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MELIOLALES FROM INDONESIA

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SUMMARY

The present account is based on the representation in Herbarium Bogoriense of the genera *Amazonia* Theiss., *Armatella* Theiss. & Syd., *Irenina* F. L. Stev., *Irenopsis* F. L. Stev., and *Meliola* Fr., as far as the Indonesian material is concerned. The total number of species is 134, of which 39 species and 12 varieties are described as new, most of which belong to *Meliola*.

The paper deals with the major part of a collection of fungi forwarded to me by the Keeper, Herbarium Bogoriense, Bogor, Indonesia, whom I have to thank for his great kindness in allowing me to examine these specimens. Most of the species of Meliolaceae previously recorded from Java are represented here, together with a large number of species previously undescribed. The species are here arranged according to the alphabetical order of their host-families, this being the most convenient arrangement for future comparisons and determination of new specimens.

I have to thank the staff of the Herbarium Bogoriense for their most valuable assistance in checking the specimen numbers, localities, etc., and especially in re-determination of the host plants in accordance with Backer's new "Beknopte Flora van Java (Nooduitgave)." In particular I wish to acknowledge the great help received from Dr. M. A. Donk in his editorial revision of this paper.

On Acanthaceae.

(1) **Irenopsis graptophylli** Hansf., *sp. nov.* (3401.3220)

Plagulae amphigenae, 1—5 mm diam. vel confluentes, tenues, leves. Mycelium ex hyphis brunneis, flexuosis, 4—6 μ crassis (cellulis plerumque 20—30 μ longis), opposite vel irregulariter ramosis, laxe reticulato-intertextis compositum. Hyphopodia capitata alternata, 12—22 μ longa, plerumque recta; cellula basali cylindracea, 2—6 μ longa; cellula apicali rotundato-angulosa vel leniter stellatim lobata, versiformia, 9—17 × 10—15 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, curvata, ampullacea, 12—19 × 6—8 μ, collo suberecto, 3 μ crasso. Setae myceliales nullae. Perithecia laxe dispersa, stra. globosa, verrucosa, usque ad 120 μ diam., superne setis 0—6, erecto-patentibus, rectis, simpli-

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cibus, obtusis, usque ad 120 × 7—8 μ, 2—3-septatis, apice pallidioribus, granulosis ornata. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, leniter constrictae, 29—33 × 13—14 μ.

Hab. in foliis *Gryptophylli picti*, G. Karang, Banten (Bantam), Java, *Boedijn 1328* (*BO 12579*; typus).

(2) MELIOLA BRILLANTAISIAE Hansf. & Deight. *in* Mycol. Papers, C.M.I. No. 23: 68. 1948.

On Acanthacea indet., Bot. Gard., Bogor (Buitenzorg), Java, *BO 4651*.
On *Lepidagathis sp.*, Bot. Gard., Bogor (Buitenzorg), Java, *van Overeem s.n.* (*BO 4935*).

On Ampelidaceae, see Vitaceae.

On Anacardiaceae.

(3) MELIOLA MANGIFERAE Earle *in* Bull. New York bot. Gdn 3: 307. 1905.

On *Mangifera indica*, Weltevreden, Djakarta (Batavia), Java, *Boedijn s.n.* (*BO 7369*); Nusa Kambangan, Java, *Boedijn 1104* (*BO 12086*); Amboina, *Robinson 2118* (*BO 4149*); Singapore, *Baker, Fungi malay. 452* (*BO 14869*).
On *Mangifera sp.*, Bot. Gard., Bogor (Buitenzorg), Java, *BO 5915 p.p.*

(4) **Meliola melanochylae** Hansf., *sp. nov.* (3111.4322)

Plagulae epiphyllae, subdensae, usque ad 4 mm diam. vel numerosae confluentesque, tenuiter velutinae. Mycelium ex hyphis atrobrunneis, subrectis, 6—7 μ crassis (cellulis plerumque 15—20 μ longis), opposite rectangulariter ramosis, laxe vel subdense reticulatis, compositum. Hyphopodia capitata alternata vel minor 1% opposita, patentia, recta vel leniter sinuoso-curvula, 13—20 μ longa; cellula basali cylindracea 2—7 μ longa; cellula apicali ovata vel sinuoso-cylindracea, apice rotundata, 9—15 × 7—9 μ. Hyphopodia mucronata iilis capitatis commixta, opposita vel alternata, anguste conoideo-ampullacea, curvata, 20—25 × 7—9 μ, collo erecto, 3 μ crasso. Setae myceliales dispersae et juxta perithecia aggregatae, erectae, rectae, simplices, acutae, usque ad 470 × 7—10 μ. Perithecia, dispersa, atra, globosa, verrucosa, usque ad 170 μ diam. Sporae atrobrunneae, late ellipsoideae, obtusae, 4-septatae, constrictae, 37—45 × 13—15 μ.

Hab. in foliis *Melanochylae tomentosae*, Tjilodong, Java, *Boedijn 1681* (*BO 13012*; typus).

(5) MELIOLA PACHYCHAETA H. Syd. *in* Philip. J. Sci. 21: 134. 1922.

On *Semecarpus cassuvium*, Amboina, *Robinson 2053* (*BO 3523*); loc. cit., *Robinson 2246* (*BO 3519*).

(6) MELIOLA GENICULATA Syd. & Butl. *in* Ann. myc., Berl. 9: 381. 1911.

On *Spondias pinnata*, Java?, *BO 4941*.

(7) MELIOLA HAMATA H. & P. Syd. *in* Ann. myc., Berl. 12: 548. 1914.

On *Ruehnannia sp.*, Java?, *BO 4632*.

On Annonaceae.

(8) MELIOLA BORNEENSIS H. Syd. *in* Ann. myc., Berl. 21: 90. 1923.

On *Polyalthia longipes*, G. Karang, Banten (Bantam), Java, *Boedijn 1319* (*BO 12544*).

On Apocynaceae.

(9) MELIOLA DEPRESSULA H. & P. Syd. *in* Ann. myc., Berl. 15: 184. 1917.

On *Urceola javanica*, Tandjungberan (Bengkulu), Sumatra, *van Romburgh p.p.* (*BO 7441*); Java?, *BO 5048 p.p.*

(10) MELIOLA VOACANGAE Hansf. & Stev. *in* J. Linn. Soc., Lond. 51: 284. 1937.

On *Urceola javanica*, Tandjungberan (Bengkulu), Sumatra, *van Romburgh p.p.* (*BO 7441*).

(11) MELIOLA VOACANGAE Hansf. & Stev. var. CONOPHARYNGIAE Hansf. & Deight. *in* Mycol. Papers, C.M.I. No. 23: 54. 1948.

On *Rauwolfia reflexa*, Nusa Kambangan, Java, *Boedijn 1083* (*BO 12107*).

(12) **Meliola voacangae-foetidae** Hansf., *sp. nov.* (3111.3224)

Plagulae plerumque hypophyllae, tenuissimae, usque ad 5 mm diam. vel confluentes. Mycelium ex hyphis atrobrunneis, sinuosis, 6—7 μ crassis (cellulis plerumque 20—30 μ longis), opposite acuteque ramosis, laxe reticulato-radiantibus compositum. Hyphopodia capitata alternata, plus minusve antrorsa, plerumque recta, 12—18 μ longa; cellula basali cylindracea, 3—8 μ longa; cellula apicali globosa vel ovata, integra, 9—12 × 8—10 μ. Hyphopodia mucronata in hyphis distinctis evoluta, opposita vel alternata, curvata, ampullacea, 18—25 × 7—8 μ, collo elongato, erecto, 3 μ crasso. Setae myceliales praecipue juxta perithecia evolutae, erectae, subrectae, obtusae, 200—1100 × 7—8 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 120 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae leniter constrictae, 27—35 × 12—14 μ.

Hab. in foliis *Voacangae foetidae*, Depok, Java, *Boedijn 2935* (*BO 14515*; typus).

(13) MELIOLA SIMILLIMA Ell. & Ev. *apud* Hitchcock *in* Ann. Rep. Missouri bot. Gdn 9: 118. 1898.

On *Wrightia tomentosa* (*W. javanica*), Tjikampek, Java, *Boedijn s.n.* (*BO 10935*); loc. cit., *Boedijn 968* (*BO 12212*).

(14) **Meliola urceolae** Hansf., *sp. nov.* (3121.3221)

Plagulae amphigenae, in hypophyllo usque ad 5 mm diam., subtenues, tenuiter velutinae, in epiphyllo minores. Mycelium ex hyphis atrobrunneis, subrectis, 7—8 μ crassis (cellulis plerumque 20—35 μ longis), opposite vel irregulariter ramosis, (30—60°), laxe vel subdense reticulato-radiantibus compositum. Hyphopodia capitata alternata, patentia, recta, 17—22 μ longa; cellula basali cylindracea, 5—9 μ longa; cellula apicali globosa vel late ovata, integra, 12—15 × 10—13 μ. Hyphopodia mucronata illis capitatis commixta, alternata, ampullacea, 17—25 × 7—10 μ, collo suberecto, 3 μ crasso. Setae myceliales tenuiter dispersae etiam juxta perithecia aggregatae, erectae, simplices, obtusae, usque ad 270 × 7—9 μ, superne late arcuatae vel uncinatae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 34—39 × 14—16 × 11—13 μ.

Hab. in foliis *Urceolae javanicae*, Java?, *BO 5048 p.p.* (typus).

The colonies are mixed in this collection with the very dense, velvety *M. depressula* Syd., from which they are easily distinguished by being much thinner and not causing leaf distortion. The setae around the perithecia are often much less arcuate than those on the mycelium and may be almost straight.

On Araceae.

(15) MELIOLA ALOCASIAE H. Syd. *in* Elmer, Leafl. Philip. Bot. 9: 3114. 1925.

On *Alocasia sp.*, Tjibodas, Java, *van Overeem & Bruggeman s.n.* (*BO 4926*).

On Araliaceae.

(16) MELIOLA LEPTOCLADA H. Syd. *in* Ann. myc., Berl. 20: 62. 1922.

On *Schefflera polybotrya*, Java, *Boedijn 1833 p.p.* (*BO 13216*); Tjisarua, Java, *Boedijn 3653 p.p.* (*BO 17412*).

(17) MELIOLA ?PECTINATA Höhn. *in* S.B. Akad. Wiss. Wien, Math.-nat. Kl., Abt. I, 118: 1170. 1909.

On *Schefflera polybotrya*, Tjisarua, Java, *Boedijn 3653 p.p.* (*BO 17412*).

The formula of the present specimen is 3112.6331, and no true perithecial setae are present. The hyphopodia are opposite, and the head cells large, from subglobose to irregularly and shallowly lobed, 12—19 × 12—15 μ. The mycelial setae are thinly scattered and also grouped around the perithecia, erect, straight, simple, acute, up to 260 × 8—11 μ. The spores measure 54—62 × 19—22 μ.

The above determination is only approximate, as authentic material of Von Höhnel's species has not been available for comparison. He had

M. pectinata mixed with *M. heteroseta* Höhn. on *Paratropia* in Java, and I suspect that the same mixture is present in Boedijn's collection, though in neither species present in the latter were the perithecia found to be setose, whereas Von Höhnel described both of his as having perithecial setae.

(18) **Meliola schefflerae** Hansf., *sp. nov.* (3113.4221)

Plagulae epiphyllae, densae, usque ad 3 mm diam., velutinae. Mycelium ex hyphis atrobrunneis, subrectis vel undulatis, 7—9 μ crassis (cellulis plerumque 15—20 μ longis), dense opposite vel irregulariter ramosis, dense reticulatis compositum, in centro plagularum subsolidum. Hyphopodia capitata opposita vel alternata, plus minusve antrorsa, 14—20 μ longa; cellula basali cylindracea, 3—8 μ longa; cellula apicali globosa vel late piriformia, integra, 12—15 × 10—13 μ. Hyphopodia mucronata in hyphis distinctis evoluta, opposita, curvato-ampullacea, 15—20 × 7—10 μ, collo suberecto, 4—5 μ crasso praedita. Setae myceliales tenuiter dispersae et circum perithecia aggregatae, erectae, rectae, simplices, acutae, usque ad 260 × 8—11 μ. Perithecia in centro plagularum aggregata, globosa, atra, verrucosa, usque ad 200 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 45—51 × 17—19 μ.

Hab. in foliis *Schefflerae aromaticae*, Tjisarua, Java, *Boedijn 767* (*BO 11740*; typus); in foliis *Schefflerae polybotryae*, Java, *Boedijn 1831 p.p.* (*BO 13216*).

On Burseraceae.

(19) MELIOLA CANARII H. & P. Syd. *in* Ann. myc., Berl. 12: 550. 1914.

On *Canarium commune*, Amboina, *Robinson 2072* (*BO 2986*).

On Caesalpiniaceae.

(20) MELIOLA AETHIOPS Sacc. *in* Bull. Orto bot. Napoli, Notae mycol. 24: 3. 1918.

On *Cassia alauca*, Mampar near Depok, Java, *Bakhuizen van den Brink Jr. 1861* (*BO 2242*); Depok, Java, *Boedijn 2993* (*BO 14513*), a form with the capitate hyphopodia predominantly alternate; Tjikampek, Java, *Boedijn s.n.* (*BO 10925*).

On Caprifoliaceae.

(21) IRENINA EBULI Yamamoto *in* Trans. nat. Hist. Soc. Formosa 31: 16. 1941.

On Sambucus javanica, Tjisarua, Java, *Boedijn 1853 p.p.* (*BO 13095*).

(22) **Meliola sambuci** Hansf., *sp. nov.* (3111/3.3221)

Plagulae hypophyllae, usque ad 4 × 1—2 mm, tenues, leniter velutinae. Mycelium ex hyphis atrobrunneis, tortuosis, 6—7 μ crassis (cellulis plerumque 20—30 μ longis), opposite vel irregulariter ramosis (60—90°), laxe

reticulatis compositum. Hyphopodia capitata alternata vel minor 1% opposita, plerumque curvula, patentia, 16—20 μ longa; cellula basali cylindracea 2—5 μ longa; cellula apicali subglobosa vel late ovata, integra, 12—16 × 8—13 μ. Hyphopodia mucronata in hyphis distinctis evoluta, opposita vel alternata, curvata, ampullacea, 15—20 × 6—9 μ, collo suberecto, 3 μ crasso. Setae myceliales dispersae etiam juxta perithecia aggregatae, erectae, rectae, simplices, acutae, usque ad 360 × 8—10 μ. Perithecia laxe dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, leniter constrictae, 28—34 × 13—14 × 10 μ.

Hab. in *foliis Saxboei javanicae*, Tjisarua, Java, *Boedijn 1853 p.p.* (*BO 13095*; typus).

On Combretaceae.

(23) IRENINA COMBRETI Stev. *in* Ann. myc., Berl. 25: 455. 1927.

On *Combretum latifolium* (*C. extensum*), Depok, Java, *Boedijn s.n.* (*BO 10990*).

(24) MELIOLA PELLICULOSA H. & P. Syd. *in* Philip. J. Sci., C Bot. 8: 480. 1913.

On *Lumnitzera racemosa*, Amboina, *Robinson 2185* (*BO 3540*).

On Connaraceae.

(25) MELIOLA ACELAEAE Stev. & Rold. *in* Philip. J. Sci. 56: 64. 1935.

On *Agelaea* (*Hemiandrina*) *javanica*, Depok, Java, *Boedijn s.n.* (*BO 10993*).

On Convolvulaceae.

(26) MELIOLA QUADRISPINA Rac., Paras. Algen Pilze Javas 3: 33. 1900.

On *Ipomoea pes-caprae*, Amboina, *Robinson 2129 p.p.* (*BO 3542*).
On *Lepistemon binectariferum*, Tjitjadas, Java, *Boedijn 2053 p.p.* (*BO 14441*).
On *Argyreia roxburghii*, Bot. Gard., Bogor (Buitenzorg), *Nooguong s.n.* (*BO 6050*).

(27) MELIOLA BONAMIAE Hansf. & Deight. *in* Myc. Papers, C.M.I. No. 23: 65. 1948.

On *Ipomoea pes-caprae*, Amboina, *Robinson 2129 p.p.* (*BO 3542*).

This collection was determined by Sydow as *M. clavulata* Wint., but the Herbarium Bogoriense portion shows no sign of this species, containing a mixture of *M. bonamiae* and *M. quadrispina*.

(28) MELIOLA MALACOTRICHA Speg. *in* An. Soc. cient. argent. 26: No. 59. 1888.

For the present I follow Stevens in regarding *M. merremiae* Rehm as a synonym of the above, though I have not yet been able to compare the types.

On *Lepistemon binectariferum*, G. Sari, Banten (Bantam), Java, *Boedijn 1292* (*BO 12576*); Tjitjadas, Java, *Boedijn 2652 p.p.* (*BO 14441*); Tjigombong, Java, *Boedijn 752* (*BO 11727*); loc. cit., *Boedijn 1155* (*BO 12246*); Tjilodong, Java, *Boedijn 1687* (*BO 13010*); Megamendung, Java, *Boedijn 3029* (*BO 15028*); G. Bunder, Java, *Boedijn 1198* (*BO 12423*).

On *Merremia nymphaeifolia*, G. Bunder, Java, *Boedijn 1218* (*BO 12465*).

On *Merremia umbellata*, Kuripan, Java, *Boedijn 776* (*BO 11769*); Tjitjadas, Java, *Boedijn 2652* (*BO 14446*).

(29) **Meliola malacotricha** Speg. var. **major** Hansf., *var. nov.* (3112.4223)

Plagulae epiphyllae, densae, velutinae, usque ad 3 mm diam. Mycelium ex hyphis brunneis, subrectis vel undulatis, 5—7 μ crassis (cellulis plerumque 25—30 μ longis), opposite acuteque ramosis, dense reticulato-radiantibus compositum. Hyphopodia capitata opposita, leniter antrorsa, recta, 9—14 μ longa; cellula basali cylindracea, 2—5 μ longa, cellula apicali globosa vel late ovata, integra, 7—10 × 6—9 μ. Hyphopodia mucronata illis capitatis commixta, pauca, opposita vel alternata, curvata, ampullacea, 9—12 × 6—8 μ, collo suberecto, 3 μ crasso. Setae myceliales numerosae, dispersae, erectae, rectae, simplices, acutae, usque ad 750 × 8—10 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 150 μ diam. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, 37—43 × 15—19 × 11—13 μ.

Hab. in foliis *Ipomoeae crassicaulis*, Nusa Kambangan, Java, *Boedijn 1090* (*BO 12100*; typus).

(30) MELIOLA CLAVULATA Wint. in Hedwigia 25: 98. 1886.

On *Argyreia capitata*, Nusa Kambangan, Java, *Boedijn 1112* (*BO 12078*).

On *Argyreia mollis*, Nusa Kambangan, Java, *Boedijn 1111* (*BO 12079*).

(31) **Meliola erycibis** Hansf., *sp. nov.* (3111.4233)

Plagulae amphigenae, densae, velutinae, in epiphyllo usque ad 3 mm diam., in hypophyllo majores confluentesque. Mycelium ex hyphis brunneis, subrectis vel flexuosis, 8—9 μ crassis (cellulis plerumque 25—35 μ longis), alternatim vel irregulariter ramosis, dense reticulato-intertextis compositum. Hyphopodia capitata alternata, patentia, saepe reflexo-curvata, 25—37 μ longa; cellula basali cylindracea, 8—15 μ longa; cellula apicali late ovata, piriformia vel leniter sinuoso-irregularia, 16—23 × 12—17 μ. Hyphopodia mucronata praecipue in hyphis distinctis evoluta, pauca, opposita vel alternata, curvata, ampullacea, 17—24 × 8—10 μ, collo curvato, 3 μ crasso. Setae myceliales numerosae, erectae, rectae, simplices, obtusae, usque ad 530 × 9—10 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 230 μ diam. Sporae atrobrunneae, cylindraceae obtusae, 4-septatae, constrictae, 38—46 × 15—16 μ.

Hab. in foliis *Erycibis rheedii*, Tjilodong, Java, *Boedijn 1675* (*BO 13001*; typus); loc. cit., *Boedijn 1767* (*BO 12998*).

On Cyperaceae.

(32) MELIOLA MAPANIAE Yates *in* Philip. J. Sci., C Bot. **12**: 367. 1917.

On *Mapania palustris*, G. Wiru, SW of Leuwiliang, Buitenzorg Res., Java, *Bakhuizen van den Brink 7744* (*BO 12824*).

On Dilleniaceae.

(33) Irenina tetracerae Hansf. & Deight. var. **minor** Hansf., *var. nov.* (3101.4220)

Plagulae epiphyllae, usque ad 3 mm diam., interdum confluentes densae, leves. Mycelium ex hyphis atrobrunneis, flexuosis, 7—8 μ crassis (cellulis plerumque 20—30 μ longis), opposite vel irregulariter ramosis, dense reticulatis compositum. Hyphopodia capitata alternata, plus minusve antrorsa, 20—30 μ longa; cellula basali cylindracea vel cuneata, 5—15 μ longa; cellula apicali globosa vel ovata, integra, 12—18 × 10—14 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, anguste conoidea vel ampullacea, curvata, 27—35 × 7—9 μ, collo 4 μ crasso. Setae nullae. Perithecia dispersa, atra, verrucosa, globosa, usque ad 180 μ diam., cellulis parietis conico-mamillatibus, usque ad 30 μ altis. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 34—40 × 13—15 μ.

Hab. in foliis *Tetracerae scandentis* (*T. sarmentosae* var. *hebecarpae*), Tjarita, Banten (Bantam), Java, *Boedijn 1246* (*BO 12552*; typus);
in foliis *Tetracerae indicae* (*T. assae*), Tjilodong, Java, *van Overeem 20* (*BO 791*); Kuripan, Java, *Boedijn 778* (*BO 11768*).

As the perithecia mature their surface becomes rather smoother than in the young state.

On Epacridaceae.

(34) **Meliola cyathodis** Hansf. var. **styphelinae** Hansf., *var. nov.* (2113.5241)

Plagulae amphigenae, plerumque hypophyllae, subdensae, leves, usque ad 2 mm diam. Mycelium ex hyphis undulatis atrobrunneis, 6—7 μ crassis (cellulis plerumque 20—25 μ longis), opposite vel irregulariter ramosis, dense reticulatis compositum. Hyphopodia capitata alternata vel circa 1% opposita, plus minusve antrorsa, recta vel varie curvata, 22—35 μ longa; cellula basali cylindracea vel cuneata, 6—20 μ longa, cellula apicali irregulariter rotundata-lobata, versiformia, 15—23 × 12—18 μ. Hyphopodia mucronata capitatis commixta, plerumque alternata, ampullacea, 14—20 ×

6—9 μ, cello suberecto, 3—4 μ crasso. Setae myceliales paucae, juxta perithecia aggregatae, erectae, rectae vel curvulae, simplices, obtusae, usque ad 200 × 6—8 μ, subinde flexuosis procumbentibusque. Perithecia in centro plagularum laxe aggregatae, atrae, globosae, usque ad 350 μ diam., cellulis parietis conoidea-mammillatibus, usque ad 30 μ alta et basi circa 50 μ diam. Sporae atrobrunneae, curvulae, ellipsoideae vel subfusoideae, 3-septatae, constrictae, 45—54 × 16—18 μ, cellulis terminalibus parvulis obtuse conoideisque.

Hab. in foliis *Styphelíae sp.* (cf. *S. phillipinensis*), Lompobatang (Peak of Bonthain), Celebes, *Bünnemeijer 12220a* (*BO 13640*, typus).

On Escalloniaceae.

(35) MELIOLA CYLINDROPHORA Rehm *in* Philip. J. Sci., C Bot. 8: 181. 1913.

On *Itea macrophylla*, Tjiapus-kloof, Java, *Boedijn 1992* (*BO 13526*); loc. cit., *Boedijn s.n.* (*BO 10978*); G. Gilipotung, Kedu, Java, *Doeters van Leeuwen 14180* (*BO 13258*).

On Euphorbiaceae.

(36) IRENINA HANSFORDII Stev. *apud* Hansf. *in* J. Linn. Soc., Lond. 51: 269. 1937.

On *Dalechampia bidentata*, Tjilodong, Java, *van Overeem 21* (*BO 792*).

(37) IRENINA MALLOTI Hansf. & Thirum. *in* Farlowia: 3: 289. 1948.

On *Mallotus paniculatus*, G. Bunder, Java, *Boedijn 1185* (*BO 12284*).

(38) MELIOLA HOMALANTHI Boedijn *in* Bull. Jard. bot. Buitenzorg III 16: 369. 1940.

On *Homalanthus populneus*, Krakatau I., *Doeters van Leeuwen 8649* (*BO 5601*; typus).

(39) **Meliola alchorneicola** Hansf., *sp. nov.* (3111.4322)

Plagulae epiphyllae, atrae, densae, 1—2 mm diam. Mycelium ex hyphis atrobrunneis, rectis vel leniter undulatis, 7—8 μ crassis (cellulis plerumque 15—25 μ longis), opposite ramosis (60—90°), dense reticulatis compositum. Hyphopodia capitata alternata, patentia, recta vel curvata, 20—25 μ longa; cellula basali cylindracea, 3—9 μ longa; cellula apicali piriformia, subglobosa vel saepius plus minusve lobata, 13—18 × 12—16 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, curvato-ampullacea, 18—25 × 7—9 μ, collo suberecto, 3—5 μ crasso. Setae myceliales dispersae, erectae, rectae, simplices obtusae vel acutae, usque ad 480 × 10—12 μ. Perithecia dispersa atra, globosa, verrucosa, usque ad 170 μ diam. Sporae atrobrunneae, ellipsoideae, obtusae, 4-septatae, constrictae, 43—49 × 20—22 μ.

Hab. in foliis *Alchorneae javanensis*, Depok, Java, *Boedijn s.n.* (*BO 10991*; typus).

(40) MELIOLA MACARANGAE H. & P. Syd. *in* Ann. myc., Berl. 15: 188. 1917.

On *Macaranga tanarius*, Krakatau I., Java, *Doctors van Leeuwen 11853* (*BO 10396*).

(41) **Meliola macarangae** Syd. var. **longiseta** Hansf., *var. nov.* (3111.5323).

Plagulae plerumque epiphyllae, subdensae, velutinae, usque ad 4 mm diam. Mycelium ex hyphis atrobrunneis, flexuosis vel tortuosis, 8—9 μ crassis (cellulis plerumque 30—40 μ longis), opposite vel irregulariter ramosis, laxe vel subdense reticulatis compositum. Hyphopodia capitata alternata vel distantia, saepius curvata, 33—60 μ longa; cellula basali cylindracea, recta vel curvata, 12—30 μ longa; cellula apicali globosa, ovata, ellipsoidea vel rotundato-angulosa, saepe subtriangulosa, apice rotundata vel truncata, 22—40 × 13—24 μ. Hyphopodia mucronata pauca, alternata, 20—35 μ longa, basi 9—13 μ crassa, curvato-ampullacea, collo erecto, 3—5 μ crasso. Setae myceliales paucae vel numerosae, dispersae, erectae plus minusve rectae, simplices, superne attenuatae, apice obtusae, usque 630 × 10—12 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae atrobrunneae, ellipsoideae vel subcylindraceae, 4 septatae, leniter constrictae, 48—55 × 19—22 μ.

Hab. in foliis *Macarangae trilobae*, Megamendung, Java, *Boedijn 1663* (*BO 12377*; *typus*); Tjigombong, Java, *Boedijn 1163* (*BO 12338*); Tjilodong, Java, *van Overeem 7* (*BO 800*);

in foliis *Macarangae tanariae*, G. Salak, Java, *Boedijn 3237* (*BO 16348*).

(42) **Meliola galariae** Hansf., *sp. nov.* (3113.4222).

Plagulae hypophyllae, usque ad 10 mm diam. vel confluentes, subdensae, velutinae. Mycelium ex hyphis subrectis, atrobrunneis, 6—7 μ crassis (cellulis plerumque circa 20 μ longis), opposite ramosis (60—90°), laxe vel subdense reticulatis compositum. Hyphopodia capitata opposita vel alternata, recta vel abrupte curvata, saepius leniter recurvata, 12—20 μ longa; cellula basali cylindracea, 3—7 μ longa; cellula apicali subglobosa vel oblonga-cylindracea, apice rotundata, recta vel curvata, integra, 9—14 × 7—11 μ. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, curvata, ampullacea, 17—25 × 7—9 μ, collo erecto, 3—4 μ crasso. Setae myceliales dispersae, erectae, rectae, simplices, acutae, usque ad 370 × 7—9 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 42—48 × 16—18 × 13—15 μ.

Hab. in foliis *Galeariae filiformis*, Tjilodong, Java, *van Overeem 15* (*BO 802*; typus).

On Gesneriaceae.

(43) MELIOLA PUMILA H. Syd. *in* Elmer, Leafl. Philip. Bot. 9: 3119. 1925.

The following description is made after the collection cited below.

Colonies epiphyllous, dense, 1—2 mm diam. Mycelium of crooked dark brown hyphae 7—8 μ thick, the cells mostly 15—20 μ long, branching close, usually opposite at wide angles, closely reticulate. Capitate hyphopodia alternate only, at wide angles, usually straight, 16—20 μ long; stalk cell cylindric, 3—6 μ long; head cell globose and entire or somewhat irregularly angulose, rarely shallowly lobed, 11—15 × 10—14 μ. Mucronate hyphopodia scattered, few, opposite or alternate, bent ampulliform, 14—20 × 7—8 μ, neck upturned, 4 μ thick. Mycelial thinly scattered, erect, straight, simple, obtuse, up to 330 × 8—9 μ. Perithecia scattered, black, globose, verrucose, up to 150 μ diam. Spores dark brown, cylindric, obtuse, 4-septate, constricted, 26—31 × 13—14 μ.

On *Cyrtandra picta*, G. Karang, Banten (Bantam), Java, *Boedijn 1337* (*BO 12546*); Tjibodas, Java, *Boedijn 1824 p.p.* (*BO 12213*); G. Patcha, Java, *Boedijn 3486 p.p.* (*BO 17413*).

On *Cyrtandra wandei*, Megamendung, Java, *Boedijn 1662 p.p.* (*BO 13397*).

On *Cyrtandra repens*, G. Bunder, Java, *Boedijn 1210 p.p.* (*BO 12426*).

On Gnetaceae.

(44) **Meliola gneti** Hansf., *sp. nov.* (3113.4323)

Plagulae hypophyllae, densae, velutinae, usque ad 8 mm diam. Mycelium ex hyphis atrobrunneis, subrectis, 7—8 μ crassis (cellulis plerumque 20—40 μ longis), opposite acuteque ramosis, laxe vel dense reticulatis compositum. Hyphopodia capitata alternata vel usque ad 3% opposita, patentia, recta curvula, 15—24 μ longa; cellula basali cylindracea 5—10 μ longa; cellula apicali globosa, late piriformia vel cylindraceo-ovata, integra, 11—15 × 9—13 μ. Hyphopodia mucronata numerosa, illis capitatis commixta, alternata vel opposita, elongato-ampullacea, curvata, 20—40 × 7—11 μ, collo suberecto, 3 μ crasso. Setae myceliales dispersae etiam juxta perithecia aggregatae, erectae, simplices, acutae, usque ad 900 × 10—11 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 44—49 × 18—20 μ.

Hab. in foliis *Gneti gnemonis*, Pasauran, Banten (Bantam), Java, *Boedijn 1269* (*BO 12548*; typus).

On Gramineae.

(45) MELIOLA PANICICOLA H. & P. Syd. *in* Ann. myc., Berl. 12: 552. 1914.

On *Panicum palmifolium*, G. Gede, Java, *Boedijn 1487* (*BO 12697*).

(46) MELIOLA PANICI Earle *in* Muhlenbergia 1: 12. 1901.

On *Thysanolaena maxima*, G. Bunder, Java, *Boedijn 1223* (*BO 12402*); loc. cit., *Boedijn 2629* (*BO 14432*).

On *Thysanolaena procera*, Tjiapus-kloof, Java, *Boedijn 1994* (*BO 13535*).

On *Oplismenus cf. compositus*, Tjisarua, Java, *Boedijn 1651* (*BO 13280*).

On *Panicum sp.?*, (prob. *Hoplismenus compositus*), Ngebel, Java, *Boedijn 2115* (*BO 15226*).

On *Panicum sp.* (prob. *Setaria palmifolia*), G. Gede, Java, *Boedijn 2010* (*BO 13586*).

On *Rottboellia exaltata*, Los Baños, Philippines, *Baker 4211* (*U.S. Dept. Agr., Path. Mye. Coll. 66893*; *BO 14095*); this was originally determined by Sydow as *M. subatenospora* Höhn. f. *rottboelliae* Rehm.

On *Andropogon squarrosus*, Singapore, *Baker Fungi malay. 456* (*BO 15870*).

On unknown grass (prob. *Themeda villosa*), Bogor, Java, *Noegroeng s.n.* (*BO 7049*).

On *Saccharum spontaneum*, Tjigombong, Java, *Boedijn 1158 p.p.* (*BO 12344*).

(47) MELIOLA HERCULES Höhn. *in* S.B. Akad. Wiss. Wien., Math.-nat. Kl., Abt. I, 118: 316. 1909.

On *Saccharum spontaneum*, Tjigombong, Java, *Boedijn 1158 p.p.* (*BO 12344*); loc. cit., *Boedijn 761* (*BO 11727*).

(48) **Meliola boedijniana** Hansf., *sp. nov.* (3111.5322)

Plagulae epiphyllae, subdensae, velutinae, usque ad 2 mm diam. Mycelium ex hyphis brunneis, rectis vel tortuosis, 7—8 μ crassis, opposite vel irregulariter ramosis, dense reticulatis compositum, in centro plagularum subsolidum. Hyphopodia capitata alternata, rarissime opposita, recta vel curvata, 20—30 μ longa; cellula basali cylindraceae, 3—14 μ longa; cellula apicali subglobosa, late ovata, piriformia, vel irregulariter lobata, 12—20 × 10—20 μ, versiformia. Hyphopodia mucronata pauca, illis capitatis commixta, alternata, curvata, ampullacea vel lageniformia, 17—26 × 8—10 μ, cello erecto, 3 μ crasso. Setae myceliales numerosae, dispersae etiam juxta perithecia aggregatae, erectae, rectae, simplices, acutae, usque ad 450 × 10—12 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae, vel ellipsoideae, obtusae, 4-septatae, constrictae, 44—51 × 19—21 μ.

Hab. in foliis graminaceis, Tjisarua, Java, *Boedijn 1630* (*BO 12913*; typus).

Mixed with the spores described above are others, considered to be foreign, measuring up to 51 × 25 μ. Like several other species of *Meliola* on grasses, the longitudinal hyphae of the mycelium tend to be straight, while the transverse ones are very crooked.

On Hippocrateaceae.

(49) MELIOLA OLIGOMERA H. & P. Syd. *in* Ann. myc., Berl. 15: 190. 1917.

On *Hippocratea indica*, Tjilodong, Java, *Boedijn 1690* (*BO 12919*).

On Labiatae.

(50) IRENINA ANASTOMOSANS (Wint.) Stev. *in* Ann. myc., Berl. 25: 456. 1927.

= *Irenina hyptidicola* (Stev.) Stev. *in* Ann. myc., Berl. 25: 455. 1927; and probably is the same as *I. hyptidicola* var. *wombalensis* (Beeli) Stev. *in* Ann. myc., Berl. 25: 455 1927.

On *Pogostemon menthoides*, G. Gede, Java, *Boedjin 1486 (BO 12698)*; loc. cit., *Boedjin 1856 (BO 13211)*; G. Patuha, Java, *Boedjin 3529 (BO 17423)*;
On *Plectranthus javanicus*, G. Patuha, Java, *Boedjin 3479 (BO 17429)*;

On Lauraceae.

(51) **Armatella cinnamomicola** Hansf., *sp. nov.*

Plagulae amphigenae, tenues, leves, usque ad 12 mm diam. vel late confluentes. Mycelium ex hyphis atrobrunneis subrectis, 7—9 μ crassis, cellulis plerumque 25—30 μ longis, alternatim vel irregulariter acuteque ramosis, laxe reticulatis compositum, parietibus hypharum crenulatissimis. Hyphopodia capitata alternata, patentia, recta vel curvula, 18—30 μ longa, cellula basali cylindracea, 4—10 μ longa, cellula apicali ovata vel late conoidea, apice rotundata, 12—18 × 9—11 μ, margine crenulata. Hyphopodia mucronata nulla. Setae nullae. Perithecia dispersa, depresso-globosa, usque ad 150 μ diam. et 120 μ alta, verrucosa, atra. Sporae dilute brunneae, cylindraceae, utrinque obtusae, 1-septatae, leniter constrictae, 30—35 × 8—10 μ, episporio indistincte granuloso.

Hab. in foliis *Cinnamomi iners*, G. Panjisan, Java, *Boedjin 1719 (BO 13520, typus)*; G. Pandan, Java, *Boedjin 3131 (BO 15213)*; Malang, Java, *Groenhart s.n. (BO 17402)*.

Each perithecium develops at the centre of a radiate subiculum of crenulate exhyphopodiate hyphae up to 100 μ long. After discharge, at germination the upper cell of the spore gradually collapses, while the lower enlarges, turns dark brown and forms a hyphopodium at its base; germinating spores measure 32—38 × 11—13 μ.

This differs from *A. cinnamomi* Hansf. & Thirm., described on *Cinnamomum zeylanicum* from Mysore, India, in the stouter mycelium with its very characteristic fine crenulations of the side walls and hyphopodia, and the considerably larger spores, which in both species germinate in a similar manner, possibly characteristic of the whole genus.

(52) MELIOLA ACUTISETA H. & P. Syd. *in* Elmer, Leafl. Philip. Bot. 6: 1921. 1913.

On *Persea pyriformis*, Cabadbaran, Agusan, Mindanao, Philippines, *Elmer 13812 (BO 3233;* portion of the type collection).

(53) Meliola beilschmiediae Yamamoto var. cinnamomi Hansf., *var. nov.*

Plagulae hypophyllae tenues, usque ad 5 mm diam., tenuiter velutinae. Mycelium ex hyphis atrobrunneis undulatis, 8—10 μ crassis, opposite vel irregulariter ramosis, laxe reticulato-radiantibus compositum. Hyphopodia capitata alternata vel dispersa, patentia, saepe curvata, 20—35 μ longa; cellula basali cylindracea, 4—12 μ longa; cellula apicali ovata vel piriformia, recta vel curvata, integra, 15—24 × 15—18 μ. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, curvato-ampulliformia, 20—30 × 9—12 μ, collo erecto elongato, 3 μ crasso. Setae myceliales praecipue juxta perithecia evolutae, erectae, rectae, simplices, acutae, 250—1100 × 10—12 μ. Perithecia dispersa atra globosa verrucosa, usque ad 230 μ diam. Sporae atrobrunneae, ellipsoideae, obtusae, 4-septatae constrictae, 53—61 × 22—24 μ.

Hab. in foliis *Cinnamomi insertis*, Java?, *BO 4675* (typus).

(54) MELIOLA CALOCHAETA H. Syd. *in* Elmer, Leafl. Philip. Bot. 9: 3117. 1925.

The Herbarium Bogoriense specimen of the type collection shows only one hypophyllous colony, 5 mm. diam, without perithecia or setae. The mycelium is closely reticulate, of undulate to crooked or substraight dark brown hyphae 5—7 μ thick, the cells mostly 15—25 μ long, branching usually opposite at wide angles. Capitate hyphopodia about 90% opposite, at wide angles, straight or bent, 9—16 μ long; stalk cell cylindric, 2—6 μ long, head cell globose to piriform, entire, 7—11 × 6—9 μ. Mucronate hyphopodia mixed with capitate, opposite or alternate, bent ampulliform, 14—19 × 6—8 μ, the neck upturned, 3—4 μ thick. Few spores were found, measuring 44—50 × 22—23 μ, ellipsoid, 4-septate.

On *Cryptocarya sp.*, Mt. Bulusan, Irosin, Sorsogon, Luzon, Philippines, *Elmer 17331* (*BO 3909*; portion of type collection).

(55) MELIOLA LITSEAE H. & P. Syd. *in* Ann. myc., Berl. 15: 187. 1917.

On *Litsea perrottetii*, Los Baños, Luzon, Philippines, *Baker 549* (*BO 15974*).
On *Litsea monopetala* (*L. polyantha*), Tjikampek, Java, *Boedijo s.n.* (*BO 10933*).

(56) **Meliola litseae** H. & P. Syd. var. **rotundipoda** Hansf., *var. nov.*

Plagulae epiphyllae et paucae hypophyllae, atrae, usque ad 3 mm diam., densae, velutinae. Mycelium ex hyphis subrectis atrobrunneis, 7—8 μ crassis (cellulis plerumque 20—25 μ longis), opposite ramosis (60—90°), dense reticulatis compositum. Hyphopodia capitata alternata, leniter antrorsa, plerumque recta, 17—20 μ longa; cellula basali cylindracea, 4—7 μ longa; cellula apicali ovata vel late piriformia, apice late rotundata, integra, 11—13 × 10—12 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea vel conoidea, 22—30 × 7—9 μ, collo curvato-erecto, 4—5 μ crasso, praedita. Setae myceliales numerosae, erectae, rectae, atrae, simplices, acutae, usque ad 650 × 8—10 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam.

Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 35—40 × 16—18 μ.

Hab. in foliis *Litseae glutinosae*, Los Baños, Luzon, Philippines, *Baker, Fungi malay. 362* (*BO 16006*; typus); *Philip. Bur. Sci. 2931, 29994*;

in foliis *Litseae cubebae* (*L. citratae*), G. Bunder, Java, *Boedijn 1205* (*BO 12399*).

In foliis *Litseae noronhae*, G. Karang, Banten (Bantam), Java, *Boedijn 1298* (*BO 12578*);

in foliis *Litseae sp.*, Java?, *BO 16056*.

The type collection was originally determined by Sydow as *Meliola cookeana* var. *saccardoi*, forma, while the Herbarium Stockholm specimen of PBS 3001 was found under *Meliola ambigua* f. *litseae* Rehm.

(57) **Meliola litseae-citratae** Hansf., *sp. nov.* (3111.3221)

Plagulae epiphyllae densae leves, usque ad 1 mm diam. Mycelium ex hyphis subrectis vel undulatis, atrobrunneis, 6—7 μ crassis (cellulis plerumque 12—20 μ longis), alternatim vel irregulariter ramosis, densissime radiato-reticulatis compositum. Hyphopodia capitata alternata antrorsa, recta vel curvula, 14—20 μ longa; cellula basali cylindracea 3—9 μ longa; cellula apicali globosa vel piriformia, recta vel curvula, interdum rotundato-angulosa, 10—15 × 9—13 μ. Hyphopodia mucronata pauca, illis capitatis commixta, alternata, curvato-ampullacea, 14—19 × 6—8 μ, collo erecto, 3—4 μ crasso praedita. Setae myceliales paucae vel nullae, juxta perithecia oriundae, erectae, rectae, simplices, obtusae, usque ad 180 × 7—9 μ. Perithecia dispersa atra globosa verrucosa, usque ad 210 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 35—41 × 14—16 μ.

Hab. in foliis *Litseae cubebae* (*L. citratae*), G. Salak, Java, *Boedijn s.n.* (*BO 10924*; typus).

(58) MELIOLA MACHILI Yamamoto *in* Trans. nat. Hist. Soc. Formosa **31**: 23. 1941.

On *Machilus rimosa*, Tjibodas, Java, *Boedijn 1182* (*BO 12769*).

On Lecythidaceae.

(59) MELIOLA INDICA H. & P. Syd. *apud* Syd. & Butl. *in* Ann. myc., Berl. 9: 382. 1911.

On *Barringtonia spicata*, Telawa, border between Semarang and Surakarta, Java, *Kasrin* (*BO 2734*).

On *Barringtonia insignis*, Nusa Kambangan, *Boedijn 1080* (*BO 12110*).

On Loganiaceae.

(60) MELIOLA FAGRAEAE H. & P. Syd. *in* Ann. myc., Berl. 12: 549. 1914.

On *Fagraea fragrans*, Palembang, Sumatra, *Steup s.n.* (*BO 6323*); Singapore, *Flippance* (*BO 5434*).

On Magnoliaceae.

(61) MELIOLA DIPLOCHAETA H. & P. Syd. *in* Elmer, Leafl. Philip. Bot. 5: 1536. 1912.

This is represented in the Bogor Herbarium by part of the type collection, Elmer 12790 (BO 3257, Puerto Princesa, Mt. Pulgar, Palawan, Philippines) and by part of Elmer 17325, (BO 3886, Mt. Bulusan, Irosin, Sorsogon, Philippines). These have been re-examined by me, and I find that the "perithecial setae" described by Sydow arise from beneath the perithecium and not from its surface, hence being of mycelial origin. The spores reach 63 × 28 μ, and the revised formula is 311/31.6324.

(62) **Meliola talaumae** Hansf., *sp. nov.* (3111.6322)

Plagulae plerumque hypophyllae atrae densae, leniter velutinae. Mycelium ex hyphis atrobrunneis, subrectis vel leniter flexuosis, 7—8 μ crassis (cellulis plerumque 15—25 μ longis), opposite vel irregulariter ramosis, dense reticulatis compositum, in centro plagularum subsolidum. Hyphopodia capitata alternata, plus minusve antrorsa, saepe leniter curvata, 20—35 μ longa; cellula basali cylindracea, 5—12 μ longa; cellula apicali cylindracea, apice rotundata, integra, saepe curvata, 16—25 × 9—12 μ. Hyphopodia mucronata pauca, dispersa, opposita vel alternata, conoideo-ampullacea, 20—28 × 7—10 μ, collo curvato, 3—5 μ crasso praedita. Setae myceliales juxta perithecia evolutae, erectae, plus minusve rectae, simplices, acutae, usque ad 450 × 10—11 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae vel late ellipsoideae, obtusae, 4-septatae, leniter constrictae, 57—65 × 28—30 μ.

Hab. in foliis *Talaumae sp.*, Mt. Kinabalu, British North Borneo, *Clemens 28628 p.p. (BO 13847;* typus).

This differs from both collections of *Meliola diplochaeta* Syd. above in the colony characters, those of *M. talaume* being up to 2 mm diameter, very dense and the mycelium and hyphopodia almost a solid plate. The colonies of *M. diplochaeta* are very much larger, considerably thinner and much more velvety, with longer setae which are frequently dentate.

On Malvaceae.

(63) IRENOPSIS ACICULOSA (Wint.) Stev. *in* Ann. myc., Berl. 25: 438. 1927.

On *Abelmoschus moschatus*, Tjigombong, Java, *Boedijn 1164 (BO 12337)*.

(64) IRENOPSIS MOLLERIANA (Wint). Stev. *in* Ann. myc., Berl. 25: 437. 1927.

On *Urena lobata*, Pangipiran, E of G. Aseupan, Java, *Boedijn 2647* (*BO 14472*); Puntjak Pass, Java, *Boedijn 2235* (*BO 16334*); Java?, *BO 4629*.

On *Hibiscus similis*, Pangipiran, E of G. Aseupan, Java, *Boedijn 2651* (*BO 14467*); Tjilodong, Java, *Boedijn 1681* (*BO 13007*); Java, *Boedijn s.n.* (*BO 10950*).

(65) **Irenopsis thespesiae** Hansf., *sp. nov.* (3403.3220)

Plagulae epiphyllae, usque ad 2 mm diam., saepe numerosae et late confluentes, tenues, leves, aegre perspicuae. Mycelium ex hyphis atrobrunneis, rectis vel undulatis, 5—7 μ crassis (cellulis plerumque 20—30 μ longis), opposite vel irregulariter ramosis (45—60°), laxissime reticulatis compositum. Hyphopodia capitata alternata vel usque ad 2% opposita, plus minusve antrorsa, 13—19 μ longa; cellula basali cylindracea, 3—7 μ longa; cellula apicali globosa, ovata vel late clavata, integra vel interdum rotundato-angulosa, recta vel curvula, 9—13 × 9—11 μ. Hyphopodia mucronata illis capitatis commixta, subnumerosa, opposita vel alternata, curvato-ampullacea, 14—20 × 6—8 μ, collo erecto, 3 μ crasso. Setae myceliales nullae. Perithecia laxe dispersa, atra, globosa, leniter verrucosa, usque ad 130 μ diam., superne setis 0—6, erecto-patentibus, rectis vel curvulis, simplicibus, acutis, 2—3-septatis, levibus, usque ad 160 × 7—8 μ, ornata. Sporae atrobrunneae cylindraceae, obtusae, 4-septatae, constrictae, 30—36 × 12—14 × 11—12 μ.

Hab. in foliis *Thespesiae lampadis*, Bogor (Buitenzorg), Java, *Boedijn 2642* (*BO 14451*; typus).

On Marattiaceae.

(66) **Meliola angiopteridis** Hansf., *sp. nov.* (3113.3221)

Plagulae amphigenae, tenues, usque ad 3 mm diam. vel confluentes, tenuiter velutinae. Mycelium ex hyphis brunneis, 6—7 μ crassis, subrectis vel tortuosis, cellulis plerumque 20—35 μ longis, opposite vel irregulariter ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata vel usque ad 10% opposita, recta vel curvata, 13—20 μ longa; cellula basali cylindracea, 3—7 μ longa; cellula apicali ovata, integra, saepe fortiter curvata, 10—15 × 7—10 μ. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, curvata, ampullacea, 18—30 × 7—9 μ, collo suberecto, 3—4 μ crasso. Setae myceliales tenuiter dispersae etiam juxta perithecia aggregatae, erectae, subrectae, simplices, acutae, usque ad 450 × 7—9 μ. Perithecia laxe dispersa, atra, globosa, verrucosa, usque ad 170 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 34—40 × 13—15 μ.

Hab. in foliis *Angiopteridis evectae*, Tjibodas, Java, *Boedijn 1811* (*BO 13214*; typus); Sibolangit, Sumatra, *Doctors van Leeuwen s.n.* (*BO 4670*).

The colonies in the second collection are much denser and more closely velvety than in the type.

On Melastomaceae.

(67) MELIOLA AFFINIS H. & P. Syd. *in* Elmer Leafl. Philip. Bot. 6: 1921. 1913.

and

(68) MELIOLA MEMECYLI H. & P. Syd. *in* Ann. myc., Berl. 12: 198. 1914.

These two species occur mixed on the following specimens:

On *Memecylon appendiculatum* (*M. sudeus*), Tjilodong, Java, *Boedijn 1672* (*BO 12999*).

On *Memecylon costatum*, Java?, *BO 5059*; Depok, Java, *Boedijn s.n.* (*BO 10978*).

On Meliaceae.

(69) **Meliola aglaiicola** Hansf., *sp. nov.* (3111.3221)

Plagulae amphigenae, usque ad 1 mm diam., densae, subcrustosae. Mycelium ex hyphis atrobrunneis, rectis vel flexuosis, 7—8 μ crassis (cellulis plerumque 10—15 μ longis), opposite ramosis (60—90°), dense reticulatis compositum, in centro solidum. Hyphopodia capitata alternata, patentia, recta, 13—16 μ longa; cellula basali cylindracea, 2—5 μ longa; cellula apicali globosa, integra, 9—13 × 9—13 μ. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, curvata, ampullacea, 10—15 × 7—10 μ, collo erecto, 3 μ crasso. Setae myceliales dense dispersae, erectae, rectae, simplices, acutae, usque ad 170 × 8—9 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae 33—38 × 15—16 μ.

Hab. in foliis *Aglaiae sp.*, Tenompok, Mt. Kinabulu, British North Borneo, *Clemens 28718* (*BO 13561*; typus).

(70) **Meliola dysoxylicola** Hansf., *sp. nov.* (3113.4231)

Plagulae amphigenae, plerumque hypophyllae, 1—1,5 mm diam. vel confluentes, subdensae, velutinae. Mycelium ex hyphis atrobrunneis, flexuosis vel tortuosis, 5—6 μ crassis (cellulis plerumque 20—30 μ longis) opposite vel irregulariter ramosis, dense reticulatis compositum. Hyphopodia capitata alternata vel opposita (5—40%), patentia, 10—16 μ longa; cellula basali cylindracea, 2—4 μ longa; cellula apicali subglobosa vel ovata, apice rotundata vel obtuse attenuata, integra, 8—12 × 7—9 μ. Hyphopodia mucronata pauca, illis capitatis commixta, alternata vel opposita, curvata, ampullacea, 12—17 × 6—8 μ, collo suberecto, 3 μ crasso. Setae myceliales paucae vel numerosae, dispersae et juxta perithecia aggregatae, erectae, subrectae, simplices, acutae, usque ad 360 × 7—8 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 230 μ diam. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, leniter constrictae, 38—45 × 16—18 μ.

Hab. in foliis *Dysoxyli sp.*, Tenompok, Mt. Kinabulu, British North Borneo, *Clemens 29467* (*BO 13565*; typus).

The colonies are usually limited to the under surface of the midrib and main veins, and are strongly parasitic, causing a yellowish leaf-spot on the opposite side of the leaf, together with some distortion of the leaf-blade; often confluent into elongated patches along the veins. This may possibly be the same as *Meliola petiolaris* Petr. (*in* Ann. myc., Berl. 29: 185. 1931), but this was described as having the capitate hyphopodia alternata only, and in any case the name is ante-dated by *M. petiolaris* Doidge.

On Menispermataceae.

(71) MELIOLA BANGUIENSIS Yates *in* Philip. J. Sci., C Bot. 13: 365. 1918.

The following description is drawn up from the specimen cited below.

Colonies epiphyllous, very thin, arachnoid, widely confluent. Mycelium of dark brown substraight hyphae 7—8 μ thick, the cells mostly 25—40 μ long, branching usually opposite at acute angles, loosely reticulate. Capitate hyphopodia alternate only or more distant, more or less antrorse, straight, 14—22 μ long; stalk cell cuneate-cylindric, 3—6 μ long; head cell globose to ovate, entire, 11—14 × 10—13 μ. Mucronate hyphopodia rather numerous, mixed with capitate, alternate or opposite, bent ampulliform, 15—21 × 7—8 μ, neck upturned, 3 μ thick. Mycelial setae thinly scattered over the mycelium and in close groups around the perithecia, erect, more or less straight, simple, acute, up to 650 × 8—10 μ. Perithecia loosely scattered, black, globose, verrucose, up to 180 μ diam. Spores dark brown cylindric obtuse, 4-septate, slightly constricted, 33—38 × 13—16 × 11—13 μ.

On *Tinomiscium phytocrenoides*, Depok, Java, *Boedijn 2061 (BO 13597)*.

(72) **Meliola stephaniae** Hansf., *sp. nov.* (3111.3221)

Plagulae epiphyllae, usque ad 3 mm diam., vel confluentes, subdensae, velutinae. Mycelium ex hyphis atrobrunneis, flexuosis, 6—7 μ crassis (cellulis plerumque 25—35 μ longis), opposite ramosis, dense radiantibus reticulatibusque. Hyphopodia capitata alternata, plus minusve antrorsa, plerumque recta, 18—23 μ longa; cellula basali cuneato-cylindracea, 4—9 μ longa; cellula apicali subglobosa vel subclavata, integra, 12—16 × 10—13 μ. Hyphopodia mucronata in hyphis distinctis evoluta, opposita vel alternata, conoideo-ampullacea, curvula, 20—25 × 7—9 μ, collo suberecto, 3—4 μ crasso praedita. Setae myceliales numerosae, in mycelio dispersae et juxta perithecia aggregatae, erectae, rectae vel leniter flexuosae, simplices obtusae, usque ad 240 × 7—9 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 150 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, leniter constrictae, 33—39 × 14—16 × 12—13 μ.

Hab. in foliis *Stephaniae hernandifoliae*, Tjitjadas, Java, *Boedijn 2650 (BO 75548*; typus);

in foliis *Stephaniae capitatae*, Megamendung, Java, *Boedijn 1660 (BO 13389)*.

On Mimosaceae.

(73) MELIOLA PITHECOLOBII Stev. & Tehon *in* Mycologia 18: 9. 1926.

On *Pithecellobium clypearia* (*P. montanum*), Situgunung near Sukabumi, Java, *Boedijn 1352* (*BO 12843*).

(74) MELIOLA ROBINSONII H. Syd. *in* Philip. J. Sci. 21: 135. 1922.

The specimens in the Bogor Herbarium are part of the type collection and have the following characters:

Colonies epiphyllous, dense, up to 3 mm diam. or numerous and widely confluent. Mycelium of substraight dark brown hyphae 6—7 μ thick, the cells mostly 20—25 μ long, branching mostly opposite at acute angles, very closely reticulate and in places almost solid. Capitate hyphopodia opposite or alternate, the proportions varying greatly in different parts even of the same colony, from almost entirely opposite to entirely alternate, at wide angles, straight or slightly bent, 15—23 μ long; stalk cell cylindric, 3—5 μ long; head cell subglobose, ovate or oblong-cylindric with rounded apex, often slightly bent, entire, 11—18 × 7—10 μ. Mucronate hyphopodia mixed with capitate, alternate or opposite, bent ampulliform, 15—20 × 7—9 μ, neck 3 μ thick, upturned. Mycelial setae thinly scattered and also grouped around the perithecia, erect, straight, up to 280 × 7—8 μ, apex 2—4-dentate to 10 μ. Perithecia scattered, black, globose, verrucose, up to 185 μ diam. Spores dark brown, cylindric-ellipsoid, obtuse, 4-septate, constricted, 38—45 × 17—18 × 14—15 μ.

On *Entada phaseoloides*, Amboina, *Robinson 2118* (*BO 4139*).

Stevens (*in* Ann. myc., Berl. 25: 189. 1927) placed this as a variety of *Meliola bicornis*, but I find no reason for this, and consider it a distinct species, having larger and more elongate hyphopodia as well as wider spores.

On Monimiaceae.

(75) MELIOLA MEGALOCHAETA H. Syd. *in* Philip. J. Sci. 21: 135. 1922.

The following revised description has been compiled from the Bogor portion of the type collection.

Colonies hypophyllous, thin, up to 10 mm diam., or confluent over the leaf, thinly velvety. Mycelium of substraight dark brown hyphae 8—10 μ thick, the cells mostly 30—40 μ long, branching opposite or irregular at acute angles, loosely reticulate. Capitate hyphopodia alternate or more distant, at wide angles, straight or bent, 25—35 μ long; stalk cell cylindric 5—12 μ long; head cell piriform to widely ovate, entire, 18—24 × 12—16 μ. Mucronate hyphopodia rather numerous, mixed with the capitate, alternate, bent ampulliform, 22—29 × 9—11 μ, the neck upturned and 4—5 μ

thick. Mycelial setae thinly scattered over mycelium and also grouped around the perithecia, erect, straight, opaque, simple and obtuse or acute, or, chiefly those from perithecial discs, 2—3-dentate to 10 μ, 300—1600 × 10—13 μ. Perithecia scattered, black, globose, verrucose, up to 215 μ diam., surrounded by loose radiating exhyphopodiate hyphae up to 150 μ long. Spores dark brown, elongate ellipsoid, 4-septate, constricted, 50—57 × 20—23 × 16—18 μ.

On *Kibara coriacea f. tomentosa*, Tjilodong, Java, *van Overeem 9* (*BO 804*).

Also a portion of the type collection on *Kibara moluccana*, Amboina, *Robinson 2078* (*BO 3537*).

On Moraceae.

(76) IRENINA RETICULATA (Karst. & Roum.) Stev. *in* Ann. myc., Berl. 25: 456. 1927.

On *Ficus rostrata*, G. Karang, Banten (Bantam), Java, *Boedijn 1334 p.p.* (*BO 12584*).

(77) IRENINA UMIRAYENSIS (Yates) Hansf. *in* Proc. Linn. Soc., Lond. 157: 170. 1946.

On *Ficus obscura* (*F. pisifera*), Tjisarua, Java, *Boedijn 1632* (*BO 13381*).

(78) IRENOPSIS BENGUETENSIS Stev. & Rold. *in* Philip. J. Sci. **56**: 49. 1935.

On *Ficus obscura* (*F. acuminatissima*, *F. pisifera*), G. Karang, Banten (Bantam), Java, *Boedijn 1300* (*BO 12588*); Nusa Kambangan, Java, *Boedijn 1094* (*BO 12096*).

On *Ficus quercifolia*, Megamendung, Java, *Boedijn 1659* (*BO 13377*).

On *Ficus rostrata*, G. Karang, Banten (Bantam), Java, *Boedijn 1334 p.p.* (*BO 12584*).

(79) **Meliola fici-globosae** Hansf., *sp. nov.* (3111.6334)

Plagulae hypophyllae, densae, velutinae, usque ad 5 mm diam. Mycelium ex hyphis atrobrunneis, flexuosis, 8—9 μ crassis (cellulis plerumque 20—30 μ longis), opposite vel irregulariter ramosis (60—90°), dense reticulatis compositum. Hyphopodia capitata alternata, saepe curvata, 23—33 μ longa, patentia; cellula basali cylindracea, 6—14 μ longa; cellula apicali ovata, oblonga vel superne sublobata, saepe curvata, 16—23 × 10—13 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, curvata, conoideo-ampullancea, 25—33 × 8—10 μ, collo 3—5 μ crasso. Setae myceliales numerosae, dispersae, erectae, rectae, simplices, subacutae usque ad 1100 × 10—11 μ. Perithecia dispersa, atra, globosa verrucosa, usque ad 250 μ diam., cellulis parietis curvato-conoideis, usque ad 20 μ altis. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, 55—60 × 21—24 × 17—19 μ.

Hab. in foliis *Fici globosae*, Tjitjadas, Java, *Boedijn 2991* (*BO 14506*; typus).

(80) **Meliola paratrophidis** Hansf., *sp. nov.* (3421.5222)

Plagulae plerumque hypophyllae, usque ad 5 mm diam. vel confluentes, densae, velutinae. Mycelium ex hyphis atrobrunneis, subrectis vel leniter flexuosis, 8—9 μ crassis (cellulis plerumque 30—40 μ longis), alternatim ramosis (30—60°), laxe vel subdense reticulatis compositum. Hyphopodia capitata alternata, patentia, recta vel curvula, 23—30 μ longa; cellula basali cuneata vel cylindracea, 5—13 μ longa; cellula apicali globosa vel clavata, 13—19 × 13—16 μ. Hyphopodia mucronata pauca, in hyphis distinctis evoluta, opposita vel alternata, curvata, ampullacea 20—28 × 6—8 μ, collo suberecto, 3—4 μ crasso. Setae myceliales numerosae, dispersae, erectae, simplices, acutae, superne late arcuatae vel uncinatae, usque ad 350 × 7—9 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam., superne setis 10—16, erecto-radiantibus, simplices, subrectis vel uncinatis, acutis, usque ad 200 × 7—9 μ ornata. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, leniter constrictae, 46—53 × 13—15 μ.

Hab. in foliis *Paratrophidis glabrae*, Tenompok, Mt. Kinabulu, British North Borneo, *Clemens 29321* (*BO 13623*; typus).

(81) **Meliola brinkii** Hansf., *sp. nov.* (3423.4231)

Plagulae, usque ad 5 mm longae, densae, velutinae, petiolicolae et interdum caulicolae. Mycelium ex hyphis atrobrunneis, subrectis vel undulatis, 6—7 μ crassis (cellulis plerumque 20—30 μ longis), alternatim vel irregulariter ramosae (30—60°), dense reticulato-intertextis compositum. Hyphopodia capitata alternata vel circa 2% opposita, patentia, 20—35 μ longa; cellula basali cylindracea, recta vel curvata, 6—20 μ longa; cellula apicali interdum globosa integraque, saepius irregulariter sinuoso-lobata vel 2—3-lobata, 12—18 × 10—16 μ. Hyphopodia mucronata pauca, illis capitatis commixta, alternata, curvata, ampullacea, 15—20 × 7—10 μ, collo suberecto, 4 μ crasso. Setae myceliales numerosissimae, dense dispersae, erectae, simplices, subacutae, superne late arcuatae vel uncinatae, usque ad 280 × 9—11 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 210 μ diam., superne setis 0—8, erecto-patentibus, usque ad 200 μ longis, simplicibus, obtusis, superne subuncinatis, deorsum 8—10 μ crassis ornata. Sporae atrobrunneae cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, 38—47 × 14—17 μ.

Hab. in petiolis *Artocarpi glaucae*, Nangela, Java, *Bakhuizen van den Brink 7629* (*BO 12315*; typus).

The colonies are usually limited to the petioles and leafbases, occasionally spreading on to the upper surface of the leaf-base, rarely also on the undersides of the main leaf-veins, and sometimes on twigs.

On Myristicaceae.

(82) **Irenina knemae** Hansf., *sp. nov.* (3101.4220)

Plagulae hypophyllae, late effusae confluentesque, tenues, leves. Mycelium ex hyphis atrobrunneis, plus minusve tortuosis, 6—8 μ crassis

(cellulis plerumque 20—30 μ longis), opposite vel irregulariter ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata vel distantia, patentia, recta vel curvula, 19—28 μ longa; cellula basali cylindracea 5—12 μ longa; cellula apicali globosa, ovata vel irregulariter angulosa vel sublobata, 14—20 × 13—18 μ. Hyphopodia mucronata pauca, illis capitatis commixta, alternata vel opposita, curvato-ampullacea, 13—19 × 6—9 μ, collo curvato-erecto, 3—4 μ crasso praedita. Setae nullae. Perithecia laxe dispersa, atra, globosa, verrucosa, usque ad 190 μ diam., cellulis parietis conico-mammillatibus, circa 25 μ altis. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, 40—47 × 18—19 × 12—14 μ.

Hab. in foliis *Knemae glaucae*, G. Bunder, Java, *Boedijn 1219* (*BO 12404*; typus); Depok, Java, *Boedijn s.n. p.p.* (*BO 10992*);
in foliis *Knemae laurinae*, Tjilodong, Java, *van Overeem 6, 32* (*BO 799, 797*).

The mycelial hyphae often occur in loose strands and in places form tight knots.

(83) **Meliola knemicola** Hansf., *sp. nov.* (311/31.5333)

Plagulae amphigenae, atrae, subdensae, tenuiter velutinae. Mycelium ex hyphis atrobrunneis, subrectis vel flexuosis, 8—10 μ crassis, opposite vel irregulariter ramosis (60—90°), laxe vel subdense reticulatis compositum. Hyphopodia capitata alternata, recta vel curvata, 28—45 μ longa; cellula basali cylindraceae 8—20 μ longa; cellula apicali versiformia, in epiphyllo subglobosa vel ellipsoidea, integra, in hypophyllo saepe angulosa, 17—30 × 11—18 μ. Hyphopodia mucronata numerosa, illis capitatis commixta, opposita vel alternata, curvata, ampullacea, 19—32 × 8—10 μ, collo suberecto, 4 μ crasso. Setae myceliales praecipue juxta perithecia evolutae, erectae, rectae, simplices et obtusae vel acutae, vel 2—3-dentatae usque ad 10 μ, usque ad 840 × 11—13 μ. Perithecia laxe dispersa, atra, globosa, verrucosa, usque ad 220 μ diam. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, 51—59 × 25—29 × 19—25 μ.

Hab. in foliis *Knemae glaucae*, Depok, Java, *Boedijn s.n.* (*BO 10958*; typus); loc. cit., *Boedijn s.n. p.p.* (*BO 10992*).

(84) MELIOLA UNCINATA H. Syd. *in* Elmer, Leafl. Philip. Bot. 9: 3120. 1925.

The Herbarium Bogoriense portion of the type collection, Elmer 17222 (BO 3962, on *Horsfieldia*, Mt. Bulusan, Irosin, Sorsogon, Philippines) shows the capitate hyphopodia alternate or up to 20% opposite in some parts of the colonies, so that the formula is 3123.4222.

On Myrsinaceae.

(85) MELIOLA ARDISIAE H. Syd. *in* Elmer, Leafl. Philip. Bot. 9: 3116. 1925.

On *Ardisia sp.*, G. Bunder, Java, *Boedijn 1202 p.p.* (*BO 12390*).
On *Ardisia humilis*, Tjarita, Banten (Bantam), Java *Boedijn 1231 p.p.* (*BO 12577*).

On Myrtaceae.

(86) **Meliola eugeniae-jamboloidis** Hansf., *sp. nov.* (3111.5323)

Plagulae hypophyllae, usque ad 2 mm diam., densae, velutinae. Mycelium ex hyphis atrobrunneis, flexuosis, 7—9 μ crassis (cellulis plerumque 20—30 μ longis), opposite vel irregulariter ramosis, dense irregulariterque reticulatis compositum. Hyphopodia capitata alternata, varie curvata, 20—31 μ longa, cellula basali cylindracea, recta vel curvata, 6—13 μ longa; cellula apicali versiformia, ex oblonga ovata, clavata vel irregulariter sinuoso-curvata et leniter rotundato-lobata, 13—21 × 9—16 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, conoidea vel ampullacea, curvata, 20—30 × 7—10 μ, collo elongato suberecto, 3—4 μ crasso praedita. Setae myceliales tenuiter dispersae etiam circum perithecia aggregatae, erectae, rectae, simplices, obtusae, usque ad 600 × 8—11 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 47—54 × 18—21 μ.

Hab. in foliis *Eugeniae jamboloidis* (= *Syzygii cuecmosi*), Depok, Java, *Boedijn 2068* (*BO 13621*; typus);

in foliis *Eugeniae densiflorae* (= *Syzygii pycnanthi*), Nusa Kambangan, Java, *Boedijn 1088* (*BO 12102*).

On Olacaceae.

(87) **Meliola anacolosae** Hansf., *sp. nov.* (3123.4221)

Plagulae amphigenae, plerumque epiphyllae, usque ad 2 mm diam., densae, velutinae. Mycelium ex hyphis atrobrunneis, subrectis, 6—7 μ crassis (cellulis plerumque 15—25 μ longis), opposite acuteque ramosis, dense reticulatis, compositum, in centro plagularum subsolidum. Hyphopodia capitata opposita, patentia, recta vel curvata, 13—18 μ longa; cellula basali cylindracea 2—6 μ longa; cellula apicali globosa vel oblonga-piriformia, 7—13 × 7—10 μ. Hyphopodia mucronata illis capitatis commixta, pauca, opposita vel alternata, curvata, ampullacea, 13—17 × 7—10 μ, collo suberecto, 3 μ crasso. Setae myceliales numerosae, dispersae, erectae, late arcuatae vel uncinatae, simplices, acutae vel subacutae usque ad 290 × 8—10 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae atrobrunneae cylindraceae, obtusae, 4-septatae, constrictae, 35—44 × 14—16 × 11—13 μ.

Hab. in foliis *Anacolosae frutescentis*, Depok, Java, *Beumée s.n.* (*BO 8298*; typus).

On Oleaceae.

(88) **Meliola schwarzii** Hansf., *sp. nov.* (3113.4223)

Plagulae epiphyllae, densae, velutinae, usque ad 4 mm diam. vel numerosae confluentesque. Mycelium ex hyphis atrobrunneis, rectis vel undulatis, 6—8 μ crassis (cellulis plerumque 15—25 μ longis), opposite acuteque ramosis, dense reticulatis compositum. Hyphopodia capitata op-

posita vel alternata, dense reticulatis compositum. Hyphopodia capitata vel alternata, patentia, recta vel curvula, 15—20 μ longa; cellula basali cylindracea, 3—7 μ longa; cellula apicali subglobosa vel piriformia, integra, 11—16 × 8—12 μ. Hyphopodia mucronata numerosa, illis capitatis commixta, opposita, vel alternata, ampullacea, 20—27 × 7—10 μ, collo erecto, 3—4 μ crasso. Setae myceliales numerosae, erectae, rectae, simplices, acutae, usque ad 550 × 9—11 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae vel ellipsoideae, 4-septatae, constrictae, 38—47 × 17—19 × 13—15 μ.

Hab. in foliis *Jasmini sumbacis*, Lembang, Priangan (Preanger), Java, *B. Schwarz s.n.* (*BO 2459*; typus); Bogor (Buitenzorg), Java, *Bakhuizen van den Brink 7577* (*BO 11155*); Kapit, Sarawak, Borneo, *Clemens 21035* (*BO 12419*);
in foliis *Jasmini sp.*, Sojaweg, Amboina, *Rant 320* (*BO 10936*).

This species is near *M. gemellipoda* Doidge and *M. busogensis* Hansf., differing in having a variable proportion of alternate hyphopodia, whereas *M. jasminicola* P. Henn. has all hyphopodia alternate.

On Pandanaceae.

(89) **Meliola juttingii** Hansf., *sp. nov.* (3121.6333)

Plagulae amphigenae, usque ad 5 mm diam. vel confluentes, densae, velutinae, crustosae, facile secedentes. Mycelium ex hyphis atrobrunneis, subrectis vel undulatis, 8—11 μ crassis (cellulis plerumque 20—25 μ longis), alternatim vel irregulariter ramosis, dense reticulatis compositum. Hyphopodia capitata, alternata, plus minusve antrorsa, recta vel curvula, 18—35 μ longa; cellula basali cylindracea, 5—14 μ longa; cellula apicali globosa, integra, 14—22 × 16—23 μ. Hyphopodia mucronata in hyphis distinctis evoluta, opposita vel alternata, curvata, ampullacea, 20—28 × 8—10 μ, collo elongato, suberecto, 3 μ crasso. Setae myceliales numerosae, dispersae, erectae, raro subrectae, plerumque medio abrupte curvatae et superne flexuosae vel uncinatae, simplices, obtusae, usque ad 530 × 9—12 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 260 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 58—65 × 20—27 × 19—22 μ.

Hab. in foliis *Pandani sp.*, Kuripan, Java, *van Beuthem Jutting s.n.* (*BO 12832*; typus); loc. cit., *Docters van Leeuwen 11691* (*BO 13097*); Hort. Bog., Bogor (Buitenzorg), Java, *BO 4559*; loc. cit., *Bruggeman s.n.* (*BO 11790*); Tasikmalaja, Java, *B. Schwarz s.n.* (*BO 5770*); loc. cit., *B. Schwarz s.n.* (*BO 6046*); loc. cit., *BO 7286*; between Bogor and Djakarta (Batavia), Java, *Boedijn s.n.* (*BO 10928*); Tjilodong, Java, *van Steenis 4674* (*BO 11885*); Pasauran, Banten (Bantam), Java, *Boedijn 1273* (*BO 12558*).

On Papilionaceae.

(90) MELIOLA ABRUPTA H. & P. Syd. *in* Ann. myc., Berl. 15: 181. 1917.

On *Derris multiflora*, Tjikampek, Java, *Boedijn s.n.* (*BO 10971*).

(91) **Meliola bantamensis** Hansf., *sp. nov.* (3111.3223)

Plagulae epiphyllae, raro etiam hypophyllae, usque ad 3 mm diam., saepe numerosae et confluento-effusae, tenuissimae, tenuiter velutinae. Mycelium ex hyphis atrobrunneis, flexuosis vel tortuosis, 5—7 μ crassis (cellulis plerumque 20—35 μ longis), opposite vel irregularites ramosis (60—90°), laxe reticulatis compositum. Hyphopodia capitata alternata vel distantia, 14—20 μ longa, patentia, recta vel curvata; cellula basali cylindracea 3—6 μ longa; cellula apicali versiformia, saepe irregulariter curvata et angulosa, vel sinuoso-lobata, raro integra et late ovata, 10—14 × 11—15 μ. Hyphopodia mucronata illis capitatis commixta vel in hyphis distinctis evoluta, plerumque alternata, curvata, ampullacea, 13—16 × 6—9 μ, collo erecto, 3 μ crasso. Setae myceliales laxe dispersae, erectae, rectae, simplices, acutae, usque ad 500 × 7—9 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 140 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, leniter constrictae, 36—40 × 11—13 μ.

Hab. in foliis *Desmodii zonati*, G. Karang, Banten (Bantam), Java, *Boedijn 1301* (*BO 12562*; typus).

The same species occurs also on *Desmodium scalpe*, Tjisarua, Java, *Boedijn 1646* (*BO 13093*), but here opposite capitate hyphopodia occur rarely; Tjibodas, Java, *Boedijn 238* (*BO 11710*), with the setae almost completely limited to the vicinity of the perithecia.

On *Desmodium gangeticum*, Ngebel, Java, *Boedijn 3088* (*BO 15225*); loc. cit., *Boedijn 3109* (*BO 15237*).

On *Desmodium laxiflorum*, Ngebel, Java, *Boedijn 3112* (*BO 15250*).

(92) MELIOLA BICORNIS Wint. *in* Hedwigia 25: 99. 1886.

On *Desmodium elegans*, Pangipiran, E of G. Ascupan, Java, *Boedijn 2651* (*BO 14538*); G. Kenanga, Java, *Boedijn 2641* (*BO 14479*).

On *Desmodium scalpe*, Tjibodas, Java, *Boedijn 1494* (*BO 12893*).

On *Dumasia villosa*, Telaga Patengan, G. Patuha, Java, *Boedijn 3467* (*BO 17415*).

On *Adenanthera microsperma*, Tjipetir (estate), Java, *Maas s.n.* (*BO 7370*).

On *Erythrina subumbrans*, mixed with *M. erythrinae* Syd., Java, *Steinmann s.n. p.p.* (*BO 11893*).

(93) MELIOLA DESMODII Karst. & Roum. *in* Rev. mycol. 12: 77. 1890.

On *Desmodium gangeticum*, Amboina, *Robinson 2256* (*BO 3975*), det. Sydow.

On *Desmodium umbellatum*, Amboina, *Robinson 2180* (*BO 3974*), det. Sydow.

(94) MELIOLA ERYTHRINAE H. & P. Syd. *in* Ann. myc., Berl. 15: 185. 1917.

On *Erythrina subumbrans*, mixed with *M. bicornis* Wint., Java *Steinmann s.n. p.p.* (*BO 11893*).

On *Spatholobus ferrugineus*, Tjiapus-kloof, Java, *Boedijn s.n. p.p.* (*BO 10978*).

(95) **Meliola mucunae-acuminatae** Hansf., *sp. nov.* (311/31.3221)

Plagulae epiphyllae, usque ad 1 mm diam., numerossissimae, confluentesque. Mycelium ex hyphis atrobrunneis, subrectis vel flexuosis, circa

6 μ crassis (cellulis plerumque 30—40 μ longis), opposite vel irregulariter ramosis (60—90°), laxe reticulatis compositum. Hyphopodia capitata alternata vel distantia, recta vel curvula, patentia, 13—18 μ longa; cellula basali cylindracea, 3—6 μ longa; cellula apicali versiformia, saepe subglobosa et rotundato-angulosa, vel clavata et apice truncata, irregularia, 10—15 × 9—16 μ. Hyphopodia mucronata numerosa, in hyphis distinctis evoluta, opposita vel alternata, raro ternata, curvata, ampullacea, 10—16 × 6—8 μ, collo brevi, erecto, 3 μ crasso. Setae myceliales tenuiter dispersae et juxta perithecia aggregatae, erectae, rectae, raro simplices acutaeque, plerumque 2—3-dentatae usque ad 20 μ, usque ad 290 × 7—9 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 140 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 33—39 × 12—15 × 10—12 μ.

Hab. in foliis *Macaranga aeruminatae*, Nusa Kambangan, Java, *Boedijn 1089* (*BO 12091*; typus).

(96) **Meliola ostryoderridis** Hansf. & Deight. var. **millettiae-sericeae** Hansf., *var. nov.* (311/33.4223)

Plagulae epiphyllae, tenues, usque ad 5 mm diam., raro etiam hypophyllae. Mycelium ex hyphis atrobrunneis, subrectis, 6—7 μ crassis (cellulis plerumque 20—35 μ longis), opposite ramosis (60—90°), laxissime reticulatis compositum. Hyphopodia capitata alternata vel usque ad 20 % opposita, saepius plus minusve curvata, 11—25 μ longa; cellula basali cylindracea, 3—8 μ longa; cellula apicali subglobosa vel cylindracea, integra, saepe curvata, apice rotundata, 10—18 × 7—11 μ. Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel alternata, curvato-ampullacea, 16—20 × 8—10 μ, collo erecto, 3 μ crasso. Setae myceliales tenuiter dispersae et juxta perithecia aggregatae, erectae, rectae, simplices, acutae vel 2—4-dentatae usque ad 12 μ, usque ad 700 × 8—9 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, leniter constrictae, 37—42 × 14—17 μ.

Hab. in foliis *Millettiae sericeae*, Sumatra, Bukittinggi (Fort de Kock), *Jacobson s.n.* (*BO 4730*; typus); Tjigombong, Java, *Boedijn 748* (*BO 11725*).

On Polygonaceae.

(97) **Irenina polygoni** Hansf., *sp. nov.* (3103.4230)

Plagulae amphigenae, densae, usque ad 2 mm diam., vel raro confluentes. Mycelium ex hyphis atrobrunneis, flexuosis, 6—8 μ crassis (cellulis plerumque 20—30 μ longis), opposite vel irregulariter ramosis, dense reticulatis compositum. Hyphopodia capitata alternata vel usque ad 5 % opposita, recta vel curvata, 11—15 μ longa; cellula basali cylindracea 2—4 μ longa; cellula apicali globosa vel ovata, integra, 9—12 × 9—12 μ. Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel alternata, conoideo-ampullacea, 13—20 × 7—9 μ, collo brevi, erecto, 3 μ crasso.

Setae nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 210 μ diam., cellulis parietis rotundato-conoideis, usque ad 15 μ alt. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 34—41 × 14—15 × 11—13 μ.

Hab. in foliis *Polygoni chinensis*, Tjibodas, Java, *Boedijn 887* (*BO 11963*; typus).

The mycelium forms characteristic rounded, close meshes, following the surface depressions of the leaf cuticle.

On Rhamnaceae.

(98) IRENOPSIS TENUISSIMA Stev. *in* Ann. myc., Berl. 25: 439. 1927.

and

(99) MELIOLA COUANIAE Hansf. *in* Proc. Linn. Soc., Lond. 157: 22. 1945.

On *Gouania leptostachya*, Tjigombong, Java, *Boedijn 1166* (*BO 12335*).

Setae are rare on the colonies of the latter species in this material, and are limited to the immediate neighbourhood of the perithecia.

On Rosaceae.

(100) IRENINA RHAPHIOLEPIS Yamamoto *in* Trans. nat. Hist. Soc. Formosa 31: 50. 1941.

On *Prunus javanica*, Bot. Gard., Bogor (Buitenzorg), Java, *Noerjoeng s.n.* (*BO 4645*, *BO 6049*).

On Rubiaceae.

(101) AMAZONIA PSYCHOTRIAE (P. Henn.) Theiss *in* Ann. myc., Berl. 11: 499. 1913.

On *Argostemma uniflorum*, G. Salak, Java, *Boedijn s.n.* (*BO 10999*).
On *Lasianthus lucidus*, G. Bunder, Java, *Boedijn 1151* (*BO 12385*).
On *Psychotria viridiflora*, Tjilodong, Java, *Boedijn 1491* (*BO 13018*).

(102) **Amazonia psychotriae** (P. Henn.) Theiss. var. **major** Hansf., *var. nov.* (3101.4220)

Plagulae epiphyllae, usque ad 1 mm diam., leves. Mycelium ex hyphis atrobrunneis, leniter sinuosis, 6—7 μ crasis (cellulis plerumque 15—20 μ longis), alternatim vel irregulariter ramosis, subdense radianto-reticulatis compositum. Hyphopodia capitata alternata, antrorsa, 13—18 μ longa, cellula basali cuneata vel cylindracea, 4—8 μ longa, cellula apicali globosa vel late ovata, 10—13 × 8—11 μ. Setae nullae. Hyphopodia mucronata illis capitatis commixta, alternata, ampullacea, 18—25 × 7—9 μ, collo suberecto, 3—4 μ crasso. Perithecia 1—2, centralia, atra, convexa, levia, usque

ad 400 μ diam. et 150 μ alta, sursum radiata, margine subfimbriata. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 35—42 × 16—18 μ.

Hab. in foliis *Psychotriae viridiflorae*, Tjilodong, Java, *Boedijn 1888* (*BO 13021*).

This differs from the Brazilian type mainly in the larger perithecia and the large spores, the latter in the type measuring only 30—35 × 12—14 μ.

(103) IRENINA NAUCLEAE Boedijn *in* Bull. Jard. bot. Buitenzorg III 16: 369. 1940. (3101.4330)

On *Nauclea excelsa* var. *mollis*, Krakatau I., Java, *Boedijn 2864* (*BO 14658*; type collection).

On *Nauclea* (cf. *excelsa*), Krakatau I., *Boedijn 2865* (*BO 14657*).

(104) **Meliola kibirae** Hansf. & Stev. var. **mussaendae** Hansf., *var. nov.* (3111.3223)

Plagulae epiphyllae, tenues, usque ad 1 mm diam. Mycelium ex hyphis atrobrunneis, tortuosis, 4—6 μ crassis (cellulis plerumque 20—40 μ longis), irregulariter ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, 11—23 μ longa; cellula basali cylindracea, 2—13 μ longa; cellula apicali subglobosa vel ovata, interdum truncata vel angulosa, saepius integra, 8—15 × 8—12 μ. Hyphopodia mucronata illis capitatis commixta, alternata, ampullacea, curvata, 12—18 × 6—8 μ, collo suberecto, 3 μ crasso. Setae myceliales juxta perithecia evolutae, erectae, rectae, simplices, acutae, usque ad 600 × 8—9 μ. Perithecia laxe aggregata, atra, globosa, verrucosa, usque ad 140 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, constrictae, 4-septatae, 32—39 × 12—15 μ.

Hab. in sepalis *Mussaendae frondosae*, Tjiapus-kloof, Java, Nov. 1894, *Massart 799* (*BO 3700*; typus).

The mycelium is very characteristic, the hyphae following the depressions in the surface of the outgrown sepals, and forming rounded meshes, often two to three hyphae stranded together.

(105) **Meliola kibirae** Hansf. & Stev. var. **petungae** Hansf., *var. nov.* (3111.3223)

Plagulae amphigenae, tenues vel densae, in epiphyllo usque ad 1 mm diam., in hypophyllo majores, tenuiter velutinae. Mycelium ex hyphis brunneis, subrectis vel undulatis, 6—7μ crassis (cellulis plerumque 20—30 μ longis), opposite vel irregulariter ramosis, reticulato-radiantibus compositum. Hyphopodia capitata alternata, recta vel antrorse curvata, 18—25 μ longa; cellula basali cylindracea 5—12 μ longa; cellula apicali ovata vel subglobosa 10—15 × 9—11 μ. Hyphopodia mucronata praecipue in hyphis

distinctis evoluta, opposita vel alternata, curvata, ampullacea, 16—22 × 7—9 μ, collo suberecto, 3 μ crasso. Setae myceliales tenuiter dispersae et juxta perithecia aggregatae, erectae, rectae, simplices, acutae vel subacutae, usque ad 530 × 7—9 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 29—35 × 13—15 × 11—12 μ.

Hab. in foliis *Petunga roxburghii* (*P. microcarpae*), Tjilodong, Java, *Boedijn 1695* (*BO 13006*; typus).

(106) MELIOLA LONGISETA Höhn, *in* S.B. Akad. Wiss. Wien, Math.-nat. Kl., Abt. I, 116: 100. 1907.

On *Chasalia curviflora*, Tjitjadas, Java, *Boedijn 2661* (*BO 14537*); Java?, *BO 5067*.

(107) MELIOLA PSYCHOTRIAE Earle *in* Bull. New York bot. Gdn 3: 308. 1905.

On *Pavetta indica*, Tjilodong, Java, *Boedijn 1693* (*BO 13014*); Nusa Kambangan, Java, *Boedijn 1686* (*BO 12104*).

(108) **Meliola randicola** Hansf., *sp. nov.* (3112.4223)

Plagulae amphigenae, in epiphyllo densae, usque ad 2 mm diam., in hypophyllo usque ad 5 mm diam. vel confluentes. Mycelium ex hyphis brunneis, subrectis vel flexuosis, 7—8 μ crassis (cellulis plerumque 20—25 μ longis), opposite ramosis, dense reticulatis compositum. Hyphopodia capitata opposita plus minusve antrorsa, recta vel curvula, 13—18 μ longa; cellula basali cylindracea 2—5 μ longa; cellula apicali ovata vel cylindracea, integra, 9—14 × 8—10 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, curvata, ampullacea, 15—22 × 7—8 μ, collo suberecto, 3—4 μ crasso. Setae myceliales dispersae etiam juxta perithecia aggregatae, erectae, rectae, simplices, acutae vel subacutae, usque ad 650 × 7—9 μ. Perithecia atra, globosa, verrucosa, usque ad 170 μ diam. Sporae atrobrunneae, cylindraceae, obtusae, 4-septatae, constrictae, 42—48 × 17—19 μ.

Hab. in foliis *Randiae patulae*, Depok, Java, *Boedijn 2454* (*BO 14049*; typus).

On the upper leaf surface the perithecia are usually in a close central group, but are more scattered below, where the mycelium is somewhat more crooked and less regular.

On Rutaceae.

(109) IRENINA OBESA (Speg.) Stev. *in* Ann. myc., Berl. 25: 450. 1927.

Colonies epiphyllous, to 2 mm diam., dense, smooth. Mycelium of substraight to crooked dark brown hyphae 5—8 μ thick, the cells mostly 15—20 μ long, branching opposite or alternate, closely reticulate and

nearly solid. Capitate hyphopodia alternate or about 1 % opposite, more or less antrorse, 13—24 μ long; stalk cell cylindric, 4—8 μ long; head cell globose to ovate, usually entire, rarely shallowly lobed, 10—17 × 9—14 μ. Mucronate hyphopodia mixed with the capitate, alternate, rarely opposite, bent ampulliform, 14—20 × 6—9 μ, neck upturned, 3—4 μ thick. Setae none. Perithecia scattered, black, globose, up to 190 μ diam., the surface cells projecting up to 10 μ, rounded-convex. Spores dark brown, ellipsoid, obtuse, 4-septate, constricted, 33—39 × 14—16 × 12—14 μ.

On *Clausena excavata*, Tjikampek, Java, *Boedijn 865* (*BO 12211*).

(110) MELIOLA CITRICOLA H. & P. Syd. *in* Ann. myc., Berl. **15**: 183. 1917.

On *Citrus medica*, Bogor (Buitenzorg), Java, *Nongnong s.n.* (*BO 996*).

On *Citrus nobilis*, Pasarminggu, Java, *Ochse s.n.* (*BO 4748*).

On *Citrus sp.*, Bukittinggi (Fort de Kock), Sumatra, *Jacobson 179* (*BO 2828*); Nusa Kambangan, Java, *Boedijn 1105* (*BO 12085*).

(111) **Meliola evodiicola** Hansf., *sp. nov.* (3111.3221)

Plagulae epiphyllae, usque ad 3 mm diam., tenues, atrae. Mycelium ex hyphis atrobrunneis, undulatis vel flexuosis, 8—9 μ crassis (cellulis plerumque 20—35 μ longis), opposite vel irregulariter ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, plus minusve antrorsa, 18—30 μ longa; cellula basali cylindracea 5—12 μ longa; cellula apicali cylindracea, ovata vel leniter rotundato-angulosa, raro irregularia, plerumque recta, 10—19 × 9—12 μ. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampulliformia, 19—27 × 7—9 μ, collo elongato, suberecto, 3 μ crasso praedita. Setae myceliales paucae, saepe nullae, circum perithecia evolutae, simplices, obtusae, rectae vel curvulae, haud uncinatae, usque ad 280 × 8—9 μ. Perithecia laxe dispersa, globosa, verrucosa, atra, usque ad 180 μ diam. Sporae atrobrunneae, ellipsoideae vel cylindraceae, obtusae, 4-septatae, constrictae, 34—39 × 14—18 × 12—13 μ.

Hab. in foliis *Evodiae glabrae* (*E. aromaticae*), G. Bunder, Java, *Boedijn 1209 p.p.* (*BO 12177*; typus).

On Sapindaceae.

(112) MELIOLA CAPENSIS (Kalchbr. & Cooke) Theiss. *in* Ann. myc., Berl. **10**: 20. 1912.

On *Schleichera oleosa* (*S. trijuga*), Tjikampek, Java, *Boedijn 861* (*BO 12213*); G. Pandan, Java, *Boedijn 3130* (*BO 15251*).

(113) **Meliola capensis** (Kalchbr. & Cooke) Theiss. var. **mischocarpi** Hansf., *var. nov.* (3112.4223)

Plagulae amphigenae, usque ad 5 mm diam. vel confluentes, subdensae, tenuiter velutinae. Mycelium ex hyphis atrobrunneis, subrectis, 6—7 μ crassis (cellulis plerumque 20—30 μ longis), opposite ramosis, dense

radiantibus reticulatisque compositum. Hyphopodia capitata opposita, patentia, plerumque recta, 13—16 μ longa; cellula basali cylindracea 2—5 μ longa; cellula apicali subglobosa vel late ovata, apice late rotundata, integra, 9—13 × 6—10 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, curvata, ampullacea, 14—20 × 7—9 μ, collo erecto, 3 μ crasso. Setae myceliales dispersae, et breviores juxta perithecia aggregatae, erectae, rectae, simplices, acutae usque ad 900 × 8—9 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, ellipsoideae, obtusae, 4-septatae, constrictae, 42—47 × 18—20 μ.

Hab. in foliis *Mischocarpi sundaici*, Tjilodong, Java, *Boedijn 1685* (*BO 13017*; typus); loc. cit., *van Overeem 27, 27a* (*BO 806, 805*); loc. cit., *Boedijn 1677* (*BO 13005*).

The shorter mycelial setae around the perithecia are occasionally dentate, to 3 μ, and the perithecia are usually surrounded by a radiating subiculum of hyphopodiate hyphae.

On Scrophulariaceae.

(114) MELIOLA MICROSPORA Pat. & Gaill. *in* Bull. Soc. myc. France 4: 104. 1892.

= *M. udei* Hansf. *in* Proc. Linn. Soc., Lond. 160: 132. 1948.

On *Hysanthes ruelloides*, Java?, *BO 4913*.

This corresponds closely to the type from Venezuela, save that the hyphopodia are somewhat more elongate, reaching 16 μ long.

On Sterculiaceae.

(115) IRENOPSIS BUTTNERIICOLA Deight. *in* Sydowia 5: 2. 1951.

On *Sterculia spanoghei* (*S. spangleri*, Pasauran, Banten (Bantam), Java, *Boedijn 1279* (*BO 12574*).

This specimen is rather scanty and the determination only approximate though the material corresponds to no other species known on this host family.

(116) **Irenopsis tjibodense** Hansf., *sp. nov.* (3401.3220)

Plagulae epiphyllae, tenues, aegre persicues, usque ad 2 mm diam., vel confluentes, leves. Mycelium ex hyphis atrobrunneis, subrectis, 7—8 μ crassis (cellulis plerumque 25—40 μ longis), opposite ramosis compositum, laxe reticulatum. Hyphopodia capitata alternata vel dispersa, recta vel curvata, 15—23 μ longa; cellula basali cuneato-cylindracea, 5—12 μ longa; cellula apicali globosa vel late clavata, saepe leniter reflexo-curvata, integra vel raro leniter angulosa, 11—15 × 11—14 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 18—23 × 7—9 μ, collo curvato, suberecto, 3 μ crasso praedita. Setae myceliales nullae.

Perithecia dispersa, atra, globosa, verrucosa, usque ad 140 μ diam., superne setis erecto-patentibus simplicibus, obtusis, rectis vel curvulis, haud uncinatis, continuis, 7—8 μ crassis, leniter granulosis, usque ad 120 μ longis, ornata. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, 33—39 × 14—17 μ.

Hab. in foliis *Pterospermi javanici*, G. Tjibodas, Tjampea, Java, *Boedijn 795 (BO 11904;* typus).

On Theaceae.

(117) MELIOLA THEACEARUM Stev. *in* Ann. myc., Berl. **26**: 207. 1928.

On leaves of *Schima noronhae*, Bolang, Bogor (Buitenzorg), Java, *Boedijn 1357 (BO 12851)*; Tjibodas, Java, *Boedijn 1497 p.p. (BO 12782)*; G. Pantjar, Java, *Boedijn 1730 p.p. (BO 13110)*.

(118) **Meliola schimae** Hansf., *sp. nov.* (3141.5321)

Plagulae hypophyllae, usque ad 10 mm diam. vel confluentes, subtenues, tenuiter velutinae. Mycelium ex hyphis atrobrunneis, flexuosis, 6—8 μ crassis (cellulis plerumque 20—25 μ longis), opposite ramosis, laxe vel subdense reticulatis compositum. Hyphopodia capitata alternata, plus minusve curvata, 18—24 μ longa; cellula basali cylindracea, 4—9 μ longa; cellula apicali subglobosa, ovata, late piriformia vel irregularia, saepe curvata, apice saepe attenuata vel subacuta, 11—17 × 9—12 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, curvata, ampullacea 20—28 × 8—9 μ, collo elongato, suberecto, 3 μ crasso. Setae myceliales laxe dispersae, erectae, 200—270 μ altae, 10—11 μ crassae, 3—4-dichotome divisae, ramis 1-riis usque ad 50 μ longis, 2-riis ad 50 μ, 3-riis ad 30 μ, 4-riis ad 30 μ, apice acutis. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. (immatura?). Sporae atrobrunneae, ellipsoideae, obtusae, 4-septatae, constrictae, 46—53 × 20—23 μ.

Hab. in foliis *Schimae noronhae*, G. Bunder, Java, *Boedijn 1212 p.p. (BO 12411;* typus); G. Pantjar, Java, *Boedijn 1730 p.p. (BO 13110)*.

(119) MELIOLA SCHIMICOLA Yamamoto *in* Trans. nat. Hist. Soc. Formosa **30**: 421. 1940.

On *Schima noronhae*, G. Bunder, Java, *Boedijn 1212 p.p. (BO 12411)*; Situgunung, Sukabumi, Java, *Boedijn 1358 (BO 12847)*; Tjibodas, Java, *Boedijn 1497 p.p. (BO 12782)*; G. Panjisan, Java, *Boedijn 1718 (BO 13125)*; G. Beser, Java, *Boedijn 3008 (BO 14584)*.

On Tiliaceae.

(120) IRENOPSIS TRIUMFETTAE (Stev.) Hansf. & Deight. *in* Mycol. Papers, C.M.I. No. 23: 14. 1948.

On *Schoutenia ovata*, Tjikampek, Java, *Boedijn s.n. (BO 10947)*.

On *Triumfetta bartramia*, Pangipiran, E of G. Ascupan, Java, *Boedijn 2648 (BO 14436)*.

Perithecia dispersa, atra, globosa, verrucosa, usque ad 140 μ diam., superne setis erecto-patentibus simplicibus, obtusis, rectis vel curvulis, haud uncinatis, continuis, 7—8 μ crassis, leniter granulosis, usque ad 120 μ longis, ornata. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, 33—39 × 14—17 μ.

Hab. in foliis *Pterospermi javanici*, G. Tjibodas, Tjampea, Java, *Boedijn 795 (BO 11904;* typus).

On Theaceae.

(117) MELIOLA THEACEARUM Stev. *in* Ann. myc., Berl. **26**: 207. 1928.

On leaves of *Schima noronhae*, Bolang, Bogor (Buitenzorg), Java, *Boedijn 1357 (BO 12851)*; Tjibodas, Java, *Boedijn 1497 p.p. (BO 12782)*; G. Pantjar, Java, *Boedijn 1730 p.p. (BO 13110)*.

(118) **Meliola schimae** Hansf., *sp. nov.* (3141.5321)

Plagulae hypophyllae, usque ad 10 mm diam. vel confluentes, subtenues, tenuiter velutinae. Mycelium ex hyphis atrobrunneis, flexuosis, 6—8 μ crassis (cellulis plerumque 20—25 μ longis), opposite ramosis, laxe vel subdense reticulatis compositum. Hyphopodia capitata alternata, plus minusve curvata, 18—24 μ longa; cellula basali cylindracea, 4—9 μ longa; cellula apicali subglobosa, ovata, late piriformia vel irregularia, saepe curvata, apice saepe attenuata vel subacuta, 11—17 × 9—12 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, curvata, ampullacea 20—28 × 8—9 μ, collo elongato, suberecto, 3 μ crasso. Setae myceliales laxe dispersae, erectae, 200—270 μ altae, 10—11 μ crassae, 3—4-dichotome divisae, ramis 1-riis usque ad 50 μ longis, 2-riis ad 50 μ, 3-riis ad 30 μ, 4-riis ad 30 μ, apice acutis. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. (immatura?). Sporae atrobrunneae, ellipsoideae, obtusae, 4-septatae, constrictae, 46—53 × 20—23 μ.

Hab. in foliis *Schimae noronhae*, G. Bunder, Java, *Boedijn 1212 p.p. (BO 12411;* typus); G. Pantjar, Java, *Boedijn 1730 p.p. (BO 13110)*.

(119) MELIOLA SCHIMICOLA Yamamoto *in* Trans. nat. Hist. Soc. Formosa **30**: 421. 1940.

On *Schima noronhae*, G. Bunder, Java, *Boedijn 1212 p.p. (BO 12411)*; Situgunung, Sukabumi, Java, *Boedijn 1358 (BO 12847)*; Tjibodas, Java, *Boedijn 1497 p.p. (BO 12782)*; G. Panjisan, Java, *Boedijn 1718 (BO 13125)*; G. Beser, Java, *Boedijn 3008 (BO 14584)*.

On Tiliaceae.

(120) IRENOPSIS TRIUMFETTAE (Stev.) Hansf. & Deight. *in* Mycol. Papers, C.M.I. No. 23: 14. 1948.

On *Schoutenia ovata*, Tjikampek, Java, *Boedijn s.n. (BO 10947)*.

On *Triumfetta bartramia*, Pangipiran, E of G. Ascupan, Java, *Boedijn 2648 (BO 14436)*.

On Urticaceae.

(121) **Meliola achudemiae** Hansf., *sp. nov.* (3111.3221)

Plagulae amphigenae, tenues, usque ad 2 mm diam., numerosae, interdum confluentes. Mycelium ex hyphis atrobrunneis, flexuosis vel tortuosis, 5—7 μ crassis (cellulis plerumque 20—40 μ longis), opposite acuteque ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, antrorsa vel patentia, plerumque recta, 14—22 μ longa; cellula basali cylindracea 4—8 μ longa; cellula apicali ovata, integra, 11—18 × 8—10 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, curvata, ampullacea, 13—21 × 7—9 μ, collo suberecto 3 μ crasso. Setae myceliales tenuiter dispersae erectae, rectae vel flexuosae, simplices, obtusae, usque ad 270 × 7—9 μ. Perithecia laxe aggregata, atra, globosa, verrucosa, usque ad 150 μ diam. Sporae atrobrunneae, ellipsoideae, obtusae, 4-septatae, constrictae, 28—34 × 11—13 μ.

Hab. in foliis *Achudemiae javanicae*, G. Karang, Banten (Bantam), Java, *Boedijn 1826* (*BO 12550*; typus).

(122) **Irenina villebruneae** Hansf., *sp. nov.* (3101.5320)

Plagulae epiphyllae, tenues, usque ad 4 mm diam. vel confluentes, leves. Mycelium ex hyphis atrobrunneis, subrectis vel leniter flexuosis, 6—7 μ crassis (cellulis plerumque 20—40 μ longis), opposite vel irregulariter ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata vel distantia, patentia, 20—35 μ longa; cellula basali cylindracea, 8—16 μ longa; cellula apicali subglobosa, ovata integraque, vel irregulariter angulosa et sublobata, 18—25 × 12—20 μ. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, curvata, ampullacea, 16—25 × 8—10 μ, collo suberecto, 3 μ crasso. Setae nullae. Perithecia laxe dispersa, atra, globosa, verrucosa, usque ad 160 μ diam., cellulis parietus obtuse conoideis, usque ad 20 μ altis. Sporae atrobrunneae, ellipsoideae, obtusae, 4-septatae, constrictae, 43—50 × 17—21 × 15—16 μ.

Hab. in foliis *Villebruneae scabrae* (= *V. rubescentis*), Tjianten, Java, *Boedijn 1776* (*BO 13815*; typus).

On Verbenaceae.

(123) IRENINA CALLICARPAE Stev. & Rold. *in* Philip. J. Sci. 56: 53. 1935.

On *Callicarpa* (= *Geunsia*) *pentandra*, Situgunung, Sukabumi, Java, *Boedijn 1347* (*BO 12849*).

(124) IRENINA CALLISTA (Rehm) Hansf. *in* Proc. Linn. Soc., Lond. 157: 169. 1946.

On *Callicarpa longifolia*, Nusa Kambangan, Java, *Boedijn 1981* (*BO 12106*).

On *Stachytarpheta indica*, Situ Palahlar, Krawang, Java, *Boedijn 2633* (*BO 14453*).

On *Premna obtusifolia*, Ambuina, *Robinson 2181 p.p.* (*BO 2545*).

(125) **Irenina depokensis** Hansf., *sp. nov.* (3101.4220)

Plagulae epiphyllae, 1—2 mm diam., subdensae, leves. Mycelium ex hyphis brunneis, tortuosis, 6—7 μ crassis (cellulis plerumque 15—20 μ longis), opposite vel irregulariter ramosis, dense reticulatis compositum. Hyphopodia capitata alternata, patentia, 20—30 μ longa, saepe curvata; cellula basali cylindracea, 5—14 μ longa; cellula apicali versiformia, irregulariter angulosa vel lobata, saepe curvata, 12—20 × 10—20 μ. Hyphopodia mucronata pauca vel numerosa, illis capitatis commixta, opposita vel alternata, curvata, ampullacea, 15—20 × 7—10 μ, collo suberecto, 3 μ crasso. Setae nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam., cellulis parietis rotundato-conoideis, usque ad 14 μ altis. Sporae atrobrunneae, cylindraceae vel ellipsoideae obtusae, 4-septatae, constrictae, 37—44 × 17—19 × 13—15 μ.

Hab. in foliis *Viticis paniculatae* (*V. bicoloris*), Sawangan, W of Depok, Java, *Bakhuizen van den Brink 3764* (*BO 2344*; typus).

(126) MELIOLA RIZALENSIS H. & P. Syd. *in* Ann. myc., Berl. 12: 551. 1914.

On *Peperomia cucneeca*, Pasauran, Banten (Bantam), Java, *Boedijn 1278* (*BO 12553*).

(127) MELIOLA RIZALENSIS Syd. var. VITICUS (Hansf.) Hansf. & Deight. *in* Mycol. Papers, C.M.I. No. 23: 70. 1948.

On *Clerodendron* sp., Bot. Gard., Bogor (Buitenzorg), *van Overeem s.n.* (*BO 40*); loc. cit., *van Overeem s.n.* (*BO 3892*).

On *Clerodendron inciusum* var. *macrosiphon*, Bot. Gard., Bogor (Buitenzorg), *Boedijn 757* (*BO 11728*); loc. cit., *van Overeem* s.n. (*BO 4910*).

On *Clerodendron inerme*, Bot. Gard., Bogor (Buitenzorg), *Nongnong s.n.* (*BO 4661*).

On *Clerondendron serratum*, Tjikampek, Java, *Boedijn s.n.* (*BO 10932*); Nusa Kambangan, *Boedijn 1097* (*BO 12093*), loc. cit., *Boedijn 1095* (*BO 12095*), loc. cit., *Beeker de la Rivière s.n.* (*BO 12445*); Pasauran, Banten (Bantam), Java, *Boedijn 1271* (*BO 12555*); G. Sari, Banten (Bantam), Java, *Boedijn 1284* (*BO 12556*); Ngebel, Java, *Boedijn 3098* (*BO 15225*).

(128) MELIOLA CLERODENDRICOLA P. Henn. *in* Hedwigia 37: 288. 1895.

On *Clerodendron minahassae*, Buton, *Robinson 2509* (*BO 2529*).
On *Clerodendron speciosissimum*, Amboina, *Robinson 2124* (*BO 2982*).
On *Clerodendron* sp., Macassar, Celebes, *Robinson 2466* (*BO 2521*).

These specimens were determined by Sydow as *M. sakawensis* P. Henn., but I find no difference between them and the African collections of *M. clerodendricola;* the type material of *M. sakawensis* has not been available to me as yet, so that it cannot be reduced to definite synonomy.

(129) MELIOLA MICROMERA H. & P. Syd. *in* Ann. myc., Berl. 12: 552. 1914.

On *Gaultheria elliptica* (*G. villosa*), Kidungdjati, Java, *Kalkhoven s.n.* (*BO 12835*).

There is little difference between this and the Java specimens I have classified above as *M. clerodendricola*, of which it may perhaps be best regarded as a variety.

(130) MELIOLA CALLICARPAE H. & P. Syd. *in* Ann. myc., Berl. 10: 80. 1912.

On *Premna tomentosa*, Tjitjadas, Java, *Boedijo 2661* (*BO 11161*).

On Violaceae.

(131) MELIOLA MACROCHAETA H. & P. Syd. *in* Elmer, Leafl. Philip. Bot. 5: 1538. 1912.

The Herbarium Bogoriense specimen of the type collection (Elmer 12887) has the following characters:

Colonies hypophyllous, 5—15 mm diam., thin. Mycelium of dark brown, straight or slightly undulate hyphae, 8—10 μ thick, the cells mostly 30—40 μ long, branching opposite or irregular at acute angles, loosely reticulate. Capitate hyphopodia alternate or more distant, mostly bent, 28—45 μ long; stalk cell cylindric, 5—20 μ long, sometimes 1-septate; head cell bent ellipsoid, entire or sometimes 2—3-lobed, 20—30 × 11—22 μ. Mucronate hyphopodia fairly numerous, opposite or alternate, mixed with the capitate, conoid-ampulliform, bent, 25—45 × 8—10 μ, the neck 3—4 μ thick, upturned. Mycelial setae almost entirely from the perithecial discs, erect, straight and obtuse (immature?), or 2—3-dentate to 30 μ, up to 1200 × 13—15 μ. Perithecia scattered, each on a solid disc surrounded by a few exhyphopodiate radiating hyphae, black, globose, verrucose, up to 210 μ diam, without setae. Spores dark brown, cylindric, obtusae, 4-septate, constricted, 47—58 × 18—21 × 15—17 μ.

On *Rinorea javanica*, Mt. Pulgar, Puerto Princesa, Palawan, Philippines, *Elmer 12887* (*BO 3229*).

Stevens (*in* Ann. myc., Berl. 25: 438. 1927), placed this species as *Irenopsis*, but I am unable to confirm that any setae arise from the perithecial walls and so return the species to *Meliola*, with the formula 3111.5334.

On Vitaceae.

(132) **Irenopsis leeae** Hansf. *in* J. Linn. Soc., Lond. 51: 268. 1937 var. **javensis** Hansf., *var. nov.* (3403.3220)

Plagulae epiphyllae, usque ad 1 mm diam., densae, leves. Mycelium ex hyphis atrobrunneis, flexuosis, 7—8 μ crassis (cellulis plerumque 15—

20 μ longis), opposite denseque ramosis (60—90°) dense reticulatis compositum, in centro plagularum subsolidum. Hyphopodia capitata alternata (minor 1 % opposita), 13—20 μ longa; cellula basali cylindracea, 2—6 μ longa; cellula apicali globosa, angulosa vel subirregularia, 9—15 × 10—16 μ. Hyphopodia mucronata illis capitatis commixta, numerosa, alternata vel opposita, curvata, ampullacea, 16—22 × 7—9 μ, collo suberecto 3 μ crasso. Setae myceliales nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 150 μ diam., superne setis 0—6 erecto-patentibus ornata; setae rectae vel leniter flexuosae, simplices, acutae, 2—3-septatae, leves, usque ad 130 μ longae, deorsum 7—9 μ crassae. Sporae atrobrunneae, ellipsoidae, obtusae, 4-septatae, constrictae, 30—35 × 14—15 μ.

Hab. in foliis *Leeae aequatae*, Tjigombong, Java, *Boedijn 1156* (*BO 12315*; typus).

Differs from the type in the much smaller proportion of opposite capitate hyphopodia, which are rather rare, and resembles the type in that the hyphopodia are arranged in more or less marked groups along the hyphae, separated by gaps without any.

(133) **Meliola cissi-repandae** Hansf., *sp. nov.* (2111.3221)

Plagulae epiphyllae, usque ad 3 mm diam., tenues vel subdensae, tenuiter velutinae. Mycelium ex hyphis brunneis, subrectis vel flexuosis, 6—8 μ crassis (cellulis plerumque 20—25 μ longis), opposite vel irregulariter ramosis, laxe vel subdense reticulatis compositum. Hyphopodia capitata alternata, patentia, recta vel curvata, 16—24 μ longa; cellula basali cylindracea 3—7 μ longa; cellula apicali subglobosa, ovata vel leniter rotundato-angulosa, saepe curvata, 11—17 × 10—15 μ. Hyphopodia mucronata illis capitatis commixta, alternata, curvata, ampullacea, 15—20 × 7—10 μ, collo erecto, 4—5 μ crasso. Setae myceliales tenuiter dispersae et juxta perithecia aggregatae, erectae, rectae, simplices, obtusae vel subacutae, usque ad 280 × 7—10 μ. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae atrobrunneae, cylindraceae, obtusae vel subtruncatae, 3-septatae, constrictae, 33—39 × 12—14 μ.

Hab. in foliis *Cissi repandae* (*Vitis repandae*; *Cissi vitigeneae*), Tjisarua, Java, *Boedijn 751 p.p.* (*BO 11746*; typus); Tjibodas, Java, *Boedijn 1822* (*BO 12209*).

The spores are very characteristic, often having one end obtusely rounded and the other almost truncate.

(134) **Meliola merrillii** Syd. *in* Philip. J. Sci., C Bot. 8: 479. 1913 var. **major** Hansf., *var. nov.* (3143.5332)

Plagulae epiphyllae, atrae densae, velutinae, usque ad 2 mm diam. Mycelium ex hyphis atrobrunneis, flexuosis, 7—9 μ crassis (cellulis plerumque 20—25 μ longis), opposite vel irregulariter ramosis, dense reticulatis compositum. Hyphopodia capitata alternata vel circa 2% opposita, patentia, saepe curvata, 17—28 μ longa; cellula basali cylindracea 3—8 μ longa;

cellula apicali irregulariter clavata, saepe apice truncata vel leniter rotundato-lobata, 13—20 × 11—20 μ. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, curvata, conoidea vel ampullacea, 20—26 × 7—10 μ, collo suberecto, 4—5 μ crasso. Setae myceliales numerosae, dispersae et juxta perithecia aggregatae, erectae, rectae, usque ad 300 μ altae, superne 3-dichotome divisae, ramis patentibus vel reflexis, 1-riis —50 μ, 2-riis —35 μ, 3-riis et 4-riis —20 μ, apice acutis. Perithecia dispersa, atra, globosa, verrucosa, usque ad 200 μ diam. Sporae atrobrunneae, cylindraceae vel ellipsoideae, obtusae, 4-septatae, constrictae, 45—52 × 19—21 × 16—18 μ.

Hab. in foliis *Cissi repandae* (*Vitidis repandae*), Tjisarua, Java, *Boedijn 751 p.p.* (*BO 11726*; typus).