

On some species of the genus *Meliola*.

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Meliola tenuis B. & C.

A fungus was distributed under the above name by Ravenel¹ on leaves of *Arundinaria* from Darien, Ga., but no description was given. It is mentioned by Cooke,² who merely remarks: "Scarcely different from *Meliola amphitricha*." It is mentioned by Saccardo³ under the heading "*Species mihi minus notæ*", where he simply quotes Cooke's remark as given above. It is next mentioned by Martin⁴ as Ravenel's no. 330. He gives no description, but says: "This appears to be *M. amphitricha* Fr.

In the *Supplementum Universale* Saccardo⁵ publishes a description for the first time. It is as follows: "*Meliola tenuis* B. & C., Ravenel, Fungi Amer. Exsic. no. 831 (without description).—Epiphyllous, forming small, black, hairy, sub-orbicular spots; perithecia globose, covered with rigid, straight, sharp-pointed setæ; asci 2–4-spored, ellipsoid; sporidia oblong, $50 \times 18-20\mu$, 4-septate, slightly constricted, extremities rounded, fuliginous; pycnidia present, smaller than the perithecia; stylospores oblong, 1-septate, multiguttulate, hyaline, $25-26 \times 6-7\mu$." This description would certainly justify the remarks of Cooke and Martin, that it was near to or identical with *M. amphitricha* Fr.

Gaillard⁶ in his admirable monograph places *M. tenuis* B. & C. among "*species dubiæ*." After quoting Saccardo's description he makes the following remarks: "We have examined authentic specimens from Ravenel's no. 831. They offer the following characters: Spots pulverulent, of a deep black brown color. Mycelium formed of moniliform cells of a pale fuliginous brown, bearing occasionally little spherical swellings, from which globular, thin-walled, sterile conceptacles

¹ Ravenel, Fungi Americani Exsiccati no. 331.

² Cooke, Ravenel's American Fungi, Grevillea—: 49. D. 1878.

³ Saccardo, Sylloge Fungorum 1: 70. Je. 1882.

⁴ Martin, Synopsis of the North American species of *Asterina*, *Dimerosporium* and *Meliola*, Jour. of Mycology 1: 148. D. 1885.

⁵ Saccardo, Sylloge Fungorum 9: 428. S. 1891.

⁶ Gaillard, Le Genre *Meliola*; Anatomie, Morphologie, Systematique 117. 1892.

develop. Mycelial setæ very abundant, acicular, thin ($200 \times 6\mu$), of a clear fuliginous brown, with numerous septa. The moniliform mycelium, the absence of hyphopodia and of spores cause us to place this plant among the doubtful species."

Ravenel's specimens seem to be the only ones known of this fungus. Some confusion exists in quoting his numbers, they being variously given as 330, 331 and 831. These seem to be simply misprints of the same number. The specimen in the herbarium of the Division of Vegetable Physiology and Pathology of the U. S. Department of Agriculture is certainly *Fungi Amer. Exsic. no. 331*.

In the fall of 1893 I was fortunate enough to collect this little-known species on *Arundinaria tecta* at Ocean Springs, Miss. The characters found in these specimens differed so markedly from any described species that I was inclined to think it new, since they afforded the combination of such distinctive marks as the divided tips of the setæ and the conspicuously lobed apical cell of the capitate hyphopodia. I find, however, that it agrees exactly with Ravenel's specimen *Fungi Amer. Exsic. no. 331*, as represented in the herbarium here.

Saccardo's description is incorrect as to the setæ and he does not mention the hyphopodia at all. The specimens examined by Gaillard were evidently very imperfect or immature.

The following description is taken from Ravenel's specimen no. 331 in the herbarium of the Division of Vegetable Physiology and Pathology, and from the Mississippi specimens. It is believed to give the true characters of the species:

MELIOLA TENUIS B. & C., nov. desc.—Amphigenous, covering small ($2-3^{\text{mm}}$) black orbicular or at length confluent areas: conidia-bearing mycelium light fuliginous, somewhat flexuous, branched, frequently septate, not constricted at the septa, $6-7\mu$ thick; conidia not observed: perithecia-bearing mycelium abundant, dark fuscous, irregularly flexuous and nodular, frequently septate, $8-9\mu$ thick: capitate hyphopodia abundant, alternate, about $20-25\mu$ long; basal cell short-cylindrical about $8 \times 8\mu$; apical cell broader, usually irregularly but distinctly three or four lobed, $12-15 \times 12-20\mu$; setæ abundant, rigid, dark and opaque, $200-400 \times 10\mu$, acute, the tip often bifid, trifid, or occasionally 4-parted for a distance of $10-20\mu$: asci ovate, thin-walled, often evanescent, 2-4-spored, $50-70 \times 35-40\mu$: sporidia dark fuscous, 4-septate,

constricted at the septa, ends obtusely rounded, $50-60\mu$ long, somewhat flattened, seemingly elliptical, $18-20\mu$ wide in front view, but cylindrical and $12-15\mu$ wide in side view.—On living leaves of *Arundinaria*, Georgia and Mississippi.

Notes on specimens of *Meliola*.

Perhaps no group of fungi is in greater confusion in most American herbaria than the species of *Meliola* and their allies in the other genera of the Perisporiaceæ. This is largely attributable to the fact that the specimens of so many published exsiccati are incorrectly named. Having recently had occasion to examine the specimens in the herbarium of the Division of Vegetable Physiology and Pathology of the U. S. Department of Agriculture, the following notes may prove of general interest:

Meliola amphitricha Fr., Bonin Islands, U. S. North Pacific Exploring Expedition.—This is mentioned by Gaillard⁷ among the forms which he refers to *M. amphitricha* Fr., but this specimen differs from his description in the much smaller (only $16 \times 12\mu$) capitate hyphopodia, which often have the apical cell conspicuously lobed, and in the evident false ostiole of the perithecium. The sporidia also differ in being strictly cylindrical (not elliptical), with the rounded apical cells longer than the rather short medial ones.

Meliola amphitricha Fr., on *Callicarpa americana*, Gainesville, Florida, Ravenel: Fungi Amer. Exsic. no. 84.—This is *Meliola cookeana* Speg. It is the same as N. A. F. no. 1295.

Meliola amphitricha Fr., on *Gordonia lasianthus*, Louisiana, 1885, coll. Dr. Palmer (herb. no. 1785).—This is *Meliola cryptocarpa* E. & M., and is the same as N. A. F. no. 1293.

Meliola amphitricha Fr., on *Laurus carolinensis*, Houston, Texas, 1869, coll. H. W. Ravenel, no. 116a.—This is not a *Meliola*, but is *Asterina dillitescens* E. & M.

Meliola amphitricha Fr., on *Laurus carolinensis*, Ravenel: Fungi Caro. no. 70.—This is *Meliola martiniana* Gaillard.⁸

Meliola amphitricha Fr., on *Persea palustris*, Green Cove Springs, Florida, March, 1883, Dr. Martin, N. A. F. no. 1296.—This is the type of *Meliola martiniana* Gaillard.⁹

⁷Gaillard, A., Le Genre *Meliola* 77. 1892.

⁸L. c. 68.

⁹L. c. 68.

Meliola amphitricha Fr., on *Persea*, Gainesville, Florida, Fungi Amer. Exsic. no. 82.—This is not a *Meliola*. Our specimen has no perithecia, but it is doubtless *Asterina dilutescens* E. & M.

Meliola amphitricha Fr. var. *palmarum* Berk., on *Phoenix dactylifera*, Calcutta, India, Thüm. Mycotheca Universalis no. 2155.—This is referred by Gaillard¹⁰ to *Meliola palmicola* Wint. Our specimen while it agrees with the usual form of this species on *Sabal* in the long, often three-celled hyphopodia, does not show the divided tips of the setæ.

Meliola amphitricha Fr., on *Sabal*, Gainesville, Florida, Ravenel: Fungi Amer. Exsic. no. 81.—This is *Meliola palmicola* Wint.

Meliola camelliæ (Catt.) Sacc., on *Camellia japonica*, Italy, Briosi e Cavara no. 106.—This, like the other "sooty molds" following insect injuries, does not at all present the characters of a true *Meliola*, and I quite agree with Gaillard¹¹ in excluding them. It is likely that all these true saprophytic forms should be referred to *Capnodium*, even if the ordinarily accepted definition of that genus has to be extended to include them. They form a natural group and so do the true *Meliolas*, but they have little in common.

Meliola furcata Lév., Ellis N. A. F. no. 1297, (a) on *Bignonia capreolata*, Florida, Dr. Martin; (b) on *Gonolobus*, North Carolina, Dr. Thos. F. Wood; (c) on *Sabal serrulata*, Florida, Dr. Martin.—Both (a) and (b) are *Meliola bidentata* Cke. *Gonolobus* is a new host for this species, but the specimen agrees exactly with the description given by Gaillard¹² and with the specimens on *Bignonia*; (c) is *Meliola Palmicola* Wint.

Meliola furcata Lév., on *Bignonia*, Gainesville, Florida, Ravenel: Fungi Amer. Exsic. no. 330.—This also is *Meliola bidentata* Cke., and is perfectly distinct from *M. furcata* Lév. which is represented in the herbarium by the N. Pacific Exploring Expedition specimen collected by Wright in Nicaragua, but which has not been found in the United States.

Meliola heteromeles (C. & H.), N. A. F. no. 1546.—Our specimen seems to be all *Capnodium*. I find nothing to indicate either *Meliola*, *Meliopsis* or *Zucalia*, where it has been variously placed.

¹⁰L. c. 101.

¹¹L. c. 123.

¹²L. c. 106.

Meliola MacOwaniana Thüm., Mycotheca Universalis no. 568. — This is *Dimerosporium MacOwanianum* (Thüm.) Sacc.¹³ The sporidia are only two-celled.

Meliola penzigi Sacc., Briosi e Cavara no. 135. — This too is *Capnodium*, not *Meliola*.¹⁴

Meliola psilostomæ Thüm., Mycotheca Universalis no. 775. — This is *Dimerosporium psilostomatis* (Thüm.,) Sacc.¹⁵

Meliola quinquespora Thüm., Mycotheca Universalis no. 657. — This is referred by Gaillard¹⁶ to *Meliola inermis* Kal. & Cke.

Meliola sanguinea E. & E., on *Rubus trivialis*, Pointe à la Hache, Louisiana, Jan. 5, 1886, A. B. Langlois. — This is considered by Gaillard¹⁷ to be the same as *Meliola manca* E. & M., which also occurs on *Myrica* (see N. A. F. no. 1292).

Meliola (young), on *Ilex*, Harris co., Texas, H. W. Ravenel. — This is not *Meliola*, but *Asterina pelliculosa* Berk. Another specimen on *Ilex* from Galveston, Texas, collected by Ravenel in 1869, has two leaves like the above showing nothing but *Asterina pelliculosa* Berk., while a third leaf bears a good *Meliola*, perhaps *M. amphitricha* Fr.

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¹³Saccardo, Sylloge Fungorum 1: 53.

¹⁴Gaillard, l. c. 123.

¹⁵Saccardo, Sylloge Fungorum 1: 54.

¹⁶Gaillard, l. c. 123.

¹⁷Gaillard, l. c. 37.



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