

New African Meliolaceae — II.

By F. C. Deighton.

(Commonwealth Mycological Institute, Kew.)

In *Sydowia*, **5**, pp. 1—8, 1951, some new species and varieties of African *Meliolaceae* were described. The present account deals with a number of recent collections from Africa, chiefly from Sierra Leone, and with the revision of some earlier identifications which has been made necessary as a result of further study and new gatherings.

The type collections are deposited in the herbarium of the Commonwealth Mycological Institute.

I am grateful to the Director of the Royal Botanic Gardens, Kew, for allowing me to examine certain phanerogamic collections and to remove from the leaves two of the fungi described here.

(1) *Asteridiella salaciae-erectae* Deighton, sp. nov.

Plagulae epiphyllae, raro etiam hypophyllae, densae, glabrae, usque ad 2 mm. diam. Hyphae brunneae, illae epiphyllae rectae, illae hypophyllae sinuosae, opposite et rectangulariter ramosae, dense reticulatae, cellulis plerumque $12-20 \approx 8-10 \mu$. Hyphopodia capitata alternata, patentia vel leniter antrorsa, recta vel interdum leniter curvata, $18-24 \mu$ longa; cellula basali cylindrica vel cuneata, $3-7 \mu$ longa; cellula apicali ovata, oblonga vel clavata, margine sinuosa, saepe sublobata vel angulosa, $13-20 \approx 10-14 \mu$. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, $18-30 \approx 8-11 \mu$. Setae nullae. Perithecia laxè aggregata, atra, globosa, usque ad 220μ diam., tuberculosa; cellulis parietalibus obtuse conoideis, saepe curvatis, usque ad 25μ alt. Sporae brunneae, ellipsoideae, obtusae, 4-septatae, constrictae, $38-46 \approx 17-20 \approx$ plus minusve 14μ .

Hab. in foliis vivis *Salaciae erectae* (G. Don) Walp. (*Hippocrateaceae*), Sierra Leone: Ngokoma (Kori), 26. VI. 1954, Deighton M 6037 A (I.M.I. 57301 a, typus).

(2) *Asteridiella soyauxiae* Deighton, sp. nov.

Plagulae amphigenae, tenues, glabrae, usque ad 1 mm. diam. vel confluentes. Hyphae brunneae, subrectae vel sinuosae, opposite lateque ramosae, laxè reticulatae, cellulis plerumque $15-25 \approx 5-6 \mu$.

Hyphopodia capitata opposita vel alternata, leniter antrorsa vel subpatentia, 11—16 μ longa; cellula basali cylindrica, 2—5 μ longa; cellula apicali plerumque subglobosa vel ovata, interdum oblonga vel clavata, integra, recta vel leniter plerumque retrorse interdum antrorse curvata, 9—13 $\Rightarrow$ 6—10 μ . *Hyphopodia mucronata* illis capitatis commixta, opposita vel alternata, ampullacea, 15—20 $\Rightarrow$ 6—8 μ . Setae nullae. Perithecia laxè dispersa, atra, globosa, usque ad 160 μ diam., tuberculosa; cellulis parietalibus conoideis, curvatis, obtusis, usque ad 28 μ alt. Sporae brunneae, cylindricae, interdum leniter cuneatae, obtusae, 4-septatae, constrictae, 32—37 $\Rightarrow$ 12—14 $\Rightarrow$ 9—11 μ .

Hab. in foliis vivis *Soyauxiae floribundae* Hutch. (*Medusandraceae*), Sierra Leone: Gbesebu (Kamagai), 5. XI. 1952, Deighton M 4974 A (I.M.I. 51787 a, typus).

Epiphyllous colonies are severely parasitized by *Helminthosporium dorycarpum* Mont., and such parasitized colonies grow to a larger size.

Soyauxia was till recently included in *Passifloraceae*.

(3) *Asteridiella voacangae* Deighton, sp. nov.

Plagulae amphigenae, praecipue epiphyllae, glabrae, subdensae, usque ad 1.5 mm. diam. Hyphae brunneae, rectae, oppositè lateque ramosae, subdense reticulatae, cellulis plerumque 10—20 $\Rightarrow$ 6—9 μ . *Hyphopodia capitata alternata*, recta, antrorsa et saepe hyphis adnata, 14—20 μ longa; cellula basali cylindrica, recta vel antrorse curvata, 3—7 μ longa; cellula apicali subglobosa, elliptica vel ovata, integra, recta, 10—16 $\Rightarrow$ 10—12 μ . *Hyphopodia mucronata* in hyphis distinctis evoluta, opposita vel alternata, ampullacea, 14—18 $\Rightarrow$ 6—8 μ . Setae nullae. Perithecia dispersa, atra, globosa, usque ad 180 μ diam., tuberculosa; cellulis parietalibus obtuse conoideis, rectis, usque ad 15 μ alt. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, 36—40(42) $\Rightarrow$ 14—16(17) $\Rightarrow$ 12—13 μ .

Hab. in foliis vivis *Voacangae obtusae* K. Schum. (*Apocynaceae*), Sierra Leone: Gegbwema (Tunkia), 27. X. 1949, Deighton M 3282 p. p. (I.M.I. 40245 a, typus); *loc. cit.*, 4. IV. 1939, Deighton M 1970 p. p. (I.M.I. 23413 c); *loc. cit.*, 29. X. 1955, C. T. Pyne M 6381 p. p. (I.M.I. 61729 b); Buedu (Kisi Tungi), 6. IV. 1936, Deighton M 2353 p. p. (I.M.I. 5416 a).

On all collections cited above, other than the type, this species occurs mixed with *Meliola voacangae* Hansford & Stevens from which (apart from the absence of setae) it can be readily distinguished by its always entire capitate hyphopodia and its shorter and narrower ascospores.

In Mycol. Pap., *C.M.I.*, 23, p. 54, 1948, Hansford & Deighton referred several Sierra Leone collections on *Voacanga* to

Meliola voacangae, with a remark that the hyphopodia are rather more regular than in the Uganda type and the spores slightly smaller ($34-39 \Rightarrow 14-16 \mu$). More recent collections on *Voacanga obtusa* show that two species commonly occur on the same leaves; *Asteridiella voacangae*, described above, and *Meliola voacangae* Hansford & Stevens which is represented by the following Sierra Leone collections: Gima (Lunia), 20. VII. 1952, Deighton M 4834 A (I.M.I. 51018 a), apparently unmixed with any other Meliolaceous fungus; Buedu (Kisi Tungi), 6. IV. 1936, Deighton M 2353 p.p. (I.M.I. 5416 b); Gegbwema (Tunkia), 4. IV. 1939, Deighton M 1970 p.p. (I.M.I. 23413 a); *loc. cit.*, 29. X. 1955, C. T. P y n e M 6381 p.p. (I.M.I. 61729 a). The ascospores in these collections measure $(40)42-48 \Rightarrow 17-19(20) \mu$, and the characters of the fungus are in good agreement with Uganda collections of *M. voacangae*.

Deighton M 1335 (I.M.I. 23412) on *Voacanga africana* Stapf (incorrectly cited as M 1355 by Hansford & Deighton in *Mycol. Pap., C.M.I.*, 23, p. 54) is quite distinct from both these species and is being described elsewhere as a new species by Dr. C. G. Hansford.

(4) ***Irenopsis aburiensis*** Deighton, sp. nov.

Plagulae hypophyllae, subdensae, usque ad 5 mm. diam., vel confluentes. Hyphae brunneae, sinuosae vel subrectae, alternate vel opposite et acute vel late ramosae, subdense reticulatae, cellulis plerumque $20-40 \Rightarrow 5-9 \mu$. Hyphopodia capitata recta vel leniter curvata, $20-30 \mu$ longa, alternata lateralique vel plerumque in ramulis lateralibus hypharum, 0-3-septatis, usque ad 70μ longis, terminaliter posita; cellula basali cylindrica, pallidiore hyphis, $5-30 \mu$ longa recta vel plerumque varie flexuosa curvataque; cellula apicali subglobosa, elliptica vel obconoidea, plerumque recta integraque, interdum leniter varieque curvata, vel margine leniter sinuosa, $14-22 \Rightarrow 13-17 \mu$. Hyphopodia mucronata in hyphis distinctis evoluta, opposita vel alternata, ampullacea, $13-30 \Rightarrow 7-9 \mu$. Setae myceliales nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 200μ diam.; setae peritheciales paucae, atrobrunneae, rectae, 1-(?2-) septatae, obtusae, sursum leniter tortuosae vel hamatae, $75-95 \Rightarrow 8-9 \mu$. Sporae brunneae, ellipsoideae, obtusae, 4-septatae, constrictae, $48-53 \Rightarrow 22-24 \Rightarrow 16 \mu$.

Hab. in foliis vivis *Colae verticillatae* (Thonn.) Stapf ex A. Chev. (*Sterculiaceae*), Ghana: Aburi, 5. IV. 1953, leg. T. W. Tinsley, I.M.I. 55448 a, typus.

The capitate hyphopodia, commonly terminal on short lateral hyphal branches, distinguish this species from all other Meliolines that I have seen: at first sight, it might be thought that these hypho-

podia were provided with a multiseptate stalk-cell, but the actual stalk-cell is distinguished from the hyphal cells by its paler colour. Only two perithecial setae were seen on the material.

(5) ***Irenopsis leptonychia*** Deighton, sp. nov.

Plagulae epiphyllae, raro etiam hypophyllae, densae, usque ad 1.5 mm. diam. Hyphae brunneae, rectae, oppositae vel alternatae lateque ramosae, dense vel subdense reticulatae, cellulis plerumque $10-20 \Rightarrow 7-10 \mu$. Hyphopodia capitata alternata, plerumque recta, antrorsa, $16-24 \mu$ longa; cellula basali cylindrica, $2-7 \mu$ longa; cellula apicali subglobosa, late elliptica vel obovata, cum margine integra, interdum leniter sinuosa vel angulosa, raro sublobata, $11-19 \Rightarrow 11-15 \mu$. Hyphopodia mucronata numerosa, illis capitatis commixta, opposita vel alternata, ampullacea, $16-22 \Rightarrow 6-9 \mu$. Setae myceliales nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 185μ diam.; setae peritheciales $0-6$, deorsum rectae, sursum curvatae, sinuosae vel tortuosae, brunneae, continuae, granulosa, late obtusae, usque ad $95 \Rightarrow 8 \mu$. Sporae brunneae, cylindricae, obtusae, 4-septatae, contractae, $34-42 \Rightarrow 15-16 \Rightarrow 11-12 \mu$.

Hab. in foliis vivis *Leptonychia pubescentis* Keay (*Sterculiaceae*), Ghana: Tafo, 9. XII. 1953, Deighton M 5450 A (I.M.I. 55445 a, typus).

Many colonies are parasitized by *Helminthosporium dorycarpum* Mont., and such colonies may be as much as 6 mm. across. In hypophyllous colonies, the hyphae are substraight to slightly flexuous, and form a more lax network than in epiphyllous colonies: the capitata hyphopodia are less markedly and uniformly antrorse, and are sometimes subpatent; the stalk-cell is commonly $6-10 \mu$ long, and the head-cell is commonly clavate to pyriform and frequently angular to sublobate, and sometimes irregular in shape.

(6) ***Irenopsis media*** Deighton sp. nov.

Plagulae epiphyllae, densae, usque ad 5 mm. diam. Hyphae brunneae, subrectae, oppositae lateque ramosae, dense reticulatae, cellulis plerumque $20-35 \Rightarrow 7-8 \mu$. Hyphopodia capitata alternata, antrorsa vel patentia, recta, $18-25 \mu$ longa; cellula basali cylindrica vel cuneata, $3-7 \mu$ longa; cellula apicali plerumque subglobosa, interdum obovata, integra, $14-19 \Rightarrow 13-16 \mu$. Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel alternata, ampullacea, $16-25 \Rightarrow 8-10 \mu$. Setae myceliales nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 200μ diam.; setae peritheciales $3-10$, erecto-radiantes, rectae vel sursum plerumque flexuosae vel curvatae, vel leniter tortuosae, obtusae, deorsum atrobrunneae, sursum pallidiores, continuae, usque ad $200 \Rightarrow 8-9 \mu$, sursum leniter

granulosae. Sporae brunneae, ellipsoideae, obtusae, 4-septatae, constrictae, $44-52 \Rightarrow 19-22 \Rightarrow 14-15 \mu$.

Hab. in foliis vivis *Colae lateritiae* K. Schum. var. *maclaudii* (A. Chev.) Brenan & Keay (*Sterculiaceae*), Sierra Leone: Njala (Kori), 17. III. 1955, Deighton M 5191 A (I.M.I. 53011 a, typus); in foliis vivis *Colae chlamydanthae* K. Schum., Sierra Leone: Kpalu (Nongowa), 25. II. 1953, Deighton M 5164 A (I.M.I. 52344 a) (sporae $48-55 \Rightarrow 21-24 \mu$).

Differs from *Irenopsis coliicola* Hansford & Deighton in its denser colonies, entire capitate hyphopodia (the margin rarely sinuous but not sublobate), and the longer and wider spores: it differs from *I. njalaensis* Hansford & Deighton in its shorter and narrower spores.

In *I. njalaensis*, the colonies are usually small; but a collection on *Cola simiarum* leaves from Momenga (Kori), Sierra Leone, 16. IX. 1954, Deighton M 6220 A (I.M.I. 58037 a) shows colonies as large as in *I. media* but spores $52-61 \Rightarrow 24-30 \mu$, and for this reason seems best regarded as *Irenopsis njalaensis*.

(7) ***Irenopsis nesogordoniae*** Deighton, sp. nov.

Plagulae amphigenae, subdensae, usque ad 1.5 mm. diam. Hyphae brunneae, oppositae lateque ramosae, subdense reticulatae, illae ephyllae rectae, illae hypophyllae leniter sinuosae, cellulis plerumque $20-25 \Rightarrow 7-9 \mu$. Hyphopodia capitata alternata vel rarissime opposita, plerumque antrorsa, interdum hyphis adnata, plerumque recta, interdum leniter curvata, $15-23 \mu$ longa; cellula basali cylindrica, recta vel interdum antrorse curvata, $2-6 \mu$ longa; cellula apicali ovato-clavata, recta vel interdum leniter curvata, cum margine integra vel interdum leniter sinuosa vel sublobata, $12-19 \Rightarrow 9-12 \mu$. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, $14-20 \Rightarrow 6-8 \mu$. Setae myceliales nullae. Perithecia pauca, in centro plagularum aggregata, atra, globosa, rugosa, usque ad 120μ dim.; setae peritheciales $2-18$, $80-105 \Rightarrow 7-9 \mu$, ad basim leniter inflatae ($\Rightarrow 10-15 \mu$), ad apicem haud vel leniter inflatae, brunneae, continuae, plerumque sursum leniter flexuosae, sursum granulosae, crasse tunicatae. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, $37-42 \Rightarrow 17-19 \Rightarrow 13 \mu$.

Hab. in foliis vivis *Nesogordoniae papaveriferae* (A. Chev.) R. Capuron (*Cistanthera papaverifera* A. Chev.) (*Sterculiaceae*), Sierra Leone: Kasewe Hills Forest Reserve, 16. VI. 1952, Deighton M 4882 A (I.M.I. 52995 a, typus).

Many colonies are severely parasitized by *Helminthosporium dorycarpum* Mont., and such colonies are a little larger, up to 2 mm. diam.

(8) ***Irenopsis triaspidis*** Deighton, sp. nov.

Plagulae amphigenae, praecipue epiphyllae, subdensae, usque ad 1.5 mm. diam., vel confluentes. Hyphae brunneae, subrectae vel leniter sinuosae (illae hypophyllae sinuosae), opposite lateque ramosae, subdense reticulatae, cellulis plerumque $20-30 \Rightarrow 6-8 \mu$. Hyphopodia capitata alternata vel unilateralia, plerumque recta, patentia vel antrorsa, $16-23 \mu$ longa (illa hypophylla usque ad 26μ longa, interdum curvata); cellula basali cylindrica, $4-7 \mu$ longa (illa hypophylla usque ad 12μ); cellula apicali integra, subglobosa vel clavata (illa hypophylla saepe versiformi), $12-16 \Rightarrow 12-14 \mu$. Hyphopodia mucronata numerosa, illis capitatis commixta, opposita vel alternata, ampullacea vel corniformia, $16-25 \Rightarrow 5-8 \mu$. Setae myceliales nullae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 200μ diam.; setae peritheciales $0-4$, brunneae, deorsum rectae, sursum plerumque tortuosae interdum flexuosae vel hamatae, late obtusae, sursum granulosa, $0-1$ -septatae, $45-65 \mu$ longae, ad basim $7-8 \mu$ latae, vix attenuatae, interdum sursum leniter inflatae (usque ad 10μ). Sporae brunneae, cylindricae, obtusae, 4 -septatae, constrictae, $33-40 \Rightarrow 14-16 \Rightarrow 12-13 \mu$.

Hab. in foliis vivis *Triaspidis stipulatae* Oliv. (*Malpighiaceae*), Nigeria: Oyo Province, prope Ikire in via Ibadan-Ife, 10. I. 1948, leg. Keay, Ludipo et Mutch, I.M.I. 63582, typus.

The fungus was taken from collection no. F.H.I. 22462 in the phanerogamic collection, under *Triaspis stipulata*, in Herb. R.B.G., Kew.

(9) ***Meliola aethiops*** Sacc. var. ***longiseta*** Deighton, var. nov.

Plagulae hypophyllae, raro etiam epiphyllae, tenues vel subdensae, laxe velutinae, usque ad 5 mm. diam. vel confluentes. Hyphae brunneae, illae hypophyllae flexuosae vel sinuosissimae, illae epiphyllae subrectae vel leniter sinuosae, opposite lateque ramosae, laxe vel subdense reticulatae, cellulis $13-40$ (plerumque $25-40$) $\Rightarrow 5-8 \mu$. Hyphopodia capitata alternata vel usque ad 20 per centum opposita, patentia, plerumque recta, interdum leniter curvata, $10-15 \mu$ longa (raro -18μ , vel illa epiphylla -22μ); cellula basali cylindrica vel interdum cuneata, $2-6(9) \mu$ longa; cellula apicali integra, subglobosa vel breve ovata, recta vel interdum leniter curvata, $8-12$ (illa epiphylla -14) $\Rightarrow 7-11 \mu$. Hyphopodia mucronata pauca, illis capitatis commixta, opposita vel alternata, ampullacea, $14-18 \Rightarrow 6-9 \mu$. Setae myceliales dispersae, rectae, simplices, obtusae, usque ad $350 \Rightarrow 6-8 \mu$. Perithecia dispersa, atra, globosa, verrucosa, usque ad 220μ diam. Sporae atrobrunneae, cylindricae, obtusae, 4 -septatae, constrictae, $36-46 \Rightarrow 15-17 \Rightarrow 12-14 \mu$.

Hab. in foliis vivis *Distemonanthi benthamiani* Baill. (*Caesalpinaceae*), Sierra Leone: Lalehun (Gaura), XII. 1950, leg. H. C. King, M 3983 (I.M.I. 46596 a, typus).

A typo differt setis longioribus.

Opposite capitate hyphopodia are much less frequent in the epiphyllous colonies, which are less well developed than the hypophyllous colonies. The capitate hyphopodia are frequently formed well below the septa of the hyphae in hypophyllous colonies.

Sierra Leone collections of what I regard as *Meliola aethiops* Sacc., on *Cassia marginata* Roxb., M 1512 (I.M.I. 23833) and M 4640 A (I.M.I. 49016 a), show similar frequent hypophyllous colonies with sinuous mycelial hyphae and often a smaller proportion (about 30%) of opposite capitate hyphopodia than is normal in *M. aethiops*. Both these collections were made from the same tree, introduced from Ceylon and cultivated in a garden at Njala, which is the only specimen of *Cassia marginata* in Sierra Leone. One Sierra Leone collection on *Cassia sieberiana* DC., M 1431 (I.M.I. 23832), also shows a similar proportion of opposite capitate hyphopodia, but M 2375 (I.M.I. 5435 a) on *Cassia sieberiana* is intermediate in this respect between this and typical *Meliola aethiops*.

In none of the Sierra Leone collections on *Cassia marginata*, *C. fistula* or *C. sieberiana*, nor in the type of *Meliola aethiops* Sacc., do the setae exceed 280 μ in length.

(10) ***Meliola baisseae*** Deighton, sp. nov.

Plagulae amphigenae, aegre perspicuae, tenues, usque ad 2 mm. diam. Hyphae brunneae, subrectae vel leniter undulatae, opposite lateque ramosae, laxae reticulatae, cellulis plerumque 20—30 $\Rightarrow$ 6—8 μ . Hyphopodia capitata alternata, raro opposita, leniter antrorsa, recta, 11—18 μ longa; cellula basali cylindrica, 2—5 μ longa; cellula apicali subglobosa, vel breviter oblonga vel clavata, integra, 9—13 $\Rightarrow$ 8—10 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 14—20 $\Rightarrow$ 6—8 μ . Setae myceliales paucae, rectae, simplices acutaeque vel rarissime bidentatae (usque ad 3 μ), usque ad 350 $\Rightarrow$ 7—9 μ . Perithecia in centro plagularum aggregata, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, 32—41 $\Rightarrow$ 13—15 $\Rightarrow$ 9—11 μ .

Hab. in foliis vivis *Baisseae aframensis* Hutch. & Dalz. (*Apo-cynaceae*), Sierra Leone: Mongeri (Lunia), 15. VII. 1952, Deighton M 4831 (I.M.I. 51015, typus).

(11) *Meliola berliniae* Hansf. & Deighton var. **densa** Hansford & Deighton, var. nov.

Plagulae amphigenae, plerumque epiphyllae, numerosae, saepe confluentes, densae, velutinae, usque ad 3 mm. diam. Hyphae brun-

neae, illae epiphyllae subrectae, illae hypophyllae sinuosae, oppositae lateque ramosae, dense reticulatae, cellulis plerumque $20-30 \Rightarrow 7-8 \mu$. Hyphopodia capitata alternata vel usque ad 75 per centum opposita, patentia vel leniter antrorsa, plerumque recta, $12-18 \mu$ longa; cellula basali cylindrica, $2-6 \mu$ longa; cellula apicali plerumque subglobosa, interdum breve oblonga, integra, $10-12 \Rightarrow 8-10 \mu$. Hyphopodia mucronata numerosa, illis capitatis commixta, opposita vel alternata, ampullacea, $15-19 \Rightarrow 7-9 \mu$. Setae myceliales dispersae, etiam juxta perithecia aggregatae, rectae, usque ad $300 \Rightarrow 8-9 \mu$, ad apicem $2-4$ -dentatae (usque ad 12μ). Perithecia dispersa, atra, globosa, verrucosa, usque ad 160μ diam. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, $34-44 \Rightarrow 14-16(17) \Rightarrow 13-14(15) \mu$.

Hab. in foliis vivis *Detarii senegalensis* Gmel. (*Caesalpinaceae*), Sierra Leone: Baoma (Koya), 3. IV. 1939, Deighton M 1969 (I.M.I. 23822 a, typus); Njala (Kori), 13. X. 1953, Deighton M 5739 (I.M.I. 56503 a).

A typo differt hyphopodiis capitatis oppositis copiosis et in setis brevioribus.

M 1969 was listed by Hansford & Deighton in *Mycol. Pap., C.M.I.*, **23**, p. 23, 1948, as *Meliola berliniae* Hansf. & Deight., forma, on *Berlinia* sp. or *Azelia* sp., (Deighton 3671)'. The host plant has since been identified as *Detarium senegalense*.

(12) ***Meliola caesalpiniae*** (Hansford & Deighton) Hansford & Deighton, comb. nov.

Syn. *Meliola aethiops* Sacc. var. *caesalpiniae* Hansf. & Deighton in *Mycol. Pap., C.M.I.*, **23**, p. 22, 1948.

On leaves of *Caesalpinia sappan* Linn. (*Caesalpinaceae*), Ghana: Aburi, 13. VIII. 1937, Deighton CB 896 (I.M.I. 23826), type; Sierra Leone: Njala (Kori), 1. III. 1939, Deighton M 1926 (I.M.I. 23825).

In *Mycol. Pap., C.M.I.*, **23**, the type collection was wrongly cited as CB 895.

The setae are mostly acute or dentate, less commonly obtuse: in the original diagnosis, they were incorrectly given as obtuse or dentate. Though the hyphopodia resemble those of *Meliola aethiops*, the setal tips are quite different, and the fungus is better regarded as a distinct species.

The host plant at Njala, Sierra Leone, was raised from seed from the Aburi plants.

(13) ***Meliola capensis*** (Kalchbr. & Cooke) Theiss. var. ***hughesii*** Deighton var. nov.

Plagulae amphigenae, praecipue hypophyllae, densae, velutinae, usque ad 6 mm. diam. Hyphae brunneae, subrectae vel leniter

sinuosae, opposite acutaeque ramosae, dense reticulatae, cellulis plerumque $20-30 \Rightarrow 6-9 \mu$. Hyphopodia capitata opposita, raro alternata, antrorsa vel interdum patentia, recta vel plerumque varie curvata, $14-21 \mu$ longa; cellula basali cylindrica, $2-6 \mu$ longa; cellula apicali oblonga, elliptica vel clavata, late obtusa, recta vel plerumque antrorse vel retrorse vel varie curvata, integra vel saepe margine undulato vel sublobato, $11-16 \Rightarrow 8-10 \mu$. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, $18-24 \Rightarrow 7-8 \mu$. Setae myceliales numerosae, dispersae, etiam juxta perithecia aggregatae, rectae, usque ad $850 \Rightarrow 8-9 \mu$, juxta perithecia breviores (plerumque circa 250μ longae), ad apicem $2-3$ -dentatae (usque ad 10μ) et interdum sub apice ramulo laterali praeditae, raro simplices acutaeque. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160μ diam. Sporae brunneae, cylindricae, obtusae, 4 -septatae, constrictae, $36-42 \Rightarrow 14-15 \Rightarrow 10-11 \mu$.

Hab. in foliis vivis *Lecaniodisci cupanioidis* Planch. (*Sapindaceae*), Ghana: Jasikan, Togoland, 27. V. 1949, leg. S. J. Hughes, I.M.I. 47495 a, typus.

A few colonies of *Meliola capensis* var. *lecaniodisci* Hansford & Deighton (I.M.I. 47495 b) are to be found on the same leaves.

(14) *Meliola capensis* (Kalchbr. & Cooke) Theiss var. **riparia** Deighton, var. nov.

Plagulae amphigenae, densae, velutinae, usque ad 6 mm. diam. Hyphae brunneae, illae epiphyllae, subrectae, illae hypophyllae sinuosae, opposite lateque ramosae, dense reticulatae, cellulis $12-20$ (25) $\Rightarrow 6-8 \mu$. Hyphopodia capitata opposita, leniter antrorsa, $12-16 \mu$ longa; cellula basali cylindrica, $2-4 \mu$ longa; cellula apicali subconoida, apice attenuato-rotundato, saepe leniter retrorse curvata, vel ovata, interdum subcylindrica, integra, illa hypophylla saepe irregulari, $9-13 \Rightarrow 6-9 \mu$. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, $16-20 \Rightarrow 7-8 \mu$. Setae myceliales numerosae, dispersae, rectae, simplices acutaeque, raro 2 -dentatae (usque ad 10μ), rarissime 3 -dentatae, usque ad $400 \Rightarrow 8-10 \mu$, plerumque $220-330 \mu$ longae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 180μ diam. Sporae brunneae, cylindricae, obtusae, 4 -septatae, constrictae, $34-38 \Rightarrow 14-15 \Rightarrow 10-12 \mu$.

Hab. in foliis vivis *Placodisci riparii* Keay (*Sapindaceae*), Sierra Leone: Njala (Kori), 16. IV. 1948, Deighton M 2641 (I.M.I. 24423 a, typus); Bumpe (Bumpe), 5. IX. 1951, Deighton M 4215 A (I.M.I. 48008 a); Bonjema (Kori), 28. X. 1952, Deighton M 4933 B (I.M.I. 51783 b).

A Meliola capensis var. *lecaniodisci* Hansford & Deighton differt setis brevioribus et praecipue simplicibus acutisque.

In hypophyllous colonies, occasional alternate capitate hyphopodia occur mixed with the opposite ones.

(15) **Meliola colae-simiarum** Deighton, sp. nov.

Plagulae caulicola, densae, velutinae, usque ad $5 \Rightarrow 3$ mm. Hyphae brunneae, subrectae vel tortuosae, oppositae vel irregulariter ramosae, dense reticulatae, cellulis plerumque $12-22 \Rightarrow 7-10$ μ . Hyphopodia capitata opposita vel alternata, patentia vel antrorsa, recta vel curvata, $13-20$ μ longa; cellula basali cylindrica, recta vel interdum curvata, $2-11$ μ longa; cellula apicali subglobosa, ovata vel oblonga, integra, $11-14 \Rightarrow 9-14$ μ . Hyphopodia mucronata pauca, illis capitatis commixta, alternata, ampullacea, $20-28 \Rightarrow 8-10$ μ . Setae myceliales numerosae, dispersae, flexuosae, interdum late arcuatae, simplices, ad apicem obtusum plus minusve abrupte attenuatae, usque ad $320 \Rightarrow 9-11$ μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 270 μ diam. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, $44-54 \Rightarrow 17-20 \Rightarrow 14-15$ μ .

Hab. in ramulis vivis *Colae simiarum* Sprague ex Brenan & Keay (*Sterculiaceae*), Sierra Leone: Momenga (Kori), 26. V. 1954, Deighton M 5948 (I.M.I. 57269, typus).

(16) **Meliola crotonis-nigritani** Deighton, sp. nov.

Plagulae amphigenae, plerumque epiphyllae, tenues, tenuiter velutinae, usque ad 5 mm. diam. Hyphae brunneae, subrectae vel undulatae, oppositae vel irregulariter lateque ramosae, laxae reticulatae, cellulis $15-40$ (plerumque $20-30$) $\Rightarrow 5-6$ μ . Hyphopodia capitata alternata, raro opposita, patentia vel leniter antrorsa vel retrorsa, recta vel curvata, $12-15$ μ longa; cellula basali cylindrica, $2-4$ μ longa; cellula apicali subglobosa vel clavata, vel ovata et saepe antrorse vel retrorse curvata, integra, $9-12 \Rightarrow 8-12$ μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, $16-27 \Rightarrow 6-8$ μ , collo elongato. Setae myceliales dispersae, etiam juxta perithecia aggregatae, rectae, simplices acutaeque vel rarissime dentatae, usque ad $1000 \Rightarrow 7-9$ μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 150 μ diam. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, $32-38 \Rightarrow 13-14 \Rightarrow 10-12$ μ .

Hab. in foliis vivis *Crotonis nigritani* Sc. Elliot (*Euphorbiaceae*), Sierra Leone: Njala (Kori), 26. I. 1951, Deighton M 3820 (I.M.I. 46583, typus); *loc. cit.*, 15. II. 1953, Deighton M 5124 (I.M.I. 52336).

Two dentate setae were seen on the type collection: in one, a lateral tooth 4 μ long was borne 2 μ below the apex and lying more or less parallel with the axis of the seta; in the other, a lateral patent tooth 2 μ long was borne 6 μ below the apex.

(17) **Meliola deformis** Deighton, sp. nov.

Plagulae caulicola, atrae, dense velutinae, densissime crustosae, fortiter adhaerentes, orbiculares vel ellipticae, usque ad 15 mm. longae

et 15 mm. latae. Hyphae brunneae, subrectae vel flexuosae, irregulariter ramosae, densissime reticulatae, cellulis plerumque $8-20 \approx 5-8 \mu$. Hyphopodia capitata alternata, recta, antrorsa vel patentia, $17-33 \mu$ longa; cellula basali cylindrica, $3-20 \mu$ longa; cellula apicali subglobosa vel ovata, integra vel angulosa, $13-22 \approx 11-18 \mu$. Hyphopodia mucronata alternata vel opposita, ampullacea, $12-26 \approx 8-9 \mu$, collo brevi, numerosissima et, ut videtur, semper in hyphis distinctis evoluta. Setae myceliales numerosissimae, dispersae, atrae, simplices, obtusae vel subacutae, subrectae vel leniter curvatae, saepe 1-2-geniculatae, sursum vel per totam longitudinem dense tortae, usque ad $330 \approx 8-10 \mu$, plerumque $175-250 \mu$ longae. Perithecia laxè dispersa, atra, globosa, verrucosa, usque ad 220μ diam. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, $30-39 \approx 12-13 \approx 11-12 \mu$.

Hab. in caulibus *Uncariae africanae* G. Don (*Rubiaceae*), Sierra Leone: Mosongo (Kori), 26. VII. 1954, Deighton M 6124 (I.M.I. 57687, typus); *loc. cit.*, 24. VI. 1954, Deighton M 6098 (I.M.I. 57337); *loc. cit.*, 17. VII. 1954, Deighton M 6120 (I.M.I. 57684).

The three collections were made from the same site; M 6124 on living stems, and M 6098 and M 6120 on dead stems.

The setae are remarkably twisted, often from the base, and resemble a wrung wet dish-cloth: the twisting is sometimes so marked that one or two geniculations in the setae are formed. The capitata hyphopodia are often irregular in shape as a result of crowding and compression.

Dr. C. G. Hansford, to whom I sent a portion of the type collection, tells me that he found ascospores up to 15μ wide: I have not found any wider than 13μ in my preparations.

(18) ***Meliola desmodii-laxiflori*** Deighton, sp. nov.

Plagulae epiphyllae caulicolaque, densae, velutinae, usque ad 3 mm. diam., saepe numerosae confluentesque. Hyphae brunneae, in caulibus subrectae vel leniter sinuosae, in foliis sinuosae vel tortuosae, oppositè lateque ramosae, dense reticulatae, cellulis plerumque $15-40 \approx 6-8 \mu$. Hyphopodia capitata alternata, rarissime opposita, antrorsa vel patentia, recta vel curvata, $13-20 \mu$ longa; cellula basali cylindrica, $2-6 \mu$ longa; cellula apicali subglobosa, oblonga vel ovata, recta vel saepe antrorse vel retrorse curvata, integra, $11-15 \approx 10-14 \mu$. Hyphopodia mucronata in hyphis distinctis evoluta, opposita vel alternata, ampullacea, $14-19 \approx 7-9 \mu$. Setae myceliales numerosae, dispersae, rectae, simplices, acutae, usque ad $380 \approx 9-10 \mu$ (plerumque circa 200μ longae). Perithecia dispersa, atra, globosa, verrucosa, usque ad 200μ diam. Sporae brunneae, cylindricae vel saepe leniter cuneatae, obtusae, 4-septatae, leniter constrictae, $35-43 \approx 11-12.5 \approx 9-11 \mu$.

Hab. in foliis vivis, etiam in petiolis caulibusque, *Desmodii laxiflori* DC. (*Papilionaceae*), Sierra Leone: Kambia (Biriwa), 4. XII. 1951, Deighton M 4504 (I.M.I. 48943, typus).

On the leaves, the capitate hyphopodia are mostly entire but are sometimes angular or with a slightly sinuous margin.

(19) **Meliola englerinae** Deighton, sp. nov.

Plagulae hypophyllae, raro etiam epiphyllae, tenues, laxae velutinae, usque ad 10 mm. diam., vel confluentes. Hyphae brunneae, subrectae vel leniter sinuosae, oppositae vel alternatae lateque ramosae, laxae reticulatae, cellulis 13–38 (plerumque 20–30) $\Rightarrow$ 5–7 μ . Hyphopodia capitata alternata, raro opposita, antrorsa, plerumque recta, 14–19 μ longa; cellula basali cylindrica, 3–5 μ longa; cellula apicali subglobosa, oblonga vel clavata, integra, plerumque recta, interdum leniter retrorse curvata, 10–14 $\Rightarrow$ 8–12 μ . Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, 14–20 $\Rightarrow$ 7–9 μ . Setae myceliales dispersae, rectae, usque ad 425 $\Rightarrow$ 7–8 μ , simplices et ad apicem acutae vel 2–3-denticulatae (usque ad 10 μ), superne saepe plus minusve dense tortae (ut videtur, torulosae). Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, 32–38 $\Rightarrow$ 14–15 $\Rightarrow$ 12 μ .

Hab. in foliis vivis *Englerinae parviflorae* (Engl.) Balle (*Loranthi parviflori* Engl.) (*Loranthaceae*), Sierra Leone: Bonjema (Kori), 14. V. 1954, Deighton M 5929 B (I.M.I. 57261 b, typus).

Not very many ascospores were seen, and only one in side view.

(20) **Meliola entadicola** Deighton, sp. nov.

Plagulae amphigenae, praecipue epiphyllae, tenues vel subdensae, velutinae, usque ad 5 mm. diam. Hyphae brunneae, rectae, oppositae lateque ramosae, laxae vel subdense reticulatae, cellulis plerumque 15–40 $\Rightarrow$ 5–8 μ . Hyphopodia capitata alternata vel usque ad 45 per centum opposita, recta, antrorsa, 11–16 μ longa; cellula basali cylindrica, 2–4 μ longa; cellula apicali recta, integra, subglobosa, oblonga vel elliptica, 9–12 $\Rightarrow$ 7–10 μ . Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, 15–20 $\Rightarrow$ 6–8 μ . Setae myceliales dispersae, etiam juxta perithecia aggregatae, rectae vel leniter curvatae vel flexuosae, 150–200(275) $\Rightarrow$ 7–8 μ , ad apicem 2–4-cristato-dentatae, usque ad 12 μ , dentibus acutis et saepe iterum 2–4-denticulatis, et interdum sub apice ramulo laterali praeditae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 160 μ diam. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, 31–40(42) $\Rightarrow$ 13–15(16) $\Rightarrow$ 11–12 μ (plerumque circa 36 $\Rightarrow$ 14 μ).

Hab. in foliis vivis *Entadae pursaethae* DC. (*Mimosaceae*), Sierra Leone: prope Kangahun (Gandima), 7. II. 1954, Deighton M 5802 (I.M.I. 56534 a, typus).

Close to *Meliola entadae* Hansford, in which the colonies are all hypophyllous. The setal apices are very similar in both species, but the setae of *M. entadicola* though much more fully developed than in the portion of Ciferri 151 (the type collection of *M. entadae*) in Herb. R.B.G., Kew, are only about half as long. The setae in Ciferri 151 are commonly 300–400 μ long, though round the perithecia some may be only 150 μ . In *M. entadicola*, the setae are very uniform in length. The very flexuous hyphae and often deformed capitate hyphopodia in Ciferri 151 are doubtless due to the leaf-surface of the host plant: over a main nerve of the leaf, the hyphae are more or less straight and the hyphopodia more regular. Such regular hyphopodia are, however, rather narrower (-8μ) and the head-cell a little shorter (-10μ) than in *M. entadicola*.

Deighton M 2329 (I.M.I. 23798) on *Entada mannii* (Oliv.) Tisserant (the host plant was earlier misdetermined as *E. africana* Guill. & Perr.) is best included in *Meliola entadicola*, at least till further collections are available. A description of this collection was given by Hansford & Deighton in *Mycol. Pap., C.M.I.*, 23, p. 25, 1948, where it was referred to *Meliola bicornis* Winter. Hansford in *Proc. Linn. Soc. Lond.*, **160**, p. 124, 1949, referred it to *M. entadae* Hansford. It differs from I.M.I. 56534 a, on *Entada pursaetha*, in its narrower spores (not more than 13 μ wide), rather smaller head-cells of the capitate hyphopodia, and shorter setae (-190μ) which may, however, be not quite fully developed and are shortly and obtusely 2-dentate (-8μ).

(21) ***Meliola golaensis*** Deighton, sp. nov.

Plagulae epiphyllae, atrae, densae, laxae velutinae, usque ad 1 mm. diam. Hyphae brunneae, oppositae lateque ramosae, dense reticulatae, cellulis $10-18(30) \Rightarrow 7-10 \mu$. Hyphopodia capitata alternata, leniter antrorsa, interdum subpatentia, recta, $16-28 \mu$ longa; cellula basali cylindrica, $4-7 \mu$ longa; cellula apicali recta, integra, subcylindrica, ovata vel clavata, $12-18 \Rightarrow 9-13 \mu$ (praecipue $\Rightarrow 11-12 \mu$). Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, $20-26 \Rightarrow 7-11 \mu$. Setae myceliales paucae, dispersae, rectae vel interdum deorsum leniter curvatae vel geniculatae, usque ad $710 \Rightarrow 7-8 \mu$, simplices, vix attenuatae et obtusae (? immaturae) vel subacutae. Perithecia dispersa, atra, globosa, immatura, usque ad 140μ diam., leniter tuberculosa, cellulis parietalibus circa 10μ alt. Sporae brunneae, cylindrico-doliiformes, obtusae, 4-septatae, strictae, $43-47 \Rightarrow 19-22 \mu$.

Hab. in foliis vivis *Xylopiæ quintasii* Engl. & Diels (*Annonaceae*), Sierra Leone: Gola Forest (Tunkia Chiefdom), 25. V. 1952, leg. D. Small, M 5354 (I.M.I. 53146, typus).

The fungus was taken from D. Small 669 in the phanerogamic collection, under *Xylopiæ quintasii*, in Herb. R.B.G., Kew.

(22) ***Meliola hannaë*** Deighton, sp. nov.

Plagulae amphigenae, tenues vel densae, subvelutinae, usque ad 8 mm. diam. Hyphae brunneae, rectae, oppositae lateque ramosae, laxae reticulatae, cellulis plerumque $20-30 \approx 5-7 \mu$. Hyphopodia capitata opposita vel alternata, leniter antrorsa vel patentia, $14-20 \mu$ longa; cellula basali cylindrica, $3-6 \mu$ longa; cellula apicali cylindrica, integra, recta vel leniter retrorse curvata, $11-15 \approx 6-7 \mu$. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, $20-35 \approx 6-9 \mu$, collo elongato. Setae myceliales dispersae, etiam juxta perithecia aggregatae, rectae, usque ad $290 \approx 8-9 \mu$, ad apicem breviter 2-4-dentatae (usque ad 8μ), interdum dentibus iterum breviter bidentatis. Perithecia dispersa, atra, globosa, verrucosa, usque ad 180μ diam. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, $38-49 \approx 17-19 \approx 12-13 \mu$.

Hab. in foliis vivis *Hannaë klaineanae* Pierre ex Engl. (*Simaroubaceae*), Sierra Leone: Njala (Kori), 17. XII. 1951, Deighton M 4564 (I.M.I. 48952, typus); loc. cit., 15. II. 1951, Deighton M 3872 (I.M.I. 46585).

(23) ***Meliola holarrhenicola*** Deighton sp. nov.

Plagulae amphigenae, plerumque epiphyllae, atrae, densissimae, velutinae, usque ad 4 mm. diam. vel confluentes. Hyphae brunneae, subrectae vel sinuosae, alternate vel oppositae et plerumque acute (plus minusve 45°) ramosae, densissime reticulatae et in centro plagularum interdum thalliformes, cellulis plerumque $20-30 \approx 7-9 \mu$. Hyphopodia capitata alternata vel rarissime opposita, antrorsa, recta vel interdum curvata, $20-30 \mu$ longa; cellula basali cylindrica, recta vel leniter curvata, $3-10 \mu$ longa; cellula apicali ovata, elliptica vel clavata, recta vel leniter curvata, cum margine integra vel interdum leniter sinuosa vel angulosa, $14-20 \approx 10-14 \mu$. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, corniformia vel anguste ampullacea, $20-25 \approx 7-8 \mu$. Setae myceliales numerosissimae, dispersae, rectae vel leniter curvatae, atrae, simplices, acutae vel subacutae, $300-600$ (plerumque circa 450) $\approx 8-12 \mu$. Perithecia dispersa, atra, globosa, verrucosa, usque ad 250μ diam. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, $(42)46-58 \approx 20-24 \approx 15-18 \mu$.

Hab. in foliis vivis *Holarrhenae africanae* A. DC. (*Apocynaceae*), Sierra Leone: Njala (Kori), 4. II. 1953, Deighton M 5107 A (I.M.I. 51803 a, typus).

The mycelial hyphae and hyphopodia are often closely appressed so as to form dense thallus-like strands.

On the same leaves is to be found, to a lesser extent, *Meliola simillima* Ell. & Ev. (I.M.I. 51803 d) which is readily distinguished by its thinner colonies with sparser setae and much smaller ascospores: there is also present a species of *Asterina* (I.M.I. 51803 e).

(24) ***Meliola homallicola*** Deighton, sp. nov.

Plagulae amphigenae, praecipue hypophyllae, modice densae, velutinae, usque ad 12 mm. diam. Hyphae brunneae, subrectae vel flexuosae, oppositae vel alternatae lateque ramosae, subdense reticulatae, cellulis plerumque $20-30 \approx 6-9 \mu$. Hyphopodia capitata alternata vel opposita (usque ad 50 per centum), recta vel leniter curvata, subpatentia, $13-24 \mu$ longa; cellula basali cylindrica, $3-6 \mu$ longa; cellula apicali plerumque subcylindrica vel conoidea, integra, recta vel leniter curvata, $10-20 \approx 7-9 \mu$. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, $15-30 \approx 7-10 \mu$. Setae myceliales dispersae, atrae, valde curvatae vel arcuatae, simplices, obtusae, usque ad $380 \approx 8-10 \mu$. Perithecia dispersa, atra, globosa, verrucosa, usque ad 220μ diam. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, $38-48 \approx 17-19 \approx 14-15 \mu$.

Hab. in foliis vivis *Homalii letestui* Pellegr. (*H. dolichophylli* Gilg ex Engl.) (*Samydaceae*), Sierra Leone: Njala (Kori), 6. V. 1953, Deighton M 5272 (I.M.I. 53131, typus).

Easily distinguished from *Meliola homalii-dolichophylli* Hansford & Deighton, which is more common on the same host species in Sierra Leone, and from *M. homalii* Hansford which it resembles in setal characters.

(25) ***Meliola imperspicua*** Deighton, sp. nov.

Plagulae hypophyllae, tenuissimae, laxissime velutinae, usque ad 10 mm. diam. Hyphae brunneae, leniter sinuosae, oppositae lateque ramosae, laxissime reticulatae, cellulis plerumque $30-45 \approx 4-6 \mu$. Hyphopodia capitata alternata, recta, antrorsa, $14-25 \mu$ longa; cellula basali cylindrica vel cuneata, $4-10 \mu$ longa; cellula apicali integra, recta, plerumque ovata et ad apicem obtusam attenuata, vel subglobosa et ad apicem rotundata, interdum clavata, $10-15 \approx 8-11 \mu$. Hyphopodia mucronata illis capitatis commixta, alternata, ampullacea, $15-25 \approx 5-8 \mu$. Setae myceliales paucae, praecipue juxta perithecia aggregatae, etiam in mycelio dispersae, rectae vel interdum leniter curvatae, obtusae, usque ad $450 \approx 7-8 \mu$. Perithecia dispersa,

pauca, atra, globosa, verrucosa, usque ad 120 μ diam. Sporae brunneae, cylindricae vel fusoideae, interdum leniter cuneatae, obtusae, e latere distincte curvatae, 4-septatae, lenissime constrictae, 32—39 $\Rightarrow$ 9—10 $\Rightarrow$ 9—10 μ .

Hab. in foliis vivis *Psychotriae warneckei* K. Schum. & K. Krause (*Rubiaceae*), Sierra Leone: Pandobu, prope Lalehun (Bambara), 16. IV. 1940, Deighton M 2265 B (I.M.I. 25553 d, typus); Wiima (Horahun), 25. IV. 1940, Deighton M 2280 B (I.M.I. 25552 c).

(26) **Meliola koriensis** Deighton, sp. nov.

Plagulae epiphyllae, subdensae, velutinae, usque ad 3 mm. diam. Hyphae brunneae, subrectae, opposite lateque ramosae, laxae vel subdense reticulatae, cellulis plerumque 25—35 $\Rightarrow$ 7—9 μ . Hyphopodia capitata alternata vel raro opposita, recta vel curvata, antrorsa vel patentia, interdum retrorsa, 18—25 μ longa; cellula basali cuneata vel cylindrica, 3—7 μ longa; cellula apicali ovata, clavata vel transverse ellipsoidea, integra, 13—19 $\Rightarrow$ 10—15 μ . Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, 18—23 $\Rightarrow$ 8—10 μ . Setae myceliales dispersae, etiam juxta perithecia aggregatae, rectae, usque ad 650 $\Rightarrow$ 8—10 μ , juxta perithecia breviores (circa 300 μ), ad apicem 2—4-dentatae (usque ad 10 μ), rarissime simplices acutaeque. Perithecia dispersa, atra, globosa, verrucosa, usque ad 200 μ diam. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, 41—51 $\Rightarrow$ 17—20 $\Rightarrow$ 12—14 μ .

Hab. in foliis vivis *Leptoderridis trifoliatae* Hepper (*Papilionaceae*), Sierra Leone: Njala (Kori), 19. IV. 1948, Deighton M 2645 (I.M.I. 24418, typus); *loc. cit.*, 30. XI. 1948, Deighton M 2671 (I.M.I. 32568); *loc. cit.*, 27. IV. 1954, Deighton M 5905 C (I.M.I. 56741 c); *loc. cit.*, 28. XII. 1955, C. T. P y n e M 6468 p. p. (I.M.I. 62519 d).

The collections were all made on the same small group of plants in the type locality of *Leptoderris trifoliata* Hepper. The type collection of *Phyllachora leptoderridis* Deighton apud Petrak & Deighton in *Sydowia*, 6, p. 318, 1952, was made on these same plants (on living, not dead leaves as stated in the original diagnosis) on which it is common.

(27) **Meliola kuprensis** Deighton, sp. nov.

Plagulae epiphyllae, rarissime etiam hypophyllae, atrae, densae, subglabrae, usque ad 1.5 mm. diam. Hyphae brunneae, subrectae, opposite lateque ramosae, dense reticulatae, cellulis plerumque 12—24 $\Rightarrow$ 7—9 μ . Hyphopodia capitata alternata, recta, antrorsa, 19—25 μ longa; cellula basali cylindrica, 3—8 μ longa; cellula apicali integra, praecipue recta, cylindrica, vel longe elliptica vel ovata, apice late rotundato, 14—18 $\Rightarrow$ 8—10 μ . Hyphopodia mucronata illis capitatis

commixta, alternata vel raro opposita, $20-28 \Rightarrow 7-9 \mu$, ampullacea, collo longo. Setae myceliales pauculae, in centro plagularum juxta perithecia aggregatae, atrobrunneae, rectae, simplices, late obtusae, usque ad $180 \Rightarrow 9-12 \mu$ (plerumque circa $100 \Rightarrow 10 \mu$). Perithecia in centro plagularum aggregata, atra, globosa, verrucosa, usque ad 225μ diam. Sporae brunneae, ellipticae, obtusae, 4-septatae, constrictae, $44-50 \Rightarrow (18)20-22 \Rightarrow 14-15 \mu$.

Hab. in foliis vivis *Xylopiæ aethiopicae* (Dunal) A. Rich. (*Annonaceae*), Sierra Leone: Rokupr (Magbema), 24. II. 1951, Deighton M 3917 A (I.M.I. 46588 a, typus); *loc. cit.*, 26. V. 1953, Deighton M 5277 (I.M.I. 53136 a); Pujehun (Lunia), 17. VII. 1952, Deighton M 4810 (I.M.I. 50999); Newton (Colony), 31. I. 1936, Deighton M.1539 p. p. (I.M.I. 31209 b); Dodo (Dodo), 13. IV. 1940, Deighton M 2254 p. p. (I.M.I. 23291 c); Giewahun (Tunkia), 19. VII. 1939, Deighton M 2179 p. p. (I.M.I. 43979 c).

This species was particularly common on one tree at Rokupr (Ro-Kupr, also given on maps as Kupr), from which the specific epithet is derived. Hypophyllous colonies were only seen on I.M.I. 31209 b.

(28) **Meliola lychnodisci** Deighton, sp. nov.

Plagulae hypophyllae, densae vel subdensae, velutinae, usque ad 10 mm. diam. Hyphae brunneae, sinuosissimae, oppositae vel alternatae lateque ramosae, subdense vel dense reticulatae, cellulis plerumque $20-40 \Rightarrow 3-8 \mu$. Hyphopodia capitata alternata vel usque ad 30 per centum opposita vel subopposita, recta vel antrorse vel retrorse curvata, saepe versiformia, $11-24 \mu$ longa; cellula basali cuneata vel cylindrica, $2-10 \mu$ longa; cellula apicali versiformi, elliptica, obovata, cylindrica, corniformi vel malleiformi, plerumque integra, interdum cum margine sinuosa, $9-16 \Rightarrow 6-9 \mu$. Hyphopodia mucronata illis capitatis commixta, opposita vel alternata, ampullacea, $18-22 \Rightarrow 5-7 \mu$. Setae myceliales dispersae, etiam juxta perithecia aggregatae, rectae, atrae, usque ad $260 \Rightarrow 7-8 \mu$, raro simplices acutaeque, praecipue ad apicem 2-3-furcatae (usque ad 42μ , plerumque ad $8-20 \mu$), ramis divergentibus rectisque, quandoque iterum bidentatis, interdum ramulo brevi laterali praeditae. Perithecia dispersa, atra, globosa, verrucosa, usque ad 150μ diam. Sporae brunneae, fusoidae-ellipsoideae, e latere fusoidae, obtusae, 4-septatae, constrictae, cellula media majore, $36-46(50) \Rightarrow 14-15 \Rightarrow 12-14 \mu$.

Hab. in foliis vivis *Lychnodisci dananensis* Aubrév. & Pellegr. (*Sapindaceae*), Sierra Leone: Peri (Gaura), 25. XI. 1952, Deighton M 5042 B (I.M.I. 51793 b, typus); *loc. cit.*, 10. XII. 1952, Deighton M 5065 A (I.M.I. 51797 a).

The capitate hyphopodia are often situated in the middle of a hyphal cell and not immediately below a hyphal septum: and of a pair of „opposite“ capitate hyphopodia, one may arise close to the distal septum of a hyphal cell and the other close to the proximal septum. Occasionally, two capitate hyphopodia arising from the same hyphal cell may lie both in the same side of the hypha. Immature but dark brown spores in the perithecium are cylindric, hardly constricted, and with the middle cell no larger than the others, and may be as short as 32 μ .

On the upper leaf surfaces of both collections occurs *Meliola capensis* (Kalchbr. & Cooke) Theiss. var. *lecaniodisci* Hansford & Deighton.

(29) ***Meliola mitragynicola*** Deighton, sp. nov.

Plagulae amphigenae, plerumque epiphyllae, usque ad 2 mm. diam., illae hypophyllae usque ad 8 mm. diam., atrae, subdensae, laxae velutinae. Hyphae brunneae, subrectae vel leniter sinuosae, alternate vel opposite lateque ramosae, subdense reticulatae, cellulis plerumque 20–30 $\Rightarrow$ 5–9 μ . Hyphopodia capitata alternata, antrorsa vel interdum subpatentia, plerumque recta, 20–30 μ longa; cellula basali cylindrica vel cuneata, recta vel antrorse curvata, 4–14 μ longa; cellula apicali subglobosa vel ovata, illa epiphylla raro illa hypophylla saepe cuneata vel clavata, plerumque integra, interdum leniter angulosa vel sublobata, 13–18 $\Rightarrow$ 10–15 μ . Hyphopodia mucronata in hyphis distinctis evoluta, alternata vel opposita, ampullacea, 10–20 $\Rightarrow$ 6–8 μ , collo brevi. Setae myceliales dispersae, atrae, rectae vel lenissime curvatae vel flexuosae, simplices, aciculares et in apicem acutum gradatim attenuatae, superne sinistrorse denseque tortae (ut videtur, dense flexuosae vel torulosae), usque ad 390 (plerumque circa 275) $\Rightarrow$ 8–9 μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 200 μ diam. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, 37–46 $\Rightarrow$ 14–16 $\Rightarrow$ 13–14 μ .

Hab. in foliis vivis *Mitragynae stipulosae* (DC.) O. Kuntze (*Rubiaceae*), Sierra Leone: Kangahun (Gandima), 7. II. 1954, Deighton M 5791 A (I.M.I. 56524 a, typus); Ghana: Agona, prope Tarkwa, 12. V. 1949, leg. S. J. Hughes, I.M.I. 46769 a et 46770 a; Tafo, 18. VI. 1949, leg. S. J. Hughes, I.M.I. 46771 a.

This species is also present (epiphyllous colonies) on the following collections by Deighton on *Mitragyna stipulosa* from Sierra Leone: Makali (Kunike Barina), 8. II. 1945, M 2398 p. p. (I.M.I. 25516 e); Njala (Kori), 24. II. 1937, M 1328 p. p. (I.M.I. 9990 c); Dodo (Dodo), 11. IV. 1940, M 2250 p. p. (I.M.I. 7671 d).

Hughes I.M.I. 46771 (a) differs from the other collections in that hypophyllous colonies are more numerous than epiphyllous: the ascospores are also frequently only 14 μ wide.

Meliola mitragynicola differs from *M. canthii* Hansford in the setae which in *M. canthii* are more rigid and hardly tapered till near the apex where they are abruptly tapered, rather like a sharpened pencil. In *M. mitragynicola*, the setae are more slender and acicular, being gradually tapered from near the base. The closely twisted upper part of the setae in *M. mitragynicola*, giving a closely flexuous or torulose appearance at first sight, is also characteristic though similar apical twisting is to be seen in the setae of several other species of *Meliola* on rubiaceous hosts.

(30) *Meliola mitragynicola* Deighton var. **leonensis**

(Hansford & Deighton) Deighton, comb. nov.

Syn. *Meliola canthii* Hansford var. *leonensis* Hansford & Deighton in *Mycol. Pap., C.M.I.*, 23, p. 59, 1948.

Diagnosis emendata: Plagulae hypophyllae. Setae myceliales aciculares, in apicem acutum gradatim attenuatae, superne plerumque leniter vel dense tortae, 6—7(8) μ latae. Ascosporae 33—40 $\Rightarrow$ 12—13 $\Rightarrow$ 11—12 μ , plerumque 35—38 μ longae.

Hab. in foliis vivis *Mitragynae stipulosae* (DC.) O. Kuntze (*Rubiaceae*), Sierra Leone: Makali (Kunike Barina), 8. II. 1945, Deighton M 2398 p. p. (I.M.I. 25516 a), typus.

A typo differt setis et sporis tenuioribus. A *Meliola canthii* Hansford differt setis acicularibus et superne tortis.

I am grateful to Dr. S. J. Hughes for pointing out, in notes in Herb. I.M.I., that the dimensions of the spores in the hypophyllous colonies did not agree with the diagnosis of *Meliola canthii* var. *leonensis*. Further examination showed that in the diagnosis by Hansford & Deighton, the abundant hypophyllous colonies (I.M.I. 25516 a) of *M. mitragynicola* var. *leonensis* had been confused with the less common and smaller epiphyllous colonies (I.M.I. 25516 e) of *M. mitragynicola* var. *mitragynicola*.

(31) *Meliola mitragynicola* Deighton var. **ugandensis**
Deighton, var. nov.

Plagulae amphigenae, atrae, densae vel subdensae, laxae velutinae, usque ad 6 mm. diam., illae epiphyllae minores. Hyphae brunneae, rectae vel leniter sinuosae, oppositae et late vel acute ramosae, dense vel subdense reticulatae, cellulis plerumque 14—22 $\Rightarrow$ 6—8 μ . Hyphopodia capitata alternata, plerumque recta, antrorsa et interdum hyphis adnata, vel interdum subpatentia, 21—36 μ longa; cellula basali cylindrica vel cuneata, plerumque recta, interdum curvata, 6—18 μ longa; cellula apicali subglobosa, elliptica vel clavata, interdum versiformi, plerumque integra, interdum angulosa vel sublobata, plerumque recta, 14—21 $\Rightarrow$ 11—14 μ . Hyphopodia mucronata in hyphis

distinctis evoluta, alternata vel opposita, ampullacea, $10-18 \Rightarrow 7-9 \mu$, collo brevi. Setae myceliales dispersae, rectae vel saepe lenissime curvatae vel flexuosae, aciculares et in apicem acutum gradatim attenuatae, superne sinistrorse denseque tortae, usque ad $370 \Rightarrow 8-10 \mu$. Perithecia dispersa, atra, globosa, verrucosa, usque ad 200μ diam. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, $44-53 \Rightarrow 16-18 \Rightarrow 14-16 \mu$.

Hab. in foliis vivis *Mitragynae stipulosae* (DC.) O. Kuntze (*Rubiaceae*), Uganda: Masaka road, XII. 1940, C. G. Hansford 2951 (I.M.I. 25518 a, typus).

A typo differt sporis longioribus latioribusque.

This collection was cited by Hansford, in Proc. Linn. Soc. Lond. **157** (1944-45), p. 22, 1945, as *Meliola canthii* Hansford. Because of its acicular setae, it is better considered a variety of *M. mitragynicola*.

(32) ***Meliola papayae*** Deighton, sp. nov.

Plagulae fruticicola, subtenues, velutinae, usque ad 3 mm. diam. Hyphae brunneae, subrectae vel flexuosae, opposite lateque ramosae, laxe reticulatae, cellulis plerumque $20-35 \Rightarrow 5-7 \mu$. Hyphopodia capitata opposita vel alternata, patentia vel leniter antrorsa, recta vel interdum leniter retrorse curvata, $12-17 \mu$ longa; cellula basali cylindrica, $2-5 \mu$ longa; cellula apicali subglobosa vel breve oblonga vel ovata, integra, $9-13 \Rightarrow 9-11 \mu$. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, $14-20 \Rightarrow 7-9 \mu$. Setae myceliales dispersae, etiam juxta perithecia aggregatae, subrectae, usque ad $240 \Rightarrow 7-8 \mu$, ad apicem 3-4-cristato-dentatae usque ad 8μ . Perithecia dispersa, atra, globosa, verrucosa, usque ad 190μ diam. Sporae brunneae, cylindricae vel subellipsoideae, obtusae, 4-septatae, constrictae, $37-43 \Rightarrow 16-18 \Rightarrow 13-14 \mu$.

Hab. in fructibus *Caricae papayae* Linn. (*Caricaceae*), Sierra Leone: Njala (Kori), 19. XI. 1953, Deighton M 5705 (I.M.I. 56466, typus).

(33) ***Meliola roureae*** Syd. var. **santaloidis** Deighton, var. nov.

Plagulae amphigenae, praecipue epiphyllae, tenues, usque ad 5 mm. diam. Hyphae brunneae, illae hypophyllae sinuosae, illae epiphyllae subrectae, opposite lateque ramosae, laxe reticulatae, cellulis plerumque $25-50 \Rightarrow 7-8 \mu$. Hyphopodia capitata alternata vel rarissime opposita, recta vel plus minusve curvata, antrorsa, illa hypophylla interdum subpatentia, $18-26 \mu$ longa; cellula basali cylindrica, recta vel curvata, $4-9 \mu$ longa; cellula apicali cylindrica vel clavata, interdum clavato-pyriformi, recta vel plus minusve curvata, integra, $13-18 \Rightarrow 8-12 \mu$. Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, $15-28 \Rightarrow 6-10 \mu$. Setae myceliales

juxta perithecia aggregatae, rectae, simplices, acutae, usque ad $600 \Rightarrow 8-10 \mu$. Perithecia dispersa, atra, globosa, verrucosa, usque ad 200μ diam. Sporae brunneae, cylindricae vel subellipsoideae, obtusae, 4-septatae, constrictae, $44-52 \Rightarrow 18-20 \Rightarrow 14-15 \mu$.

Hab. in foliis vivis *Santaloidis afzelii* (R. Br. ex Planch.) Schellenb. (*Connaraceae*), Sierra Leone: Musaia (Dembelia Musaia), 24. II. 1946, Deighton M 2468 (I.M.I. 5406 a, typus).

A typo et a var. *major* Hansford & Deighton differt hyphopodiis capitatis brevioribus et leniter tenuioribus.

In the description of *Meliola roureae* var. *major*, in Mycol. Pap., C.M.I., **23**, p. 48, 1948, the capitate hyphopodia are given as alternate, but on certain parts of the colonies in the type collection several opposite pairs are to be seen.

(34) *Meliola thalliformis* Deighton, sp. nov.

Plagulae hypophyllae, raro etiam epiphyllae, usque ad 10 mm. diam., atrae, orbiculares, margine distincto, densissimae thalliformesque, dense velutinae, parasiticae et maculas rubrofuscas efformantes. Hyphae brunneae, radiatae, opposite vel alternate acuteque ramosissimae, cum hyphopodiis cohaerentes et plagulam prosenchymaticam thalliformem efformantes, cellulis $12-20 \Rightarrow 6-9 \mu$. Hyphopodia capitata alternata, $16-34 \mu$ longa, antrorsa et hyphis adnata et eis adhaerentes; cellula basali cylindrica vel cuneata, $3-14 \mu$ longa; cellula apicali subglobosa, elliptica vel obovata, integra, $12-20 \Rightarrow 10-14 \mu$. Hyphopodia mucronata pauca, in hyphis distinctis evoluta, alternata, $12-20 \Rightarrow 6-8 \mu$, ampullacea, collo brevi. Setae myceliales numerosissimae, dispersae, etiam juxta perithecia aggregatae, atrae, fortiter arcuatae vel interdum uncinatae, in apicem acutum gradatim attenuatae, sub apice saepe leniter flexuosae vel subtorulosae, $200-325 \Rightarrow 8-9 \mu$ (plerumque circa 250μ longa). Perithecia dispersa, atra, globosa, verrucosa, usque ad 230μ diam. Sporae brunneae, cylindricae, obtusae, 4-septatae, constrictae, $38-44(48) \Rightarrow 14-16 \Rightarrow 12-14 \mu$.

Hansford & Deighton in Mycol. Pap., C.M.I. **23**, p. 58, 1948, *aceae*, Sierra Leone: Njala (Kori), 24. II. 1937, Deighton M 1328 (I.M.I. 9990 b, typus); Dodo (Dodo), 11. IV. 1940, Deighton M 2250 p. p. (I.M.I. 7671 b).

Hansford & Deighton in Mycol. Pap., C.M.I. **23**, p. 58, 1948, referred these collections to *Meliola woodiana* Sacc. from which they differ in the very dense thalliform colonies, the distinct leaf-spot visible on the leaf-surface opposite the *Meliola* colony, the much narrower and somewhat shorter ascospores, and in the curvature of the setae which in *M. woodiana* are arcuate from the base, whereas in *M. thalliformis* the curvature is confined to the upper half. Even very young colonies, about 0.5 mm. diam., are already becoming

thalliform, with hyphae and densely crowded hyphopodia fused together.

On both collections there are also numerous small epiphyllous thinner colonies of *Meliola mitragynicola* Deighton.

(35) *Meliola thalliformis* Deighton var. **naucleae** Deighton, var. nov.

Meliolam thalliformem referens sed ita differt: plagulae amphigenae, plerumque hypophyllae, usque ad 7 mm. diam., leviter tenuiores, areolatae, facilius secedentes; hyphopodia capitata saepe sublobata; perithecia usque ad 220 μ diam.; setae plerumque subrectae, leniter curvatae vel flexuosae, interdum arcuatae; sporae 38—48 $\Rightarrow$ 13—15 $\Rightarrow$ 12—13 μ , plerumque 40—44 μ longae.

Hab. in foliis vivis *Naucleae diderrichii* (De Wild.) Merrill (*Rubiaceae*), Sierra Leone: Pelewahun (Kamagai), 19. II. 1947, Deighton M 2563 (I.M.I. 37693 a); Njala (Kori), 18. III. 1953, Deighton M 5192 A (I.M.I. 53012 a, typus).

Differs from the type in the commonly almost straight setae: a character which can be readily seen under the binocular microscope. The colonies are rather thinner, and spaces frequently occur in the thallus-like plate of hyphae and hyphopodia: the colonies are quite commonly epiphyllous as well as hypophyllous.

Hansford & Deighton, in Mycol. Pap., C.M.I., **23**, p. 76, 1948, referred M 2563 (citing it in error as M 2263) to *Meliola woodiana* Sacc.: the host was there given as *Sarcocephalus diderrichii*.

(36) ***Meliola tricalysiae*** Deighton, sp. nov.

Plagulae amphigenae, praecipue epiphyllae, subdensae, laxae velutinae, usque ad 2 mm. diam. Hyphae brunneae, rectae vel subrectae, oppositae lateque ramosae, subdense reticulatae, cellulis plerumque 12—20 $\Rightarrow$ 6—10 μ . Hyphopodia capitata alternata, rarissime opposita, antrorsa vel subpatentia, plerumque recta, interdum leniter et retrorse vel raro antrorse curvata, 15—20 μ longa; cellula basali cylindrica, 3—5 μ longa; cellula apicali integra, oblonga, late ovata vel clavata, late obtusa, plerumque recta, interdum leniter curvata, 10—16 $\Rightarrow$ 10—12 μ . Hyphopodia mucronata illis capitatis commixta, alternata vel opposita, ampullacea, 16—24 $\Rightarrow$ 7—10 μ . Setae myceliales dispersae, etiam juxta perithecia aggregatae, rectae vel leniter flexuosae, usque ad 425 $\Rightarrow$ 9—10 μ , subdentatae vel inaequaliter bidentatae (usque ad 20 μ), quandoque dentibus iterum bidentatis. Perithecia dispersa, atra, globosa, verrucosa, usque ad 200 μ diam. Sporae brunneae, cylindrico-ellipsoideae, obtusae, 4-septatae, constrictae, 36—44 $\Rightarrow$ 15—16.5 $\Rightarrow$ 13—14 μ .

Hab. in foliis vivis *Tricalysiae okelensis* Hiern (*Rubiaceae*),
Sierra Leone: Musaia (Dembelia Musaia), 24. II. 1946, Deighton
M 2477 (I.M.I. 5390, typus).

In hypophyllous colonies, the hyphae are sinuous, and the capitate hyphopodia are more commonly curved than in epiphyllous colonies.

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