

## A NEW GENUS OF THE SCLEROTINIACEAE

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My conservative critics will doubtless raise an eyebrow at this presentation of another monotypic genus in that group of stromatic inoperculate Discomycetes for which I have erected the family *Sclerotiniaceae*.<sup>2</sup> When I began my studies on these forms, now some 30 years ago, mycologists treating any of these species commonly tossed them more or less indiscriminately into one of three or four genera, most frequently into *Sclerotinia* or *Ciboria*, genera erected by Fuckel back in 1869. My investigations on these forms indicate that there are at least 15 or 20 well marked generic groups in this family. Those which appear to me to have acceptable generic status are: *Sclerotinia*<sup>3</sup> Fuckel 1869; *Ciboria*<sup>3</sup> Fuckel 1869; *Rutstroemia* Karsten 1871 (in part) emend. Rehm 1893;<sup>4</sup> *Stromatinia* Boudier 1907;<sup>5</sup> *Phaeociboria* von Höhnelt 1918;<sup>6</sup> *Lambertella* von Höhnelt 1918 (see also Whetzel 1943); *Monilinia* Honey 1928; *Septotinia* Whetzel 1937; *Ovulinia* Weiss 1940; and *Martinia* Whetzel 1942. It will be evident to my incredulous reader that I still have a substantial number of genera up my sleeve which I hope to spring upon the mycological public shortly. Of the ten above listed genera, four are as yet monotypic, but as I discovered in the case of *Lambertella*, they are likely to lose that status as more intensive searches in the field uncover undescribed species of the *Sclerotiniaceae*.

With this orientation of my critical mycological fellows, I shall now proceed to add another monotypic genus to this growing family.

## A COPROPHILOUS SPECIES

While on a collecting trip with some of my students at Malloryville, New York, on June 22, 1942, I picked up a small dung-ball, about half an inch long by a quarter of an inch in diameter among leaf mold on the hillside about the pitcher plant bog. The dung-ball looked like that of a partridge. It bore several tiny brown apothecial cups borne on the tips of long hair-like stipes. Ascospore shootings on potato dextrose agar gave a striking, black, indeterminate stroma (Fig. 2-3) from which there presently developed numerous long-stipitate apothecia like those on the original substrate.

<sup>1</sup> *Acknowledgments*: I am grateful to Drs. David H. Linder and W. Lawrence White for critical suggestions in the preparation of this paper and to Dr. Rolf Singer who has kindly written the Latin descriptions.

<sup>2</sup> See Whetzel, 1943, p. 18, footnote 2.

<sup>3</sup> Both these genera need to be revised and emended with *Sclerotinia sclerotiorum* (DBy) Fckl. and *Ciboria caucis* (Rebent.) Fckl. to be taken as type species respectively.

<sup>4</sup> See White, 1941, p. 163, 169.

<sup>5</sup> To be restricted to forms similar to the type species, *S. rapulum* Boud.

<sup>6</sup> See Whetzel and White, 1940, p. 614.



The dung-ball, meanwhile in a moist chamber, failed to produce more apothecia and was discarded. The striking characters of the apothecia which developed so abundantly from the stromata produced on the agar substratum lead to a careful study of the species which proves to be quite unlike any other of the fifteen or more genera of the *Sclerotiniaceae* known to me. I am, therefore, describing it as a new species and placing it in a new genus.

**Coprotinia** gen. nov.

Stromate indistincto, nigro, 1-2 mm. crasso; strato corticali 1- vel pluri-stratoso, ex hyphis dense intertextis, atris consistente, medullam includente. Structura stromatis structurae sclerotiorum *Botrytis cinereae* simillima. Carpophoris spermatigeris haud visis. Statu conidiali nulla. Apotheciis gregariis, longis, stipitibus gracilibus institutis, plus minusve fuscidulis; disco exiguo prae stipitis longitudine, margine fortiter recurvato in maturis, stipite criniformi, apicibus hypharum glanduliformibus ornato; ascis minutissimis, clavatis, basin versus gradatim attenuatis, apice incrassatis, poro iodii ope leviter caerulescente; ascosporis bi-seriatim dispositis, in apicem asci congregatis, minutis, elongate ellipsoideis, uni-cellulatis, hyalinis; paraphysibus cylindraceis et tenuiter tunicatis.

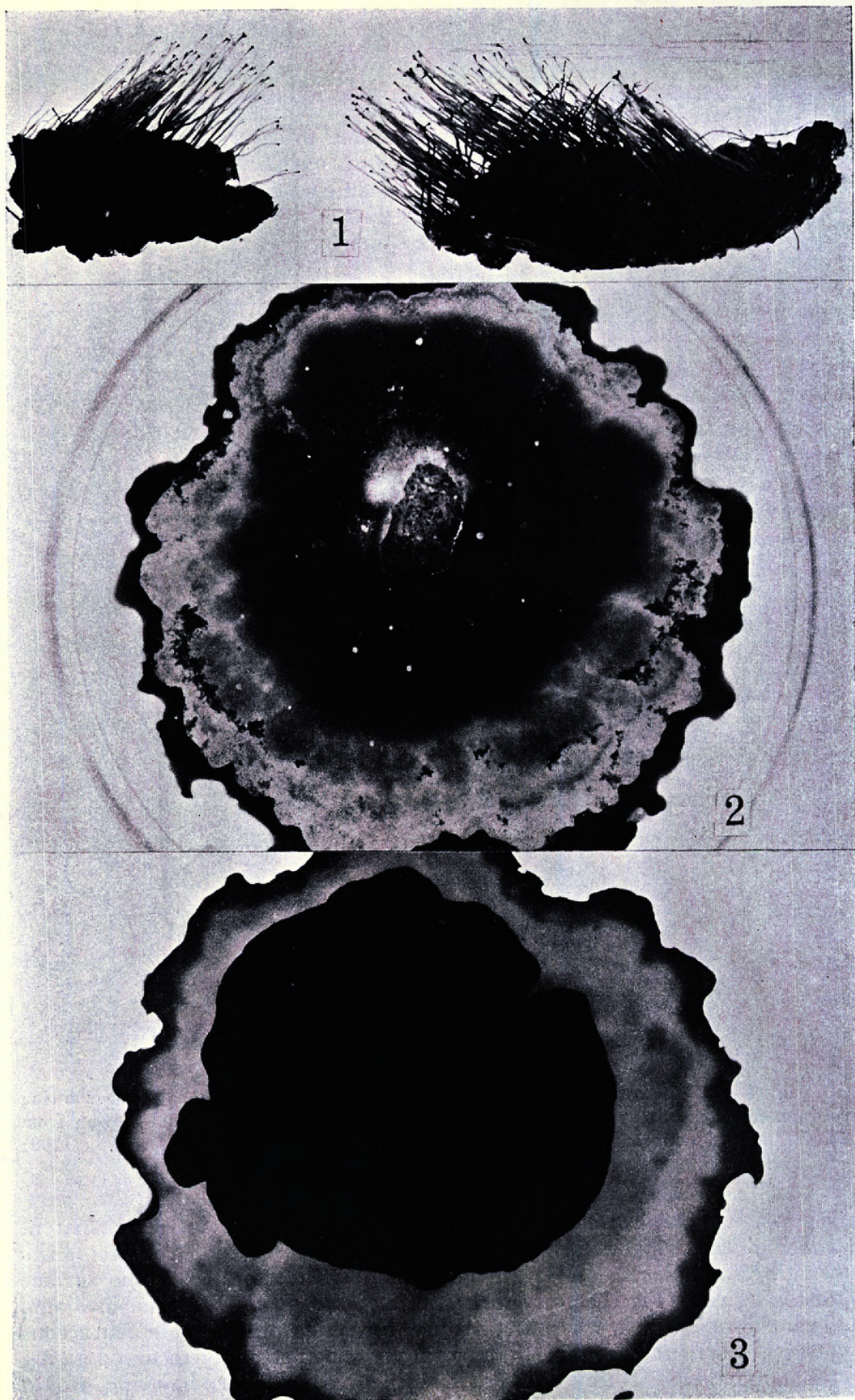
*Stroma* (on potato dextrose agar) indeterminate, black, 1-2 mm. thick; *rind* (external and submerged) one to several layers of densely interwoven, slender, dark brown to black hyphae, enclosing a medulla; *medulla* of rather closely interwoven, slender, thin-walled hyphae embedded in a rubbery transparent matrix. Stromatic structure very like that of the sclerotia of *Botrytis* of the *cinerea* type. *Spermatial* fruit-bodies not seen. *Conidial* stage wanting. *Apothecia* gregarious, long, slender-stipitate, some shade of brown; *disc* small in comparison with length of stipe, the margin strongly recurved at maturity, *stipe* hair-like, the surface adorned with scattered glandular hyphal tips; *asci* very small, clavate, tapering gradually to the base, apex thickened, pore faintly J+; *ascospores* biserial, crowded into the swollen apical part of the ascus, minute, long ellipsoid, one-celled, hyaline; *paraphyses* cylindric and thin-walled.

**Coprotinia minutula** sp. nov.

Stromate diffuso, indistincto, nigro, 1-2 mm. crasso; strato corticali ex hyphis dense intertextis, atro-fuscis, gracilibus consistente et uno vel nonnullis stratis composito, extus asperulato; medulla ex hyphis intertextis, ramosissimis, anastomosantibus, gracilibus, septatis, hyalinis, 3-3.5  $\mu$  crassis efformata. Carpophoris spermatigeris haud observatis. Statu conidiali nullo. Apotheciis numerosis e superficie tota stromatis nusquam non enatis, longissime stipitatis; receptaculo 1-2 mm. in diametro, atrocastaneo ad primam maturitatem, vetustis expallentibus usque ad colorem pallide fulvidum, tenui, margine prima juventute fortiter recurvato; stipite gracillimo, criniformi, usque ad 20 mm. longo et  $\frac{1}{4}$  mm. crasso, sursum pallido, atro deorsum, apicibus hypharum glanduliformibus ornato; ascis brevibus, crassiusculis, clavatis, saepe conspicue inflatis sub ipso apice, 31-47 x 3.6-4.8  $\mu$ , apice rotundato, incrassato, poro iodii ope leviter caerulescente; ascosporis 8, minutis, bi-seriatim dispositis et in tertiam superiorem inflatam congregatis, elongate ellipsoideis, 4.8-6.0 x 1.5-2  $\mu$ , hyalinis; paraphysibus cylindraceis, tenuiter-tunicatis nec septatis nisi ad basin, 3-3.5 x 33-45  $\mu$ .

*Stroma* (on potato dextrose agar) diffuse, indeterminate, black, 1-2 mm. thick (Fig. 2-3); *rind* (external and submerged) composed of densely

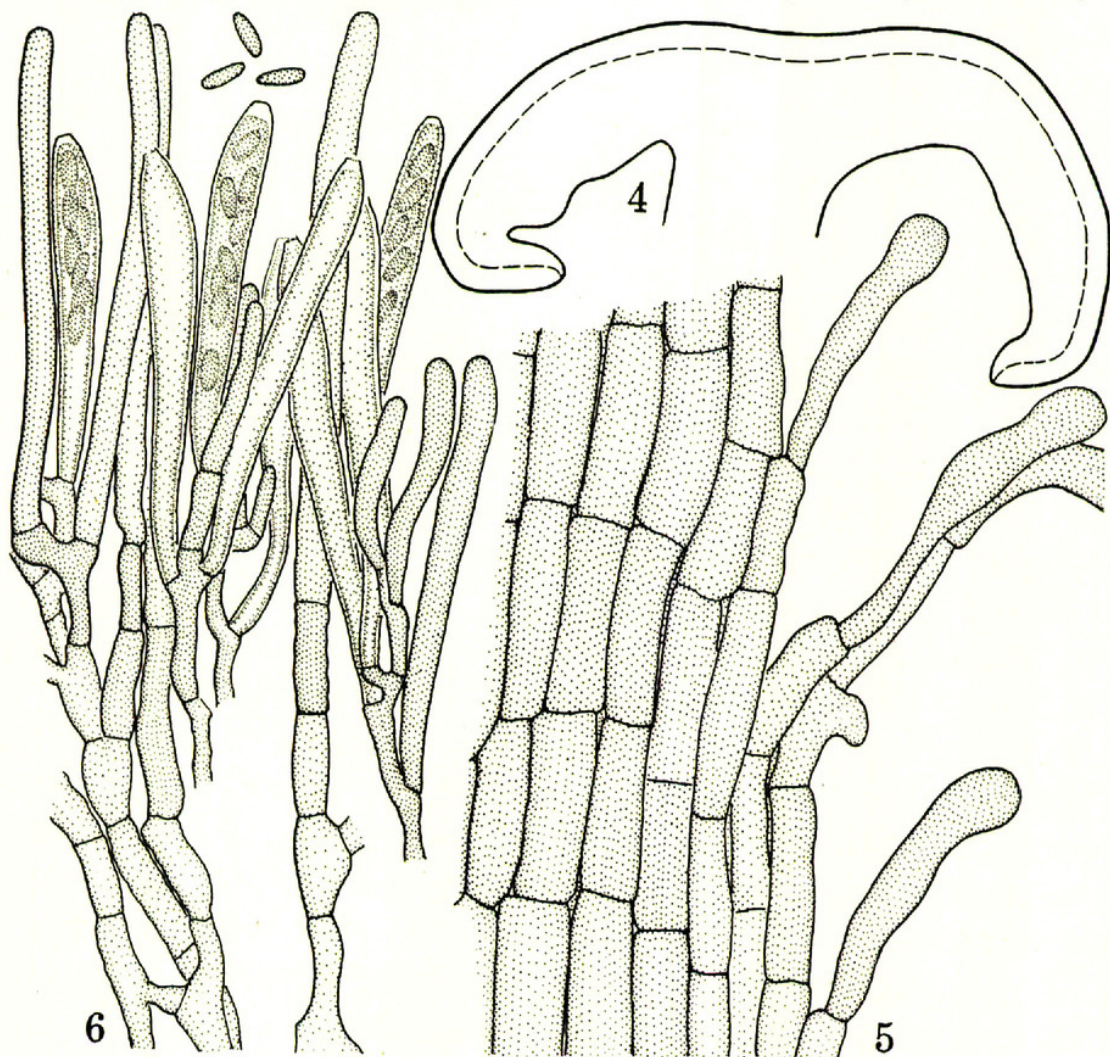




**Fig. 1-3. *Coprotinia minutula*:** 1, Apothecia produced in culture,  $\times 2$ ; 2, Stroma formed on potato dextrose agar, photographed from upper surface,  $\times 1$ ; 3, Same as 2 but photographed with Petri dish inverted,  $\times 1$ .



interwoven dark brown, slender hyphae, one to several layers thick, the external portion here and there double with narrow strip of medulla between the two layers; the surface rough and where not imbedded in the agar covered with a felty layer of loose brown hyphae; *medulla* of rather densely interwoven, much branched and anastomosed, slender, thin-walled,



**Fig. 4-6. *Coprotinia minutula*:** 4, Diagram of section through disc showing its general form at complete maturity,  $\times 80$  approx.; 5, Longitudinal section from lower part of stipe showing structure of stipe and protruding hyphal tips,  $\times 1290$ ; 6, Asci, paraphyses, and ascospores,  $\times 1290$ .

septate, hyaline hyphae,  $3-5.5 \mu$  in diam., embedded in a transparent rubbery matrix. *Spermatial fruit-bodies* not observed. *Conidial* stage wanting. *Apothecia* arising in large numbers from all over the surface of the stroma (Fig. 1), very long stipitate; *receptacle* 1-2 mm. in diam., dark chestnut brown when first mature, bleaching out to "pale ochraceous tawny" (R) with age, thin, the margin very soon strongly recurved giving the appearance of tiny toadstools; *stipe* very slender, hair-like, up to 20 mm. long by  $\frac{1}{4}$  mm. thick, pale above, dark below, adorned with short glandular hyphal tips; *asci* short, stout, clavate, often markedly



inflated or swollen just below the tip,  $31-47 \times 3.6-4.8 \mu$ , apex rounded, thickened, pore faintly J+; *ascospores* 8 per ascus, minute, biserial and crowded into the swollen upper third of the ascus, narrow ellipsoid,  $4.8-6.0 \times 1.5-2.0 \mu$  hyaline; *paraphyses* cylindric, thin-walled and aseptate except at the base,  $3-3.5 \times 33-45 \mu$ .

**HABITAT:** Collected only once on a small dung-ball of some unknown animal at Malloryville, N. Y., June 22, 1942. Known chiefly from stromata and apothecia developed in cultures derived from ascospore discharge on potato dextrose agar and on sterilized wheat in laboratory at Ithaca, N. Y.

**TYPE SPECIMEN:** C. U. Pl. Path. 31585. Stromata developed on potato dextrose agar and on sterilized wheat kernels.

This little discomycete presents several distinctive characters. Coprophilous species in the *Sclerotiniaceae* are rare. The only other species known to me to occur on dung is the form recorded by me<sup>7</sup> but collected by R. F. Cain on rabbit dung near Lac St. Joseph, Quebec, on August 25, 1938 (C. U. Pl. Path. 29646). That form I have referred to *Martinia panamaensis* Whetzel. The species here described is, however, quite different since the apothecia develop from a diffuse stroma rather than from tiny distinct hemispherical sclerotia, and the spores are hyaline instead of colored.

In certain of its aspects, *Coprotinia minutula*, reminds one at once of certain species of *Lambertella*. It cannot, however, be referred to that genus, since its stroma is of a more highly developed type, being in the structure of its rind and that of its medulla much more like the sclerotium of a *Botrytis* of the *cinerea* type. This, together with its colorless spores, sets it off not only from *Lambertella* but also from *Martinia*, although its apothecia, asci and ascospores are strikingly like those of the latter genus. It is perhaps most closely related to *Rutstroemia*, but the slender hair-like stipes of the apothecia would seem to deny reference of it to that genus. One of its most peculiar characters is the gland-like hyphal tips which adorn the stipe throughout its length and over the underside of the receptacle. These are of variable length, usually of 1 to 5 short cells, the apical cell being swollen and filled with an olivaceous-green substance of an oily character (Fig. 5).

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<sup>7</sup> See Whetzel, 1942, p. 589.



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