

TWO NEW SPECIES OF *CIBORINIA* (LEOTIALES,
SCLEROTINIACEAE) FROM THE JINGGANG
MOUNTAINS, JIANGXI, CHINA*

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ABSTRACT Two new species of *Ciborinia*, *C. hemisphaerica* and *C. jinggangensis*, from Jinggang Mountains, Jiangxi Province are described and illustrated. The distinctions between the new taxa and the existing species of the genus are discussed.

KEY WORDS *Ciborinia*, *Ciborinia hemisphaerica*, *Ciborinia jinggangensis*

Ciborinia Whetzel (1945), a sclerotiniaceous genus distinguishing from *Sclerotinia* Fuckel by its containing remnants of host vascular tissues in the sclerotia, was seldom known in China, even though *Sclerotinia allii* Sawada [= *Ciborinia allii* (Sawada) Kohn] was described from Taiwan Province long time ago (Sawada, 1919). It has been the only Chinese record of the genus. *Ciborinia* was well-documented by Batra & Korf (1959) and Batra (1960), in which 13 species were accepted around the world. Later, 5 additional members were found (Kohn, 1979, 1982; Schumacher & Kohn, 1985; Huhtinen, 1985; Palmer, 1992). During our excursion to the Jinggang Mountains in Jiangxi Province, two collections of the genus on two unknown dicotyledons were found. They both have well-developed, flat, black sclerotia forming in the leaf blades of host plants from which apothecia arise. Each of them represents a new taxon.

Ciborinia hemisphaerica W. Y. Zhuang & Z. Wang, sp. nov. (Fig. 1)

Ab aliis speciebus *Ciborinae* differt apotheciis convexis vel hemisphaericis, 3~6mm diam., hymeniis lateritiis, stipitibus brunneis, 15~55 mm longis, ascis 97~110 x 7.2~7.6µm, ascosporis 8~10 x (2.5~) 3.0~3.5µm, sclerotiis irregularibus, 7~20 x 3.5~15 x 0.5~1.5 mm.

Sclerotia black, flat, irregular-shaped, 7~20 x 3.5~15 x 0.5~1.5mm, cortex with thick-walled brown cells; outer layer 2~3 cell-layer thick, cells angular, 5~13µm in diam; medulla of hyaline, thin-walled cells, containing host mesophyll and vascular tissues. Sclerotia produced in culture, flat, nearly isodiametric, black, on surface of

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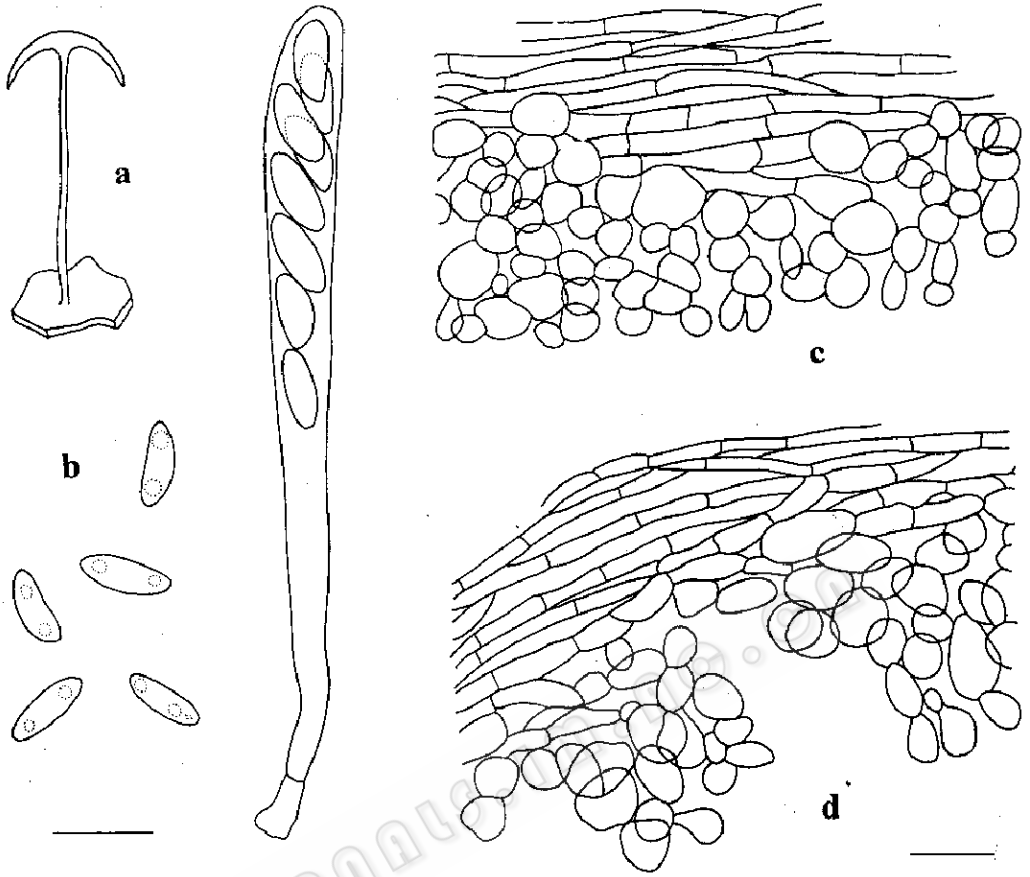


Fig.1 *Ciborinia hemisphaerica*

- a. Schematic outline of apothecium in vertical section; b. Ascus and ascospores;
 c. Structure of ectal excipulum at flank; d. Structure of ectal excipulum near stipe;
 b scale=10 μ m, c, d scale=20 μ m. All from holotype

PDA medium and partially submerged.

Apothecia 2~4 arising from a sclerotium, strongly convex to nearly hemispherical stipitate, 3~6mm in diam; hymenium brick-red, receptacle concolorous at margin and lighter than hymenium at flanks; stipes brown, 15~55mm long, with light brown hyphal tuft at base. Ectal excipulum of two layers, outer layer of textura globulosa, 35~66 μ m thick, pustulate near stipe, cells thin-walled, nearly spherical, hyaline, 8~21 μ m in diam; inner layer of textura porrecta, 64~100 μ m thick, hyphae 5~9 μ m wide. Medullary excipulum of textura intricata, 50~210 μ m thick, hyphae hyaline, 4~10 μ m wide. Subhymenium of dense textura intricata, 13~21 μ m thick. Hymenium 85~96 μ m thick. Asci clavate, 8-spored, J+ in Melzer's reagent, 97~110 x 7.2~7.6 μ m. Ascospores elongate-ellipsoid, uniseriate to irregularly biseriate, hyaline, with 2~3 guttules, non-septate, 8~10 x (2.5~) 3~3.5 μ m. Paraphyses filiform, ca 2 μ m wide. Spermata not seen.

Holotype: on sclerotia in leaves of a plant (? tree), Ciping, Jiangxi Province, W.-y. Zhuang & Z. Wang (1571), 1996 X 27, HMAS 71901.

Notes: *Ciborinia* Whetzel and *Verpatinia* Whetzel & Drayton are two genera possessing sclerotia which contain remnants of the leaf vascular tissues in the medulla, but have quite different apothecial shapes. The gross morphology and excipular structure of *Ciborinia hemisphaerica* are very distinctive by the very thin, strongly convex, and well-expanded receptacle, which are much closer to members of *Ciborinia* than to that of *Verpatinia*, and never with cylindrical, conic, or companulate pileus like all known species in *Verpatinia* (Whetzel, 1945; Mains, 1955; Dennis, 1956; Redhead, 1977).

Ciborinia hemisphaerica is characterized by its apothecial shape which is strongly convex to nearly hemispherical, with a brick-red hymenium and brown stipe, and on sclerotia in leaves. The fungus has a distinct inner layer of ectal excipulum which is of textura porrecta. The combination of the above gross morphology and detailed anatomic structure makes the fungus distinguishable from any existing species of the genus *Ciborinia*.

***Ciborinia jinggangensis* W.Y.Zhuang & Z. Wang, sp. nov. (Fig.2)**

Ab *Ciborinia seaveri* ascis tetrasporis, $53\sim 60 \times 5.0\sim 5.5\mu\text{m}$, ascosporis uniseriatis, $7\sim 11 \times 2.8\sim 3.5\mu\text{m}$ differt.

Sclerotia black, flat, thin, irregular in shape, $5\sim 6 \times 3\text{mm}$, cortex $3\sim 5$ cell-layer thick, cells angular, isodiametrical, dark brown, thick-walled, $5\sim 14\mu\text{m}$ in diam, medulla of hyaline, thin-walled cells, containing mesophyll and vascular tissues of host.

Apothecia $1\sim 8$ arising from a sclerotium, discoid, stipitate, $0.5\sim 1.0\text{mm}$ in diam; hymenium beige, receptacle lighter than hymenium, surface slightly furfuraceous, stipes brownish, up to $800\mu\text{m}$ long. Ectal excipulum of textura angularis to textura globulosa, $15\sim 36\mu\text{m}$ thick at flanks; cells thin-walled, hyaline, isodiametric $5\sim 15\mu\text{m}$ in diam; stipes of textura porrecta, hyphae light brown, $3\sim 6\mu\text{m}$ wide. Medullary excipulum of textura intricata, $13\sim 71\mu\text{m}$ thick, hyphae pale brown. Subhymenium of dense textura intricata, $13\sim 18\mu\text{m}$ thick. Hymenium $54\sim 61\mu\text{m}$ thick. Asci 4 (~ 5)-spored, cylindrical-clavate, J+ in Melzer's reagent, $53\sim 60 \times 5.0\sim 5.5\mu\text{m}$. Ascospores elongate-ellipsoid, uniseriate, hyaline, with $4\sim 7$ small guttules and 3 of them larger than others, $7\sim 11 \times 2.8\sim 3.5\mu\text{m}$. Paraphyses subcylindrical, $1.5\sim 2.0\mu\text{m}$ wide. Spermata not seen.

Holotype: on sclerotia in leaves of a ? herbaceous plant, Jinggangshan Natural Preserve, Ciping, Jiangxi Province, W.-y. Zhuang & Z. Wang (1485), 1996 X 22, HMAS 71902.

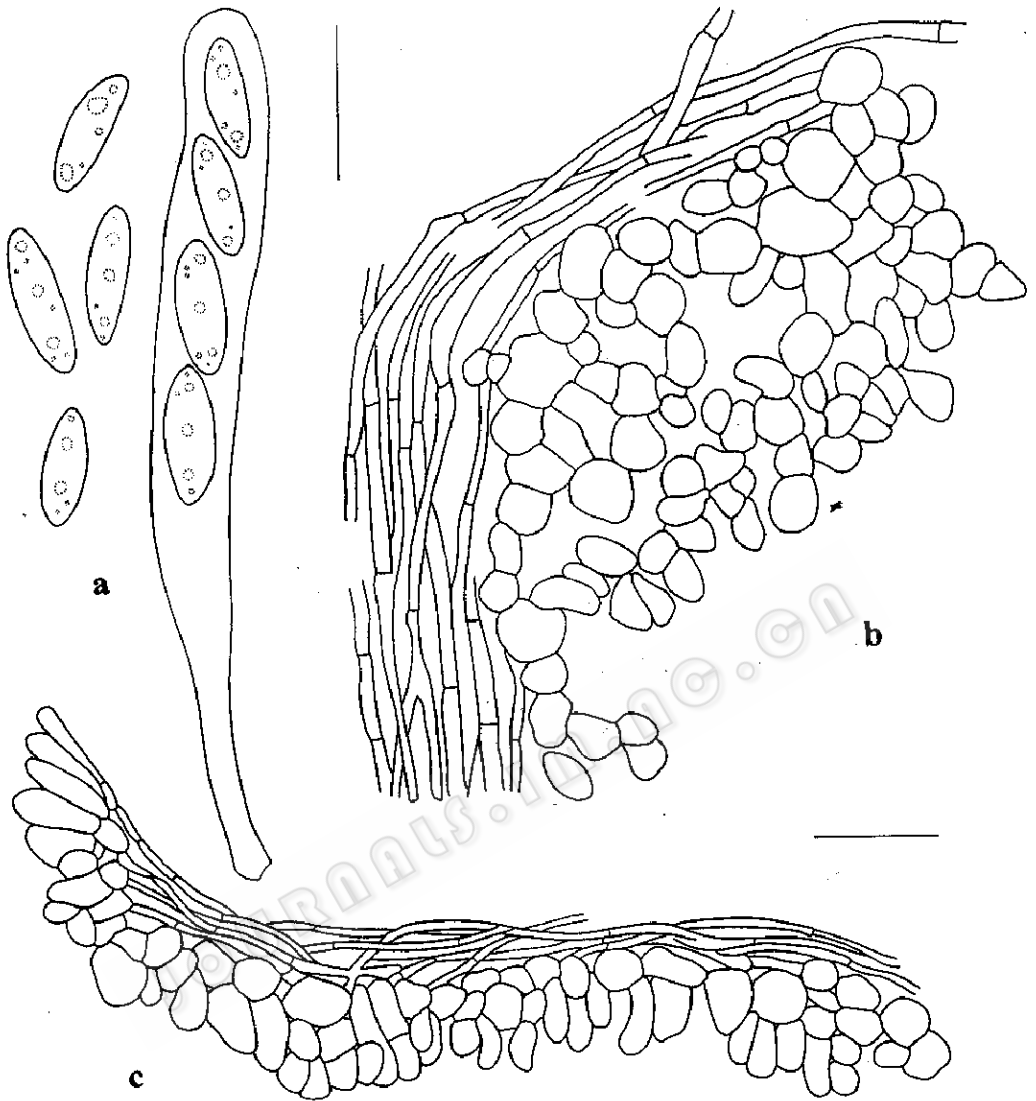


Fig.2 *Ciborinta jinggangensis*

a. Ascus and ascospores; b. Structure of ectal excipulum at conjunction between ectal excipulum and stipe;
c. structure of ectal excipulum at flank; a scale=10 μ m, b,c scale=20 μ m. All from holotype.

Notes: In the genus *Ciborinia*, the closest species to *C. jinggangensis* is *C. seaveri* Groves & Bowerman (Seaver, 1951; Groves & Bowerman, 1955; Batra & Korf, 1959; Batra, 1960). The former differs from the latter in the 4-spored instead of 8-spored and narrow asci, uniseriate ascospores, smaller and darker apothecia with shorter stipes, and not growing on *Populus*.

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井冈山地区叶杯菌属两个新种

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摘要 从江西省井冈山地区采集到的叶杯菌属(*Ciborinia*)两个新种——半球叶杯菌(*Ciborinia hemisphaerica*)和井冈山叶杯菌(*Ciborinia jinggangensis*), 讨论了新种与相近种之间的形态学差异。新种的发现使中国已知叶杯菌属的种数明显增加。

关键词 叶杯菌属, 半球叶杯菌, 井冈山叶杯菌