyphis subrectis vel leniter undulatis, atrobrunneis, 7—9 μ cr. (cellulis plerumque 15—25 μ longis), opposita vel irregulariter acuteque ramosis, dense reticulatis compositum. Hyphopodia capitata alternata, subantrorsa, recta vel curvata, 19—28 μ longa, cellula basali cuneata vel cylindracea, 6—10 μ longa, cellula apicali ovata vel clavata, apice late rotundata vel raro attenuata, integra, 14—20 $\Rightarrow$ 10—13 μ . Hyphopodia mucronata in hyphis distinctis evoluta, alternata vel interdum opposita, curvato-ampullacea, 15—21 $\Rightarrow$ 6—8 μ , collo 3—4 μ cr. Setae nullae. Perithecia

laxe dispersa, atra, globosa, verrucosa, usque ad 180 μ diam., cellulis parietis rotundatis, usque ad 10 μ alt. Sporae atrobrunneae, cylindraceae vel subellipsoideae, obtusae, 4-septatae, leniter constrictae, 39—45 $\Rightarrow$ 16—19 μ .

Hab. in foliis *Citharexylis fruticosi*, San Domingo, Ciferri. Mycofl. doming. exs. 241, typus in Herb. Kew.

(320) **Irene schwenkiae** Hansf., sp. n. (3101. 4220).

Plagulae epiphyllae, usque ad 3 mm. diam., leves, subtenues. Mycelium ex hyphis atrobrunneis, rectis vel leniter undulatis, 7—8 μ cr. (cellulis plerumque 20—25 μ longis), oppositae lateque ramosis, laxae reticulatis compositum. Hyphopodia capitata alternata, subantrorsa, recta vel apice recurvata, 20—25 μ longa, cellula basali cylindracea vel cuneata, 4—7 μ longa, cellula apicali globosa vel curvato-ovata, integra vel raro leniter rotundato-angulosa, 13—18 $\Rightarrow$ 11—15 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, curvata, 13—18 $\Rightarrow$ 6—8 μ , collo 3 μ cr. Setae nullae. Perithecia dispersa, atra, globosa, usque ad 140 μ dim., cellulis parietis obtuse conoideis vel apice truncatis, usque ad 20 μ alt. Sporae atrobrunneae, obtusae, 34—42 $\Rightarrow$ 13—15 μ .

Hab. in foliis *Schwenkiae browalloidis*, Puerto La Cruz, Venezuela, Sydow, Fung. exot. exs. 795.

The type collection is represented both at Kew and Stockholm herbaria.

(321) **Irene scorodocarpi** Hansf., sp. n. (3101. 4330).

Plagulae hypophyllae, densae, leves, usque ad 5 mm. diam. vel confluentes. Mycelium ex hyphis atrobrunneis, subrectis vel leniter undulatis, 7—8 μ cr. (cellulis plerumque 13—20 μ longis) oppositae vel irregulariter ramosis, dense reticulatis compositum. Hyphopodia capitata alternata, patentia, plerumque recta, 14—18 μ longa, cellula basali cuneata vel cylindracea, 3—5 μ longa, cellula apicali subglobosa vel lenissime rotundato-angulosa, plerumque integra, 10—13 $\Rightarrow$ 8—11 μ . Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel alternata, curvata, ampullacea, 16—25 $\Rightarrow$ 7—9 μ , collo elongato 3 μ cr. Setae myceliales nullae. Perithecia dense dispersa, atra, globosa verrucosa, usque ad 290 μ diam., cellulis parietis curvato-conoideis vel mammillatibus, usque ad 30 μ alt. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae 42—49 $\Rightarrow$ 18—21 μ .

Hab. in foliis *Scorodocarpi borneensis*, British North Borneo, Forest Dept. 4355, typus in Herb. Kew.

(322) **Irene ximeniae** Hansf., sp. n. (3103. 4340).

Plagulae amphigenae, plerumque hypophyllae, usque ad 1 mm. diam., densae, leves. Mycelium ex hyphis atrobrunneis, rectis, 8—11 μ cr. (cellulis plerumque 10—15 μ longis), oppositae vel irregulariter,

lateque ramosis, densissime reticulatis compositum, subsolidum. Hyphopodia capitata alternata vel opposita, recta vel antrorse curvata, 15–25 μ longa, cellula basali cylindracea, 3–8 μ longa, cellula apicali subglobosa, vel oblonga, integra, 12–18 $\Rightarrow$ 8–14 μ . Hyphopodia mucronata pauca, illis capitatis commixta, alternata vel opposita, ampullacea vel conoidea, 20–35 $\Rightarrow$ 9–10 μ , collo elongato, 3–4 μ cr. Setae nullae. Perithecia in centro plagellarum laxe gregaria, atra, globosa, verrucosa usque ad 330 μ diam., cellulis parietis conoideis vel mammillatibus, usque ad 25 μ alt. Sporae atrobrunneae, ellipsoideae, obtusae vel apiculatae, 4-septatae, constrictae, 42–49 $\Rightarrow$ 20–23 μ .

Hab. in foliis *Ximeniae americanae*, San Domingo, Ciferri, Mycofl. Doming. exs. 250, typus in Herb. Kew.

The colonies are remarkable in that the mycelium often forms solid "fans" of closely branched, radiating, exhyphopodiate hyphae, which at the edges of the "fan" become looser and bear hyphopodia. The species occurs mixed in this collection with *Irenopsis seyboensis* Cif.

(323) *Irenina sanguinea* (Ell. & Ev.) Stev., Ann. Myc. **25**: 448. 1927.

The type is Langlois 74 on *Rubus trivialis*, Louisiana, and is represented in Herb. Kew. My examination shows that this is identical with *Appenmiculella calostroma* (Desm.) Hoehn., and that Stevens was in error when he stated that there were no larviform appendages to the perithecia. It causes red leafspots on the host, but I have found similar spots of varying degree of discoloration on other species of *Rubus* attacked by this fungus.

(324) *Irenopsis cupanilicola* Hansf., sp. n. (3401. 4220).

Plagulae epiphyllae, dispersae, usque ad 2 mm. diam., tenuissimae, leves. Mycelium ex hyphis atrobruneis, subrectis vel leniter undulatis, 6–8 μ cr. (cellulis plerumque 25–35 μ longis) opposite lateque ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, saepius irregulariter curvata 22–35 μ longa; cellula basali cylindracea, 7–15 μ longa, cellula apicali versiformi, saepius curvata, cylindracea, apice rotundata integraque, rotundato-angulosa vel irregulariter lobata, 15–25 $\Rightarrow$ 10–18 μ . Hyphopodia mucronata pauca, illis capitatis commixta, alternata vel raro opposita, curvata ampullacea, 16–20 $\Rightarrow$ 6–8 μ , collo 3 μ cr. Setae myceliales nullae. Perithecia laxe dispersa, atra, globosa, verrucosa, usque ad 200 μ diam., superne setis erecto-patentibus, usque ad 130 μ longis, subrectis vel apice curvatis vel uncinatis, levibus, obtusis, 2–3-septatis, tunica 1–1½ μ cr., ornata. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, leniter constrictae, 34–44 $\Rightarrow$ 15–17 μ .

Hab. in foliis *Cupaniae guatemalensis*, Costa Rica, Sydow. Fung. exot. exs. 625, p. p., in Herb., Kew sub *Meliola glabroides* forma.

This differs from *I. cupaniae* Stev. in the larger and irregular hyphopodia.

(325) ***Irenopsis dimorphandrae*** Hansf., sp. n. (3403. 4220).

Plagulae hypophyllae, tenues, leves, usque ad 10 mm diam. vel confluentes. Mycelium ex hyphis atrobrunneis, flexuosis vel tortuosis, 5–8 μ cr. (cellulis plerumque 20–40 μ longis) opposite vel unilateraliter ramosis, laxe sinuoso-reticulatis compositum. Hyphopodia capitata alternata vel circa 2% opposita, recta vel curvata, 10–15 μ longa; cellula basali cylindracea, 2–5 μ longa, cellula apicali ovata vel piriformia, integra, 8–12 μ $\approx$ 7–10 μ . Hyphopodia mucronata illis capitatis commixta, alternata, ampullacea, 18–25 μ $\approx$ 6–8 μ , collo elongato 3 μ cr. Setae myceliales nullae. Perithecia laxe dispersa, atra, globosa, verrucosa, usque ad 160 μ diam., superne setis erecto-patentibus, usque ad 20, rectis, pellucide dilute brunneis, obtusis, levibus, usque ad 170 μ longis ornata. Sporae atrobrunneae, fusoideae, utrinque obtuse conoideae, 4-septatae, constrictae, 36–43 μ $\approx$ 15–17 μ .

Hab. in foliis *Dimorphandrae* sp. indet., British Guiana, Stevens, Fungi of Br. Guiana 380, typus in Herb. Kew.

The setae are sometimes slightly swollen at the apex; the middle cell of the spore usually is both longer and wider than the others.

(326) ***Irenopsis earleana*** Cif., Mycopathologia 7: 123. 1954.

Specimens examined: Ciferri, Mycofl. doming. exs. 182 on *Rhacoma crossopetalum*, San Domingo; Heller 6217 on *Crosso-petalum*, Porto Rico; (the type of *I. compacta* (Earle) Stev., a name antedated by *Meliola compacta* Lev.)

The specimen Ule, Herb. brasil. 2204, on what appears to be either *Rhamnaceae* or *Celastraceae*, Brazil, in Herb. Kew, appears to me to be this same species.

(327) ***Irenopsis myrciae*** Hansf., sp. n. (3401. 5220).

Plagulae hypophyllae, usque ad 5 mm diam., tenues leves. Mycelium ex hyphis atrobrunneis, sinuosis vel flexuosis, 6–7 μ cr. (cellulis plerumque 20–30 μ longis), opposite vel irregulariter ramosis, laxe reticulato-intertextis compositum. Hyphopodia capitata alternata, recta vel varie curvata, 17–30 μ longa, cellula basali cylindracea, 3–10 μ longa, cellula apicali versiformi, subglobosa vel elongata, saepe curvata, integra vel irregulariter lobata, 12–23 μ $\approx$ 9–17 μ . Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, 16–24 μ $\approx$ 8–9 μ , collo elongato, 3 μ cr. Setae myceliales nullae. Perithecia laxe dispersa, atra, globosa, verrucosa, usque ad 170 μ diam., superne setis 15–30, radiantibus, usque ad 150 μ $\approx$ 6–8 μ , rectis vel leniter flexuosis, simplices, obtusis, levibus, continuis vel 1-septatis ornata. Sporae atrobrunneae, cylindraceae, 4-septatae, constrictae, 52 μ $\approx$ 18 μ .

Hab. in foliis *Myrciae deflexae*, Bandera, Porto Rico, Stevens 8672 p. p., typus in Herb. Kew.

The perithecial setae have their apices either straight or subuncinate. Few spores were found in this specimen.

(328) **Irenopsis pteridicola** (Stev.) Hansf., comb. n.

Syn.: *Meliola pteridicola* Stev., Illin. Biol. Monogr., 2: 28. 1916.

Stevens in Ann. Myc. 26: 252, 1928, regarded the setae as originating from the perithecial disc, but examination of his Porto Rican specimens, and also of Ciferri, Mycofl. doming. exs. 108, on *Asplenium cristatum*, San Domingo, shows that these setae arise from the sides and upper parts of the perithecium, and are therefore to be regarded as true perithecial setae. They are simple, obtuse, smooth, straight or somewhat bent, continuous, up to $110 \pm 6-8 \mu$.

(329) **Irenopsis wrightii** (B. & C.) Hansf., comb. n. (3103. 4220).

Syn.: *Meliola wrightii* B. & C., Journ. Linn. Soc. Lond. 10: 392.

1869. — *Irenina wrightii* (B. & C.) Stev., Ann. Myc. 25: 450. 1927.

Examination of the type, Wright 881 on *Sapindaceae* indet., in Herb. Kew, shows that the perithecia have each 0—15 erect-spreading setae on the upper half; setae continuous or thinly 1-sepate, simple, obtuse, more or less bent to tortuous at the apex, which is paler, the upper half finely and closely granulose-verruculose, up to 80μ long by $6-7 \mu$ thick.

(330) *Meliola amphigena* Stev. & Tehon, var. **rondeletiae** Hansf., var. n. (3111. 3222).

Plagulae amphigenae, usque ad 5 mm diam., saepe numerosae, minutae confluentesque, subdensae, velutinae. Mycelium ex hyphis atrobrunneis, subrectis vel sinuosis, $6-7 \mu$ cr. (cellulis plerumque $20-25 \mu$ longis) opposita lateque ramosis, dense reticulato-intertextis compositum. Hyphopodia capitata alternata, plus minusve antrorsa, recta vel curvata $12-21 \mu$ longa, cellula basali cuneato-cylindracea, $2-6 \mu$ longa, cellula apicali globosa vel ovata, apice rotundata, integra, $9-14 \pm 8-10 \mu$. Hyphopodia mucronata in hyphis distinctis evoluta, opposita vel alternata, ampullacea, $15-20 \pm 6-7 \mu$ cr. Setae myceliales dispersae et juxta perithecia aggregatae, rectae vel leniter flexuosae, simplices, apice obtusae vel subacutae, usque ad $450 \pm 7-8 \mu$. Perithecia in centro plagularum laxae aggregata, atra, globosa, verrucosa, usque ad 140μ diam. Sporae atrobrunneae, cylindraceae vel subellipsoideae, obtusae, 4-septatae, constrictae, $27-35 \pm 13-15 \pm 11-12 \mu$.

Hab. in foliis *Rondeletiae purdei*, Aragua, Venezuela, Sydow, Fung. exot. exs. 798, typus in Herb. Kew.

(331) **Meliola anacardiacearum** (Stev.) Hansf., comb. n. (3113. 4322).

Syn.: *Amazonia anacardiacearum* Stev., Ann. Myc. **25**: 413. 1927.

The type collection, Stevens 277 on ?*Tapirira* sp., British Guiana, is represented in the Farlow Herb.:

Colonies epiphyllous, 1.5–5.0 mm diam., black, rather thin, sometimes confluent. Mycelium of substraight dark brown hyphae 7–8 μ thick, the cells mostly about 25 μ long, branching usually opposite, loosely interwoven-reticulate. Capitate hyphopodia opposite or alternate, straight or bent, 15–20 μ long, stalk cell short cylindric, 2–4 μ long, head cell ovate to cylindric with rounded apex, entire or slightly rounded-angulose, 11–15 $\Rightarrow$ 7–9 μ . Mucronate hyphopodia mixed with capitate, opposite or alternate, ampulliform, 17–22 $\Rightarrow$ 7–9 μ , the neck 3–4 μ thick. Setae thinly scattered, erect, straight, simple, obtuse, up to 360 $\Rightarrow$ 7–9 μ . Perithecia scattered, each on a radiate subiculum, globose, verrucose, up to 150 μ diam. Spores dark brown, cylindric, obtuse, 4-septate, slightly constricted, 40–45 $\Rightarrow$ 18–20 μ .

Most colonies are parasitised by various fungi, which suppress the development of setae and perithecia.

(332) *Meliola citricola* Syd. var. **amyridis** Hansf., var. n. (31 $\frac{1}{3}$. 4323).

Plagulae amphigenae, plerumque hypophyllae, densae, usque ad 5 mm diam., tenuiter velutinae. Mycelium ex hyphis atrobrunneis, subrectis, 6–7 μ cr. (cellulis plerumque 20–30 μ longis), dense reticulatis compositum. Hyphopodia capitata opposita vel alternata, recta vel curvata, 13–20 μ longa, cellula basali cylindracea, 3–5 μ longa, cellula apicali cylindracea, apice rotundata, integra, 10–16 $\Rightarrow$ 6–9 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 20–25 $\Rightarrow$ 6–7 μ , collo 3–4 μ cr. Setae myceliales dispersae, etiam juxta perithecia aggregatae, rectae, simplices, acutae vel breviter dentatae (rarius usque ad 20 μ), usque ad 850 $\Rightarrow$ 9–11 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, 39–45 $\Rightarrow$ 17–21 μ .

Hab. in foliis *Amyridis diatrypae*, San Domingo, Ciferri. Mycofl. Doming. exs. 255 (typus in Herb. Kew).

On the lower surface the mycelial hyphae are very crooked and often geniculate, with the hyphopodia less commonly opposite and usually much bent, sometimes irregular in outline. Ciferri determined this as *M. monensis* Stev.

[(333) **Meliola connaricola** Hansf., sp. n. (3113. 4323).

Plagulae plerumque epiphyllae, densae, tenuiter velutinae, usque ad 3 mm diam. Mycelium ex hyphis atrobrunneis, subrectis, 7–9 μ cr. (cellulis plerumque 10–16 μ longis), opposita lateque ramosis, dense reticulatis compositum, subsolidum. Hyphopodia capitata oppo-

sita vel alternata, recta vel curvula, leniter antrorsa, 18—25 μ longa, cellula basali cylindracea, 3—7 μ longa, cellula apicali cylindracea apice rotundata vel leniter attenuata, 13—19 $\Rightarrow$ 7—10 μ . Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel alternata, ampullacea, 20—25 $\Rightarrow$ 8—9 μ , collo elongato, 3 μ cr. Setae myceliales laxae dispersae, rectae, simplices, obtusae vel acutae, opacae, usque ad 800 $\Rightarrow$ 10—12 μ . Perithecia in centro plagularum laxae gregariae, atrae, globosae, verrucosae, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae 40—48 $\Rightarrow$ 18—21 $\Rightarrow$ 15—16 μ .

Hab. in foliis *Connari neurocalycis*, Rizal, Philippines, leg. Ramos, in Mus. Nat. Hist. Vindobon, 3424 (typus in Herb. Kew).

(334) *Meliola cyathodis* Hansf., var. **stypheliae** Hansf., var. n. (2111. 7332).

Plagulae amphigenae, usque ad 2 mm diam., densae, atrae, fortiter adhaerentes. Mycelium ex hyphis atrobrunneis, flexuosis, 7—10 μ cr. (cellulis plerumque 15—20 μ longis), oppositae vel irregulariter dense ramosis compositum, in centro plagularum subsolidum. Hyphopodia capitata alternata saepius curvata, 23—35 μ longa, cellula basali cylindracea, curvata, 5—18 μ longa, cellula apicali clavata-piriformi, integra vel irregulariter fortiterque stellato-lobata, 15—23 $\Rightarrow$ 11—19 μ . Hyphopodia mucronata non visa. Setae myceliales paucae, saepe nullae, plerumque juxta perithecia laxae aggregatae, erectae, rectae vel subhamatae, simplices, obtusae, usque ad 350 $\Rightarrow$ 8—9 μ . Perithecia in centro plagularum laxae gregariae, atrae, globosae, verrucosae, usque ad 230 μ diam. Sporae atrobrunneae, fusoidaeae utrinque obtuse conoideae, leniter curvatae, 3-septatae, subconstrictae 60—72 $\Rightarrow$ 18—20 μ .

Hab. in foliis *Stypheliae philippinensis*, Celebes, Bunne-meijer 12220a, typus in Herb. Bogor, no. 13640.

(335) *Meliola dioscoreicola* Hansf. & Deighton, var. **peruvlensis** Hansf., var. n. (31 3. 4232).

Plagulae epiphyllae, densae, usque ad 3 mm diam., velutinae. Mycelium ex hyphis atrobrunneis, subrectis, 7—8 μ cr. (cellulis plerumque 15—35 μ longis), oppositae ramosis, laxae vel dense reticulatis compositum. Hyphopodia capitata alternata vel usque ad 30% opposita, recta vel curvata, 12—19 μ longa, cellula basali cylindracea, 2—5 μ longa, cellula apicali globosa vel distincte curvata, integra, 9—13 $\Rightarrow$ 8—12 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 20—28 $\Rightarrow$ 8—9 μ , collo elongato, 3 μ cr. Setae myceliales numerosae, dispersae et juxta perithecia aggregatae, erectae, subrectae, simplices, obtusae vel subacutae, vel varie dentatae usque ad 15 μ . Perithecia dispersa, atrae, globosae, verrucosae, usque ad 240 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 45—49 $\Rightarrow$ 16—18 μ .

Hab. in foliis *Dioscoreae* spec. indet., Yurinagua, Peru, Ule, Herb. brasil. 3306, typus in Herb. Kew.

This was determined originally by Hennings as *M. pellucida*. (336) *Meliola gaillardiana* Stev., var. **domingensis** Hansf., var. n. (31³/₄. 4222).

Plagulae amphigenae, atrae, densae, velutinae, usque ad 3 mm diam. vel confluentes. Mycelium ex hyphis atrobrunneis, subrectis vel flexuosis, 6—8 μ cr. (cellulis plerumque 10—15 μ longis), oppositae ramosis, dense reticulatis compositum, subsolidum. Hyphopodia capitata alternata, rarissime opposita, plus minusve antrorsa, recta, 13—18 μ longa, cellula basali cylindracea, 2—6 μ longa, cellula apicali ovata vel piriforme, integra, 10—13 μ $\Rightarrow$ 8—10 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel unilateralia, ampullacea, 14—20 μ $\Rightarrow$ 7—10 μ , collo 3—4 μ cr. Setae myceliales dispersae, etiam juxta perithecia aggregatae erectae, retae, usque ad 400 μ $\Rightarrow$ 9—10 μ , apice breviter 2—4-reflexo-dentatae vel 2—3-furcatae usque 10 μ , ramulis dentatis. Perithecia dispersa, atra, globosa, verrucosa, usque ad 150 μ diam. Sporae atrobrunneae, ellipsoideae, obtusae, 4-septatae, constrictae, 38—44 μ $\Rightarrow$ 17—18 μ .

Hab. in foliis *Piperis samanensis*, Samana, San Domingo, Ciferri, Mycofl. doming. exs. 94-ter., typus in Herb. Kew.

(337) **Meliola illioli** (Cif.) Hansf., comb. n. (3141. 4321).

Syn.: *Meliola magnoliae* Stev., var. *illicii* Cif., Ann. Myc., **31**: 147. 1933.

This appears to be sufficiently distinct from the type of Stevens' species to warrant erection as a separate species; the type collection was distributed by Ciferri as Mycofl. doming. exs. 162, on *Illicium parviflorum*, San Domingo.

(338) **Meliola jamaicensis** Hansf., sp. n. (3111. 5333).

Plagulae hypophyllae, usque ad 15 mm diam., tenues vel densae, velutinae. Mycelium ex hyphis atrobrunneis, subrectis vel sinuosis, 7—8 μ cr. (cellulis plerumque 20—30 μ longis), oppositae acuteque ramosis, laxae reticulatis compositum. Hyphopodia capitata alternata, patentia, recta vel sinuosa, 21—29 μ longa, cellula basali cylindracea, 5—8 μ longa, cellula apicali cylindracea vel anguste ellipsoidea, integra, 15—20 μ $\Rightarrow$ 8—10 μ . Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, 20—28 μ $\Rightarrow$ 8—10 μ , collo elongato, 3 μ cr. Setae myceliales dispersae, rectae, usque ad 900 μ $\Rightarrow$ 9—10 μ , apice simplices, subcutae, scabridae vel breviter dentatae usque ad 6 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 220 μ diam. Sporae atrobrunneae late ellipsoideae, 4-septatae, constrictae, 49—58 μ $\Rightarrow$ 23—27 μ .

Hab. in foliis *Crotonis* spec. indet., Castleton Gardens, Jamaica, Hansford 683, typus in Herb. Kew.

(339) *Meliola kisubiensis* Hansf., var. **peleicola** Hansf., var. n. (3111. 5334).

Plagulae hypophyllae, tenues, leniter velutinae, effusae, confluentes. Mycelium ex hyphis atrobrunneis, subrectis vel leniter undulatis, 8—10 μ cr. (cellulis plerumque 15—20 μ longis), opposite lateque ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, plus minusve antrorsa et saepe recurvata, 15—22 μ longa, cellula basali cylindracea, 3—6 μ longa, cellula apicali subglobosa, ovata vel breviter cylindracea, apice rotundata, integra, 12—16 μ 8—13 μ . Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, 15—20 μ 8—10 μ , collo 3—4 μ cr. Setae myceliales laxae dispersae, rectae, simplices, acutae, usque ad 1000 μ 11—14 μ . Perithecia sparsa, atra, globosa, verrucosa, usque ad 220 μ diam. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, 52—58 μ 22—25 μ .

Hab. in foliis *Peleae* spec. indet., Mt. Kaala, Oahu, Hawaii, Shear 679 (typus in Herb. Stockholm, ex U.S.Dept. Agric. Myc. Herb. 71020).

In the type this species occurs mixed with *Meliola juddiana* Stev.

(340) *Meliola lepisanthea* Sacc. var. **schmidellae** Hansf., var. n. (3111. 3221).

Plagulae epiphyllae, usque ad 5 mm diam. vel late confluentes, tenues, leves. Mycelium ex hyphis atrobrunneis, rectis, radiantibus, 6—8 μ cr. (cellulis plerumque 15—24 μ longis), opposite vel irregulariter lateque ramosis compositum. Hyphopodia capitata alternata, subantrorsa, saepius recta, 12—19 μ longa, cellula basali cuneata, 3—7 μ longa, cellula apicali globosa, integra, 9—13 μ 9—11 μ . Hyphopodia mucronata, pauca, illis capitatis commixta, opposita vel alternata, ampullacea, 15—18 μ 6—8 μ , collo 3 μ cr. Setae myceliales paucae, juxta perithecia aggregatae, subrectae, simplices, obtusae, usque ad 200 μ 6—7 μ . Perithecia in centro plagularum aggregata, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, subconstrictae, 29—34 μ 12—14 μ .

Hab. in foliis *Schmidelliae* sp., Ceylon, typus in Herb. Kew.

Collection details are absent from the specimen label.

(341) ***Meliola medinillae*** Hansf. (3111. 3222).

Plagulae hypophyllae, usque ad 10 mm diam., tenues vel in centro subdensae, tenuiter velutinae. Mycelium ex hyphis atrobrunneis, flexuosis, 5—6 μ cr. (cellulis plerumque 30—40 μ longis), opposite vel irregulariter ramosis, in centro plagularum dense reticulato-intertextis compositum. Hyphopodia capitata laxae dispersae, alternata vel unilateralia, saepius curvata, 20—30 μ longa, cellula basali cylin-

dracea, 5—10 μ longa, cellula apicali irregulariter ovata, saepe fortiter curvata, apice attenuato-rotundata, subintegra, 15—20 $\Rightarrow$ 9—13 μ . Hyphopodia mucronata pauca, dispersa, opposita vel alternata, ampullacea, 15—20 $\Rightarrow$ 7—8 μ , collo 3 μ cr. Setae myceliales dispersae et juxta perithecia aggregatae, rectae, simplices, obtusae, usque ad 400 $\Rightarrow$ 8—9 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 150 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 29—33 $\Rightarrow$ 11—13 $\Rightarrow$ 10—14 μ .

Hab. in foliis *Medinillae disparifoliae*, Luzon, Philippines Phil. Bur. Sci. 9764, typus in Herb. Kew.

(342) *Meliola microspora* Pat. & Gaill., Bull. Soc. Myc. France, 4: 104. 1892.

Three portions of the type collection have become available to me, from Kew and Stockholm (Gaillard, Champ. du Haut-Orenoque 262, 1887); the host plant, long assumed to be a Labiate, has now been determined for me by the authorities at Kew as *Vandellia diffusa*, a weed introduced from Africa to South America. Dr. Dennis informs me that amongst the numerous collections of this plant from Africa in the Kew Herbarium, no sign of this *Meliola* was found, nor has it yet been recorded from any part of Africa on this host. The same *Meliola* on the same host was reported by me previously as *M. ulei* Hansf. (Proc. Linn. Soc. London, 160: 132. 1948).

Colonies amphigenous and cauliculous, black, dense, up to 1 mm diam. or widely confluent. Mycelium of substraight to flexuos-sinuous dark brown hyphae 5—7 μ thick, the cells mostly 15—20 μ long, branching opposite or irregular at acute angles, closely reticulate. Capitate hyphopodia alternate only, more or less antrorse, usually straight, 10—13 μ long; stalk cell cylindric, 2—5 μ long, head cell subglobose, entire, 7—10 $\Rightarrow$ 6—10 μ . Mucronate hyphopodia few to numerous, mixed with capitate, opposite or alternate, ampulliform, 10—16 $\Rightarrow$ 6—7 μ , neck short, 3 μ thick. Mycelial setae few, scattered, erect, straight or variously bent but not uncinat, simple, obtuse, up to 180 $\Rightarrow$ 6—7 μ , the apex sometimes torulose. Perithecia scattered, black, globose, verrucose, up to 150 μ diam. Spores dark brown, cylindric, obtuse, 4-septate, constricted, 25—29 $\Rightarrow$ 9—11 μ .

I have not yet decided how many of the numerous collections of *Meliola* on Labiatae in various parts of the world really belong to this species, or whether some may need separation as distinct species.

(343) *Meliola osmanthi* Syd., var. **hawaiiensis** Hansf., var. n. 3111. 4322).

Plagulae epiphyllae, usque ad 3 mm diam., densae, velutinae. Mycelium ex hyphis atrobrunneis, subrectis, 6—7 μ cr. (cellulis

plerumque 15—20 μ longis), opposite vel irregulariter ramosis, dense reticulato-radiantibus compositum. Hyphopodia capitata alternata, antrorsa, recta vel leniter curvata, 20—30 μ longa, cellula basali cylindracea, 5—9 μ longa, cellula apicali cylindracea apice rotundata, integra, 12—22 $\Rightarrow$ 7—9 μ . Hyphopodia mucronata pauca, in hyphis distinctis in centro plagularum evoluta, opposita vel alternata, ampullacea, 15—22 $\Rightarrow$ 7—9 μ , collo 3 μ cr. Setae myceliales numerosae, rectae, simplices, obtusae vel subacutae, usque ad 450 $\Rightarrow$ 9—11 μ . Perithecia atra, globosa, verrucosa, usque ad 190 μ diam. Sporae atrobrunneae, cylindraceae vel subellipsoideae, obtusae, 4-septatae, constrictae, 40—47 $\Rightarrow$ 17—20 μ .

Hab. in foliis *Osmanthi sandwicensis*, Kulwuon, Oahu, Hawaii, Stevens, Fungi of Hawaii 146, typus in Herb. Kew.

Differs from the type in closely radiate colonies, with longer setae and smaller spores. The hyphae branch often at very acute angles and tend to radiate in strands, becoming more divergent at the edge of the colony, which is almost solid.

(344) *Meliola panici* Earle, var. **major** Hansf., var. n. (3111. 5222).

Plagulae epiphyllae, atrae, subvelutinae, densae, usque ad 3 mm diam. vel confluentes. Mycelium ex hyphis atrobrunneis, subrectis vel flexuosis, 7—9 μ cr. (cellulis plerumque 25—40 μ longis) opposite vel irregulariter ramosis, dense reticulatis compositum. Hyphopodia capitata alternata plus minusve antrorsa, recta vel curvata, 20—30 μ longa, cellula basali cylindracea, 6—12 μ longa, cellula apical versiformia, subglobosa, angulosa, vel irregulariter clavato-cylindracea, saepe leniter lobata, 12—22 $\Rightarrow$ 11—18 μ . Hyphopodia mucronata plerumque in hyphis distinctis evoluta, alternata vel opposita, ampullacea, 15—20 $\Rightarrow$ 8—10 μ , collo suberecto, 3 μ cr. Setae myceliales dispersae, plus minusve rectae, simplices, obtusae, usque ad 420 $\Rightarrow$ 9—11 μ , sursum leniter attenuatae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 19 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 46—52 $\Rightarrow$ 16—18 μ .

Hab. in foliis *Panici* spec., Brazil, Ule 182-b, in Herb. Stockholm, (det. Rehm, „*Meliola laxa* Gaill.“).

(345) *Meliola panici* Earle var. **uniolae** Hansf., var. n. (3111. 4332).

Plagulae epiphyllae, usque ad 2 mm diam. vel confluentes, densae, velutinae. Mycelium ex hyphis atrobrunneis, rectis vel sinuosis, 7—9 μ cr. (cellulis plerumque 15—20 μ longis), alternatim vel irregulariter, rarius opposite ramosis, dense reticulatis compositum. Hyphopodia capitata alternata vel unilateralia, plus minusve antrorsa, saepe irregulariter curvata, 20—32 μ longa, cellula basali cylindracea vel cuneata, 5—14 μ longa, cellula apicali subglobosa, late

piriforme vel irregulariter anguloso-lobata 12—23 $\Rightarrow$ 11—17 μ . Hyphopodia mucronata in hyphis distinctis evoluta, opposita vel alternata, 15—20 $\Rightarrow$ 7—9 μ , collo 3 μ cr. Setae myceliales dispersae, etiam juxta perithecia aggregatae, numerosae, rectae, simplices, subacutae, usque ad 500 $\Rightarrow$ 9—10 μ . Perithecia in centro plagularum laxe gregaria, atra, globosa verrucosa, usque ad 210 μ diam. Sporae atrobrunneae, cylindratae vel subellipsoideae, obtusae, 4-septatae, constrictae, 40—48 $\Rightarrow$ 18—21 μ .

Hab. in foliis *Uniolae virgatae*, San Domingo, Ciferri, Mycofl. Doming. exs. 205—bis, typus in Herb. Kew.

(346) **Meliola paullinilcola** Hansf., sp. n. (311/3. 4222).

Plagulae epiphyllae, tenues, usque ad 2 mm diam., subleves. Mycelium ex hyphis rectis, atrobrunneis, 7—8 μ cr. (cellulis plerumque circa 30 μ longis), opposite acuteque ramosis, laxe radiato-reticulatis compositum. Hyphopodia capitata plerumque opposita, antrorse curvata, 16—24 μ longa, cellula basali cylindrata vel cuneata, 3—5 μ longa, cellula apicali globosa integraque, vel ovato-piriformi et rotundato-angulosa, 12—19 $\Rightarrow$ 9—15 μ . Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, curvato-ampullacea, 16—25 $\Rightarrow$ 6—8 μ , collo elongato, 3 μ cr. Setae myceliales haud numerosae, praecipue juxta perithecia aggregatae, erectae, rectae, simplices acutaeque, vel 3—5-dentatae (— 6 μ), usque ad 400 $\Rightarrow$ 8—9 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae ellipsoideae, obtusae, 4-septatae, constrictae, atrobrunneae, 37—44 $\Rightarrow$ 15—18 μ .

Hab. in foliis *Paullinae* sp., Rio de Janeiro, Brazil, Ule, Herb. brasil. 2272, typus in Herb. Stockholm, ex Herb. Rehm, sub *M. malacotricha* f. *longispora* Gaill.

(347) **Meliola piperis-barbati** Hansf., sp. n. (3113. 4232).

Plagulae plerumque hypophyllae, usque ad 2 mm. diam., densae, velutinae. Mycelium ex hyphis subrectis vel leniter flexuosis, atrobrunneis, 7—9 μ cr. (cellulis plerumque 10—15 μ longis), opposite vel irregulariter, lateque ramosis, dense reticulatis compositum, sub-solidum. Hyphopodia capitata alternata vel usque ad 10% opposita, plus minusve antrorsa, recta vel curvata, 12—20 μ longa, cellula basali cylindrata, 2—8 μ longa, cellula apicali globosa vel oblonga, integra, 9—14 $\Rightarrow$ 7—9 μ , collo suberecto, 3 μ cr. Setae myceliales numerosae, dispersae, erectae, simplices, subrectae, obtusae vel subacutae, usque ad 400 $\Rightarrow$ 7—9 μ . Perithecia in centro plagularum aggregata, atra, globosa, verrucosa, usque ad 220 μ diam. Sporae atrobrunneae, cylindratae vel subellipsoideae, obtusae, 4-septatae, constrictae, 37—43 $\Rightarrow$ 14—16 μ .

Hab. in foliis *Piperis barbati*, Pichincha, Ecuador, Sydow, Fung. exot. exs. 1045, p. p. (typus in Herb. Kew).

This occurs mixed with *M. pululahuensis* Gaill., under which name Sydow distributed his specimen.

(348) *Meliola roureae* Syd. var. **domingensis** Hansf., var. n. (3111. 6322).

Plagulae plerumque hypophyllae, densae, velutinae, usque ad 4 mm. diam., fortiter parasiticae et maculae epiphyllae brunneae formantes. Mycelium ex hyphis atrobrunneis, flexuosis, 7–10 μ cr. (cellulis plerumque 15–30 μ longis), oppositae vel irregulariter ramosae, subdense reticulatis compositum. Hyphopodia capitata alternata, saepius varie curvata, 24–30 μ longa, cellula basali cylindracea, 4–8 μ longa, cellula apicali cylindracea vel clavata, integra, apice lata rotundata, recta vel curvata, 17–23 μ $\Rightarrow$ 9–13 μ . Hyphopodia mucronata illis capitatis commixta, alternata, ampullacea, 23–29 μ $\Rightarrow$ 8–10 μ , collo 3–4 μ cr. Setae myceliales numerosae, dispersae, opacae, erectae, rectae, simplices, acutae, usque ad 480 μ $\Rightarrow$ 9–11 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae vel subellipsoideae, 4-septatae, constrictae, 55–65 μ $\Rightarrow$ 20–22 μ $\Rightarrow$ 17–19 μ .

Hab. in foliis *Roureae surinamensis*, San Domingo, Ciferri, Mycofl. doming. exs. 32, typus in Herb. Kew.

(349) **Meliola sapindi-esculenti** Hansf., sp. n. (311 $\frac{1}{2}$. 3. 3221).

Plagulae amphigenae, plerumque epiphyllae et late subconfluentes, usque ad 3 mm. diam., subdensae, subleves. Mycelium ex hyphis atrobrunneis, subrectis vel leniter undulatis, 6–7 μ cr. (cellulis plerumque 15–20 μ longis), oppositae lateque ramosae, dense reticulatis compositum. Hyphopodia capitata alternata vel opposita, recta vel leniter curvata, patentia, 11–14 μ longa, cellula basali 2–4 μ longa, cylindracea, cellula apicali cylindracea vel ovata, apice rotundata, integra, 8–12 μ $\Rightarrow$ 6–8 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 13–18 μ $\Rightarrow$ 6–8 μ , collo 3 μ cr. Setae myceliales laxae dispersae etiam juxta perithecia aggregatae, erectae, rectae, simplices, acutae, vel 2-dentatae usque ad 7 μ , usque ad 320 μ $\Rightarrow$ 7–8 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae vel subellipsoideae, obtusae, 4-septatae, subconstrictae, 28–35 μ $\Rightarrow$ 11–14 μ .

Hab. in foliis *Sapindi esculenti*, Para, Brazil, Baker, Plants of Amazon 380, typus in Herb. Stockholm.

(350) *Meliola scabriseta* Hansf. & Deight., var. **brasiliensis** Hansf., var. n. (3111. 4231).

Plagulae epiphyllae usque ad 1 mm. diam., subdensae. Mycelium ex hyphis atrobrunneis, subrectis vel undulatis, 7–8 μ cr. (cellulis plerumque 20–30 μ longis), oppositae vel irregulariter lateque ramosae, laxae reticulatis compositum, in centro subdensum. Hyphopodia capi-

tata alternata, patentia, saepius recta, 20—27 μ longa, cellula basali cuneata vel cylindracea, 4—9 μ longa, cellula apicali subglobosa vel late piriformi, integra, 14—19 μ $\approx$ 11—14 μ . Hyphopodia mucronata plerumque in hyphis distinctis evoluta, alternata, opposita vel ternata, ampullacea, 15—24 μ $\approx$ 7—9 μ , collo 3 μ cr. Setae myceliales sparsae, etiam juxta perithecia aggregatae, simplices, obtusae, usque ad 300 μ $\approx$ 8 μ , sursum verrucosae vel tuberculatae. Perithecia in centro plagularum laxe aggregata, atra, globosa, verrucosa, usque ad 220 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 43—48 μ $\approx$ 16—18 μ $\approx$ 14 μ .

Hab. in foliis *Papilionacearum* spec. indet., Ule, Herb. brasil. 2290, typus in Herb. Stockholm, ex Rehm, sub *M. malacotricha* Speg.

(351) **Meliola schwenklicola** Hansf., sp. n. (3113. 3222).

Plagulae plerumque epiphyllae, atrae, usque ad 2 mm. diam., interdum confluentes, subdensae, leniter velutinae. Mycelium ex hyphis atrobrunneis, sinuosis, 6—7 μ cr. (cellulis plerumque 18—25 μ longis), opposita vel irregulariter acuteque ramosis, dense reticulatis compositum. Hyphopodia capitata alternata vel opposita, recta vel curvata, 9—14 μ longa, cellula basali cuneata vel cylindracea, 2—5 μ longa, cellula apicali globosa vel ovata, integra, 7—11 μ $\approx$ 7—9 μ . Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel alternata, curvata, ampullacea, 14—18 μ $\approx$ 6—8 μ , collo elongato 3 μ cr. Setae myceliales praecipue juxta perithecia evolutae, rectae, simplices, obtusae, usque ad 450 μ $\approx$ 7—9 μ . Perithecia in centro plagularum laxe aggregata, atra, globosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 32—38 μ $\approx$ 11—14 μ .

Hab. in foliis *Schwenkieae browaloidis*, Puerto La Cruz, Venezuela, Sydow. Fung. exot. exs. 795, p. p., typus in Herb. Kew. (socio *Irenina schwenkieae* Hansf.)

(352) **Meliola serjaniae** Stev. var. **densa** Hansf., var. n. (3133. 4222).

Plagulae epiphyllae, usque ad 2 mm. diam., densae, velutinae. Mycelium ex hyphis atrobrunneis, rectis, 7—8 μ cr. (cellulis plerumque 20—35 μ longis), opposita acuteque ramosis, dense reticulatis compositum. Hyphopodia capitata alternata vel usque ad 80% opposita, antrorsa vel patentia, plerumque recta, 12—20 μ longa, cellula basali cylindracea, 2—6 μ longa, cellula apicali typice 3-rotundato-angulosa vel sublobata, 8—15 μ $\approx$ 10—16 μ . Hyphopodia mucronata pauca, illis capitatis commixta, ampullacea vel conoidea, 15—18 μ $\approx$ 7—9 μ , collo 3—4 μ cr. Setae myceliales numerosae, bifformes: (a) in mycelio dispersae, simplices, rectae, acutae, usque ad 500 μ $\approx$ 9—10 μ , (b) juxta perithecia, usque ad 200 μ $\approx$ 7—8 μ , simplices acutaeque, vel 2—3-dentatae usque ad 8 μ . Perithecia in centro plagularum laxe gregaria, atra, globosa, verrucosa, usque ad 170 μ diam. Sporae atro-

brunneae cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, $36-43 \Rightarrow 16-18 \mu$.

Hab. in foliis *Serjaniae diversifoliae*, San Domingo, Ciferri, Mycofl. doming. exs. 219—bis (typus in Herb. Kew); in foliis *S. polyphyllae*, Ciferri, l. c. 220.

(353) *Meliola serjaniae* Stev. var. **major** Hansf., var. n. (3113. 4223).

Plagulae epiphyllae, atrae, tenues, velutinae, usque ad 5 mm. diam. Mycelium ex hyphis atrobrunneis, subrectis, $7-8 \mu$ cr. (cellulis plerumque $20-25 \mu$ longis), opposite lateque ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata vel circa 2% opposita, plus minusve antrorsa, recta, $16-23 \mu$ longa, cellula basali cylindracea, $3-8 \mu$ longa, cellula apicali clavata, apice rotundata vel leniter 3-angulosa, $12-16 \Rightarrow 9-13 \mu$. Hyphopodia mucronata pauca, in hyphis distinctis evoluta, opposita vel alternata, ampullacea, $17-25 \Rightarrow 7-9 \mu$. Setae myceliales dispersae et juxta perithecia aggregatae, rectae, simplices, acutae, usque ad $700 \Rightarrow 8-10 \mu$. Perithecia laxe dispersa, atra, globosa, verrucosa, usque ad 190μ diam. Sporae atrobrunneae, cylindraceae vel subellipsoideae, obtusae, 4-septatae, constrictae, $42-47 \Rightarrow 16-18 \mu$.

Hab. in foliis *Serjaniae* spec. indet., Rio Grande, Brazil, Theissen, Dec. Fung. brasil. 7, typus in Herb. Stockholm.

Differs from the type in the less irregular hyphopodia and larger spores. Ule, Herb. brasil. 615, on *Serjania, Itajahy*, Amazonia, differs from the above only in shorter setae (-400μ) with those around the perithecia only to 250μ , and in slightly smaller spores $36-43 \Rightarrow 14-17 \mu$. Sydow, Fung. exot. exs. 622, Costa Rica, is this variety.

(354) ***Meliola spigelliae*** Hansf., sp. n. (3111. 3221).

Plagulae amphigenae, tenues vel subdense, usque ad 2 mm. diam. vel confluentes, tenuiter velutinae. Mycelium ex hyphis atrobrunneis, subrectis vel undulatis, $5-7 \mu$ cr. (cellulis plerumque $15-25 \mu$ longis), opposite lateque ramosis, laxe vel dense reticulato-intertextis compositum. Hyphopodia capitata alternata, antrorsa, plerumque recta, $13-18 \mu$ longa, cellula basali cylindracea, $3-4 \mu$ longa, cellula apicali ovata, integra, saepius apice attenuata, $10-15 \Rightarrow 6-8 \mu$. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, $15-23 \Rightarrow 6-8 \mu$, collo 3μ cr. Setae myceliales dispersae, etiam juxta perithecia aggregatae, erectae, rectae vel subflexuosae, haud uncinatae, simplices, sursum gradatim attenuatae, apice subacutae, usque ad $300 \Rightarrow 7-8 \mu$. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, leniter constrictae, $24-32 \Rightarrow 10-12 \mu$.

Hab. in foliis *Spigelliae* sp., Brazil, Ule, Herb. brasil. 1284, typus in Herb. Stockholm, ex Rehm, sub *Meliola microspora*.

(355) *Meliola telosmae* Rehm, var. **tylophorae** Hansf., var. n. (3111. 3221).

Plagulae epiphyllae, tenues vel subdensae, tenuiter velutinae, usque ad 4 mm. diam. vel confluentes. Mycelium ex hyphis atrobrunneis, subrectis vel leniter sinuosis, 5—7 μ cr. (cellulis plerumque 20—30 μ longis) opposite acuteque ramosis, laxe vel subdense reticulato-intertextis compositum. Hyphopodia capitata alternata, subantrorsa, plerumque recta, 12—19 μ longa, cellula basali cylindracea, 3—7 μ longa, cellula apicali subglobosa vel ovata, integra, apice late rotundata, 9—13 μ $\Rightarrow$ 7—10 μ . Hyphopodia mucronata in centro, plagularum illis capitatis commixta, opposita vel alternata, ampullacea, 13—16 μ $\Rightarrow$ 7—8 μ , collo 3 μ cr. Setae myceliales numerosae, dispersae etiam juxta perithecia aggregatae, erectae, suberectae, simplices, obtusae, usque ad 240 μ $\Rightarrow$ 7—8 μ , sursum leniter gradatim attenuatae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 140 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae constrictae 26—32 μ $\Rightarrow$ 11—12 μ .

Hab. in foliis *Tylophorae perrottetiae*, Los Banos, Philippinae, Baker, PBS 2854 a, typus in Herb. Stockholm ex Rehm, sub *M. microspora*.

This differs from the type of *M. telosmae* mainly in the obtuse setae, which are fully mature in the specimen quoted.

(356) **Meliola xylosmaticola** Hansf., sp. n. (2111. 7273).

Plagulae amphigenae, densae, velutinae, usque ad 3 mm. diam. vel confluentes. Mycelium ex hyphis atrobrunneis, rectis, 8—9 μ cr. (cellulis plerumque 25—30 μ longis), opposite vel irregulariter, lateque ramosis, laxe, demum dense reticulatis compositum. Hyphopodia capitata alternata, leniter antrorsa, recta, 25—40 μ longa, cellula basali cuneata vel cylindracea, 5—15 μ longa, cellula apicali irregulariter lobata, 20—25 μ $\Rightarrow$ 14—20 μ . Hyphopodia mucronata illis capitatis commixta, ampullacea, 25—30 μ $\Rightarrow$ 8—9 μ , collo 3—4 μ cr. Setae myceliales numerosae, dispersae, rectae, simplices, obtusae vel subacutae, usque ad 900 μ $\Rightarrow$ 11—12 μ . Perithecia dispersa, atra, globosa, verrucosa, immatura. Sporae atrobrunneae, cylindraceae, saepe curvulae, obtusae, 3-septatae, constrictae, 63—77 μ $\Rightarrow$ 16—18 μ .

Hab. in foliis *Xylosmatis buxifolii*, San Domingo, Ciferri, Mycofl. doming. exs. 189, typus in Herb. Kew.

(357) **Appendiculella echinata** (Gaill.) Hansf., comb. n. (3201. 5320).

Syn.: *Meliola echinata* Gaill., Le Genre *Meliola*, 1892, p. 61. — *Irene echinata* (Gaill.) Theiss. & Syd., Ann. Mycol. **15**: 461. 1917.

The type in Herb. Paris, on unknown host, Sumatra, Forbes 3132, has been re-examined: —

Colonies hypophyllous, thin to 4 mm. diam., smooth. Mycelium of substraight to slightly and finely undulate dark brown hyphae, the cells $30-40 \Rightarrow 7-8 \mu$, branching opposite or irregular at acute angles, loosely reticulate. Capitate hyphopodia alternate, at wide angles, straight or bent, $20-28 \mu$ long; stalk cell cuneate to cylindric, $6-12 \mu$ long, head cell rounded to sublobate, versiform, $13-19 \Rightarrow 11-16 \mu$. Mucronate hyphopodia mixed with the capitate, alternate or opposite, long, bent ampulliform, $20-30 \Rightarrow 7-8 \mu$, the neck upturned, 3μ thick. Setae none. Perithecia loosely scattered, black, globose, rough to 200μ diam., with 4–8 conoid-cylindric appendages, bent at the apex, not uncinat, dark brown, smooth, up to 50μ long by $20-25 \mu$ wide at the base, attenuate to obtuse apex about 10μ wide. Spores 4-septate, $50-52 \Rightarrow 12-20 \mu$ (Gaillard, not seen by me).

The nearest approach to this I have so far seen is *Appendiculella ugandensis* (Hansf.) comb. n. (= *Irene ugandensis* Hansf.) on *Antiaris* in Uganda; the leaf of the present specimen could easily be that of a species of *Ficus*.

(358) *Appendiculella tonkinensis* (Karst. & Roum.)
Toro, Mycologia **19**: 71. 1926. (3201. 4220).

Syn.: *Meliola tonkinensis* Karst. & Roum., Rev. Mycol., **12**: 77. 1890. — *Meliola reticulata* Karst. & Roum., l. c. p. 78.

The type is represented by Roumeguere, Fung. sel. exs. 5944 in Herb. Paris, on *Ficus* sp., Tonkin, leg. Balansa; other portions of the same collection are also in Herb. Paris and correspond:

Colonies amphigenous, on the upper surface very thin, on lower surface denser and up to 6 mm diam. or confluent. Mycelium of substraight dark brown hyphae $6-7 \mu$ thick, the cells mostly $25-35 \mu$ long, branching usually opposite at acute angles, loosely reticulate. Capitate hyphopodia alternate, antrorse or spreading, straight or bent, $14-22 \mu$ long; stalk cell cuneate to cylindric, $3-8 \mu$ long; head cell globose, entire, $10-15 \Rightarrow 9-12 \mu$. Mucronate hyphopodia mixed with capitate, alternate or opposite, $15-22 \Rightarrow 7-8 \mu$, ampulliform with the neck upturned, $3-4 \mu$ thick. Perithecia scattered, black, globose, to 170μ diam. (without appendages), most of the surface cells prolonged into dark brown, subtranslucent transversely rugose-striate, obtuse, straight or bent appendages, up to $45 \Rightarrow 25 \mu$, tapering to about 10μ at the apex. Spores dark brown, fusoid with conoid-obtuse ends, 4-septate, constricted, $37-43 \Rightarrow 15-16 \mu$.

Hypophyllous colonies have very crooked, irregularly branched mycelium penetrating the tomentum of the leaf, and the capitate hyphopodia have long stalk cells.

(359) *Irenopsis guignardii* (Gaill.) Stevens, Ann. Mycol. **25**: 433. 1927. (2401. 5350).

Syn.: *Meliola guignardii* Gaill., Bull. Soc. Myc. France, **8**: 176. 1892.

On unknown host, Sao Jacoto, Ecuador, Lagerheim, July 1892, in Herb. Paris:

Colonies epiphyllous, dense, to 2 mm diam. Mycelium of crooked dark brown hyphae 8–11 μ thick, the cells mostly 20–40 μ long, branching opposite or irregular, closely reticulate and interwoven. Capitulate hyphopodia alternate or unilateral, straight or irregularly bent, 35–55 μ long; stalk cell cuneate to cylindric, 10–25 μ long; head cell irregularly rounded-angulose to lobate, versiform, 25–35 μ 13–25 μ . Mucronate hyphopodia mixed with capitata, ampulliform, bent, 20–25 μ 8–9 μ , the neck upturned 3–4 μ thick. Mycelial setae none. Perithecia 2–3-aggregate in centre of colony, black, globose, verrucose, to 450 μ diam. Perithecial setae numerous, flexuous-tortuous, up to 500 μ 8–10 μ , 2–3-septate, the apex obtuse or slightly clavulate, the setae reflexed around the perithecium to the mycelial network. Spores dark brown, cylindric-ellipsoid, obtuse, 3-septate, constricted 50–56 μ 22–24 μ . (Gaillard gave them as 62–66 μ long).

The host leaf is large, and possibly that of some composite.

(360) **Irenopsis laevis** (Berk. & Curt.) Hansf. (3403. 4220).

Syn.: *Meliola laevis* B. & C. in Herb.

Plagulae amphigenae, usque ad 2 mm diam., densae, leves. Mycelium ex hyphis subrectis, atrobrunneis, 7–8 μ cr. (cellulis plerumque 10–15 μ longis), oppositae denseque ramosis, dense reticulatis, compositum, subsolidum. Hyphopodia capitata opposita, raro alternata, plus minusve antrorsa, recta vel curvata, 13–20 μ longa, cellula basali breviter cuneata vel cylindracea, 2–5 μ longa, cellula apicali subglobosa vel late piriformi, integra, 10–15 μ 9–12 μ . Hyphopodia mucronata pauca, illis capitatis commixta, alternata vel opposita, ampulliformia, 13–20 μ 7–8 μ , collo suberecto 4 μ cr. Setae myceliales nullae. Perithecia dispersa vel in centro plagularum laxae aggregata, atra, globosa, verrucosa, usque ad 160 μ diam., cellulis parietis obtuse conoideis; sursum setis 8–12 ornata; setae rectae, simplices, subacutae, continuae vel 1-septatae, sursum dilutiores et dense verruculosae, usque ad 90 μ 8–9 μ , erecto-patentes. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, 37–42 μ 17–19 μ .

Hab. in foliis ignotis, Cuba, Wright 396 in Herb. Kew sub *Meliola glabra* B. & C.

(361) **Balladynopsis ledermannii** (Syd.) Hansf., comb. nov.

Syn.: *Balladyna ledermannii* Syd., Engl. Bot. Jahrb., **54**: 254. 1916.

The type collection, *L e d e r m a n n*, 18. 5. 1912, on *Bignoniaceae* indet., Sepik, New Guinea, is represented in the Farlow Herb., and has been re-examined:

Colonies amphigenous, 2–8 mm diam., black, rather dense, smooth. Mycelium of dark brown, substraight hyphae 3–4 μ wide, the cells mostly 20–30 μ long, irregularly branched and becoming rather closely reticulate. Hyphopodia alternate or more scattered, subglobose, mostly with slightly angular or crenulate margin, sometimes shallowly lobed, continuous, concolorous with hyphae, 4–6 μ diam. Mycelial setae none. Perithecia numerous, erect and sessile on the hyphae, globose, black, 40–65 μ diam., the wall of one layer of dark brown angular parenchyma, about 5 μ thick. Asci one to several, maturing in succession, fasciculate in the base of the perithecium, possibly mixed with sterile ones, which appear as indistinctly mucose-fibrous tissue. Asci ovate, sessile, broadly rounded and thickened above when young to 5 μ , 8-spored, up to 40 $\Rightarrow$ 25 μ . Spores conglobate, oblong with rounded obtuse ends, pale brown, smooth, 1-septate at or near the middle, 13–16 $\Rightarrow$ 4–5 μ , the cells equal or the upper slightly shorter. The perithecia have each 3–6 spreading setae around the apex, up to 90 $\Rightarrow$ 7 μ 3–5-septate, obtuse, with thick walls and very finely roughened surface; they descend to the leaf surface amongst the mycelial hyphae and are dark brown.

(362) *Irenopsis passiflorae* Hansf., sp. n. (3403. xxx0).

Plagulae hypophyllae et caulicolae, tenues, usque ad 3 mm diam., leves. Mycelium ex hyphis flexuosis, 6–9 μ cr., cellulis plerumque 18–28 μ longis, opposita ramosis, irregulariter radianto-reticulatis compositum, Hyphopodia capitata alternata vel opposita, recta vel curvata, 18–27 μ longa, cellula basali cuneata vel cylindracea, 2–10 μ longa, cellula apicali globosa, vel ovata, integra vel rotundato-angulose, 15–23 $\Rightarrow$ 11–17 μ . Hyphopodia mucronata pauca, illis capitatis commixta, alternata vel opposita, ampulliformia, 17–23 $\Rightarrow$ 8–9 μ , collo suberecto 3 μ cr. Setae myceliales nullae. Perithecia dispersa, alba, globosa, immatura, sursum setis erecto-patentibus 3–6 ornata; setae rectae, atrobrunneae, 1–2-septatae, simplices, obtusae, usque ad 140 $\Rightarrow$ 9–10 μ , leves, apice dilutiores. Sporae non visae.

Hab. in foliis et caulibus *Passiflorae* spec. indet., San Jorge, Ecuador, Lagerheim (in Herb. Paris sub *Meliola hispida* Gaill., ined.).

Rehm and also Theissen report „*Meliola molleriana* Wint.“ on *Passiflora* spp. in Brazil; as this species is limited to Malvaceae, they possibly had that described above, but I have not seen any of their specimens.

(363) *Irene amphiphili* Hansf., sp. n. (3101. 4230).

Plagulae epiphyllae, usque ad 1.5 mm diam., densae, leves. Mycelium ex hyphis atrobrunneis, subrectis vel leniter undulatis, 7—8 μ cr., cellulis 25—30 μ longis, alternatim vel irregulariter acuteque ramosis, dense radianto-reticulatis compositum. Hyphopodia capitata alternata, leniter antrorsa, plerumque recta, 26—38 μ longa, cellula basali tenuiter cuneata, 10—15 μ longa, cellula apicali ovata, integra, apice attenuato-rotundata, 18—24 μ $\Rightarrow$ 10—12 μ . Hyphopodia mucronata in hyphis distinctis in centro plagularum evoluta, opposita vel alternata, ampullacea, 16—25 μ $\Rightarrow$ 6—8 μ , collo elongato, subrecto, 3 μ cr. Setae myceliales nullae. Perithecia in centro plagularum laxe aggregata, atra, globosa, leniter verruculosa, usque ad 240 μ diam. Sporae atrobrunneae, cylindratae, obtusae, 4-sept., leniter constrictae, 36—42 μ $\Rightarrow$ 14—15 μ .

Hab. in foliis *Amphilophii vauthieri*, S. Leopoldo do Sul, Brazil, Theissen in Rehm, Ascomyceten 1824, in Herb. Stockholm ex Herb. Sydow.

This was published by Rehm in Ann. Mycol. **7**: 140, 1909, as *Meliola plebeja* Speg.

(364) *Irene andromedae* (Pat.) Sydow, Ann. Mycol. **15**: 194. 1917. (2101. 5240).

Syn.: *Meliola andromedae* Pat., Rev. Mycol., **10**: 137. 1888.

The type on *Andromeda salicifolia*, Reunion, leg. Vincent, in Herb. Paris, as well as a second collection by Boivin, 1849—52 on *A. sp.*, Reunion, have been examined:

Colonies only hyphphyllous, dense, smooth, 3—6 mm diam. Mycelium of dark brown, substraight to undulate hyphae 6—8 μ wide, the cells mostly 15—30 μ long, branching opposite or irregular at varying angles, closely reticulate and becoming nearly solid in the centre of larger colonies. Capitata hyphopodia alternate, usually bent, 13—22 μ long; stalk cell cylindric, 3—9 μ long; head cell ovoid, often bent, entire, 10—13 μ $\Rightarrow$ 8—11 μ . Mucronate hyphopodia few, mixed with capitata, alternate or opposite, ampulliform, 14—19 μ $\Rightarrow$ 6—7 μ , neck upturned 3 μ thick. Perithecia in loose central group, black, globose, verrucose, to 350 μ diam.; surface cells obtusely conoid, up to 25 μ high. Spores dark brown, cylindric, obtuse, 3-septate, strongly constricted, 48—54 μ $\Rightarrow$ 16—18 μ .

(365) *Irene boni* (Gaill.) Sydow, Ann. Mycol., **15**, 194. 1917. (2101. 5330).

Syn.: *Meliola boni* Gaill., Le Genre *Meliola*, 1892, p. 39. — *Irenina boni* (Gaill.) Stev., Ann. Mycol., **25**, 449. 1927.

On unknown host, Tonkin, Bon 3319 in Herb. Paris:

Colonies epiphyllous, 1 mm diam., dense, smooth. Mycelium of substraight dark brown hyphae 7—8 μ thick, the cells mostly about 20 μ long, branching opposite at acute angles, closely radiating-

reticulate. Capitata hyphopodia alternate, more or less antrorse, straight or bent, $20-29\ \mu$ long; stalk cell cuneate or cylindric, $6-10\ \mu$ long; head cell irregularly 2-4-rounded-lobate, $13-19 \rightleftharpoons 12-18\ \mu$. Mucronate hyphopodia scattered amongst capitata, alternate, ampulliform, bent, $18-8\ \mu$, the neck upturned, $3\ \mu$ thick; rarely opposite. Setae none. Perithecia loosely grouped in centre of colony, black, globose, rough, to $230\ \mu$ diam.; surface cells obtusely conoid, up to $20\ \mu$ high. Spores bent fusoid with obtuse ends, 3-septate, constricted, $47-52 \rightleftharpoons 18-22\ \mu$, the end cells rather smaller than the middle ones.

(366) *Irene ekebergiae* Doidge, var. **paraguayensis** Hansf., var. n. (3101. 4270).

Plagulae epiphyllae, usque ad 2 mm diam., subtenues, leves. Mycelium ex hyphis atrobrunneis, flexuosis, $7-9\ \mu$ cr., cellulis plerumque $20-30\ \mu$ longis, opposita vel irregulariter ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata (rarissime opposita), curvata vel uncinata, $27-37\ \mu$ longa, cellula basali cylindracea, curvata, $7-15\ \mu$ longa, cellula apicali versiformi, irregulariter curvata vel uncinata, lobata, $12-24 \rightleftharpoons 9-17\ \mu$. Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel alternata, curvata, ampullacea, $17-20 \rightleftharpoons 7-9\ \mu$, collo suberecto $3\ \mu$ cr. Setae nullae. Perithecia dispersa, atra, globosa, immatura. Sporae atrobrunneae, cylindraceae vel subellipsoideae, obtusae, 4-septatae, constrictae, $35-40 \rightleftharpoons 15-17\ \mu$.

Hab. in foliis *Meliacearum* spec. indet., Paraguay, Balansa 4761 in Herb. Stockholm, ex Bresadola.

(367) **Irene gaillardii** Hansf., sp. n. (3101. 3230).

Plagulae plerumque hypophyllae, usque ad 8 mm. diam., vel confluentes et majores, tenues, leves. Mycelium ex hyphis atrobrunneis, undulatis vel flexuosis, $7-8\ \mu$ cr., cellulis plerumque $20-40\ \mu$ longis, alternatim vel irregulariter acuteque ramosis, laxe reticulato-intertextis compositum. Hyphopodia capitata alternata, plus minusve antrorsa, recta vel curvata, $18-30\ \mu$ longa, cellula basali cuneata, $5-8\ \mu$ longa, cellula apicali piriformi vel irregulariter rotundato-angulosa, saepe curvata, $16-24 \rightleftharpoons 11-17\ \mu$. Hyphopodia mucronata in hyphis distinctis evoluta, alternata vel opposita, ampullacea, $16-27 \rightleftharpoons 7-9\ \mu$, collo elongato, suberecto, $3\ \mu$ cr. Setae nullae. Perithecia laxa dispersa, atra, globosa, verrucosa, usque ad $260\ \mu$ diam., cellulis parietis obtuse conoideis, interdum curvatis, usque ad $30\ \mu$ alt. et $40-45\ \mu$ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, $36-42 \rightleftharpoons 15-17\ \mu$.

Hab. in foliis ?*Solani* spec. indet., Ecuador, July 1892, Lagerheim, in Herb. Paris sub. „*Meliola verrucosa* Gaill.“ (ined.).

(368) **Irene gay-lussacae** Hansf., sp. n. (2101. 5220).

Plagulae epiphyllae, usque ad 2 mm. diam., subdensae, leves. Mycelium ex hyphis atrobrunneis subrectis vel flexuosis, 7—9 μ cr., cellulis plerumque 15—25 μ longis, oppositae vel irregulariter, obtuse ramosis, dense reticulatis compositum. Hyphopodia capitata alternata, patentia, recta vel interdum curvata, 18—24 μ longa, cellula basali cylindracea, 4—9 μ longa, cellula apicali piriformi, integra, 13—16 μ $\rightleftharpoons$ 9—12 μ . Hyphopodia mucronata dispersa, alternata vel opposita, ampullacea, 17—23 μ $\rightleftharpoons$ 8—9 μ , collo suberecto 3 μ cr. Setae nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 170 μ diam., cellulis parietis obtuse rotundatis vel submammillatibus, usque ad 20 μ alt. Sporae atrobrunneae, subellipsoideae, 3-septatae, constrictae, 44—52 μ $\rightleftharpoons$ 16—18 μ .

Hab. in foliis *Gay-lussaciae brasiliensis*, Sta. Catharina, Brazil, Ule 90, in Herb. Paris.

This was reported as „*Meliola pulchella* Speg.“ by Gaillard and by Pazschke; it is also represented in Herb. Stockholm.

(369) **Irene henningsii** (Beeli) Hansf., comb. n. (3101. 4230).

Syn.: *Meliola solanicola* P. Henn., Engl. Bot. Jahrb. **28**: 326. 1901 (non Gaill.).

Meliola henningsii Beeli, Bull. Jard. Bot. Bruxelles, **7**: 100. 1920.

The type collection, Holst 4231 on *Solanum englerianum* Usambaras, Tanganyika, is represented in Herb. Stockholm: —

Colonies amphigenous, to 1 mm. diam., or confluent, dense, smooth. Mycelium of crooked dark brown hyphae 6—7 μ wide, the cells mostly 13—20 μ long, branching alternate at acute angles, densely reticulate. Capitulate hyphopodia alternate, antrorse, straight, 14—18 μ long; stalk cell rounded-angulose to shallowly lobed, 10—15 μ $\rightleftharpoons$ 10—18 μ . Mucronate hyphopodia on separate hyphae, opposite or alternate, ampulliform, 15—20 μ $\rightleftharpoons$ 7—8 μ , the neck upturned, 3 μ thick. Mycelial setae none. Perithecia in a loose central group, black, globose, verrucose, to 260 μ diam., the surface cells rounded or prolonged into bluntly conoid outgrowths which become translucent brown but not striate, up to 50 μ high by 30 μ diam., at the base. Spores dark brown, cylindric obtuse, 4-septate, constricted, 35—42 μ $\rightleftharpoons$ 13—15 μ .

(370) **Irene peruviana** (Syd.) Hansf., comb. n. (3101. 3220).

Syn.: *Meliola peruviana* Syd., Ann. Mycol. **14**, 75. 1916.

On *Bignoniaceae* indet., Seringal Auristella, Peru, Ule. Herb. brasil. 3452, in Herb. Stockholm ex Sydow: —

Colonies epiphyllous, thin, smooth, to 2 mm. diam. or confluent. Mycelium of more or less undulate, dark brown hyphae 5—7 μ thick, the cells mostly 20—25 μ long, branching usually opposite at wide angles, loosely reticulate. Capitulate hyphopodia alternate, antrorse or spreading, straight or bent, 12—17 μ long; stalk cell cylindric or

cuneate, 3–6 μ long; head cell globose to wide ovate, entire, 9–12 μ long. Mucronate hyphopodia mixed with capitate, opposite or alternate, bent ampulliform, 13–17 μ long, the neck elongate, upturned 3 μ thick. Setae none. Perithecia loosely scattered, black, globose, verrucose, to 170 μ diam.; the surface cells obtusely conoid, to 12 μ high. Spores dark brown, cylindric, 4-septate, slightly constricted, 28–34 μ long.

(371) **Irene mammillata** Hansf., sp. nov. (3101. 3220).

Plagulae epiphyllae, densae, atrae, leves, usque ad 3 mm diam., raro confluentes. Mycelium ex hyphis subrectis vel sinuosis, atrobrunneis, 6–7 μ cr., cellulis 15–30 μ longis, opposita vel irregulariter acuteque ramosis, dense radiato-reticulatis compositum. Hyphopodia capitata alternata, recta vel curvata, antrorsa vel patentia, 17–23 μ longa, cellula basali cylindracea, 3–10 μ longa, cellulata apicali ovata, piriformi vel clavata, integra, 12–16 μ longa. Hyphopodia mucronata dispersa, alternata, raro opposita, ampullacea, 28–24 μ longa, collo elongata, surerecto 3 μ cr. Setae nullae. Perithecia dispersa, atra, globosa, usque ad 180 μ diam., cellulis parietis obtuse conoideis vel mammillatibus, usque ad 25 μ alt. Sporae atrobrunneae, cylindraceae vel subellipsoideae, obtusae, 4-septatae, constrictae, 34–39 μ longae.

Hab. in foliis *Myrtacearum* spec. indet., Avenida, Sao Paulo, Brazil, Usteri 86, typus in Herb. Stockholm.

(372) **Irene mendonciae** Hansf., sp. n. (3101. 4320).

Plagulae epiphyllae, tenues, usque ad 2 mm. diam. vel confluentes, leves. Mycelium ex hyphis atrobrunneis, subrectis vel sinuosis, 6–8 μ cr., cellulis plerumque 20–30 μ longis, opposita vel irregulariter obtuseque ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata plus minusve antrorsa, recta vel curvata, 18–25 μ longa, cellula basali cuneata vel cylindracea, 5–8 μ longa, cellula apicali globosa vel late piriformi, integra, 12–18 μ longa. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, curvata, ampullacea, 13–19 μ longa, collo suberecto, 3–4 μ cr. Setae nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 170 μ diam. Sporae atrobrunneae, ellipsoideae, obtusae, 4-septatae, constrictae 42–49 μ longae. Cellulis parietis perithecii obtuse conoideis vel mammillatibus, usque ad 25 μ alt.

Hab. in foliis *Mendonciae coccineae*, Sta. Catharina, Brazil, Ule, Herb. brasil. 91; Rabh. Fung. europ. 3853.

These specimens were found in Herb. Stockholm sub *Meliola obesa* Speg.; duplicates are in Herb. Kew, and I am indebted to Mr. R. Sandwith of that institution for the determination of the host.

(373) *Irene plebeja* (Speg.) Th. + Syd., var. **asperirma** (Speg.) Hansf., comb. nov. (3101. 4230).

Syn.: *Meliola plebeja* var. *asperirma* Speg., Bol. Acad. Cient. Cordoba, **11**, 239. 1889. — *Irenina plebeja* var. *asperirma* (Speg.) Stev., Ann. Mycol., **25**, 453. 1927.

On *Solanaceae* indet., Apiaty, Brazil, P u i g g a r i 1551. The copy of this collection in Herb. Paris has been examined: —

Colonies amphigenous, to 1 mm. diam., thin to subdense, smooth. Mycelium of undulate, dark brown hyphae 6–8 μ wide, the cells mostly 20–30 μ long, branching alternate, acute, loosely radiating-reticulate. Capitulate hyphopodia alternate, somewhat antrorse, straight or bent, 20–33 μ long; stalk cell cylindric, 5–14 μ long; head cell rounded-angulose to shallowly lobate, 13–20 μ $\approx$ 12–16 μ . Mucronate hyphopodia on separate hyphae, opposite or alternate, ampulliform, 20–28 μ $\approx$ 7–9 μ , the neck upturned, elongate, 3 μ thick. Setae none. Perithecia in loose central group, black, globose, to 230 μ diam., the surface cells obtusely conoid, to 20 μ high. Spores dark brown, cylindric, obtuse, 4-septate, constricted, 38–44 μ $\approx$ 15–17 μ .

(374) *Irene plebeja* (Speg.) Th. & Syd., Ann. Mycol. **15**, 461. 1917. (3101. 4230).

Syn.: *Meliola plebeja* Speg., Bol. Acad. Sci. Cordoba, **11**, 238. 1889. — *Irenina plebeja* (Speg.) Stev., Ann. Mycol. **25**, 453. 1927.

Colonies hypophyllous, 2–3 mm. diam., not usually confluent, smooth. Mycelium of undulate, dark brown hyphae 7–9 μ thick, the cells mostly 20–25 μ long, branching alternate at acute angles, loosely wavy-reticulate. Capitulate hyphopodia alternate, subantrorse, 19–24 μ long, usually straight; stalk cell cuneate to cylindric, 5–9 μ long; head cell subglobose to rounded-angulose, 13–16 μ $\approx$ 12–15 μ . Mucronate hyphopodia in centre, mixed with a few capitulate, alternate or opposite, ampulliform, 18–28 μ $\approx$ 7–8 μ , neck upturned, elongate, 3 μ thick. Setae none. Perithecia loosely grouped in centre of colony, black, globose, verrucose, to 240 μ diam., the surface cells obtusely conoid, up to 28 μ high. Spores dark brown, cylindric, obtuse, 4-sept., constricted, 37–43 μ $\approx$ 14–16 μ .

On *Solanaceae* indet., Apiaty, Brazil, P u i g g a r i 2759, in Herb. Paris.

(375) *Irene pseudekebergiae* Hansf., sp. n. (3102. 32x0).

Plagulae epiphyllae, usque ad 2 mm. diam., subdensae, leves. Mycelium ex hyphis atrobunneis, rectis, 6–7 μ cr., cellulis plerumque 15–25 μ longis, oppositae acutaeque ramosis, subdense reticulatis compositum. Hyphopodia capitata opposita, leniter antrorsa, subrecta, 12–16 μ longa, cellula basali cylindracea, 2–4 μ longa, cellula apicali cylindracea apice rotundata, 9–12 μ $\approx$ 7–8 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 15–20 μ $\approx$

6—7 μ collo suberecto 3—4 μ cr. Setae nullae. Perithecia dispersa, atra, globosa, verrucosa, immatura. Sporae atrobrunneae, subellipsoideae, obtusae, 4-septatae, leniter constrictae, 35—39 $\Rightarrow$ 15—16 μ .

Hab. in foliis *Meliacearum* spec. indet., Paraguay, B a l a n s a 4761 p. p., in Herb. Stockholm, ex B r e s a d o l a.

In this specimen this species occurs mixed with *Irene ekebergiae* var. *paraguayensis* Hansf. The mycelium closely resembles that of *Meliola ekebergiae* Hansf., but is devoid of setae.

(376) **Meliola aglaia** Hansf., sp. nov. (3112. 3221).

Plagulae epiphyllae, usque ad 2 mm. diam., densae, leves. Mycelium ex hyphis atrobrunneis subrectis, 6—8 μ cr., cellulis plerumque 10—20 μ longis, oppositae ramosis, dense reticulatis compositum, subsolidum. Hyphopodia capitata opposita, leniter antrorsa, recta vel curvula, 13—18 μ longa; cellula basali cuneata, 3—5 μ longa; cellula apicali cylindracea vel subclavata, recta vel curvula, apice late rotundata, integra, 9—14 $\Rightarrow$ 6—8 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 15—22 $\Rightarrow$ 6—8 μ , collo suberecto, 3 μ cr. Setae myceliales paucae, juxta perithecia evolutae, saepe nullae, erectae, rectae, simplices, acutae, usque ad 290 $\Rightarrow$ 7—9 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae ellipsoideae, obtusae, atrobrunneae, 4-sept., constrictae, 32—37 $\Rightarrow$ 16—18 $\Rightarrow$ 12—13 μ .

Hab. in foliis *Aglaiae* spec. indet., Taytay, Palawan, Philippines, Phil. Bur. Sci. 8884 p. p.

In the type in Herb. Stockholm the above occurs mixed with *Meliola parvula* Syd.

(377) *Meliola balansae* Gaill., Le Genre *Meliola*, 1892, p. 95. (311 $\frac{1}{2}$ l. 5332).

The type, B a l a n s a 4018, on unknown host, Paraguay, in Herb. Paris, has been examined: —

Colonies epiphyllous, dense, to 5 mm. diam. or confluent, velvety. Mycelium of substraight dark brown hyphae 8—9 μ thick, the cells mostly 15—25 μ long, branching opposite at acute angles, densely reticulate-radiating. Capitate hyphopodia alternate, antrorse, straight or slightly bent, 24—33 μ long; stalk cell cuneate or cylindric, 6—10 μ long, head cell cylindric with widely rounded apex, entire, 18—23 $\Rightarrow$ 10—15 μ . Mucronate hyphopodia few, on separate hyphae, opposite or alternate, bent ampulliform, 18—24 $\Rightarrow$ 6—8 μ , neck upturned 3 μ thick. Mycelial setae closely scattered, erect, simple, up to 350 $\Rightarrow$ 8—10 μ , the upper half uncinuate to irregularly curved, not straight, apex acute when fully mature. Perithecia scattered, black, globose, verrucose, up to 260 μ diam. Spores dark brown, cylindric, obtuse, 4-septate, constricted, 48—59 $\Rightarrow$ 22—26 μ .

Many colonies have few or even no setae.

(378) *Meliola bignoniacearum* Stev. var. **major** Hansf., var. nov. (31¹/₃ 4221).

Plagulae hypophyllae, subdensae, usque ad 10 mm. diam. Mycelium ex hyphis subrectis, atrobrunneis, 7—8 μ crassis, cellulis plerumque 15—30 μ longis, oppositae lateque ramosis, dense reticulato-inter-textis compositum. Hyphopodia capitata alternata, recta vel curvata, patentia, 15—25 μ longa; cellula basali cylindracea, 3—10 μ longa; cellula apicali ovata vel cylindracea, apice late rotundata, integra, recta vel curvata, 11—18 μ $\Rightarrow$ 9—12 μ . Hyphopodia mucronata numerosa, illis capitatis commixta, opposita vel alternata, ampullacea, 16—25 μ $\Rightarrow$ 8—9 μ , collo elongato, suberecto, 3 μ cr. Setae myceliales tenuiter dispersae, erectae, rectae, simplices, obtusae, raro apice rugulosae vel multi-dentatae usque ad 4 μ , usque ad 270 μ $\Rightarrow$ 7—8 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 170 μ diam. Sporae atro-brunneae, cylindraceae, obtusae, 4-septatae, constrictae, 38—44 μ $\Rightarrow$ 14—16 μ .

Hab. in foliis *Bignoniacearum* spec. indet., Tumatumari, Brit. Guiana, Stevens 105 in Farlow Herb.

(379) *Meliola bignoniacearum* Stev. var. **parasitica** Hansf., var. nov. (3131. 4221).

Plagulae epiphyllae, densae, usque ad 1,5 mm. diam., in maculas aureas vel rufo-brunneas insidentes, subvelutinae. Mycelium ex hyphis atrobrunneis, subrectis vel undulatis, 5—7 μ crassis, cellulis plerumque 15—20 μ longis, oppositae lateque ramosis, dense reticulatis compositum. Hyphopodia capitata alternata, subantrorsa, recta vel curvata, 15—20 μ longa; cellula basali cylindraceae vel cuneata, 3—6 μ longa, cellula apicali ovata vel cylindracea, apice rotundata, integra vel leniter angulosa, 12—15 μ $\Rightarrow$ 9—11 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 13—18 μ $\Rightarrow$ 6—7 μ , collo suberecto, 3 μ cr. Setae myceliales dispersae etiam juxta perithecia aggregatae, erectae, suberectae, usque ad 250 μ $\Rightarrow$ 7—9 μ , apice 2—4-furcatae usque ad 25 μ , (saepius circa 10 μ), ramulis pluri-denticulatis usque ad 10 μ , divergentibus. Perithecia subaggregata, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 34—40 μ $\Rightarrow$ 14—16 μ $\Rightarrow$ 12—14 μ .

Hab. in foliis *Bignoniacearum* spec. indet., Terecita, Ecuador, Stevens 82, typus in Herb. Farlow; Trinidad, Thaxter 7493.

(380) *Meliola chamissoae* Hansf., sp. nov. (31¹/₃ 3222).

Plagulae amphigenae, densae, usque ad 4 mm. diam., vel confluentes, tenuiter velutinae. Mycelium ex hyphis atrobrunneis, undulatis vel flexuosis, 6—7 μ cr., cellulis plerumque 12—20 μ longis, oppositae lateque ramosis, dense reticulatis compositum. Hyphopodia capitata alternata vel opposita, recta vel curvata, subantrorsa, 12—17 μ

longa; cellula basali cylindracea, 2—6 μ longa; cellula apicali subglobosa vel late ovata, integra, 8—13 $\Rightarrow$ 7—10 μ . Hyphopodia mucronata pauca, illis capitatis commixta, plerumque alternata, ampullacea, 15—20 $\Rightarrow$ 7—8 μ , collo suberecto, 3 μ cr. Setae myceliales dispersae etiam juxta perithecia aggregatae, erectae, rectae, usque ad 350 $\Rightarrow$ 7—8 μ , apice saepius 2-dentatae usque ad 10 μ diam. Perithecia dispersa, atra, globosa, verrucosa, usque ad 170 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 29—36 $\Rightarrow$ 12—14 μ .

Hab. in foliis *Chamissoae altissimae*, Tela, Honduras, Standley 55274 (typus in Farlow Herb.).

This is the first record of *Meliola* on *Amarantaceae*.

(381) ***Meliola colombiensis*** Hansf., sp. nov. (31 $\frac{1}{3}$. 3223).

Plagulae amphygenae, usque ad 3 mm. diam., densae, velutinae. Mycelium ex hyphis atrobrunneis 5—7 μ crassis, cellulis plerumque 13—20 μ longis, undulatis vel flexuosis, oppositae denseque ramosis, reticulatis compositum. Hyphopodia capitata opposita vel alternata, patentia vel antrorsa, recta vel curvata, 10—14 μ longa; cellula apicali subglobosa vel late ovata, integra, 7—11 $\Rightarrow$ 7—9 μ ; cellula basali cylindracea, 2—4 μ longa. Hyphopodia mucronata illis copatatis commixta, opposita vel alternata, ampullacea, 13—20 $\Rightarrow$ 7—8 μ , collo suberecto, 3 μ cr. Setae myceliales numerosae, dispersae, etiam juxta perithecia aggregatae, erectae, rectae, simplices vel varie dentatae usque ad 15 μ , usque ad 950 $\Rightarrow$ 8—10 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, leniter constrictae, 32—37 $\Rightarrow$ 12—13 $\Rightarrow$ 10—12 μ .

Hab. in foliis *Solani* spec. indet., prope Ciudad Mutis Colombia, Killip & Garcia 33609 (typus in Farlow Herb.).

The mycelial setae are very variable: the longer ones are scattered over the mycelium and are usually simple, obtuse to acute, while shorter ones are grouped around the perithecia and are very irregularly dentate.

(382) *Meliola cymbisperma* Mont., Ann. Sci. Nat. **2**: 20, 374. 1843. (3113. 5333).

Type on *Smilax globifera*, Surinam, Splitgerber 1262, in Herb. Paris: —

Colonies epiphyllous, to 5 mm. diam. or confluent and larger, dense, heavily parasitised by *Helminthosporium* and *Meliolinopsis*. Mycelium of substraight dark brown hyphae 7—10 μ thick, the cells mostly 18—25 μ long, branching usually opposite at wide angles, loosely to closely reticulate. Capitae hyphopodia alternate or opposite in varying proportions, spreading or antrorse, straight or bent, 18—24 μ long; stalk cell cylindric, 3—6 μ long; head cell subglobose to cylindric with rounded apex, entire, 13—18 $\Rightarrow$ 9—12 μ . Mucronate hyphopodia not seen. Mycelial setae obscured by conidiophores of the

parasite; straight, simple, acute, up to $650 \pm 10 \mu$. Perithecia scattered, black, globose, verrucose, to 240μ diam. Spores dark brown, cylindric to subellipsoid, obtuse, 4-septate, slightly constricted, $50-56 \pm 19-20 \mu$.

(383) *Meliola decidua* Speg., Bot. Acad. Sci. Cordoba, **11**, 240. 1889. (3113. 5222).

The Herb. Paris copy of the type, P u i g g a r i 2344, on ? Convolvulaceae indet., Brazil, has been examined: —

Colonies amphigenous, 2–5 mm. diam., dense, velvety, subcrustose, easily secedent. Mycelium of substraight dark brown hyphae $7-10 \mu$ thick, the cells mostly $15-20 \mu$ long, branching opposite or irregular at acute angles, densely reticulate and almost solid. Capitate hyphopodia opposite or alternate, somewhat antrorse, straight or bent, $15-27 \mu$ long; stalk cell cylindric, $3-9 \mu$ long; head cell rounded-angulose or sublobed, irregular, $12-21 \pm 11-20 \mu$. Mucronate hyphopodia few, mixed with capitate, opposite or alternate, ampulliform, $15-20 \pm 6-8 \mu$, neck upturned 3μ thick. Mycelial setae numerous, closely scattered, erect, straight, simple, acute, up to $350 \pm 10-11 \mu$. Perithecia closely scattered, black, globose, verrucose, up to 200μ diam. Spores cylindric with obtusely rounded ends, 4-septate, constricted, $49-54 \pm 15-17 \mu$.

(384) *Meliola effusa* Gaill., Le Genre *Meliola*, 1892, p. 91. (3111. 5223).

Type: K e g e l 596 on unknown host, Paramaribo, Surinam, in Herb. Paris: —

Colonies hypophyllous, thin, to 10 mm. diam. or confluent, Mycelium of undulate to flexuous hyphae, the cells $20-30 \pm 5-8 \mu$, dark brown, branching opposite or irregular at variable angles, loosely reticulate-interwoven, becoming denser in centre. Capitate hyphopodia alternate, or very rarely (much less than 1%) opposite, straight or bent, $14-22 \mu$ long; stalk cell cylindric, $4-8 \mu$ long; head cell ovate to piriform, entire, often bent, $10-15 \pm 9-12 \mu$. Mucronate hyphopodia mixed with capitate, ampulliform, bent, opposite or alternate, $16-23 \pm 7-8 \mu$, the neck upturned, elongate, 3μ thick. Mycelial setae thinly scattered and also grouped around the perithecia, erect, straight, simple, acute, up to $900 \pm 9-10 \mu$. Perithecia scattered, black, globose, up to 190μ diam. Spores dark brown, cylindric with obtusely conoid ends, 4-septate, constricted, $50-56 \pm 16-18 \mu$.

In some characters this resembles *Meliola psidii* Fr., but the spores are much larger and the setae fewer and longer; the host leaf is not *Psidium guajava*.

(385) *Meliola eugeniae-jamboloidis* Hansf. var. *paulensis* Hansf., var. n. (3111. 4233).

Plagulae epiphyllae, densae, usque ad 5 mm. diam., vel late confluentes, subleves. Mycelium ex hyphis atrobrunneis, subrectis, 7—9 μ cr., cellulis plerumque 25—30 μ longis, opposite vel irregulariter acuteque ramosis, dense reticulatis compositum. Hyphopodia capitata alternata vel rarissime opposita, antrorsa vel patentia, 20—28 μ longa, recta vel curvula, cellula basali cylindracea vel cuneata, 3—8 μ longa, cellula apicali cylindracea vel clavulata, integra, apice late rotundata, 13—20 $\Rightarrow$ 9—11 μ . Hyphopodia mucronata pauca, illis capitatis in centro plagularum commixta, opposita vel alternata, ampullacea, 20—25 $\Rightarrow$ 7—9 μ , collo suberecto, 3—4 μ cr. Setae myceliales haud numerosae, dispersae etiam juxta perithecia aggregatae, erectae, simplices, acutae, rectae, usque ad 600 $\Rightarrow$ 9—11 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 210 μ diam. Sporae cylindraceae, obtusae, atrobrunneae, 4-septatae, constrictae, 42—47 $\Rightarrow$ 16—17 μ .

Hab. in foliis *Myrtacearum* spec. indet., Sao Paulo, Brazil, Usteri 51 in Herb. Stockholm, ex Rehm, sub *Meliola obesa* Speg. (386) *Meliola evanida* Gaill., Le Genre *Meliola*, 1892, p. 102. (311/31. 4224).

Type: on *Strychnos* sp., Loango, Angola, leg. Thollon, in Herb. Paris: —

Colonies hypophyllous, up to 10 mm. diam. or confluent, thin. Mycelium of brown hyphae 5—7 μ thick, the cells mostly 30—35 μ long, slightly undulate, branching opposite or irregular at acute angles, loosely reticulate. Capitate hyphopodia alternate, more or less bent, 21—29 μ long, spreading or somewhat antrorse; stalk cell cylindric, 5—8 μ long, often bent; head cell cylindric with rounded apex, entire, usually bent, 15—20 $\Rightarrow$ 7—9 μ . Mucronate hyphopodia numerous, mixed with the capitate, alternate or opposite, narrowly ampulliform, bent, 18—30 $\Rightarrow$ 6—7 μ , neck elongate, upturned, 3 μ thick. Mycelial setae in loose groups around the perithecia, up to 1100 $\Rightarrow$ 9—11 μ , simple and acute or 2—3-dentate to 30 μ . Perithecia scattered, black, globose, verrucose, to 150 μ diam. Spores dark brown, ellipsoid to nearly cylindric, obtuse, 4-septate, constricted, 38—45 $\Rightarrow$ 14—17 $\Rightarrow$ 12—13 μ .

(387) *Meliola francevilleana* Gaill., Le Genre *Meliola*, 1892, p. 88. (3113. 6231).

Type: De Brazza & Thollon 191, on *Breweria* sp., Congo Belge, in Herb. Paris: —

Colonies epiphyllous, dense, velvety, up to 4 mm. diam. Mycelium of straight dark brown hyphae 6—8 μ thick, the cells mostly 15—25 μ long, branching opposite at wide angles, becoming almost solid in the centre. Capitate hyphopodia opposite or alternate in varying proportions, straight or bent, spreading or antrorse, 13—20 μ long; stalk cell cylindric, 2—6 μ long; head cell globose to piriform, entire,

10—13 $\Rightarrow$ 8—12 μ . Mucronate hyphopodia mixed with the capitate on few hyphae, opposite or alternate, bent ampulliform, 13—19 $\Rightarrow$ 7—9 μ , neck suberect, 3 μ thick. Mycelial setae numerous, erect, straight, simple, acute, up to 280 $\Rightarrow$ 9—10 μ . Perithecia scattered, black, globose, verrucose, up to 210 μ diam. Spores dark brown, cylindric, obtuse, 4-septate, slightly constricted, 53—61 $\Rightarrow$ 16—17 μ , the middle cell usually the largest.

(388) *Meliola forbesii* Gaill., Le Genre *Meliola*, 1892, p. 110. (3143. 3221).

Type: Forbes 2893, on unknown host, Sumatra, in Herb. Paris; the host leaf has a long drip-tip like some species of *Jasminum*, or it could be the leaflet of some leguminous or Meliaceous plant: —

Colonies epiphyllous, thin, smooth, to 2 mm. diam. Mycelium of straight dark brown hyphae 7—10 μ wide, the cells mostly 25—35 μ long, branching opposite at acute angles, loosely radiating-reticulate. Capitate hyphopodia alternate or about 5% opposite, more or less antrorse, straight or bent, 16—20 μ long; stalk cell cuneate, 4—7 μ long; head cell subglobose to ovoid, entire, 12—14 $\Rightarrow$ 10—12 μ . Mucronate hyphopodia mixed with the capitate, rather few, opposite or alternate, ampulliform, 19—25 $\Rightarrow$ 8—10 μ , the neck upturned, 3 μ thick. Mycelial setae not seen — few colonies now remain on the material and all are denuded of setae, which Stevens in Ann. Mycol. **25**, 175, 1927, gave as "1—2-dichotomous, the upper secondary branch 3-dichotomous, lower usually simple". Perithecia and spores were not seen in my mounts.

(389) *Meliola furcata* Lev., Ann. Sci. Nat. Bot., III: **5**, 266. 1846.

The type specimen of this species is Kegel 595 on *Cissus* sp., Surinam, and is the only specimen in Herb. Paris from Lévillé: —

Colonies mostly epiphyllous, dense, to 3 mm. diam. or confluent, velvety. Mycelium of substraight to undulate dark brown hyphae 7—8 μ thick, the cells mostly 15—25 long, branching alternate or irregular at acute angles, closely reticulate-radiating. Capitate hyphopodia alternate, more or less antrorse, straight or bent, mostly 17—25 μ long, abnormally up to 35 μ ; stalk cell cylindric-cuneate, 6—12 μ long; head cell from subglobose and entire to shallowly and irregularly rounded-lobate, often bent, 13—18—(24) $\Rightarrow$ 10—16 μ . Mucronate hyphopodia few, on separate hyphae in centre, opposite or alternate, ampulliform, 12—16 $\Rightarrow$ 7—8 μ , neck upturned, 3 μ thick. Mycelial setae fairly numerous, scattered, erect, straight, up to 240 $\Rightarrow$ 8—10 μ , opaque, the apex divided into 2—3 spreading short branches up to 20 μ long and these again dichotomous or 2-dentate to 20 μ . Perithecia subaggregate in centre, black, globose, verrucose, to 210 μ diam. Spo-

res dark brown, cylindric, obtuse, 4-septate, slightly constricted, $36-42 \rightleftharpoons 14-15 \rightleftharpoons 11-13 \mu$.

Comparing this with records of other species of the genus on *Vitaceae*, I find that it is identical with *M. merrillii* Syd., as instanced by the specimens Phil. Bur. Sci. 8672 (type); 23885 and 24017, all on *Cissus* spp., Philippines; and with the following collections on *Cissus sicyoides*: Cuba, Wright 393; Nicaragua, Wright 548 b; Para, Brazil, Heber, in Herb. Stockholm; on *Cissus* sp., S. Catharina, Brazil, Ule, Herb. brasil. 981; on *Vitis* sp., S. Maria de Data, Costa Rica, Tonduz in Herb. Stockholm.

South African specimens on *Rhoicissus rhomboidea*, described by Doidge and Sydow in *Bothalia* 2, 447, 1928, are more or less identical with the above, but Hansford's Uganda collections on *Rhoicissus revoilii* (nos. 2787, 2812, 3176, 3416, 3607) differ markedly in the close and irregular branching of the setae, presenting a more or less cristate appearance; for these the new variety *ugandensis* is proposed: —

Meliola furcata Lev. var. **ugandensis** Hansf., var. n.

Ab typo: differt: setae myceliales dense cristato-furcatae, ramulis subdivergentibus, usque ad 15μ longis, varie dentatis usque ad 6μ .

Hab. in foliis *Rhoicissi revoilii*, Entebbe Road, Uganda, Hansford 2787, typus.

A tradition has grown up, apparently commencing with Patouillard, Rev. Mycol. 10, 135, 1888, that *Meliola furcata* Lev. occurs on palms, and many records have been made of such. All these are incorrect, and refer to one or other of species with more or less dichotomous setae, limited to palm leaves. I have not yet examined authentic material of *M. morrowi* Stev. nor of *M. melanococcae* Stev., so am unable to pronounce as to how many of the specimens previously referred by other workers and myself to *M. furcata* should be emended and placed in these species or as *M. elaeis* Stev., or whether it may be necessary to describe yet another new species to contain them.

(390) **Meliola herterii** Hansf., sp. nov. (3131. 4221).

Plagulae amphigenae, densae, velutinae, usque ad 2 mm diam. Mycelium ex hyphis subrectis, atrobrunneis, $7-9 \mu$ crassis, cellulis plerumque $15-25 \mu$ longis, oppositae acuteque ramosis, dense radiantoreticulatis compositum. Hyphopodia capitata alternata, antrorsa, plus minusve recta, $20-28 \mu$ longa; cellula basali cuneata vel cylindracea, $5-9 \mu$ longa; cellula apicali cylindracea, apice late rotundata, interdum late ovata, $15-20 \rightleftharpoons 9-12 \mu$. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, $15-25 \rightleftharpoons 7-9 \mu$, collo suberecto, 4μ cr. Setae myceliales numerosae, dispersae, erectae, rectae, usque ad $240 \rightleftharpoons 7-9 \mu$, apice saepius breviter 2-4-furcatae

usque ad 14 μ , ramulis 2—3-dentatis usque ad 10 μ . Perithecia dispersa vel in centro plagarum subaggregata, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 41—45 $\Rightarrow$ 15—18 μ .

Hab. in foliis *Bignoniae unguis-cati*, Rio Verde, Chaco, Paraguay, Herter 85137 in Farlow Harb.

The mycelium resembles that of *M. bidentata* Cooke, but the setae are quite different.

(391) *Meliola heudelotii* Gaill., Le Genre *Meliola* 1892, p. 49. (31½. 4323).

Syn.: *Irenina heudelotii* (Gaill) Stevens, Ann. Mycol. **24**, 458. 1926.

Type: On *Memecylon* sp., Senegambia, Rio Tongos, 1837, leg. Heudelot, in Herb. Paris:

Little of the type specimen now remains. Colonies epiphyllous, thin, to 2 mm diam. or confluent. Mycelium of substraight dark brown hyphae 7—8 μ thick, the cells mostly 20—30 μ long, branching opposite at acute angles, loosely reticulate. Capitate hyphopodia alternate, very rarely opposite, spreading, 15—23 μ long; stalk cell cylindric, 3—5 μ long; head cell cylindric with rounded apex, straight or slightly bent, 11—18 $\Rightarrow$ 7—12 μ . Mucronate hyphopodia mixed with capitate, opposite or alternate, ampulliform to conoid, 15—25 $\Rightarrow$ 6—8 μ , the neck upturned, 3—4 μ thick. Mycelial setae few, grouped around the perithecia, erect, more or less straight, up to 700 $\Rightarrow$ 9—10 μ , the apex simple and acute or 2-dentate to 12 μ . Perithecia loosely scattered, black, globose, verrucose, immature (Gaillard gave them as 150—200 μ diam.). Spores dark brown, cylindric, obtuse, 4-septate, constricted, 42—49 $\Rightarrow$ 18—20 μ .

This corresponds with Deighton M 2436 on *Memecylon* sp., Sussex, Colony, Sierra Leone in Herb. Commonwealth Mycological Institute, previously determined as *M. affinis* Syd.

(392) *Meliola insignis* Gaill., Le Genre *Meliola*, 1892, p. 44. (3113. 433x).

The type, Forbes 3045a on unknown host, Sumatra, in Herb. Paris is in poor condition, and no perithecia or mycelial setae now remain:

Colonies epiphyllous, thin, to 2 mm diam., smooth, heavily parasitised by *Arthrobotryum*. Mycelium of straight dark brown hyphae 7—8 μ thick, the cells mostly 15—25 μ long, branching usually opposite at wide angles, loosely reticulate. Capitate hyphopodia alternate or opposite in variable proportions, more or less antrorse, straight, 18—25 μ long; stalk cell cylindric, 3—6 μ long; head cell cylindric with rounded apex, sometimes clavulate, entire, 13—20 $\Rightarrow$ 8—10 μ . Mucronate hyphopodia not seen. No mycelial setae were found;

Stevens in Ann. Myc. **25**, 166, 1927, gave them as simple and obtuse, 250—350 μ long, but these may not have referred to this specimen. Perithecia scattered, only the empty sites now remaining; Gaillard gave them as up to 250 μ diam. Spores dark brown, cylindric, 4-septate, constricted, $47 \approx 20$ μ (Gaillard gave them as 3-septate, 34—35 $\approx$ 14—15 μ , evidently an error).

In my recent examination of the large collections of Herb. Bogoriense, I did not discover any species exactly corresponding with the above, which needs re-collection to establish its identity, as also that of the host plant.

(393) *Meliola lanosa* Pat., Rev. Mycol., **10**, 136. 1888. (2111. 6342).

Syn.: *M. funerea* McAlpine, Proc. Linn. Soc. N.S.W., **21**, 104. 1896. — *M. negeriana* Syd. Ann. Mycol. **2**, 170, 1904. — *M. macrocarpa* Mont. in Herb. Mus. Paris, p. p.

The type is on *Lomatia* sp., Chile, in Herb. Paris:

Colonies amphigenous, dense, velvety, crustose, up to 4 mm diam. Mycelium of crooked dark brown hyphae 7—8 μ thick, the cells 20—35 μ long, branching opposite or irregular at acute angles, densely reticulate-interwoven. Capitate hyphopodia alternate, straight or more often irregularly bent, 23—38 μ long; stalk cell cylindric, 6—22 μ long; head cell ovate to irregularly rounded-angulose or shallowly rounded-lobate, often bent, versiform, $15-21 \approx 10-15$ μ . Mucronate hyphopodia not seen. Mycelial setae numerous, scattered, erect, more or less straight, simple, obtuse to subacute, up to $400 \approx 9-10$ μ . Perithecia scattered or loosely aggregate, black, globose, verrucose, to 310 μ diam. Spores dark brown, slightly bent-fusoid, 3-septate, constricted $60-68 \approx 20-23$ μ , the ends obtuse.

(394) *Meliola laxa* Gaill., Bull. Soc. Myc. France, **8**, 179. 1892. (3111. 3221).

Type: on *Myrtaceae* indet., Ecuador, 1892, leg. Lagerheim, in Herb. Paris:

Colonies amphigenous, to 3 mm diam. or widely confluent, thin, smooth. Mycelium of more or less undulate, dark brown hyphae 7—10 μ thick, the cells mostly 20—30 μ long, branching alternate or irregular at acute angles, loosely reticulate. Capitate hyphopodia alternate, more or less antrorse, straight or bent, 18—25 μ long; stalk cell cylindric, 5—8 μ long; head cell ovate to clavate, widely rounded at the apex or sometimes slightly irregularly rounded-lobate, $13-18 \approx 10-13$ μ . Mucronate hyphopodia mostly on separate hyphae in centre of colony, rather few, opposite or alternate, ampulliform, $16-20 \approx 6-8$ μ , the neck upturned, 3 μ thick. Mycelial setae very few, almost all grouped around the perithecia, erect, straight or somewhat bent, not uncinat, simple, obtuse to subacute, up to $280 \approx 7-9$ μ . Peri-

thecia scattered, black, globose, verrucose, immature, to 150 μ diam. Spores dark brown, cylindric, obtuse, 4-septate, constricted, 36—39 $\Rightarrow$ 14—15 μ .

The specimen on *Eugenia guaviyu*, Argentine, B o m p l a n d, described by S p e g a z z i n i in Annal. Mus. Nac. Buenos Aires, **25**, 43, 1912, seems to differ widely in colony characters and has larger spores; I consider it to be a different species though I have not seen the specimen.

(395) *Meliola leptospora* Gaill., Le Genre *Meliola*, 1892, p. 87. (3111. 4222).

Type on *Marantaceae* indet., Congo, T h o l l o n 1207 in Herb. Paris:

Colonies mostly hypophyllous, to 15 mm diam. or confluent thin to subdense, velvety. Mycelium of substraight to flexuous dark brown hyphae 5—8 μ thick, the cells mostly 25—40 μ long, branching opposite or irregular at acute angles, loosely to closely reticulate-interwoven. Capitate hyphopodia alternate, unilateral or more scattered, straight or irregularly bent, 17—22 μ long; stalk cell cylindric to cuneate, 5—10 μ long; head cell subglobose, entire, 10—13 $\Rightarrow$ 8—13 μ . Mucronate hyphopodia few, scattered amongst the capitate, alternate, ampulliform to lageniform, 15—20 $\Rightarrow$ 6—7 μ , the neck upturned, 3 μ thick. Mycelial setae numerous, closely scattered, erect, more or less straight, simple, acute, up to 450 $\Rightarrow$ 8—9 μ , gradually attenuate to the apex. Perithecia scattered, black, globose, verrucose, to 160 μ diam. Spores dark brown, cylindric, obtuse, 4-septate, slightly constricted, 39—48 $\Rightarrow$ 11—13 μ .

(396) *Meliola moerenhoutiana* Mont. in Sagra, Hist. Cuba, p. 327. 1842. (3111. 3224).

Type on *Alyxia stellata*, Tahiti, leg. M o e r e n h o u t. In Herb. Paris are three sheets, labelled:

a) *M. moerenhoutiana* Mont., Otahiti, ex B e r t e r o,

b) *M. moerenhoutiana* Mont., on *Alyxia stellata*, Otahiti, ex L e v e i l l e.

c) without locality, and det. Gaillard as *M. amphitricha* Fr.

All these are undoubtedly on the same host, and appear to be parts of the original type collection:

Colonies amphigenous, to 2 mm diam., dense, velvety. Mycelium of substraight dark brown hyphae 5—7 μ thick, the cells mostly 10—15 μ long, branching opposite or irregular at wide angles, closely reticulate and becoming almost solid. Capitate hyphopodia alternate, slightly antrorse, straight or bent, 14—20 μ long; stalk cell cylindric, 3—7 μ long; head cell versiform, from wide ovate to cylindric with rounded or slightly clavate apex, or sinuous-bent and somewhat rounded-angulose, 9—15 $\Rightarrow$ 6.5—9 μ . Mucronate hyphopodia on sepa-

rate hyphae, mostly opposite, ampulliform, $10-15 \Rightarrow 7-8 \mu$, with short upturned neck 3μ thick. Mycelial setae numerous, erect, straight, simple, acute, up to $280 \Rightarrow 7-8 \mu$. Perithecia scattered, black, globose, verrucose, up to 140μ diam. Spores dark brown, cylindric, obtuse, 4-septate, constricted, $34-39 \Rightarrow 15-16 \mu$.

This is quite distinct from *M. alyxiae* Stevens, though Stevens suggested their being the same; in Sylloge Fungorum the spores are given in error as 3-septate.

(397) *Meliola monilispota* Gaill., Le Genre *Meliola*, 1892, p. 101. (3131. 4331).

Type: On probably Apocynaceous host (?*Strophanthus* sp.), Nyaru, Congo, Thollon, June 1888, in Herb. Paris:

Colonies amphigenous, mostly hypophyllous, black, to 2 mm diam., dense. Mycelium of substraight dark brown hyphae $7-9 \mu$ thick, the cells mostly $10-17 \mu$ long, branching usually opposite at wide angles, closely reticulate and almost solid in centre. Capitulate hyphopodia alternate, straight or bent, more or less antrorse, $20-28 \mu$ long; stalk cell cylindric to cuneate, $4-9 \mu$ long; head cell widely ovate to piriform, entire, $15-19 \Rightarrow 10-15 \mu$. Mucronate hyphopodia numerous, mixed with few capitulate, opposite or alternate, ampulliform to conoid, $15-24 \Rightarrow 7-9 \mu$, neck upturned $3-4 \mu$ thick. Mycelial setae fairly numerous, erect, scattered, straight, to 280μ long by $9-10 \mu$ wide at base, apex 2-6-dentate, the teeth rather obtuse and to 9μ long. Perithecia scattered, black, globose, verrucose, to 210μ diam. Spores dark brown, broadly ellipsoid, 4-septate, constricted, $42-49 \Rightarrow 19-23 \Rightarrow 15-16 \mu$.

Hansford 1969 on Apocynaceae indet., Mukono Forest, Kiagwe, Uganda, appears to belong to this species.

(398) *Meliola montagnei* Pat. in Gaillard, Le Genre *Meliola*, 1892, p. 85. (3113. 5221).

Type on *Salacia* sp., Reunion in Herb. Paris, ex Herb. Petit-Thouars:

Colonies amphigenous, dense, black, to 2 mm diam. Mycelium of dark brown, substraight hyphae $7-8 \mu$ thick, the cells mostly $12-20 \mu$ long, branching opposite or irregular, closely radiating-reticulate. Capitulate hyphopodia alternate or about 10% opposite, straight or antrorse-bent, $16-22 \mu$ long; stalk cell cuneate to cylindric, $3-10 \mu$ long; head cell globose to widely piriform, entire, broadly rounded at apex, $11-15 \Rightarrow 9-14 \mu$. Mucronate hyphopodia rather few, on separate hyphae in centre of colony, opposite or alternate, bent ampulliform, $15-21 \Rightarrow 6-8 \mu$, neck upturned, $3-4 \mu$ thick. Mycelial setae scattered, erect, straight, simple, acute, up to $200 \Rightarrow 8-10 \mu$. Perithecia scattered, black, globose, verrucose, to 190μ diam. Spores dark

brown, cylindric, obtuse, 4-septate, rather deeply constricted, $52-58 \Rightarrow 17-20 \mu$.

(399) *Meliola opiliae* Syd., var. **singalensis** Hansf., var. n. (3113. 4223).

Plagulae amphigenae, plerumque epiphyllae, usque ad 3 mm diam., atrae, densae, velutinae. Mycelium ex hyphis atrobrunneis, rectis, $6-8 \mu$ cr., cellulis plerumque $13-24 \mu$ longis, oppositae acuteque ramosis, dense reticulatis compositum. Hyphopodia capitata alternata vel usque ad 90% opposita, subantrorsa, recta vel curvula, $12-20 \mu$ longa, cellula basali cylindracea, $2-6 \mu$ longa, cellula apicali subglobosa vel piriformi, integra, apice late rotundata, $10-15 \Rightarrow 8-11 \mu$. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, $16-23 \Rightarrow 7-9 \mu$, collo elongato suberecto 3μ cr. Setae myceliales numerosae, dispersae, etiam juxta perithecia aggregatae, erectae, rectae, simplices, acutae, usque ad $600 \Rightarrow 9-10 \mu$. Perithecia subaggregata, atra, globosa, verrucosa, usque ad 190μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, $39-47 \Rightarrow 16-17 \Rightarrow 13-15 \mu$.

Hab. in foliis *Cansjerae rheedii*, Ceylon, Thwaites 497 p. p., in Herb. Kew.

(400) **Meliola osmanthicola** Hansf., sp. n. (3111. 53x2).

Plagulae epiphyllae, densae, usque ad 3 mm diam. Mycelium ex hyphis subrectis, atrobrunneis, $7-8 \mu$ cr., cellulis plerumque $20-25 \mu$ longis, oppositae acuteque ramosis, dense reticulatis compositum. Hyphopodia capitata alternata, plus minusve antrorsa, recta vel curvata, $23-38 \mu$ longa, cellula basali cuneata vel cylindracea, $7-12 \mu$ longa, cellula apicali curvato-cylindracea vel irregulariter clavata et sublobata, $18-28 \Rightarrow 9-12 \mu$. Hyphopodia mucronata saepius in hyphis distinctis evoluta, ampullacea, opposita vel alternata, $15-24 \Rightarrow 7-9 \mu$, collo suberecto $3-4 \mu$ cr. Setae myceliales dispersae, erectae, rectae, simplices, acutae, usque ad $500 \Rightarrow 7-9 \mu$. Perithecia dispersa, atra, globosa, immatura. Sporae atrobrunneae, cylindraceae, obtusae, constrictae, 4-septatae, $45-50 \Rightarrow 22 \mu$.

Hab. in foliis *Osmanthi sandwicensis*, Oahu, Hawaii, Stevens 513 in Herb. Stockholm, ex U.S.D.A. 71000.

(401) **Meliola osmanthina** Hansf., sp. n. (3111. 42x3).

Plagulae hypophyllae, tenues, usque ad 3 mm diam. vel confluentes. Mycelium ex hyphis atrobrunneis, subrectis vel flexuosis, $5-6 \mu$ cr., cellulis plerumque $20-30 \mu$ longis, oppositae vel irregulariter lateque ramosis, laxe reticulato-intertextis compositum. Hyphopodia capitata alternata, recta vel curvula, subantrorsa, $18-37 \mu$ longa, cellula basali cylindracea, $5-15 \mu$ longa, cellula apicali cylindracea, apice rotundata vel subattenuata, saepius irregulariter curvata vel rotundato-angulosa, $15-22 \Rightarrow 6-8 \mu$. Hyphopodia mucronata in hyphis

distinctis evoluta, opposita vel alternata, tenuiter ampullacea, $15-22 \Rightarrow 6-7 \mu$, collo suberecto $3-4 \mu$ cr. Setae myceliales dispersae, erectae, rectae, simplices, acutae, usque ad $600 \Rightarrow 8-9 \mu$. Perithecia dispersa, atra, globosa, verrucosa, immatura. Sporae atrobrunneae, ellipsoideae, obtusae, 4-septatae, constrictae, circa $45 \Rightarrow 20 \mu$.

Hab. in foliis *Osmanthi sandwicensis*, Oahu, Hawaii, Stevens 513, in Herb. Stockholm, ex U.S.D.A. 71000.

This and the preceding species occur mixed on the same leaves; they are easily distinguished by colony and mycelial characters.

(402) *Meliola paraensis* P. Henn., Hedwigia **39**, 77. 1900. (3111. 2221).

Type on *Vitex* sp., Para, Huber 4 in Herb. Stockholm, ex Herb. Berlin:

Colonies amphigenous, thin, to 5 mm diam. or confluent. Mycelium of epiphyllous colonies straight, more crooked on lower surface of leaf; hyphae dark brown, $5-6 \mu$ wide, the cells mostly $20-30 \mu$ long, branching opposite at acute angles, loosely reticulate-interwoven. Capitate hyphopodia alternate, straight, somewhat antrorse, $12-18 \mu$ long; stalk cell cuneate to cylindric, $3-6 \mu$ long; head cell globose to widely ovate, entire, $8-12 \Rightarrow 8-10 \mu$. Mucronate hyphopodia mixed with capitate or mostly on separate hyphae, opposite or alternate, ampulliform, $13-18 \Rightarrow 6-7 \mu$, neck upturned, 3μ thick. Mycelial setae thinly scattered and also grouped around the perithecia, erect, straight or flexuous, not uncinat, simple, obtuse, up to $260 \Rightarrow 6-8 \mu$. Perithecia loosely scattered, black, globose, verrucose, up to 140μ diam. Spores dark brown, cylindric, obtuse, 4-septate, constricted, $23-28 \Rightarrow 9-11 \mu$.

(403) *Meliola patouillardii* Gaill., Le Genre *Meliola*, 1892, p. 109. (313/4. 3221).

Type collection: on *Piper* sp., S. Nicolas, Ecuador, Lagerheim, in Herb. Stockholm, ex Patouillard:

Colonies hypophyllous, to 10 mm diam., rather dense, somewhat velvety. Mycelium of sinuous to crooked dark brown hyphae $5-7 \mu$ thick, the cells mostly $20-30 \mu$ long, irregularly branched and reticulate-interwoven. Capitate hyphopodia alternate or more scattered, straight or bent, $12-17 \mu$ long; stalk cell cylindric, $3-5 \mu$ long; head cell subglobose, piriform, or ovoid, often bent, entire, $8-13 \Rightarrow 7-10 \mu$. Mucronate hyphopodia rather few, scattered amongst capitate or on separate hyphae, opposite or alternate, ampulliform or lageniform, $18-25 \Rightarrow 7-9 \mu$, neck erect, elongate to $14 \Rightarrow 3 \mu$. Mycelial setae rather numerous, scattered and grouped around the perithecia, erect, more or less straight, $160-240 \Rightarrow 8-10 \mu$, the apex with 2-4 short divergent branches to 15μ long, and these with 2-3 teeth to 12μ long, or the primary branches reduced and then appearing cristate with many

teeth up to $15\ \mu$ long. Perithecia scattered, black, globose, verrucose, to $190\ \mu$ diam. Spores dark brown, cylindric, obtuse, 4-septate, slightly constricted, $35-39 \rightleftharpoons 11-12.5 \rightleftharpoons 10\ \mu$.

Ex descr. this appears to be identical with *M. zetekii* Stevens. The specimen Sydow. Fung. exot. exs. 1144, on *Piper rufescens*, Ecuador appears also to belong here, and is apparently on the same host as the type; the setal branching is rather more condensed than in the type. This specimen was also issued as Sydow. Fung. Aequator. 250.

(404) *Meliola perexigua* Gaill., Le Genre *Meliola*, 1892, p. 98. (311/4. 3221).

Type: on unknown host, Congo Francaise, Thollon, in Herb. Paris:

Colonies hypophyllous, thin, diffuse and widely confluent, almost smooth. Mycelium of substraight dark brown hyphae $5-6\ \mu$ thick, the cells mostly $25-30\ \mu$ long, loosely reticulate, becoming interwoven and closer. Capitulate hyphopodia alternate, more or less antrorse, $12-16\ \mu$ long; stalk cell cylindric, $3-6\ \mu$ long; head cell ovate, entire, widely rounded at apex, $9-12 \rightleftharpoons 7-8\ \mu$. Mucronate hyphopodia rare, alternate, mixed with capitulate, $14-18 \rightleftharpoons 6-7\ \mu$, neck upturned, $3\ \mu$ thick. Mycelial setae few, scattered and grouped around the perithecia, erect, straight, simple and acute or more rarely 2-3-dentate to $7\ \mu$, up to $270 \rightleftharpoons 6-8\ \mu$. Perithecia few, scattered, black, globose, verrucose, to $150\ \mu$ diam. Spores dark brown, cylindric, obtuse, 4-septate, constricted, $28-33 \rightleftharpoons 11-12 \rightleftharpoons 8-9\ \mu$.

(405) *Meliola petiliae* Hansf., sp. n. (3111. 4221).

Plagulae epiphyllae, usque ad $5\ \text{mm}$ diam. vel confluentes, tenues. Mycelium ex hyphis atrobrunneis, undulatis, $6-7\ \mu$ cr., cellulis plerumque $25-30\ \mu$ longis, opposita vel irregulariter lateque ramosis, laxe reticulato-intertextis compositum, Hyphopodia capitata alternata, antrorsa vel patentia, recta vel curvata, $25-34\ \mu$ longa, cellula basali cylindracea vel cuneata, $7-15\ \mu$ longa, cellula apicali ovata vel tenuiter clavata, integra, $14-20 \rightleftharpoons 10-14\ \mu$. Hyphopodia mucronata in hyphis distinctis evoluta, dense conferta, plerumque opposita, ampullacea, $13-19 \rightleftharpoons 6-9\ \mu$, collo suberecto, curvato, $3-4\ \mu$ cr. Setae myceliales tenuiter dispersae, etiam juxta perithecia aggregatae, erectae, subrectae, simplices, obtusae, usque ad $250 \rightleftharpoons 7-8\ \mu$. Perithecia dispersa, atra, globosa, verrucosa, usque ad $140\ \mu$ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-sept. constrictae, $35-40 \rightleftharpoons 14-15\ \mu$.

Hab. in foliis *Petiliae domingensis*, S. Domingo, Ciferri 2822 in Herb. Stockholm.

(406) *Meliola plectroniae* Hansf., sp. n. (3111. 4223).

Plagulae hypophyllae, tenues, subvelutinae, usque ad $5\ \text{mm}$ diam. Mycelium ex hyphis atrobrunneis, subrectis vel flexuosis, $7-9\ \mu$ cr.,

cellulis plerumque 25—40 μ longis, opposite vel irregulariter ramosis, reticulato-intertextis compositum. Hyphopodia capitata alternata, irregulariter curvata, 25—70 μ longa, cellula basali cylindracea, curvata, interdum 1—3-septata, 8—60 $\Rightarrow$ 7—9 μ , cellula apicali versiformi saepe uncinata vel curvata, 13—29 $\Rightarrow$ 9—18 μ , ovata et subintegra, varie angulosa vel sublobata. Hyphopodia mucronata dispersa, alternata, ampullacea, 15—23 $\Rightarrow$ 7—9 μ , collo suberecto 3 μ cr. Setae myceliales dispersae, rectae, simplices, acutae, usque ad 550 $\Rightarrow$ 9—10 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 41—48 $\Rightarrow$ 15—18 μ .

Hab. in foliis *Plectroniae umbellatae*, Matheran, Bombay, India, in Herb. Farlow.

The long capitate hyphopodia often resemble short mycelial branches, with their septate stalks.

(407) *Meliola polyalthiae* Hansf., sp. n. (3122. 4231).

Plagulae plerumque hypophyllae, usque ad 2 mm diam., densae, crustosae, velutinae. Mycelium in epiphylllo ex hyphis atrobrunneis, 7—8 μ cr., cellulis 10—20 μ longis, opposite lateque ramosis, dense intertextis compositum, in hypophyllo subsolidum, hyphis irregulariter flexuosis. Hyphopodia capitata opposita, plus minusve antrorsa, 10—15 μ longa, cellula basali cylindracea, 2—5 μ longa, cellula apicali subglobosa, integra, 8—11 $\Rightarrow$ 8—11 μ . Hyphopodia mucronata illis capitatis commixta, pauca vel numerosa, opposita vel alternata, conoidea vel ampullacea, 13—16 $\Rightarrow$ 7—8 μ , collo suberecto, 3—4 μ cr. Setae myceliales numerosae, erectae, usque ad 290 $\Rightarrow$ 9—11 μ , simplices, obtusae, sursum plus minusve curvatae vel uncinatae. Perithecia subaggregata, atra, globosa, verrucosa, usque ad 210 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 40—46 $\Rightarrow$ 13—15 μ .

Hab. in foliis *Polyalthiae sumatranae*, Sandakan, B. N. Borneo, Forest Dept. A 2403, p. p., in Herb. Kew.

(408) *Meliola praetervisa* Gaill., var. *stevensii* Hansf., var. n. (3112. 5323).

Plagulae epiphyllae, densae, usque ad 3 mm diam. Mycelium ex hyphis atrobrunneis, subrectis, 6—9 μ cr., cellulis plerumque 12—20 μ longis, opposite lateque ramosis, dense reticulatis compositum. Hyphopodia capitata opposita, subantrorsa, recta vel leniter recurvata, 15—20 μ longa; cellula basali cylindracea 2—5 μ longa, cellula apicali obtuse conoidea, integra, 11—16 $\Rightarrow$ 8—10 μ . Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel alternata, ampullacea, 15—20 $\Rightarrow$ 7—9 μ , collo suberecto 3—4 μ cr. Setae myceliales paucae, laxe dispersae etiam juxta perithecia aggregatae, rectae, usque ad 750 $\Rightarrow$ 9—11 μ , apice acutae vel raro breviter 2-dentatae.

Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, subellipsoideae, obtusae, 4-septatae, leniter constrictae, 46—53 $\Rightarrow$ 20—25 μ .

Hab. in foliis *Coccolobae* spec. indet., Kartabo, British Guiana, Stevens 576 (typus); in foliis *Coccolobae sintensii*, Porto Rico, Stevens 7066.

This differs from the type mainly in the slightly more delicate mycelium and hyphopodia, but the mycelial cells are shorter and hence the colony appears denser. The type is in Herb. Farlow, while the second specimen quoted is in Herb. Paris.

(409) ***Meliola randiae-aculeatae*** Hansf., sp. n. (3111. 42x2).

Plagulae plerumque epiphyllae, usque ad 3 mm diam., tenues vel subdensae, raro confluentes. Mycelium ex hyphis atrobrunneis, subrectis, 7—8 μ cr., cellulis 25—35 μ longis, oppositae acuteque ramosis, laxe vel subdense reticulatis compositum. Hyphopodia capitata alternata, antrorsa, recta, 25—35 μ long, cellula basali cuneata, 6—15 μ longa, cellula apicali ovata, apice subattenuata, integra, 18—24 $\Rightarrow$ 9—13 μ . Hyphopodia mucronata pauca, in hyphis distinctis evoluta, alternata vel opposita, ampullacea, 15—20 $\Rightarrow$ 7—8 μ , collo suberecto, brevi, 3—4 μ cr. Setae myceliales dispersae, etiam juxta perithecia aggregatae, rectae, simplices, obtusae vel subacutae, usque ad 450 $\Rightarrow$ 8—9 μ . Perithecia matura non visa. Sporae atrobrunneae, cylindraceae, obtusae, 4-sept., constrictae, 38—44 $\Rightarrow$ 17—19 μ .

Hab. in foliis *Randiae aculeatae*, S. Domingo, Ciferri 2781, in Herb. Stockholm sub *M. psychotriae* Earle.

(410) *Meliola rhois* P. Henn. in Englers Bot. Jahrb. **17**, 523. 1893. (3121. 5342).

The type collection, on *Rhus* sp., Brazil, Sellow, is represented in Herb. Stockholm, ex Herb. Sydow; it contains a mixture of two species of *Meliola*, of which one is *M. rhois* var. *flexuosiseta*, which would probably now be best classified as a variety of *M. rhoina* Doidge. The other species has the following characters:

Colonies epiphyllous, dense, velvety, crustose and easily secedent, up to 2 mm diam. Mycelium of undulalate dark brown hyphae 7—9 μ thick, the cells 15—20 μ long, branching alternate or unilateral, not opposite, at acute angles, closely reticulate and almost solid. Capitulate hyphopodia alternate, more or less antrorse-bent, mostly 25—37 μ long; stalk cell cylindric, often bent, 5—14 μ long; head cell very deeply and irregularly stellate-lobed, often bent to uncinat, 13—27 $\Rightarrow$ 15—22 μ . Mucronate hyphopodia not seen. Mycelial setae very numerous, closely scattered and grouped around the perithecia, erect, simple, obtuse, flexuous to uncinat or even circinate in the upper half, up to 450 $\Rightarrow$ 10—12 μ wide below, tapering to about 7 μ wide at obtuse apex. Perithecia in close central group, black, globose, ver-

rucose, to 320 μ diam. Spores dark brown, cylindric to subellipsoid, 4-septate, constricted, obtuse, 46—53 $\Rightarrow$ 18—21 $\Rightarrow$ 15—17 μ .

(441) *Meliola rhois* P. Henn. var. **africana** Hansf., var. n. (3411. 5332).

Ab typo ita differt: — Hyphopodia capitata minora, 20—30 μ longa, cellula basali cuneata, 6—10 μ longa, cellula apicali irregulariter rotundato-lobata, 12—21 $\Rightarrow$ 12—18 μ , recta vel varie curvata. Setae myceliales numerosae, rectae, simplices, acutae, 240—450 $\Rightarrow$ 8—10 μ . Perithecia usque ad 240 μ diam. Sporae 39—50 $\Rightarrow$ 17—21 μ .

In foliis *Rhois glaucescentis*, Entebbe Road, Uganda, Hansford 3360 (typus).

I have seen many collections of this variety from both Tropical and South Africa, and in general appearance the colonies are very distinct from those of the type of the species, especially in the much straighter mycelial setae. Apparently the type is limited to South America, and all African specimens I have seen belong to the present variety.

(442) *Meliola sandwicensis* Ell. & Ev., Bull. Torr. Bot. Club, 22, 434. 1895. (3112. 4233).

On Rubiaceae indet., Hawaii, Heller 2369 in Herb. Stockholm, part of type collection: —

Colonies amphigenous, mostly hypophyllous, numerous, dense, velvety, 2—4 mm. diam. Mycelium of dark brown, substraight hyphae 6—7 μ thick, the cells mostly 10—20 μ long, branching opposite at wide angles, closely reticulate. Capitulate hyphopodia opposite, straight or recurved, spreading, 12—15 μ long; stalk cell cylindric, 2—4 μ long; head cell subglobose to widely ovate, entire, 8—12 $\Rightarrow$ 7—10 μ . Mucronate hyphopodia mixed with capitulate, few, opposite or alternate, ampulliform, 12—18 $\Rightarrow$ 5—7 μ , neck upturned, short 3 μ thick. Mycelial setae closely scattered and around the perithecia, straight simple, acute, 300—700 $\Rightarrow$ 8—10 μ . Perithecia scattered, black, globose, verrucose, to 260 μ diam. Spores dark brown, cylindric to subellipsoid, obtuse, 4-sept., constricted, 38—46 $\Rightarrow$ 17—19 $\Rightarrow$ 12—14 μ .

(443) *Meliola sandwicensis* Ell. & Ev., var. **gouldiae** Hansf., var. n. (31 $\frac{1}{2}$. 4233).

A typo ita differt: Hyphis mycelii opposite acuteque ramosis, rectis, dense reticulatis, cellulis plerumque 15—30 μ longis. Hyphopodia capitata plus minusve antrorsa, 14—18 μ longa, cellula apicali integra, subglobose vel late ovata, 9—13 $\Rightarrow$ 7—10 μ . Setae myceliales dispersae, etiam juxta perithecia aggregatae, erectae, plerumque 200—250 μ longae, simplices et obtusae, clavatae vel breviter obtuse furcatae usque ad 20 μ , raro usque ad 700 μ longae tum simplices subacutae, totae 7—9 μ cr. Perithecia et sporae typo consimilia.

Hab. in foliis *Gouldiae coriaceae*, Hawaii, U.S.Dept. Agr. 71011, (typus, in Herb. Stockholm); in foliis *Gouldiae* spec. indet., Hawaii, S h e a r 642.

(414) **Meliola standleyi** Hansf., sp. nov. (3111. 3222).

Plagulae amphigenae, usque ad 8 mm. diam., vel numerosae confluentesque, subdensae, velutinae. Mycelium ex hyphis leniter undulatis, atrobrunneis, 6—7 μ crassis, cellulis plerumque 20—30 μ longis, oppositae ramosis, dense reticulato-intertextis compositum. Hyphopodia capitata alternata, antrorsa vel patentia, recta vel curvula, 16—25 μ longa; cellula apicali ovata, apice saepe attenuato-rotundata, integra, 12—17 μ $\Rightarrow$ 8—11 μ ; cellula basali cuneata, 4—10 μ longa. Hyphopodia mucronata pauca, in hyphis distinctis evoluta, opposita vel alternata, ampullacea, 13—18 μ $\Rightarrow$ 7—9 μ , collo brevi, suberecto, 4 μ cr. Setae myceliales numerosae, dispersae, erectae, rectae, simplices, obtusae, usque ad 500 μ $\Rightarrow$ 7—9 μ , apice saepe curvulae vel torulosae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindratae, obtusae, 4-septatae, constrictae, 33—37 μ $\Rightarrow$ 14—16 μ $\Rightarrow$ 11—13 μ .

Hab. in foliis *Bignoniacearum* spec. indet., Tela, Honduras, S t a n d l e y 55573 in Farlow Herb.

(415) **Meliola stevensiana** Hansf., sp. nov. (3133. 3221).

Plagulae epiphyllae, tenues, usque ad 3 mm. diam. vel interdum confluentes. Mycelium ex hyphis atrobrunneis, subrectis vel undulatis, 5—7 μ crassis, cellulis plerumque 20—40 μ longis, oppositae lateque ramosis, laxe reticulato-interextis compositum. Hyphopodia capitata alternata vel usque ad 5% opposita, recta vel curvata, patentia, 10—15 μ longa; cellula basali cylindrata, 2—5 μ longa; cellula apicali subglobosa, late ovata vel curvata integra, apice rotundata, 8—12 μ $\Rightarrow$ 8—11 μ . Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, 17—25 μ $\Rightarrow$ 6—8 μ , collo elongato, suberecto, 3 μ cr. Setae myceliales tenuiter dispersae etiam juxta perithecia aggregatae, erectae, subrectae, usque ad 250 μ $\Rightarrow$ 7—8 μ , apice raro simplices et minute denticulatae, saepius 2—3-dentatae usque ad 15 μ , dentibus rugulosis. Perithecia dispersa, atra, globosa, verrucosa, usque ad 170 μ diam. Sporae atrobrunneae, cylindratae, obtusae, 4-septatae, constrictae, 33—37 μ $\Rightarrow$ 13—15 μ $\Rightarrow$ 11—13 μ .

Hab. in foliis *Bignoniacearum* spec. indet., Terecita, Ecuador, S t e v e n s 82, pro parte, typus in Farlow Herb.; Trinidad, T h a x t e r 7510; in foliis *Bignoniae unguis-cati*, Trinidad, T h a x t e r 7458, 7459.

In the type the colonies occur amongst those of *M. bignoniacearum* var. *parasitica*, from which they are easily distinguished by being larger and thinner and not causing a leafspot.

(416) **Meliola stizolobii** Hansf. & Deight., var. **brasiliensis** Hansf., var. n. (3143. 4221).

Plagulae epiphyllae, usque ad 3 mm. diam., densae. Mycelium ex hyphis atrobrunneis subrectis, 6—7 μ cr., cellulis plerumque 20—30 μ longis, oppositae lateque ramosis, dense reticulatis compositum. Hyphopodia capitata opposita vel alternata, plerumque recta, 12—16 μ longa, cellula basali cylindracea, 2—5 μ longa, cellula apicali globosa vel ovata, integra, 10—13 $\Rightarrow$ 7—12 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 16—19 $\Rightarrow$ 7—9 μ , collo suberecto, 3 μ cr. Setae myceliales numerosae, dispersae etiam juxta perithecia aggregatae, rectae, usque ad 280 $\Rightarrow$ 7—9 μ , apice 2—4-furcatae (—25 μ), ramulis dentato-furcatis usque ad 10 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 150 μ diam. Sporae atrobrunneae, cylindraceae vel subellipsoideae, obtusae, 4-septatae, constrictae, 35—41 $\Rightarrow$ 13—16 $\Rightarrow$ 11—13 μ .

Hab. in foliis *Papilionacearum* spec. indet., Blumenau, Sta. Catharina, Brazil, U l e, Herb. Brasil. 1151, in Herb. Stockholm sub. *M. patouillardii*.

The colonies cause a faint brown spot on the upper surface of the leaf, indicating rather strong parasitism. The setae appear closely cristate, as the short branches are only slightly divergent.

(417) *Meliola strychnicola* Gaill., Le Genre *Meliola*, 1892, p. 72 (3111. 4221).

Type on *Strychnos* sp., Osika, Congo Francaise, D e B r a z z a, in Herb. Paris:

Colonies epiphyllous, thin, smooth, to 3 mm. diam. or widely confluent. Mycelium of undulate dark brown hyphae 6—7 μ thick, the cells mostly 20—25 μ long, branching opposite at acute angles, loosely to rather closely reticulate. Capitulate hyphopodia alternate, antrorse, straight, 14—20 μ long, stalk cell cuneate, 3—7 μ long, head cell globose, entire, 9—14 $\Rightarrow$ 9—12 μ . Mucronate hyphopodia mixed with the capitulate, opposite or alternate, ampulliform, 15—20 $\Rightarrow$ 7—8 μ . Mycelial setae only grouped around the perithecia, straight to somewhat flexuous, simple, obtuse, up to 270 $\Rightarrow$ 7 μ . Perithecia loosely scattered, black, globose, verrucose, to 140 μ diam. Spores dark brown, cylindric, obtuse, 4-septate, constricted, 35—41 $\Rightarrow$ 11—13 μ .

(418) *Meliola tijucensis* Hansf., sp. n. (3111. 5323).

Plagulae amphigenae, plerumque hypophyllae, usque ad 10 mm. diam. vel confluentes, tenues, subvelutinae. Mycelium ex hyphis atrobrunneis, subrectis vel flexuosis, 7—10 μ cr., cellulis plerumque 25—40 μ longis, oppositae vel irregulariter ramosis, reticulatis compositum. Hyphopodia capitata alternata, recta vel curvata, 20—33 μ longa, cellula basali cylindracea 6—12 μ longa, cellula apicali subglobosa integraeque, rotundato-angulosa vel subglobata, 15—22 $\Rightarrow$ 12—21 μ . Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, 20—32 $\Rightarrow$ 8—11 μ , collo suberecto 3 μ cr.

Setae myceliales numerosas, dispersae etiam juxta perithecia aggregatae, rectae, simplices, obtusae, usque ad $800 \approx 9-10 \mu$. Perithecia dispersa, atra, globosa, verrucosa, usque ad 190μ diam. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, $44-50 \approx 17-20 \approx 14-16 \mu$.

Hab. in foliis *Allophylli* spec., Tijuca, Rio de Janeiro, Brazil. Ule, Herb. Brasil. 2514, in Herb. Farlow.

The colonies are at first loosely reticulate, but the mycelium becomes more branched and interwoven so that old colonies are dense in the centre.

(419) *Meliola vignae-gracilis* Hansf. & Deighton, var. **panamensis** Hansf., var. nov. (311/3. 4221).

Plagulae sparsae, epiphyllae, densae, usque ad 3 mm. diam. Mycelium ex hyphis atrobrunneis, subrectis vel undulatis, $7-8 \mu$ cr., cellulis plerumque $15-30 \mu$ longis, oppositae lateque ramosis, dense reticulatis compositum. Hyphopodia capitata alternata, rarissime opposita, recta vel curvata, $15-21 \mu$ longa; cellula basali cuneata vel cylindracea, $3-7 \mu$ longa; cellula apicali globosa vel late ovata, integra, saepe curvata, $11-16 \approx 11-13 \mu$. Hyphopodia mucronata in hyphis distinctis evoluta, opposita vel alternata, ampullacea, $15-19 \approx 7-9 \mu$, collo erecto 3μ cr. Setae myceliales tenuiter dispersae, erectae, subrectae, simplices et obtusae vel raro breviter 2-furcatae usque ad 20μ , apice obtuse subdenticulatae, saepe torulosae et irregulariter curvulae, usque ad $280 \approx 8 \mu$. Perithecia dispersa, atra, globosa, verrucosa, usque ad 170μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, $36-42 \approx 13-14 \mu$.

Hab. in foliis *Meibomiae* spec., La Cruces Trail, Panama, Stevens 152 (typus in Farlow Herb.); Panama, Stevens 370, 85, 869; in foliis *Canavaliae lasiocalycis*, Panama, Stevens 339; in foliis *Papilionacearum* spec. indet., Venezuela, Chardon & Stelling 844.

In the type, as well as in some of the other specimens, there are numerous spores, ellipsoid, $32-38 \approx 14-16 \mu$, which probably do not belong to this *Meliola*. The collection on *Canavalia* has more numerous setae than the others. The colonies of this variety are peculiar in the distribution of the mucronate hyphopodia; these occur on separate hyphae with cells $25-40 \approx 7-9 \mu$, originating from near the centre of the colony and growing out over the rest of the mycelium to extend far beyond its limits as a loose fringe.

(420) *Meliola warnecke* Hansf., sp. n. (3111. 3222).

Plagulae plerumque epiphyllae, densae, subvelutinae, usque ad 2 mm. diam. vel confluentes. Mycelium ex hyphis atrobrunneis, $7-8 \mu$ cr., cellulis $15-20 \mu$ longis, subrectis, oppositae lateque ramosis, reticulatis compositum. Hyphopodia capitata alternata, subantrorsa, recta

vel recurvata, 18—25 μ longa, cellula basali cuneata vel cylindracea, 5—8 μ longa, cellula apicali piriformi vel cylindracea, apice late rotundata, integra, recta vel curvata, 12—18 $\Rightarrow$ 9—12 μ . Hyphopodia mucronata in centro plagularum in hyphis distinctis evoluta, opposita vel alternata, ampullacea vel conoidea, 14—19 $\Rightarrow$ 7—8 μ , collo suberecto, brevi, 4 μ cr. Setae myceliales dispersae, etiam juxta perithecia aggregatae, numerosae, subrectae, simplices, acutae, usque ad 400 $\Rightarrow$ 8—9 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 170 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-sept., constrictae, 35—39 $\Rightarrow$ 16—19,5 μ .

Hab. in foliis *Strychnodis* spec. indet., Togoland, Rehm. Ascomyceten 1620, leg. Warnecke, in Herb. Stockholm sub *M. strychnicola* Gaill.

(421) **Schiffnerula salviae** Hansf., sp. n.

Plagulae epiphyllae, usque ad 2 mm. diam. vel confluentes, tenues, leves. Mycelium ex hyphis dilute brunneis, 6—8 μ cr. (cellulis 14—20 μ longis), tortuosis, irregulariter ramosis, laxe vel subdense reticulatis compositum. Hyphopodia alternata vel unilateralia, continua, hemispherica, integra, 6—8 μ diam. Perithecia lateralialia et sessilia in hyphis mycelii, primo indistincte radiato-disciformia, demum globosa, usque ad 220 μ diam.; paries unistratosus, parenchymaticus, demum mucoso-diffuens. Asci 1—2, globosi, sessiles, 8-spori, usque ad 50 μ diam. Sporae conglobatae, oblongae, obtusae, 1-septatae, constrictae, leves, dilute brunneae, 20—24 $\Rightarrow$ 12—13 μ , cellulis subaequalibus, subglobosis.

Hab. in foliis *Salviae constanzae*, San Domingo, Ciferri, Mycofl. doming. exs. 237, typus in Herb. Kew.

This was originally determined by Ciferri as *Meliola inermis*; I was unable to find any trace of a species of *Meliola* on this specimen.

(422) **Asterina markhamiae** Hansf., sp. n.

Plagulae epiphyllae, late effusae, tenues, leves. Mycelium ex hyphis atrobrunneis, subrectis, 4—5 μ cr., (cellulis plerumque 20—25 μ longis) opposita vel irregulariter ramosis, laxe reticulatis compositum. Hyphopodia alternata vel opposita, continua, conoideo-digitata, leniter sinuoso-irregularia, apice rotundata, recta vel curvula, raro sublobata, 6—9 $\Rightarrow$ 4—5 μ . Thyriothecia laxe dispersa, atra, convexa, levia, orbiculata, usque ad 160 μ diam., raro 2—3-connata; paries inferior tenuissimus, griseo-hyalinus, radiatus, hyphis 4—5 μ cr.; paries superior atrobrunneus, radiatus, hyphis 3,5—4,5 μ cr., margine crenatus vel laxe subgimbriatus, hyphis fimbriarum usque ad 70 μ longis, stellatim dehiscens, demum late apertus. Asci circa 8, globosi, aparaphysati, 8-spori, immaturi. Sporae conglobatae, oblongae, obtusae, 1-septatae, constrictae, atrobrunneae, 21—25 $\Rightarrow$ 11—12 μ , cellulis subaequalibus,

episporio tenuiter denseque verruculoso-echinulato. Conidia non visa.

Hab. in foliis *Markhamiae platycalycis*, Pengeni, Tanganyika, Grote in Sydow, Fung. exot. exs. 248, typus in Herb. Kew.

(423) ***Asterina malleae*** Hansf., sp. n.

Plagulae epiphyllae, suborbiculares, circa 2 mm. diam., numerosae, tenues, griseo-atrae, leves. Mycelium laxè reticulatum, ex hyphis subrectis vel leniter undulatis atrobrunneis, 5–6 μ cr., cellulis plerumque circa 30 μ longis, oppositè ramosis compositum. Hyphopodia continua, opposita vel unilateralia, subinde alternata, patentia, varie 2–3-lobata, 6–10 μ $\Rightarrow$ 5–11 μ . Thyriothecia subaggregata vel saepe 2–3-connata, singulis rotundatis, 100–150 μ diam.; paries inferior tenuissimus, radiatus, griseo-hyalinus, hyphis 3 μ cr.; paries superior convexus, ater, opacus, radiatus, hyphis 4–5 μ cr., cellulis usque ad 11 μ longis; stellatim dehiscens, demum late apertus, margine fimbriatus, hyphis fimbriarum tortuosis, usque ad 100 μ longis, illis mycelii pallidioribus, exhyphopodiatis, 3,5–5 μ cr. Asci 4–8, globosi vel late ellipsoidei, 8-spori, paraphysati. Sporae conglobatae, atrobrunneae, oblongae utrinque rotundatae, constrictae, 1-septatae, 24–28 μ $\Rightarrow$ 12–14 μ cellulis subaequalibus, episporio subtiliter denseque echinulato. Conidia non visa.

Hab. in foliis *Malleae rothii*, Ceylon, typus in Herb. Stockholm, ex Berkeley.

No collector's details are given on the specimen.

(424) ***Asterolibertia crustacea*** (Ell. & Ev.) Hansf., comb. n.

Syn.: *Asterella crustacea* Ell. & Ev., Publ. Field. Mus. Columbia, Bot., 2, 15. 1900. — *Asterina crustacea* (Ell. & Ev.) Sacc. & Trott., Syll. Fung., 22, 539. 1913.

Specimen: On *Psidium guajava*, S. Domingo, Ciferri 2896 and 2915, in Herb. Stockholm: —

Colonies epiphyllous on dark reddish-brown leafspots, up to 8 mm. diam. or confluent; mycelium superficial, of dark brown, crooked hyphae 4,5–5,5 μ thick, the cells 10–20 μ long, branching opposite or irregular, loosely reticulate, often in strands of 2–3 parallel hyphae. Hyphopodia not differentiated from normal mycelial cells, most of which have 1–2 minute pores in their lower surface, less than 1 μ diam., from which fine hyaline filaments penetrate into the epidermal cells, each forming a minute, flattened-discoid haustorium within, but closely adherent to the outer wall of the host cell, scarcely visible even when stained. There is no other penetration of the host, and the discoloration of the leaf-spots is due to the death of neighbouring epidermal cells, which are stained brown. Thyriothecia closely scattered, sometimes confluent at the edges, black, flattened, roughly circular in outline, up to 400 μ diam.; upper wall of dark brown, wavy-radiating hyphae 3,5–4,5 μ wide, the margin

more or less fimbriate, the fringing hyphae often adherent in sheets, wavy-tortuous radiating, up to $60\ \mu$ long; lower wall very thin, hyaline, composed of a single layer of flattened, gelatinous hyphae, dehiscent by a few stellate fissures. The thyriothecia are about $30\text{--}40\ \mu$ high in the centre, which at first is marked by an erect column of hyaline hyphae about $50\text{--}60\ \mu$ diam. and $30\text{--}40\ \mu$ high; this disappears as the asci mature. Asci fairly numerous, horizontal, centripetal, maturing in succession, at first clavate with rather elongate narrowed stalk, up to $100 \Rightarrow 20\text{--}25\ \mu$, the stalk portion being about $40 \Rightarrow 5\text{--}7\ \mu$, later becoming cylindric-saccate and then up to $30\ \mu$ wide; wall $1\text{--}1.5\ \mu$ thick, in immature asci thickened up to $7\ \mu$ around apex, which also has a rather wide and shallow "interior canal". Spores 8, irregularly and obliquely 2—3-seriate, hyaline, becoming pale brown, clavate, 1-septate, deeply constricted, smooth, $25\text{--}28\ \mu$ long; upper cell globose to wide ovate, $14\text{--}16 \Rightarrow 13\text{--}14\ \mu$; lower cell obtusely conoid, $12\text{--}14 \Rightarrow 8\text{--}9\ \mu$. Paraphyses none.

This may not exactly equal *A. crustaceae* Ell. & Ev., of which I have seen only the description, in which no mention is made of the prominent dark red-brown leafspots occurring in the present specimens, though mention is made of the absence of hyphopodia and setae.

(425) ***Asterolibertia peruviana*** Hansf., sp. n.

Plagulae epiphyllae, tenues, aegre perspicues, usque ad 2 mm. diam., vel effusae confluentesque. Mycelium ex hyphis dilute brunneis, $4\text{--}6\ \mu$ cr., rectis vel leniter flexuosis, cellulis plerumque circa $15\ \mu$ longis, oppositae vel irregulariter acuteque ramosis, laxe reticulatis compositum. Hyphopodia ab cellulis mycelii non distinguenda, intercalata, numerosa. Thyriothecia dispersa, rotundata, brunnea, convexa, radiata, usque ad $200\ \mu$ diam.; paries superior ex hyphis brunneis $4\text{--}5\ \mu$ cr., cellulis usque ad $12\ \mu$ longis, margine haud fimbriatus, poro centrali pertusus; paries inferior hyalinus, indistinctus. Asci non visi. Sporae brunnescentes, oblongae, obtusae, 1-septatae, leniter constrictae, leves, $17 \Rightarrow 8\ \mu$, cellulis subaequalibus.

Hab. in *Bignoniacearum* spec. indet., Seringal Auristella, Rio Acre, Peru, Ule, Herb. Brasil. 3452, in Herb. Stockholm, ex Herb. Sydow.

The colonies are mixed with those of *Irene peruviana* in this specimen. The hyphopodia are not distinguished from the mycelial cells, most of which have a minute pore in their lower surface, marking the attachment of a haustorium in the leaf epidermis.

(426) ***Lombosia stevensii*** Hansf., sp. nov.

Plagulae epiphyllae, densae, usque ad 5 mm. diam., leves. Mycelium ex hyphis atrobrunneis, subrectis, $5\text{--}6\ \mu$ crassis, cellulis plerumque $20\text{--}30\ \mu$ longis, irregulariter ramosis, laxe reticulatis compositum.

Hyphopodia in hyphis primariis laxè dispersa, alternata, hemisphaerica vel irregularia, continua, concolorata, 7—11 μ diam. Thyriothecia in centro plagularum aggregata, saepius connata, orbiculata vel elongata, 300—600 $\Rightarrow$ 280—350 μ , opacè nigra, depresso-convexa, longitudinaliter apertà; paries superior ex hyphis atrobrunneis, 4—6 μ crassiss, radianto-parallelis compositus margine haud fimbriatus, irregulariter crenatus; paries inferior subhyalinus vel dilute brunneus, haud radiatus. Asci paraphysati, subsessiles, ovati vel globosi, 8-spori, apice incrassati usque ad 8 μ , usque ad 70 $\Rightarrow$ 50 μ . Sporae conglobatae, atrobrunneae, oblongae utrinque rotundatae, 1-septatae, fortiter constrictae, 28—32 $\Rightarrow$ 16—18 μ , episorio atro-granuloso, cellulis subglobois, inferiore 15—16 μ diam.

Hab. in foliis *Byrsonimae* spec. indet., British Guiana, Stevens 333 (a) in Farlow Herb.

The young asci develop within a hyaline, loose tissue of septate, mucose hyphae, and at maturity are separated by its remains and by collapsed asci; there are no true paraphyses. The young asci are thickened around the apex to 8 μ , with a shallow, wide, interior "canal", but as they ripen the canal and the thickening are reduced and the mature apex is only 1.5 μ thick; though 8 spores are formed only 2—4 may mature.

(427) *Patouillardina clavispora* (Pat.) Arnaud, Thesis, Montpellier, p. 181, 1918.

The type collection, Balansa in Roum., Fung. sel. exs. 5631, on leaves of ?*Eugenia* sp., Tonkin, is represented in Herb. Kew and has been re-examined: —

Colonies epiphyllous, black, orbicular, dense, smooth, up to 3 mm. diam. Mycelium closely reticulate, of substraight dark brown hyphae 5—7 μ thick, the cells mostly 10—20 μ long, often irregularly torulose, branching usually opposite at acute to wide angles. Hyphopodia alternate or unilateral, usually one to each cell, continuous, subglobose to short cylindric with broadly rounded apex, sometimes slightly angulose or bent, 8—11 $\Rightarrow$ 6—7 μ . Thyriothecia scattered, round, convex, black, smooth; lower wall indistinct; upper wall of radiating dark brown hyphae 5—7 μ thick, the cells 5—10 μ long, not fimbriate at the margin, stellate dehiscent into narrow triangular segments almost to the margin. Asci not seen. Spores subopaque dark brown, clavate, both ends obtuse, 2-septate, constricted, 38—46 $\Rightarrow$ 14—16 μ .

This is mixed in the type collection with the following variety: —
P. clavispora var. *tenulis* Hansf., var. n.

Plagulae tenues, effusae, confluentes, leves. Mycelium ex hyphis atrobrunneis, 4—6 μ cr., cellulis plerumque 20—30 μ longis, subrectis, subremote opposite lateque ramosis, laxè reticulatis compositum. Hyphopodia illis typi consimilia. Thyriothecia ut typo. Sporae atro-

brunneae, clavatae, obtusae, 2-septatae, subconstrictae, leves, 35—43 μ $\rightleftharpoons$ 12—15 μ .

Hab. in foliis ?*Eugeniae* spec., Tonkin, Balansa in Roum., Fung. sel. exs. 5631 p. p., typus in Herb. Kew.

The colonies of this variety are easily distinguished from those of the type, being much thinner, more sprading, and having the hyphopodia more thinly scattered along the hyphae. This difference is seen even in the germination of the spores, which are otherwise indistinguishable from those of the type. The colonies often penetrate those of the type on the same leaf.

(428) ***Peltaster byrsonimae*** Hansf., sp. nov.

Plagulae hypophyllae, tenues, atrae, leves, usque ad 4 mm. diam. Mycelium ex hyphis subrectis, brunneis, 2—3 μ crassis, exhyphopodiatis, irregulariter ramosis, laxe reticulatis compositum. Pycnothecia dispersa, in hyphis mycelii evoluta, orbiculata, atra, convexa, usque ad 180 μ diam.; paries superior radiatus, margine haud vel lenissime fimbriatus, ex hyphis brunneis, radiantibus, 2—3 μ cr., compositus; paries inferior hyalinus, mucosus, haud radiatus. Pycnosporae fusoido-ellipticae, rectae, continuae, hyalinae, leves, utrinque attenuato-rotundatae, 14—17 μ $\rightleftharpoons$ 3—3,5 μ .

Hab. in foliis *Byrsonimae* spec. indet., British Guiana, Stevens 333 (b) in Farlow Herb.

The superficial mycelium sends short branches into the stomata of the host leaf, which penetrate between the guard cells and on the interior surface of these and the adjoining cells of the epidermis spread out to form a plate of small hyaline cells only 2—3 μ thick, very closely adherent to the host cells. No haustoria are formed in the host cells and there is no further penetration of the leaf tissue. The pycnothecia dehisce by a few short stellate fissures from a central irregular small pore in the upper wall, the central portions of which soon disintegrate to leave a wide opening. The pycnosporae are formed directly upon the mucose, irregular hyphae of the lower wall of the pycnothecium.

(429) ***Trichasterina cheirodendronis*** Hansf., sp. n.

Plagulae amphigenae, atrae, subcrustosae, leves, densae. Mycelium ex hyphis brunneis, sinuosis, 5—6 μ cr., cellulis plerumque 10—20 μ longis, irregulariter acuteque ramosis, saepe 2—4-parallelis compositum, radianto-reticulatum, subsolidum. Hyphopodia alternata vel dispersa, fortiter antrorsa, recta vel curvata, continua, ovata, apice rotundata, atro-brunnea, 10—15 μ $\rightleftharpoons$ 7—10 μ . Setae myceliales paucae, dispersae, erectae, simplices, rectae, obtusae, atrae, usque ad 50 μ $\rightleftharpoons$ 5 μ . Thyriothechia in centro plagularum aggregata, orbiculata, convexa, atra; paries superior radiatus, ex hyphis subopace atrobrunneis, 5—8 μ cr. compositus, poro centrali irregulari dehiscens, demum

radiatim apertus; paries inferior fibrosus, indistincte radiatus, subhyalinus vel pallide brunneus. Asci non visi. Sporae brunneae, oblongo-clavulatae utrinque attenuato-rotundatae, 1-septatae, constrictae, $32-38\ \mu$ longae, cellula superiore $22-24 \rightleftharpoons 11-13\ \mu$, inferiore $10-16 \rightleftharpoons 8-10\ \mu$, pallidiore.

Hab. in foliis *Cheirodendronis gaudichaudii*, Hawaii, Stevens, Fungi of Hawaii 641, typus in Herb. Kew.

The spores germinate from the lower, paler and smaller cell, by formation of a short germ-tube terminated by a hyphopodium, behind which the tube develops mycelial hyphae.

[(430) **Trichasterina polyalthiae** Hansf., sp. n.

Plagulae amphigenae, tenues, usque ad 1 mm. diam. Mycelium ex hyphis radiantibus, subrectis, atrobrunneis, $5-7\ \mu$ cr. (cellulis plerumque $15-40\ \mu$ longis) irregulariter acuteque ramosis, saepe fasciculatis compositum. Hyphopodia cellulis mycelii consimilia, intercalata, irregulariter disposita, haud tumida. Setae ex hyphis mycelii et margine thyriothecii oriundae, erectae, simplices, rectae vel sursum subtorulosae, obtusae, 3-4-septatae, usque ad $150 \rightleftharpoons 6-8\ \mu$. Conidia ovato-piriformia, deorsum attenuata, basi truncata, apice late rotundata, atrobrunnea, continua, $15-20 \rightleftharpoons 10-12\ \mu$, episporio levi vel tenuiter atro-granuloso; poris germinationis supra medium, 3-4, obsoletis praedita. Thyriothecia in centro plagularum dense aggregata, distincta vel subconnata, orbiculata, atra, usque ad $300\ \mu$ diam., margine haud fimbriata; pries superior radiatus, ex hyphis atrobrunneis $4\ \mu$ cr. compositus, stellatim dehiscens; paries inferior subhyalinus vel dilute brunneus, radiatus, hyphis $4-5\ \mu$ cr. Asci numerosi, in ordine maturascentes, sessiles, ovati vel subglobosi, 8-spore, $35-40\ \mu$ diam., tenuiter tunicati, aparaphysati. Sporae atrobrunneae, oblongae utrinque rotundatae, 1-septatae, constrictae, $20-24 \rightleftharpoons 10-12\ \mu$; cellula superiore globosa, leniter majore; episporio levi vel obsolete granuloso.

Hab. in foliis *Polyalthiae* spec., Pulau Penang, Malaya, Burkill 4130, p. p., typus in Herb. Kew.

The hyphopodia are not differentiated from other cells of the mycelium, save by the presence of a minute pore on the lower surface next the leaf, marking the attachment of the epidermal huastorium. The setae described may possibly function as conidiophores; some appeared to have conidial scars near the apex, though no attached conidia were found; no other conidial apparatus was discovered in this material. Germination of both conidia and ascospores is by the formation of a globose, sessile hyphopodium, from which the mycelium later grows out. The asci are separated by collapsed cells, which I regard rather as aborted or discharged asci than as paraphyses.

(431) **Balladynella byrsonimae** Hansf., sp. n.

Plagulae hypophyllae, aegre perspicues, effusae. Mycelium ex hyphis olivaceis, ramosis, 3–4 μ cr., cellulis 20–40 μ longis, inter tomentum folii penetrantibus, compositum. Setae myceliales nullae. Hyphopodia nulla. Perithecia laxè dispersa, globosa demum piri-formia, atra, usque ad 75 μ diam. et 90 μ alt., deorsum hyphis mycelii, sursum setis paucis ornata; setae patentes, rectae vel flexuosae, olivaceae, septatae, obtusae, subinde depressae et in hyphis mycelii trans-euntes. Paries perithecii unistratosus, pellucide olivaceus, extus levis, circa 8 μ cr., ex cellulis 8–15 μ diam. compositus, demum apice late apertus. Asci 3–4, in ordine maturascentes, ovato-ellipsoidei, sessili, aparaphysati, 8-spори, usque ad 40 $\Rightarrow$ 20 μ , in juventute apice incrassati usque ad 4 μ . Sporae 2–3-seriatae, oblongae utrinque rotundatae, 1-septatae, leniter constrictae, leves, dilute olivaceae, 18–22 $\Rightarrow$ 6–7 μ , cellulis aequalibus vel superiore leniter breviorè crassiorè.

Hab. in foliis *Byrsonimae* sp., San Domingo, Ciferri, Mycofl. doming. exs. 46-ter., typus in Herb. Kew.

The external mycelium ramifies irregularly between the leaf-hairs, and sends short side branches into the stomata. The perithecia are at first globose, but later extend upwards at the apex into a slightly projecting "ostiole", which later is forced open by the mucus formed within, and the elongate cells of the apex of the perithecial wall then surround this firm hyaline mucus as "periphyses" at its base. No conidial stage was found. Young perithecia are filled with an indistinctly fibrous hyaline thin-walled tissue.

(432) **Englerula semecarpi** Hansf., sp. n.

Plagulae hypophyllae, effusae, tenues, leves. Mycelium ex hyphis brunneis, flexuosis, 2–3 μ cr., obsolete septatis, irregulariter ramosis, laxè reticulatis compositum. Perithecia superficialia, dense aggregata, primo atra, globosa, parenchymatica, sessilia, levia, 100–120 μ diam.; paries unistratosus anguloso-parenchymaticus, demum mucoso-diffluens. Asci circa 12, aparaphysati, late ellipsoidei, sessiles vel nodoso-stipitati, apice late rotundati, crasse tunicati (—5 μ), 8-spори, 30–35 $\Rightarrow$ 15–18 μ . Sporae 2–3-seriatae vel conglobatae, oblongae utrinque rotundatae, dilute brunneae, 1-septatae, constrictae, leves, 15 $\Rightarrow$ 7 μ , cellulis aequalibus. Conidia nulla.

Hab. in foliis *Semecarpi heterophylli*, Depok, Java, Boedijn 2087 (Bogor Herb. 13619).

Some penetration of the host stomata by the mycelium was observed, but the material was in too poor condition to find haustoria in the mesophyll; no internal mycelium was found in it.

(433) **Meliolinella uncinata** (Syd.) Hansf., comb. n.

Syn.: *Balladyna uncinata* Syd., Ann. Myc. 12: 546. 1914.

Colonies amphigenous, black, 1–2 mm. long by 1 mm. wide, subdense, setose. Mycelium of brown exhyphopodiate crooked hyphae,

4—7 μ wide, cells mostly 7—15 μ long, slightly constricted at many septa, closely and irregularly branched, intricately reticulate and in the centre almost solid. Mycelial setae numerous, erect-spreading, pale brown, simple, obtuse, subhyaline at apex, up to 250 μ $\Rightarrow$ 6—7 μ , multiseptate, thick-walled, smooth, substraight to broadly uncinately or twisted to coiled in the lower half. Conidia none. Perithecia scattered, sessile or very short-stipitate, subglobose to ovate, up to 65 μ diam., at first dark olivaceous-brown, becoming paler at maturity, not setose. Wall of one layer of angular parenchyma about 8 μ diam. and thick, dark-granulose on the surface, at maturity tending to separate. Asci 1—2, ovate-globose, sessile, paraphysate, 8-spored, up to 45 μ $\Rightarrow$ 35 μ . Spores conglobate, oblong with rounded ends, becoming clear brown, 1-septate and slightly constricted in middle, smooth, 22—26 μ $\Rightarrow$ 9—11 μ , germinating by production of mycelial hyphae from each end.

On *Schizostachyum* sp., Rizal, Luzon, Philippines, Sydow, Fung. exot. exs. 366; on indet. Bamboo, Philippines, PBS 25016 p. p. Preserved material was too difficult to section.

(434) ***Piliella hamatum*** (Penz. & Sacc.) Hansf., comb. n.

Syn.: *Dimerosporium hamatum* Penz. & Sacc. Malpighia 11: 389. 1897.

Part of the type collection on *Quercus* sp., Tjibodas, Java, Penzig 468, is in the Bogor Herbarium, and has been examined: —

Colonies hypophyllous, black, dense, to 15 mm. diam. or more, velvety. External mycelium of disconnected chains or small groups of subglobose dark brown cells, connected to a subcuticular mycelium of small hyaline cells, aggregated to form almost a continuous plate towards the centre of the colony, and in places up to 5 cells deep. The internal mycelium extends from below the cuticle into and between the epidermal cells, and the walls of these are sometimes stained black; beneath the epidermis a layer of 1—2 cells thick of hyaline mycelium is formed, rarely penetrating deeper into the mesophyll. There is no obvious relationship with the stomata, and no haustoria in the host cells. The cells of the external mycelium around the edges of the colony are more or less globose, subopaque dark brown, smooth or finely verruculose, up to 10 μ diam. The perithecia originate as hemispheric swellings and aggregations of the external mycelium, which grow upwards to expand into a spherical black head, at first consisting of several layers of large, opaque dark brown parenchyma, enclosing a nucleus of hyaline, thin-walled, loose tissue of hyphae 3—4 μ wide, septate, branched. The asci arise in a basal group and eventually occupy the whole of the central loculus, by lysigenous degeneration of the original ground tissue, which disappears almost completely. Finally the mature ascoma opens by

irregular fracture at the apex. Mature asci up to about 20, erect, thick-walled (to $5\ \mu$ around the apex), cylindric-ellipsoid, contracted below into a short wide stipe, or sessile, 8-spored, up to $100 \rightleftharpoons 30\ \mu$. Spores irregularly 2-seriate, becoming brown, oblong with rounded ends, 1-septate, constricted, the cells subequal, smooth, $25 \rightleftharpoons 12\ \mu$.

The ascomata are almost completely hidden by large numbers of erect setae developing around their bases, not from the sides and apex as given by Penzig, erect, simple, circinate to hamate above, obtuse, opaque black, septate, up to $700 \rightleftharpoons 7\text{--}10\ \mu$. The ascomata are slightly verrucose, black, globose, at first on a stromatic base, which becomes of loose texture with the development of the setae, so that mature ascomata are quite loosely attached to the host; up to $200\ \mu$ diam., with a wall of 1—2 layers of opaque black cells about $10\text{--}15\ \mu$ thick, all internal tissues having been replaced by the asci. Paraphyses none.

(435) *Stomatogene agaves* (Ell. & Ev.) Theiss., Ann. Myc. **14**: 404. 1916.

Specimen: Rehm, Ascomyceten 2102, on *Agave atrovirens*, Mexico, in Herb. Farlow:

Ascostromata formed in the mouth of the host stomata, and filling the outer stomatal cavity, its ring-like expansion above the guard cells, and neighbouring epidermal cells, with a black stromatic mass of cells. This stroma is connected through the stomatal pore with an extensive intercellular, hyaline, branched mycelium in the mesophyll, which does not form haustoria in the host cells. There is no other means of parasitism, nor penetration of the epidermis direct through the cuticle. The external mycelium consists of dark brown hyphae, crooked, irregularly and closely branched, extending outwards from the host stomata and from the ascomata, closely adherent to the cuticle and often forming mycelial knots in its furrows, the cells mostly $15\text{--}20 \rightleftharpoons 4\text{--}5\ \mu$; there are no hyphopodia. Perithecial development of the stromatic type; the ascostroma reaches the surface of the leaf and spreads out to form a more or less globose head up to $180\ \mu$ diam. and $120\ \mu$ high above the leaf surface, hard and rather brittle in texture, consisting of several layers of thick-walled, black cells $8\text{--}10\ \mu$ diam., enclosing one or two patches of thin-walled hyaline parenchyma, which represent the young locules. The asci develop from the base of these locules and replace the original hyaline ground tissue during their enlargement, the mature loculus containing only the paraphysate asci, with delicate short-septate filaments lining the wall. The stomata may contain one or more loculi, and in the latter case the partition between them may disappear at full maturity; finally the stroma opens by irregular fracture of the apex. Asci broadly clavate-ellipsoid, often bent,

shortly nodose-stipitate, rounded and thickened to $5-6\ \mu$ at the apex, up to $60 \pm 20-25\ \mu$, 4–8-spored, paraphysate. Spores multiseriate and more or less parallel in the ascus, clavulate-oblong with rounded ends, becoming brown, 1-septate above the middle, the upper cell subglobose, about $8\ \mu$ diam., the lower cell slightly attenuate to the rounded base, about $12 \pm 7\ \mu$, the whole spore $18-21\ \mu$ long; epispore closely and finely verrucose-echinulate. Conidia none.

[(436) **Diploldium anacardii** Hansf., sp. n.

Plagulae hypophyllae, primo tenues et fulvae, brunnescentes, demum densae. Mycelium ex hyphis rectis, pellucide rufo-brunneis, $5-6\ \mu$ cr., cellulis plerumque $30-40\ \mu$ longis, irregulariter ramosis, dense radiantibus compositum. Stomopodia lateralia, plerumque sessilia, subglobosa, $8-15 \pm 8-10\ \mu$. Conidiophora dense stipata, erecta, usque ad $60\ \mu$ alt., continua vel 1-septata, levia, rufo-brunnea, simplicia. Conidia singula, acrogena, rufo- vel atro-brunnea, ellipsoidea, levia, 1-septata, haud constricta, apice late rotundata, basi primo truncata demum subrotundata, $30-36 \pm 17-18\ \mu$, cellulis subaequalibus.

Hab. in foliis *Anacardii occidentalis*, San Domingo, Ciferri, Mycofl. doming. exs. 248 p. p., typus in Herb. Kew.

The mycelium contains a bright red dye, soluble in most mounting media, turning green with strong acids. The conidia when first detached have a flat basal hilum about $8\ \mu$ diam., but later become rounded at the base, still surrounded by a slight ring, representing the attachment to the wall of the conidiophore. The specimen contains very young stromata, probably of *Parodiopsis* sp., but none were found sufficiently developed to contain asci and spores.

(437) **Triposporium ledermannii** Hansf., sp. n.

Mycelium ex hyphis hyalinis in plagulis *Balladynopsidis ledermannii*, $2-4\ \mu$ cr., obsolete septatis, reticulatis compositum. Conidiophora singula, ex cellulis mycelii leniter tumidis, dilute olivaceis oriunda, erecta, recta, continua, sursum attenuata, usque ad $20\ \mu$ alt., basi $5\ \mu$ cr., simplicia, dilute olivacea. Conidia terminalia, singula, stauriformia, ex cellula basali olivacea turbinata $5-10 \pm 3\ \mu$ (sursum $8\ \mu$ cr.), et sursum radiis 3–4, divergentibus, leniter ascendentibus, rectis composita; radii 1-septati, cellula basali subglobosa, olivacea, $6-8\ \mu$ diam., cellula distali elongata, versus apicem obtusam attenuata, subhyalina, usque ad $15\ \mu$ longa, apice $2\ \mu$ cr.

Hab. Fungus in plagulis *Balladynopsidis ledermannii* parasiticus, in foliis *Bignoniacearum* spec. indet., Sepik, New Guinea, Ledermann, typus in Herb. Farlow.

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