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R. K. Benjamin

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## AN ADDITION TO THE GENUS MAGNUSIA

R. K. BENJAMIN

*Magnusia*, a genus included in the Eurotiaceae, was described in 1879 by Saccardo (3), and it was based on a single species, *M. nitida*, which had been collected from decaying pine wood in Berlin. This fungus has been noted on occasion by subsequent workers (4, pp. 150-151) who have found it growing usually on dung. A second coprophilous species, *M. brachytricha*, was described in 1937 by Ames (1),\* and in his excellent series of figures he illustrated not only the perfect and imperfect stages of this species but also the perfect stage of the one described by Saccardo. Recently a third representative of the genus has been isolated and grown in pure culture which is so distinctly different from the above named taxa that if it is to be recorded it shall be necessary to describe it as new.

MAGNUSIA *spirotricha* sp. nov.

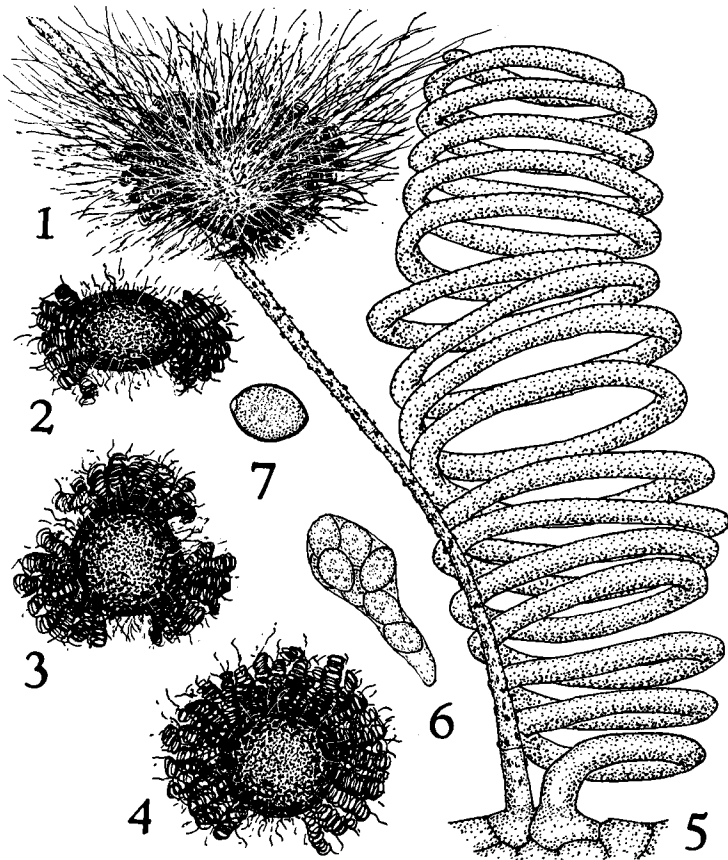
Cleistothecia superficialia, parce depressa, utpote supra visa rotunda, elliptica, aut parce angularia, 162-420 ( $279 \pm 5.2 \mu$ ) X 162-342 ( $232 \pm 4.0 \mu$ ); demum nigra; pilis longis flexuosis septatis albis base per medium ca. 1.5-2.4  $\mu$ , apice tenuioribus,  $\pm$  duplo latitudine cleistotheciorum longis, et depositis crystallinis minute asperatis. Cleistothecia pilis conspicuis, spiralibus, nonseptatis, levibus, olivaceis, 2.3-3.4  $\mu$  latis, qui e cellulis parietis cleistothecialis emanant; spiris cum ca. 20 flexibus, 100-150  $\mu$  longis, 35-50  $\mu$  latis, fere 2 aut 3 fasciculis separatis 15-30 filorum aut serie paene continua aequatore positis. Asci numerosi, inaequaliter positi, fere pyriformes, breve stirpe, 25-30 X 8-10  $\mu$ ; pariete in acetate deliquescente; sporis 8, ellipsoideis, utrinque acutis, 7.1-8.5 ( $7.8 \pm 0.05 \mu$ ) X 5.2-6.3 ( $5.7 \pm 0.03 \mu$ ), primum hyalinis, demum dilute olivaceis, extremo uno tenue-parietinis.

Cleistothecia superficial, more or less depressed, circular, elliptical, or somewhat angular in outline as viewed from above, 162-420 ( $279 \pm 5.2 \mu$ ) X 162-342 ( $232 \pm 4.0 \mu$ ); black when mature; covered with long, flexuous, septate, white hairs about 1.5-2.4  $\mu$  in diameter at the base which become more slender distally, may be more than twice the diameter of the cleistothecia in length, and are minutely roughened with apparently crystalline deposits. Cleistothecia ornamented with conspicuous, coiled, nonseptate, smooth, greenish-olive hairs, 2.3-3.4  $\mu$  wide, which originate from cells of the cleistothecial wall; coils, each with up to 20 turns more or less, 100-150  $\mu$  long X 35-50  $\mu$  wide, arranged equatorially, usually in two or three distinct clusters of 15-30 or more each or disposed in a nearly continuous band. Asci numerous, irregularly disposed, usually pyriform with a short stalk, 25-30 X 8-10  $\mu$ ; wall deliquescent at maturity; 8-spored; spores ellipsoid, slightly acute at both ends, 7.1-8.5 ( $7.8 \pm 0.05 \mu$ ) X 5.2-6.3 ( $5.7 \pm 0.03 \mu$ ), at first hyaline, becoming pale greenish-olive; distinctly thin-walled at one end.

This species, which was observed first in November, 1953, appeared in laboratory culture on deer dung which had been collected by Mr. Donald H. Ford near a small stream at an elevation of about 3,000 feet in the San Gabriel Canyon, San Gabriel Mts., approximately four miles north of Glendora, Los Angeles Co., California,

\*The writer wishes to express his gratitude to Dr. L. M. Ames who kindly supplied him with a culture of *M. brachytricha*.

15 July, 1953. The fungus subsequently was isolated and grown in pure culture on 2% Malt Extract (Difco) agar, Emerson's YpSs agar (2, p. 87), and Potato-rat-dung agar. The description given above is based on material taken from near the center of one-month-old colonies grown on 2% Malt Extract agar. The Potato-rat-dung medium was prepared according to the method described by Sweet (4, p. 151) who employed it in his studies of the effect of temperature and humidity on spore germination, growth, and reproduction in *Magnusia nitida* and *M. brachytricha* (4, 5). Contrary to the findings of Sweet for *M. nitida* and *M. brachytricha*, a conidial stage was not observed when *M. spirotricha* was grown on this medium or on any other of the media employed in the present study although cleistothecia always were produced in abundance.



Figs. 1-7. 1. Lateral view of mature cleistothecium showing two clusters of coiled appendages and the profuse, light-colored flexuous hairs. X 60. 2-4. Dorsal aspect of three mature cleistothecia showing the variability in the arrangement of the coiled appendages. Flexuous hairs mostly omitted from the drawings. X 60. 5. Non-septate coiled appendage (r.) and lower portion of septate, encrusted, flexuous hair (l.), showing origin from cleistothecial wall. X 1000. 6. Mature ascus prior to disorganization of its wall. X 1000. 7. Ascospore showing thin-walled "germination pore" at one end. X 1500.

The characteristic by which *Magnusia spirotricha* is distinguished most readily from *M. nitida* and *M. brachytricha* is the closely coiled, nonseptate cleistothecial appendages which are quite unlike the apically circinate, septate hairs which adorn the fruiting bodies of the latter species. The hairs composing the coils of *M. spirotricha* may be as much as 4 mm. long when, mechanically, they are extended to their full length, whereas in *M. nitida* and *M. brachytricha* the appendages are much shorter, sometimes reaching 600  $\mu$  in the former, but rarely exceeding 150  $\mu$  in the latter. Ames describes the appendages of *M. brachytricha* as originating from internal cells of the cleistothecial wall (1, p. 223 and fig. 10), but in *M. spirotricha* the coiled appendages appear to be derived from cells at the surface of the ascocarp (fig. 5). The pale greenish-olive ascospores of *M. spirotricha* also serve to distinguish this species from *M. nitida* and *M. brachytricha* the spores of which are pale yellowish-brown.

Slides bearing specimens of *Magnusia spirotricha* designated as holotype and isotypes, as well as dried cultures, have been deposited in the Herbarium of the Rancho Santa Ana Botanic Garden, Claremont, California. Transfers of the culture maintained at the Garden (RSABG No. 116) have been deposited in the Centraalbureau voor Schimmelcultures, Barrn, Netherlands; Commonwealth Mycological Institute, Kew, Surrey, England; and the American Type Culture Collection, Washington, D.C.

## LITERATURE CITED

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