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The Corticiaceae (Basidiomycetes) subfamilies Phlebioideae, Phanerochaetoideae and Hyphodermoideae in Taiwan

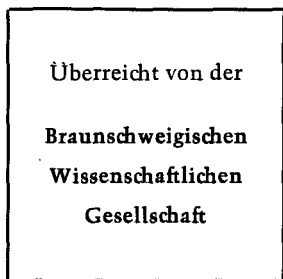
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Material for the subfamilies Phlebioideae John Erikss., Phanerochaetoideae (Jül.) Parm. and Hyphodermoideae John Erikss. of the Corticiaceae Herter, was mainly collected in 1987-1989 in Taiwan. One new genus, *Efibula*, is proposed. Sixty-two species are recognized, most of them new to Taiwan. Twenty-four new species are described: *Efibula lutea*, *E. tropica*, *Hyphoderma allantosporum*, *H. hjortstamii*, *H. macrosporum*, *H. microcystidium*, *H. neopuberum*, *Hyphodontia alba*, *H. fimbriata*, *H. formosana*, *H. mollis*, *H. niemelaei*, *H. subglobosa*, *Hypochnicium globosum*, *Phanerochaete albida*, *P. brunnea*, *P. intertexta*, *P. leptoderma*, *P. parmastoi*, *P. subglobosa*, *P. taiwaniana*, *Phlebia formosana*, *P. heterocystidia*, and *P. odontoidea*. Six new combinations are proposed: *Amethicium chrysocreas* (Berk. & Curt.) S.H. Wu, *Hyphoderma mucronatum* (Furukawa) S.H. Wu, *Phanerochaete himalayensis* (Dhingra) S.H. Wu, *Pseudolagarobasidium calcareum* (Cooke & Masee) S.H. Wu, *P. subvinosum* (Berk. & Br.) S.H. Wu, and *Resinicium granulare* (Burt) S.H. Wu. Further new combinations are made based on extra-Taiwanese species: *Amethicium leoninum* (Burd. & Nakas.) S.H. Wu, *Cylindrobasidium inusitatum* (Jacks. & Deard.) S.H. Wu, *C. involutum* (Jacks. & Deard.) S.H. Wu, *Efibula avellanea* (Bres.) S.H. Wu, *E. deflectens* (Karst.) S.H. Wu, *E. pallidovirens* (Bourd. & Galz.) S.H. Wu, *Phlebia chiricahuensis* (Gilb. & Bud.) S.H. Wu, *P. lutea* (Jül.) S.H. Wu. The term "medullary layer" is proposed for a basic structure in the subiculum. The name "ornatocystidium" is proposed for special cystidia found in the genus *Subulicystidium*. A new type of hyphae, the "quasi-binding hypha" is recognized in the Corticiaceae. The temperate element in the studied fungi in Taiwan comprises 23 species, only three of which are endemic. The warm-temperate-subtropical element consists of seven species, only one of which is new. Of the 32 species of the subtropical-tropical element, 22 are known only from Taiwan.

Key words: Corticiaceae, *Efibula* gen. nov., Hyphodermoideae, new combinations, Phanerochaetoideae, Phlebioideae, Taiwan

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I. STATUS OF THE FAMILY CORTICIACEAE

The Corticiaceae Herter mainly comprises wood-decaying fungi which can decompose cellulose, hemicelluloses and lignins in the plant cell walls, thus playing an important role in nutrient recycling in forest ecosystems and elsewhere in nature.

The genera of the Corticiaceae were earlier mostly included in the family Thelephoraceae, this classification being basically derived from the Friesian period (e.g. Burt 1914, Cunningham 1963). That broad concept of the Thelephoraceae accommodated non-poroid resupinate Aphyllophorales. Genera within the Hymenomycetes were long included in the family, predominantly on the basis of macroscopic characters, i.e., the group comprised fungi which were completely or predominantly resupinate in their habit, having a smooth hymenial surface or various kinds of hymenial protuberances but no true spines, pores or gills. Microscopical analyses and comparisons have revealed that — as in the agarics, polypores, hydneaceous fungi and many other fungal groups — the "family" Thelephoraceae was in fact comparable to trees or other physiognomic-ecological entities within the plants. So it was to be expected that deeper microscopical knowledge would lead to extensive division of the former family.

During recent decades, a number of relatively natural families have been split off from the old

Thelephoraceae. The segregate families adopted by modern mycologists include the Corticiaceae, Coniophoraceae, Dichostereaceae, Hericiaceae, Hymenochaetaceae, Stereaceae and Tulasnellaceae. Among them, the Corticiaceae accommodate a much greater number of genera and species than the other families. The use of the name Corticiaceae by Eriksson (1958) and Donk (1964) represents the approximate delimitation of the family now recognized by mycologists. Nevertheless, the family and subfamily divisions of the present paper were based on the system proposed by Parmasto (1968a), which was later modified by the same author (Parmasto 1986). This comparatively restricted concept has apparently been accepted by most other mycologists, although the older, wider concept is adopted in some recent floras for practical reasons. In this paper, the Corticiaceae is understood to be a group of the Holo-basidiomycetes, comprising genera with resupinate fruit bodies, a monomitic hyphal system and thin-walled, acyanophilous spores, and producing white-rot in wood. Unfortunately, each of these characters may exceptionally be absent.

Even in its reduced concept, fairly many mycologists still regard the Corticiaceae as a rather heterogeneous group, calling it a "sensu lato" family. A tendency to split it into even smaller, more natu-