©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.at

SYDOWIA
ANNALES MYCOLOGICI
Editi in notitiam Scientiae Mycologicae Universalis
Series II

Vol. V 1951 Nr. 1—2

New African Meliolaceae.

By F. C. Deighton,
Plant Pathologist, Department of Agriculture, Sierra Leone.

Irenina homalii-angustifolii Deighton, sp. nov.

Plagulae plerumque epiphyllae, subdensae, orbiculares, atrae, usque ad 3 mm. diam. Mycelium ex hyphis brunneis, rectis vel leniter flexuosis, 6.5—8 μ crassis (cellulis plerumque 20—40 μ longis), plerumque opposite ramosis (circa 45°), subdense reticulatis compositum. Hyphopodia capitata ,alternata, 20—27 μ longa, patentia vel antrorse vel retrorse directa, cellula basali subcylindracea vel cuneata, 5—7.5 μ longa, cellula apicali 15.5—19.5 $\times$ 9—13 μ, recta vel antrorse- vel retrorse-curvata, alia integra, elliptica, obovoidea vel clavata, alia irregulariter clavata sublobataque, interdum malleiformia. Hyphopodia mucronata alternata vel opposita, inter hyphopodia capitata intermixta, ampullaceae, recta vel curvula, 18—20 $\times$ 6.5—9 μ. Setae nullae. Perithecia dispersa, atra, globosa, usque ad 220 μ diam., cellulis parietalibus in prosessus brunneos tuberculatos obtusos conoideos plerumque circa 20 μ (usque ad 30 μ) alt. et ad basim 20—30 μ latos productis. Sporae elongato-ellipsoideae, 4-septatae, constrictae, atro-brunneae, leves, utrinque rotundatae, 41—47 $\times$ 17—20.5 μ.

Hab. in foliis *Homalii angustifolii* Smith ex DC. *(Samydaceae)*, Sierra Leone: Nganyama, Sewa Ferry (Tikonko), 12. 9. 1944, Deighton M 2391 (pars ut Herb. I. M. I. 2583 (b), typus).

Only one ascospore was seen on edge: it measured 45 $\times$ 17 $\times$ 12 μ.

Irenina phyllanthi Deighton, sp. nov.

Plagulae epiphyllae, tenues, arachnoideae, orbiculares, atrae, usque ad 2 mm. diam. vel confluentes. Mycelium ex hyphis brunneis, subrectis, 5—7 μ crassis (cellulis 17—40 μ, plerumque circa 30 μ, longis), opposite vel alternate ramosis (45—90°), laxe reticulatis compositum. Hyphopodia capitata alternata vel rarissime opposita, patentia vel leniter antrorsa, 11.5—15.5 μ longa, cellula

©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.at

basali cylindracea, 4—5 μ longa, cellula apicali integra, subglobosa vel oblonga vel breviter clavata, recta vel interdum leniter curvula, 7.5—11.5 μ longa, 9—11.5 μ lata. Hyphopodia mucronata inter hyphopodia capitata dispersa, pauca, opposita vel alternata, ampullacea, recta vel curvula, 18—20 × 6.5—8 μ. Setae nullae. Perithecia dispersa, atra, globosa, usque ad 150 μ diam., cellulis parietalibus in processus conoideos usque ad 8 μ alt. tuberculato-verrucosa. Sporae brunneae, leves, cylindraceae, 4-septatae, constrictae, utrinque rotundatae, 34—39 × 14—15.5 μ.

Hab. in foliis *Phyllanthi wildemannii* Beille *(Euphorbiaceae)*, Sierra Leone: Kowama (Peri), 24. 11. 1949, Deighton M 3349 (pars ut Herb. I. M. I. 40312, typus); in foliis *Phyllanthi floribundi* Muell. Arg.; Gold Coast: Bunsu, 7. 6. 1949, leg. S. J. Hughes, Herb. I. M. I. 44089; Bowia, 15. 5. 1949. leg. S. J. Hughes, Herb. I. M. I. 44090; in foliis *Phyllanthi* sp., Gold Coast: Agona near Tarkwa, 12. 5. 1949, leg. S. J. Hughes, Herb. I. M. I. 44092.

Only one ascospore from the type collection was seen on edge: it measured 37.5 × 11.5 μ.

The two Gold Coast collections on *Phyllanthus floribundus* match well with the type. I consider I. M. I. 44092 on P. sp. (a small herbaceous weed) to belong also to this species, though the hyphae are very sinuous and the capitate hyphopodia are often of irregular shape, with the head cell frequently apiculate and retrorsely or antrorsely curved.

Irenina phyllanthi is also to be found in small quantity, mixed with *Asterina* sp., on the following Sierra Leone gatherings: on *Phyllanthus wildemannii* Beille, Baoma (Koya), 10. 12. 1939, M 2158: on *P. reticulatus* Poir., Mange (Bure), 1. 2. 1939, M 1834: on *P. reticulatus* Poir. var. *glaber Muell.* Arg., Mange (Bure), 1. 2. 1939, M 1835; Makene (Bombali Sebura), 27. 1. 1939, M 1784.

Irenopsis buettneriicola Deighton, sp. nov.

Plagulae epiphyllae, interdum hypophyllae vel caulicolae, atrae, subdensae, orbiculares, plerumque 0.5—1 mm. sed interdum usque ad 3 mm. diam., confluendo etiam majores. Mycelium ex hyphis atrobrunneis, subrectis vel leniter flexuosis, 7—9 μ crassis (cellulis 20—30 μ longis), opposite vel alternate ramosis (45—60°), subdense reticulatis compositum. Hyphopodia capitata alternata, plerumque leniter antrorsa, subrecta vel plus minusve curvata, 20—30 μ longa, cellula basali obconoidea vel cylindracea, 4—10 μ longa, cellula apicali 16—22 × 14—17 μ subglobosa vel obovata vel late clavata, integra vel angulosa vel sublobata, versiformia, recta vel leniter et varie curvata praedita. Hyphopodia mucronata numerosa, inter hyphopodia capitata dispersa, anguste ampullacea, recta vel curvula, opposita vel alternata, 18—30 × 7—8 μ, collo

©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.at

angusto praedita. Setae myceliales nullae. Perithecia dispersa, globosa, atra, usque ad 205 μ diam., verrucosa, cellulis parietalibus obtuse tuberculatis usque 6 μ alt. et 16 μ latis praedita, superne setis 1—10 erecto-patentibus, atro-brunneis, continuis, granulosis, obtusis, apice subrectis vel leniter flexuosis vel curvatis interdum subuncinatis, 65—110 μ longis ad basim 7—9 μ crassis sub apice 6—8 μ crassis ornata. Sporae atrobrunneae, cylindracae, utrinque rotundatae, 4-septatae, leniter constrictae, leves, 26—45 × 17—20 × 13—14 μ.

Hab. in foliis caulibusque *Buettneriae* sp. nov. (Deighton 4740 in Herb. Kew.). (*Sterculiaceae*), Sierra Leone: Njala (Kori), 19. 4. 1948, Deighton M 2644 (pars ut Herb. I. M. I. 24419, typus).

This species has smaller spores than any of the five species of *Irenopsis* so far described on *Sterculiaceae*. It is quite different from *Meliola (Irenina) buettneriae* J. A. Stevenson in Mycologia XXXV, 1943, p. 629, on *Buettneria* sp. from Brazil.

Meliola baphiae-nitidae Hansf. et Deight. in Mycol. Pap., Commonw. mycol. Inst., no. 23, p. 33 (1948) var. **breviseta** Deighton, var. nov.

Plagulae hypophyllae, atrae, subdensae, orbiculares, usque ad 3 mm. diam., vel confluentes. Mycelium ex hyphis subrectis, brunneis, 6.5—8 μ crassis (cellulis 20—30 μ, plerumque circa 25 μ longis), plerumque opposite ramosis (plerumque circa 45°), subdense reticulatis compositum. Hyphopodia capitata alternata vel opposita (usque ad 5—10%), antrorsa vel patentia vel raro retrorsa, 15.5—22 μ longa, cellula basali cylindracea, 4—6.5 μ (raro ad 9 μ) longa, cellula apicali subglobosa vel saepe leniter curvata, integra, 10—15 × 7.5—10 μ. Hyphopodia mucronata inter hyphopodia capitata dispersa, opposita vel alternata, ampullacea, 19—22 × 7.5—9 μ, collo angusto plus minusve curvato praedita. Setae myceliales juxta perithecia evolutae et in mycelio dispersae, sat numerosae, atrae, erectae, rectae vel leniter curvatae, simplices, acutae vel interdum subdentatae, 300—400 × 7.5—9 μ. Perithecia dispersa, globosa, atra, verrucosa, usque ad 225 μ diam. Sporae brunneae, cylindraceae, utrinque rotundatae, 4-septatae, constrictae, leves, 36—42 (raro ad 44.5) × 14.5—17 × 10—11 μ.

Hab. in foliis *Baphiae racemosae* (Hochst.) Bak. (*Papilionaceae*), ex Sea View, Durban Natal, leg. P. van der Bijl, 1. 10. 1917, ex Union Department of Agriculture Mycological Herbarium no. 11354 ut „*Meliola indigoferae* Syd. on *Baphia goossensi* de Wild." (pars ut Herb. I. M. I. 15507, typus).

Ab typo differt setis brevioribus et sporis parum longioribus.

This collection was cited by Doidge and Sydow in Bothalia II, part 2, 1928, p. 451, as *Meliola indigoferae* Syd. on *Baphia*

©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.at

racemosa Hochst. A portion of this collection, sent to the Commonwealth Mycological Institute in 1945, was labelled „*Meliola indigoferae* Syd. on *Baphia goossensi* De Wild". Mr. E. Milne-Redhead, of the Herbarium of the Royal Botanic Gardens, Kew, informs me that the correct name for the host plant is *Baphia racemosa* (Hochst.) Bak., based on a specimen from Natal, and that *B. goossensi* De Wild. is based on later-described species from the Congo which may or may not be con-specific. The *Meliola* is quite distinct from *M. indigoferae* Syd., and closely resembles *M. baphiae-nitidae* Hansf. et Deight. from which it is distinguished by its shorter setae and slightly longer spores.

Meliola carvalhoi Deighton, sp. nov.

Plagulae amphigenae, plerumque epiphyllae, atrae, densae, orbiculares, velutinae, usque ad 4 mm. diam., confluendo etiam majores. Mycelium ex hyphis subrectis, brunneis, 5—9 μ crassis (cellulis 17—32 μ longis), plerumque opposite ramosis (45—80°), dense reticulatis compositum. Hyphopodia capitata alternata vel opposita (usque ad 20%), antrorsa vel subpatentia, 13—20 μ longa, cellula basali cylindracea, 3—7 μ longa, cellula apicali elliptica vel subglobosa vel pyriformi saepe leniter curvata, integra, 9—14 × 9—14 μ. Hyphopodia mucronata rarissima, in hyphis distinctis brevibusque juxta perithecia evoluta vel inter hyphopodia capitata dispersa, plerumque opposita, ampullacea, curvata, 17—26 × 6—9 μ, collo angusto. Setae myceliales numerosae, dispersae, 300—630 × 9—10 μ, atrae, rectae, erectae, simplices, acutae vel subdentatae vel breviter dentatae (ad 3 μ). Perithecia dispersa, globosa, atra, verrucosa, usque ad 280 μ diam. Sporae atrobrunneae, ellipsoideae vel subcylindraceae, utrinque rotundatae, 4-septatae, leniter constrictae, leves, 48—56 × 19—22 μ.

Hab. in foliis *Lonchocarpi cyanescentis* Benth. (*Papilionaceae*). Africae orientalis (Portuguese East Africa): Larde, 30. 8. 1946, leg. T. Carvalho, Herb. I. M. I. 16646 (typus).

Meliola cissi-producti Deighton, sp. nov.

Plagulae plerumque epiphyllae, atrae, tenues, arachnoideae, aegre conspicuae, orbiculares, usque ad 7 mm. diam. vel confluentes et saepe totam folii superficiem occupantes. Mycelium ex hyphis sinuosis, brunneis, 5—7 μ crassis (cellulis plerumque 30—40 μ longis), plerumque opposite ramosis (plerumque 30—60°), laxe reticulatis compositum. Hyphopodia capitata alternata, in series distinctas, 2- ad 5-cellulares, disposita, 19—27 μ longa, cellula basali cuneata, 4—8(—12) μ longa, cellula apicali ovata vel subglobosa, vel late truncato-ovata, saepe sublobata, 14—17 × 13—17 μ. Hyphopodia mucronata sat numerosa, opposita vel alternata, in hyphis distinctis producta vel inter hyphopodia capitata dispersa,

©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.at

ampullacea, recta, 17—19(—26) × 6.5—8 μ. Setae myceliales in mycelio dispersae et juxta perithecia evolutae, atro-brunneae, septatae, erectae, rectae, simplices, obtusae, 140—250 μ longae, ad basim 6.5—8 μ crassae. Perithecia dispersa, atra, subglobosa, tuberculato-verrucosa, usque ad 130 μ diam. Sporae cylindraceae, brunneae, leves, utrinque rotundatae, 4-septatae, constrictae, 32—36 × 13.5—15.5 × 10.5—12 μ.

Hab. in foliis *Cissi producti* (Bak.) Afzel. (*Ampelidaceae*), Sierra Leone: prox. Bumpe (Bumpe), 4. 12. 1948, Deighton N 2676 p. p. (pars ut Herb. I. M. I. 35710 b, typus) (cum *Meliola cissi* Hansf. intermixta).

The capitate hyphopodia are formed in groups of 2—5 on successive hyphal cells separated from the next group by 1—2 hyphal cells without hyphopodia. A similar arrangement is to be seen in *Irenopsis leeae* Hansf.

Meliola cissi-producti appears to be close to *M. viticicola* Hansf. in Recueil no. 2 de l'I. N. E. A. C., Congo Belge, p. 41, 1945, and the measurements of spores and setae are very similar. *M. viticicola* is, however, described as hypophyllous, the basal cell of the capitate hyphopodium is commonly much elongated and flexuous, and the head cell is smaller than in *M. cissi-producti.*

Meliola cissi Hansf. in Journ. Linn. Soc., Lond., Bot., li, 1937, p. 272.

West African Records: On stems of *Cissus aralioides* (Welw. ex Bak.) Planch., Sierra Leone: Njala (Kori), 3. 3. 48, M 2618 (I. M. I. 28221). On leaves and stems of *Cissus producta* (Bak.) Afzel., Sierra Leone: near Bumpe (Bumpe), 4. 12. 48, M 2676 p. p. (I. M. I. 35710 (a)) (mixed, on the leaves, with *Meliola cissi-producti* Deight.). On leaves of *Cissus oreophila* Gilg. et Brandt, Gold Coast: Bunsu 7. 6. 49, coll. S. J. Hughes, I. M. I. 43613.

These collections differ in some respects from the type collection of *M. cissi* (Hansford 1956 on *Cissus* sp. from Uganda), but it is considered that they should all be referred to this species.

In the Gold Coast collection (I. M. I. no. 43613), the capitate hyphopodia are about 90% opposite in most, but not all, parts of the colonies: they match well in size and shape with *M. cissi.* The setae are up to 650 μ long × 10—14 μ wide at the base, and are all irregularly branched or dentale. The 8 spores seen measured 44—48 × 17—19 μ.

In the Sierra Leone collections, the setae are of two kinds: long (—925 μ)simple acute setae generally dispersed on the hyphae; and shorter (—300 μ) setae, mostly dentate (—17 μ) or sometimes trifurcate or twice dentate, grouped round the perithecia. The setae are 11—13 μ thick near the base, black and opaque. Spores measured

©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.at

42—49 × 17—19 × 11.5—13 μ. In M 2676 on the leaves of *Cissus producta,* the capitate hyphopodia are more or less regularly and closely disposed and are usually straight and about 50% opposite: in this they resemble the type collection of *M. cissi.* In M 2676 on the stems, the capitate hyphopodia are more distant, mostly all alternate, and commonly curved and rather elongated. M 2618 on the stems of *Cissus aralioides* is intermediate in this respect. The capitate hyphopodia in the Sierra Leone collections are somewhat broader (13—16.5 μ) than in the type: however, in Hansford 2816 on leaves of *Cissus* sp. from Uganda, det. Hansford as *M. cissi,* the capitata hyphopodia are often as broad as this and the setae are up to 750 μ long and occasionally simple and acute.

Meliola geniculata H. et P. Syd. et Butl. in Ann. mycol., Berl., ix, p. 381 (1911) var. **antrocaryonis** Deighton, var. nov.

Plagulae epiphyllae, atrae, tenues, orbiculares, usque ad 5 mm. diam. Mycelium ex hyphis atrobrunneis, leniter flexuosis, 5—8 μ crassis (cellulis 17—32 μ longis), saepe opposite (30—90°) ramosis, laxe reticulatis compositum. Hyphopodia capitata alternata, recta, antrorsa, 16—22 μ longa, cellula basali cylindracea, 5—8 μ longa, cellula apicali subglobosa vel obovata, 11—15 × 10—14 μ. Hyphopodia mucronata sat numerosa, inter hyphopodia capitata dispersa, anguste ampullacea, subrecta vel curvula, opposita vel alternata, 18—36 × 7—10 μ. Setae myceliales juxta perithecia evolutae et in mycelio dispersae, 190—275 × 7—9 μ, sub apice circa 6 μ latae, erectae, rectae, atrae, ad apicem dilutiores, et dentibus, 2—4, aequilongis (ad 10 μ), obtusis, interdum breviter furcatis, coronatae. Perithecia dispersa, globosa, atra, usque ad 200 μ diam., cellulis parietalibus obtuse tuberculatis ad 8 μ alt. et 25 μ latis ornata. Sporae atrobrunneae, cylindraceae, utrinque, rotundatae, 4-septatae, constrictae, leves, 43—50 × 19—20 × 14—16 μ.

Hab. in foliis *Antrocaryonis micrasteris* A. Chev. et Guill. (*Anacardiaceae*), Sierra Leone: Kambui Forest Reserve (Nongowa), December 1946, Deighton M 2557 (pars ut Herb. I. M. I. 11373, typus).

Ab typo sporis et hyphopodiis capitatis majoribus differt.

The perithecia are tuberculate, as described and as is to be seen in the portion of what is presumably the type collection of *M. geniculata* (leg. E. J. Butler, Travancore, India 8th Oct., 1907) in herb. I. M. I., on *Lannea grandis* (Dennst.) Engl. (syn. *Odina wodier* Roxb.). C. B. 895 on *Lannea acidissima* A. Chev. and Hansford 3563 on *Lannea welwitschii* (Hiern) Engl. from Uganda, are similar. In these three collections of *M. geniculata* on *Lannea,* the capitate hyphopodia are occasionally opposite: a fact not mentioned in the original description of the species.

©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.at

Meliola millettiae-chrysophyllae Deighton, sp. nov.

Plagulae epiphyllae, atrae, tenues, orbiculares, usque ad 10 mm. diam. vel numerosae et confluendo majores. Mycelium ex hyphis subrectis, atrobrunneis, 6—7 μ crassis (cellulis 20—30 μ plerumque 20—24 μ longis), opposite ramosis (45—90°), laxe reticulatis compositum. Hyphopodia capitata alternata vel opposita (15—20%), leniter antrorsa vel patentia, recta vel curvula, 14—18 μ (rarius ad 20 μ) longa, cellula basali cylindracea 2—4 μ (rarius ad 6 μ) longa, cellula apicali cylindracea vel ovata, integra, recta vel curvula, 10—17 × 7—8 μ. Hyphopodia mucronata pauca, inter hyphopodia capitata dispersa, opposita vel alternata, ampullacea, curvata, 20—24 × 8—9 μ, collo angusto recto praedita. Setae myceliales dispersae, erectae, atrae, rectae vel leniter curvatae, 250—530 × 8 μ, apice 2—3 denticulatae (ad 6 μ rarius ad 15 μ). Perithecia dispersa, atra, globosa, verrucosa, usque ad 180 μ diam. Sporae atrobrunneae, cylindraceae, utrinque rotundatae, 4-septatae, leniter constrictae, leves, 32—38 × 13—14 × circa 10 μ.

Hab. in foliis *Millettiae chrysophyllae* Dunn (*Papilionaceae*), Sierra Leone: Makeni (Bombali Sebura), 27. 1. 1939, Deighton M 1765 (pars ut Herb. I. M. I. 25002, typus).

Meliola octoknematis Deighton, sp. nov.

Plagulae amphigenae, plerumque epiphyllae, atrae, densae, orbiculares, usque ad 3 mm. diam. Mycelium ex hyphis rectis, atrobrunneis, 7—8 μ crassis (cellulis plerumque 12—16 μ longis), opposite ramosis (60—90°), dense reticulatis compositum. Hyphopodia capitata opposita, leniter antrorsa, 13—19 μ longa, cellula basali cylindracea, 2—5 μ longa, cellula apicali cylindraceo-ovata, apice late rotundata, integra, recta vel subrecta, 11—14 × 8—10 μ. Hyphopodia mucronata inter hyphopodia capitata laxe dispersa, opposita vel alternata, ampullacea, 20—24 × 7—8 μ, collo angusto. Setae myceliales juxta perithecia et in mycelio evolutae, erectae, atrae, rectae vel leniter curvatae, 240—500 × 10—11 μ, apice 2—4 dentatae (ad 4 μ raro ad 6 μ), cristatae, raro denticulo laterali brevi praeditae, rarissime simplices acutaeque fere cylindraceae (ad apicem 8—9 μ crassae). Perithecia dispersa, globosa, atra, verrucosa, usque ad 250 μ diam. Sporae atrobrunneae, cylindraceae, utrinque rotundatae, 4-septatae, constrictae, leves, 44—50 × 21—22 × 14—15 μ.

Hab. in foliis *Octoknematis borealis* Hutch. et Dalz. (*Octoknemataceae*), Sierra Leone: Njala (Kori), 20. 3. 1948, Deighton M 2629 (pars ut Herb. I. M. I. 28210, typus).

©Verlag Ferdinand Berger & Söhne Ges.m.b.H., Horn, Austria, download unter www.biologiezentrum.at

Meliola olacis Deighton sp. nov.

Plagulae hypophyllae, raro epiphyllae, atrae, tenues vel subdense, orbiculares, usque ad 13 mm. diam., confluendo etiam majores. Mycelium ex hyphis atrobrunneis, subrectis vel leniter flexuosis, 5—7 μ crassis (cellulis 20—50 μ plerumque 30—40 μ longis), opposite vel alternate ramosis (circa 45°), laxe reticulatis compositum. Hyphopodia capitata distantia, alternata vel unilateralia, recta vel subrecta, antrorsa, patentia vel interdum retrorsa, 17—28 μ (plerumque circa 20 μ) longa, cellula basali cylindracea vel obconoidea, 6—11 μ (plerumque circa 8 μ) longa, cellula apicali integra, 11—14 $\times$ 8—10 μ, elliptica, apice obtusa praedita, vel obovata apice late rotundato vel interdum truncato praedita. Hyphopodia mucronata sat numerosa, inter hyphopodia capitata dispersa, anguste ampullacea, subrecta, opposita vel alternata, 18—30 $\times$ 6—7 μ, collo angusto praedita. Setae myceliales paucae, juxta perithecia evolutae et in mycelio dispersae, rectae vel nonnihil curvatae, atrae, erectae, simplices obtusaeque, interdum sub apice nonnihil torulosae, 120—295 $\times$ 6—8 μ. Perithecia dispersa, globosa, atra, verrucosa, usque ad 130 μ diam. Sporae atrobrunneae, cylindraceae, utrinque rotundatae, 4-septatae, constrictae, leves, 28—32 $\times$ 11.5—13 $\times$ circa 9 μ.

Hab. in foliis *Olacis mannii* Oliv. (*Olacaceae*), Sierra Leone: Njala (Kori), 3. 3. 1948, Deighton M 2620 (pars ut Herb. I. M. I. 28219, typus); Jama (Kowa), 10. 3. 1948, M 2625 (Herb. I. M. I. 28214 b).

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: Sydowia

Jahr/Year: 1951

Band/Volume: 5

Autor(en)/Author(s): Deighton F. C.

Artikel/Article: New African Meliolaceae. 1-8