FUNGI OF THE DOMINICAN REPUBLIC—XYLARIACEA

By JULIAN H. MILLER[1]

The Xylariaceae of the Dominican Republic are relatively little known, and in Ciferri's list (2), only thirteen species are reported. In Puerto Rico and the Virgin Islands, Seaver and Chardón (4), report fifty-three species from a much smaller territory. Our unsatisfactory knowledge of the Dominican Xylariaceae is due to the fact that previous mycological explorers showed little or no interest in collecting saprophytic forms, confining themselves almost exclusively to plant parasites.

M. J. Berkeley (1) in 1852, reported the following species:

1. **Hypoxylon concentricum** Berk
   Now *Daldinia concentrica* (Bolt. ex Fr.) Ces. & De Not.
2. **Hypoxylon comosum** Berk
   Now *Xylaria comosa* (Berk.) Mont.
3. **Hypoxylon domingensis** Berk
   Now *Xylaria domingensis* (Berk.) Sacc.
4. **Hypoxylon grammicum** Berk
   Now *Xylaria grammica* (Berk.) Mont.
5. **Hypoxylon obtusissima** Berk
   Now *Xylaria obtusissima* (Berk.) Sacc.

Feé (3) in 1835, was the first to report a species of this group from Santo Domingo, describing *Sphaeria divaricata*, which is now called *Xylaria divaricata* (Feé) Sacc.

R. A. Toro (5), in 1927, reported six additional species, one of which, *Daldinia concentrica*, had already been collected. The rest of them were:

6. **Kretzschmaria rugosa** Earle
7. **Nummularia Bulliardi** Tul
8. **Xylaria apiculata** Cooke
9. **Xylaria arbuscula** Sacc
10. **Xylaria consociata** Starb

With regards to Toro's collections, the following comments are pertinent: *Kretzschmaria rugosa* is a synonym of *Xylaria anisopleura*, *Nummularia Bulliardi* apparently does not occur in the tropics, and *Xylaria apiculata* is not in America. His number *315*, reported as *Xylaria consociata*, has been examined and found to be *Xyl. Hypoxylon;* and his number *320*, reported as *Xylaria apiculata*, has been included under the present study and found to be *Xyl. multiplex*.

In view of the above confusing records, and the fact that Berkeley's collection has not been examined, it is difficult to determine the number

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of valid species known from the flora. Provisionally, this may be figured at 9, that is Berkeley, 5; Feé, 1; and Toro, 3.

The present study of the Xylariaceae of the Dominican Republic has been based on collections made by Dr. Carlos E. Chardón, during the summer of 1937. It contains twenty-four species, none of which were previously reported, and are consequently new to the flora. Duplicates of all specimens have been kept by the writer.

Hypoxylon Bull., Champ. Fr. **1:** 168. 1791.

1. **Hypoxylon deustum** (Hoffm ex Fr)
Grev., Scott. Crypt. Fl. **6:** 324. 1828.
Sphaeria maxima Hall
Hist. Stirp. Helv. **3:** 122. 1768.
Sph. deusta Hoffm
Veg. Crypt. **1:** 3. 1787.
Sph. versipellis Tode
Fung. Meckl. Sel. fasc. **2:** 55. 1791.
Hyp. ustulatum Bull
Champ. Fr. **1:** 176. 1791.
Sph. deusta Hoffm ex Fr
Syst. Myc. **2:** 345. 1823.
Hyp. ustulatum Bull ex Fr
Summa Veg. Scand. p. 383. 1849.
Ustulina vulgaris Tul
Sel. Fung. Carp. **2:** 23. 1863.
Ust. deusta (Hoffm ex Fr)
Petrak, Ann. Myc. **19:** 279. 1921.
Nemania maxima (Hall) House
N. Y. State Mus. Rep. **266:** 48. 1925.

A closely related form, *Ustulina zonata* (Levˊ.) Sacc., is usually considered distinct due to wider and more rounded spores, but the writer does not think the difference is sufficient to warrant a specific distinction. This form, rather than *Hyp. deustum*, is the usual one in the tropics.

On dead wood.

La Vega: Forests at El Hatillo, *Chardón 1092*, August 28, 1937.

2. **Hypoxylon fossulatum** Mont
Crypt. Guyan., Ann. Sci. Nat. IV, **3:** 123. 1855.
Nummularia fossulata (Mont) Cke
Grev. **11:** 127. 1883.

This is an interesting fungus in that it is an annulate form, closely related to *Hyp. Stygium* (Levˊ.) Sacc., but is constantly smooth, not show-

ing the perithecial elevations. The asco-spores are 6–8 x 2.5μ. The type is Leprieur *692* from Cayenne, but the writer has specimens from Trinidad and Puerto Rico as well as many other countries.

On dead wood.

La Vega: Ravine near Jarabacoa, 550 m., *Chardón 949*, Aug. 5, 1937.

3. **Hypoxylon glomeratum** Cke
   Grev. **11:** 134. 1883.
   Hyp. Mascariensis Berk ex Cke
   Grev. **11:** 131. 1883. Non Mont.
   Hyp. anthracoderma Speg
   Fung. Guar. Pug. **3:** 28. 1888.
   Hyp. Berkeleyi Sacc
   Syll. Fung. **9:** 551. 1891.
   Hyp. Bakeri Earle
   Bull. Torr. Bot. Club **26:** 633. 1899.
   Hyp. vinosa-purpureum Ell & Ev
   Fl. Lud. Nom. nud.
   Hyp. cohaerens Pers ex Fr var. *brasiliensis* Starb
   Ascom. Reg. Exp. **2:** 8. 1901.
   Hyp. rubigineo-areolatum Rehm var. *microspora* Theiss
   Ann. Myc. **6:** 345. 1908.
   Hyp. Merrillii Syd
   Ann. Myc. **15:** 212. 1917.
   Hyp. cupricolor Petch
   Ann. Roy. Gard. Peradeniya **8:** 158. 1924.
   Hyp. rubigineo-areolatum Rehm var. Bakeri (Earle) Mill
   Mycol. Explor. Colombia, Jour. Dept. Agri. P. R. **14:** 273. 1930.

This species is widely spread over both North and South America.

On dead wood.

La Vega: Trail from Maimón to Yuna River, Chardon 1028, Aug. 13, 1937; Forest at El Hatillo, *Chardón* 1086 & 1095, Aug. 28, 1937.

4. **Hypoxylon sclerophaeum** Berk & Curt
   Exot. Fung. Schw., Jour. Acad. Nat. Sci. Phila. 2nd. ser. **2:** 285. 1853.
   ? *Sphaeria coelata* Fr
   Linnaea **5:** 540. 1830.
   Hyp. placentiforme Berk & Curt
   Cuban F., Jour. Linn. Soc. **10:** 383. 1869.
   Hyp. Wrightii Berk & Curt
   l. c. 1869

Hyp. coelatum Ces
Fung. Born. Atta. Acc. Sci. fisch e matim. d Napoli **8:** 19. 1879.
Nummularia Wrightii (Berk & Curt) Sacc
Syll. F. **1:** 398. 1882.
Numm. suborbicularis (Berk & Curt) Sacc var. *Cookeana* Sacc
Syll. Fung. **1:** 399. 1882.
Numm. placentiformis (Berk & Curt) Sacc
Syll. Fung. **1:** 399. 1882.
Hyp. nicaraguense Ell & Ev
Iowa Univ. Bull. **2:** 394–415. 1893.
Penzigia polyporus Starb
Ascom. der Schwed. Chaco-Cordill. Exped. p. **32,** Ark. fur Bot. **5.** 1905.
Daldinia placentiformis (Berk & Curt) Theiss
Ann. Myc. **7: 4.** 1909.
Numm. Cookeana (Sacc)
Rehm, Ascom. Phil. Leafl. Bot. **6:** 2273. 1914.
Pyrenopolyporus Hunteri Lloyd
Myc. Notes **49:** 705, f. 1054. 1917.
Hyp. amorphum Ell & Ev
Nom. nud. Kew herb.
Hypodiscus placentiformis (Berk & Curt)
Rick, Broteria ser. Bot. **25:** 34. 1931.

On fence posts.

La Vega: Maimón River, near Maimón, *Chardón* 1017, Aug. 13, 1937

5. **Hypoxylon serpens** Pers ex Fr
Summa Veg. Scand. p. 384. 1849.
Sphaeria macula Tode
Fung. Meckl. **2:** 33. 1791.
Sph. serpens Pers
Syn. Meth. F. p. 20. 1801.
Sph. uda Pers
Syn. Meth. F. p. 33. 1801.
Sph. colliculosa Schw
Syn. Car no. 82. 1822
Sph. serpens Pers ex Fr
Syst. Myc. **2:** 341. 1823.
?*Sph. unita* Fr
Elench. Fung. **2:** 67. 1828.
Sph. caries Schw
Trans. Amer. Phil. Soc., Phila. n. ser. **4:** 194. 1832.

Hyp. bipapillatum Berk & Curt
Exot. Fung. Schw., Journ. Phila. Acad. Sci. II. **2:** 285. 1853.
Sph. capnodes Berk & Br
Hooker Lond. Jour. **4:** 72. 1845.
Hyp. colliculosum (Schw) Curt
Geol. & Nat. Hist. Surv. N. C., pt. III, p. 140. 1867.
Hyp. unitum (Fr) Nits
Pyren. Germ. p. 44. 1867.
Hyp. aeneum Nits
Pyren. Germ. p. 47. 1867.
Hyp. effusum Nits
Pyren. Germ. p. 48. 1867.
Hyp. reticulatum Karst
Not ur Sallsk. pro Fauna et Fl. Fenn. II, p. 238. 1871–74.
Hyp. allantoideum Cke
Grev. **8:** 66. 1879.
Hyp. caries (Schw) Sacc
Syll. Fung. **1:** 393. 1882.
Anthostoma capnodes (Berk & Br) Sacc
Syll. Fung. **1:** 298. 1882.
Hyp. ramosum Schw ex Cke
Grev. **11:** 132. 1883.
Hyp. irregulare Cke
Grev. **11:** 133. 1883.
Ustulina linearis Rehm
Hedw. **33:** 310. 1892.

This species has the same general appearance as the mature stage of *Hyp. glomeratum*. The distinction lies in the spore measurements. The ascospores of the former are usually between 10 and 15μ. long, while those of the latter are from 9 to 11μ. Also in the early stages *Hyp. serpens* is dirty white, easily distinguishing it from *Hyp. glomeratum* which is a bright red.

Hyp. serpens is world wide in distribution, but is rarely found in the tropics.

On dead wood.

La Vega: Forests at El Hatillo, *Chardón 1090* Aug. 28, 1937.

6. **Hypoxylon Stygium** (Levˊ) Sacc
Syll. Fung. **1:** 379. 1882.
Sphaeria Stygia Levˊ
Ann. Sci. Nat. **5:** 258. 1846.
Hyp. Puiggarii Speg

Fung. Puigg. Pug. I., Bol. Acad. Cien. Cordoba II, n. 257. 1889.
Hyp. annuliforme Rehm
Verh. bot. Brand. p. 65. 1890.
Hyp. platystomum Ell & Ev
N. Amer. Pyr. p. 649. 1892.
Hyp. microcarpum Penz & Sacc
Malphigia **11:** 492. 1897.
Hyp. Bogariense v. Höhn
Stzb. K. Akad. d. Wiss. Wien. 118, abt. I, p. 341. 1909.
Hyp. punctatum Petch
Ann. Roy. Bot. Gard, Peradeniya **8:** 153. 1924.

The number *763* shows very prominent perithecia, while in number *1022* the stroma is plane as in forms previously placed in *Nummularia.*

The type was collected from St. Domingue by Poiteau, and is in the herbarium of the Museum of Paris. No. *1022* is similar to the type.

On dead branches of tree.

Azua: Las Caobas ravine, south of San José de Ocoa, *Chardón 763*, July 10, 1937.

La Vega: Trail from Maimón to Yuna River, *Chardón 1022*, Aug. 13, 1937.

7. **Hypoxylon tinctor** (Berk) Cke
Grev. **11:** 135. 1883.
?*Sphaeria clypeus* Schw
Syn. Car. n. 42. 1822.
Sph. tinctor Berk
Hook. Lond. Journ. Bot. **4:** 311. 1845.
Hyp. clypeus Schw ex Curt
Geol. & Nat. Hist. Surv. N. C. III, p. 140. 1867.
Diatrype clypeus Schw ex Berk
Grev. **4:** 95. 1876.
Diatrype tinctor (Berk) Sacc
Syll. Fung. **1:** 200. 1882.
Hyp. applanatum Cke
In herb. Kew. Nom. nud.
Nummularia clypeus Schw ex Cke
Grev. **12:** 6. 1883. Excl. Cke. Spec.
Numm. tinctor (Berk.) Ell & Ev
N. Amer. Pyr. p. 627. 1892.

Many specimens of this species, especially from the tropics, do not exhibit the discolored substratum, but No. 627 shows this orange color in just as marked a manner as in specimens from the southern United States.

On dead wood and dead trunk of *Ficus nitida* (No. *627*)

Azua: River forest, near San Juan de la Maguana, *Chardón 627*, June 27, 1927; Public Square, San José de Ocoa, *Chardón 761*, July 9, 1937.

Kretzschmaria Fries, Summa Veg. Scand. p. 409. 1849.

8. **Kretzschmaria cetrarioides** (Curr & Welw) Sacc., Syll. Fung. **9:** 966. 1891.
Hypoxylon cetrarioides Curr & Welw
Trans. Linn. Soc. **26:** 282. 1869.
Sphaeria lichenoides Berk
Kew herb. Nom. nud.
Rhopalopsis lichenoides (Berk) Cke
Grev. **11:** 94. 1883.
Kretz. lichenoides (Berk) Sacc
Syll. F. **2:** Add. ad vol. 1, XXIX. 1883.
Rhopalopsis cetrarioides (Curr & Welw) Cke
Grev. **11:** 127. 1883.
Kretz. lichenoides Rick
Ann. Myc. **7:** 8. 1909.
On dead wood.
La Vega: Forests road to Cotui, *Chardón 1077*, August 6, 1937.

9. **Kretzschmaria clavus** Fr.
Summa Veg. Scand. p. 409. 1849.
On dead wood.
La Vega: Ravine, km. 67, road to Bonao, *Chardón 800*, July 18, 1937; Forests road to Cotui, *Chardón 1077*, Aug. 6, 1937; Forests at El Hatillo, *Chardón 1091*, *1093*, Aug. 28, 1937.

Nummularia Tul., Fung. Carp. **2:** 42. 1863.

10. **Nummularia artocreas** (Cke & Mass) comb. nov.
?*Hypoxylon labellum* Mont
Ann. Sci. Nat. IV, **3:** 511, t. 5, fig. 5. 1855.
?*Camillea labellum* Mont
Syll. Crypt. p. 208. 1856.
Diatrype artocreas Cke & Mass
Grev. **21:** 4. 1892.
Numm. repanda Fr var. *zonata* Ell & Ev
Iowa Univ. Bull. **2:** 394–415. 1893.
Nummularoidea artocreas (Cke & Mass) Lloyd
Myc. Notes **7:** 1281, f. 2872. 1924.
Camillea artocreas (Cke & Mass) Rick
Broteria ser. bot. v. XXV, fasc. 1, p. 38. 1931.

Lloyd, l.c. fig. 2871, shows a photograph of *Cam. labellum*, and in fig. 2872, one of *Numm. artocreas*. These are the types and are identical in structure, but the Montagne specimen is sterile while the type of *Numm. artocreas* has ascospores 12–15 x 5μ.

This fungus looks much like *Numm. repanda* (Fr.) Nits., but it is distinct in the presence of much finer ostiola and in the sharply fusoid ascospores. Also, the latter are very faint yellow even in old specimens, but in *Numm. repanda* they are dark brown.

This is the common *Nummularia* in the West Indies and in South America. The type is from St. Vincent (B. W. I.). The writer has specimens from Puerto Rico, Jamaica, Nicaragua and Costa Rica.

On dead wood.

La Vega: Forests road to Cotui, *Chardón 961*, August 6, 1937.

Penzigia Sacc. Myc. Malac. p. 20. 1888.

11. **Penzigia frustulosa** (Berk & Curt) Mill
Myc. Explor. Ven. Univ. P. R. Monogr. ser. B, No. 2: 211. 1934.
Hypoxylon frustulosum Berk & Curt
Cuban F., Jour. Linn. Soc. **10:** 383. 1869.
Hyp. leucocreas Berk & Rav
Grev. **4:** 51. 1875.
Hyp. microsporum Ces
Myc. Born. Atta. Acc. Sci. fisich. e Matim. di Napoli **8:** 17. 1879.
Nummularia frustulosa (Berk & Curt)
Syll. F. **1:** 398. 1882.
Hyp. exiguum Cke
Grev. **11:** 130. 1883.
Xylaria frustulosa (Berk & Curt) Cke
Grev. **12:** 5. 1883.
Hyp. lilliputianum Syd
Ann. Myc. **8:** 37. 1910.
Penzigia microspora Petch
Ann. Roy. Bot. Gard. Peradeniya **10:** 137. 1924.

On dead trunk of tree.

Trujillo: Thickets beyond Bani, *Chardón 592*, June 26, 1937.

Poronia Gledits. Willd. Fl. Berol. p. 400. 1787.

12. **Poronia oedipus** Mont
Syll. Crypt. p. 209. 1856.
Sphaeria (*Poronia*) *punctata* var. *oedipoda* Mont
Ann. Sci. Nat. II, 13: n. 35. 1841.
Sph. incrassata Jungh
Flor. Javae Crypt. p. 87. 1838.

Hyp. oedipus Mont
Cuban Fl. p. 346, t. 13, f. 2. 1838–1842.
Poronia macropoda var. *cladonioides* Ces
In Klotz.-Rab. Herb. Myc. no. 1946.
On horse dung.
Santiago: San José de las Matas, *Chardón 462*, June 6, 1937.

Xylaria Hill., Hist. Pl. p. 72. 1773.

13. **Xylaria arbuscula** Sacc
Michelia **1:** 249. 1878.
On decaying pod of *Hymenea courbaril* L.
La Vega: Forests at El Hatillo, *Chardón 1215*, August 28, 1937.

14. **Xylaria axifera** Mont
Ann. Sci. Nat. IV, **3:** 106. 1855.
On dead wood.
La Vega: Forests at El Hatillo, *Chardón 1098*, August 28, 1937.

15. **Xylaria bulbosa** (Pers ex Fr) Berk & Br
Berk. Out. Brit. Fung. p. 385. 1860.
Sphaeria bulbosa Pers
Obs. Myc. **2:** 63. 1799.
Sph. bulbosa Pers ex Fr
Syst. Myc. **2:** 327. 1823.
Sph. corniformis Fr
Elench. Fung. **2:** 57. 1828.
Xylaria corniformis Fr
Summa Veg. Scand. p. 381. 1849.
This species has been named *Xylaria corniformis* in most North American herbaria. It is black, rugose, without a pellicle and sometimes there is a sterile tip. When growing on a hard substrate there is a bulbose base. The only other species with similar appearance and small spores (8–10 x 4–5μ.) is *Xylaria castorea* Berk., but it differs in being compressed instead of terete.
On dead wood.
La Vega: Forests near Yuna River, El Hatillo, *Chardón 1032*, August 14, 1937; Forests at El Hatillo, *Chardón 1103*, *1106*, August 28, 1937.

16. **Xylaria Chardoniana** (Toro) Mill
Mycol. Expl. Ven. Univ. P. R. Monogr. ser. B., no. **2:** 214. 1934.
Poronia Chardoniana Toro
N. Y. Acad. Sci. Surv. P. R. **8:** 68. 1926.

Heretofore known only from Puerto Rico and Venezuela.
On horse dung.
Santiago: San José de las Matas, *Chardón 456*, June 6, 1937.

17. **Xylaria cristata** Speg
Fung. Argent. **1:** 179. 1880.
On decaying log.
Samaná: Cacao plantations, Sabana de la Mar, *Chardón 730*, July 5, 1937.
La Vega: Forests at El Hatillo, *Chardón 1101*, Aug. 28, 1937.

18. **Xylaria cubensis** Mont
Syll. Crypt. p. 202. 1856.
Hypoxylon cubensis Mont
Ann. Sci. Nat. II, **13:** cent. 2, no. 29. 1840.
Hyp. cubensis Mont
Sagra Fl. de Cuba, p. 347, t. 13, f. 1. 1842.
Xylaria fusca Lloyd
Myc. Writ. **5:** 770, f. 1155, 1156. 1918.
This species is clavate, smooth, fuscous to darker, terete, with small spores, 8–10 x 4–5μ. It is common in South America, the West Indies, and in the southern United States.
On decaying trunk of tree.
Samaná: Cacao plantations, Sabana de la Mar, *Chardón 740*, July 6, 1937.

19. **Xylaria Hypoxylon** (L ex Fr) Grev
Fl. Edin. p. 355. 1824.
Clavaria Hypoxylon L
Sp. Pl. p. 1182. 1753.
Sphaeria Hypoxylon L ex Fr
Syst. Myc. **2:** 327. 1823.
On dead wood.
Trujillo: San Cristobal, *Kern & Toro 315*, Mar. 13, 1937 (reported as *Xylaria consociata* Starb.).
Samaná: Cacao plantations, above Samaná, *Chardón 741*, July 6, 1937.
La Vega: Forests at El Hatillo, *Chardón 1100 & 1102*, Aug. 28, 1937.
Puerto Plata: Forests near Sosúa beach, *Chardón 903*, Aug. 1, 1937.
On dead leaf sheaths of *Roystonea quisqueyana* Bailey.
La Vega: Outskirts of Bonao, *Chardón 899*, July 31, 1937.
Duarte: Near San Francisco de Macoris, *Chardón 1075*, July 18, 1937.

20. **Xylaria inaequalis** Berk & Curt
Jour. Linn. Soc. **10:** 382. 1868.

The surface of the fertile portion is dark brown, and at maturity splits in anastomosing lines in a manner similar to *Xyl. multiplex*, *Xyl. arbuscula* and *Xyl. apiculata*. The spores are 9–11 x 4–5μ. as in *Xyl. multiplex*. It differs in possessing very slender stromata and prominent perithecial elevations.

On decaying trunks.

Samaná: Cacao plantations, Sabana de la Mar, *Chardón 732* & *734*, July 5, 1937.

La Vega: Ravine near Jarabacoa, 550 m., *Chardón 951*, Aug. 5, 1937; Forests at El Hatillo, *Chardón 1083*, Aug. 28, 1937.

On decaying log of *Hura crepitans* L.

Duarte: Road beyond San Francisco de Macoris, *Chardón 806*, July 18, 1937.

21. **Xylaria multiplex** (Kze ex Fr) Berk & Curt
Jour. Linn. Soc. **10:** 381. 1869.
Sphaeria multiplex Kze ex Fr
Linnaea **5:** 536. 1830.

On dead and decaying wood.

Trujillo: San Cristobal, *Kern* & *Toro 320*, Mar. 10, 1926 (reported as *Xylaria apiculata* Cke.).

Samaná: Cacao plantations, Sabana de la Mar, *Chardón 731*, *733* & *979*, July 5, 1937.

La Vega: Ravine, km. 67, road to Bonao, *Chardón* & *Toro 921*, July 18, 1937: Forests at El Hatillo, *Chardón 1097*, *1104*, *1107*, *1221*, Aug. 28, 1937.

22. **Xylaria muscula** Lloyd
Myc. Writ. **6:** 994, pl. 160, f. 1780. 1920.

On dead wood.

La Vega: Forests at El Hatillo, *Chardón 1216*, Aug. 28, 1937.

23. **Xylaria scruposa** (Fr) Berk
Jour. Linn. Soc. **10:** 382. 1869.
Sphaeria scruposa Fr
Elench. Fung. **2:** 55. 1828.
Hypoxylon scruposum (Fr) Mont
Cuban F. p. 350. 1838–1842.

On dead wood.

La Vega: Trail from Maimón to Yuna River, *Chardón 1027*, Aug. 13, 1937; Forests at El Hatillo, *Chardón 1105*, Aug. 28, 1937; La Trinchera, near El Hatillo, *Chardón 1232*, Oct. 31, 1937.

24. **Xylaria tabacina** (Kickx) Berk
Hooker's Jour. Bot. & Kew Misc. **6:** 225. 1854.
Hypoxylon tabacinum Kickx
Bull. Acad. Brux. **8:** 11. 1841.
On decaying log.
La Vega: Ravine, km. 67, road to Bonao, *Chardón & Toro 803*, July 18, 1937.

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