

**DISCOSIELLA SYDOW AND DISCOSIELLINA  
GEN. NOV.\***

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ABSTRACT

*Discosiella cylindrospora* H. and P. Sydow, the type species of the genus *Discosiella* H. and P. Sydow, is redescribed from a study of type material. It is concluded that the conidial appendages of this fungus are mucoid in nature, a fact not mentioned by the Sydows in their diagnosis and description. The diagnosis of *Discosiella* is suitably emended. From the original description of *D. longiciliata* Agnihotrudu, supplemented by a study of the type material of this species, it is concluded that it cannot be retained in the genus *Discosiella* as emended in this paper and is now accommodated in a new genus *Discosiellina* as *D. longiciliata* (Agnihotrudu) comb. nov.

THE genus *Discosiella* was described by Sydow, H. and P. in 1912 with *D. cylindrospora* as the type species (Sydow, H. and P., 1912). Their diagnoses of the genus and the type species were as follows:

*Discosiella* gen. nov. "Pycnidia dimidiata, subsuperficialia, leniter convexa, atra, nitidula, astoma, irregulariter disrumpentia, membranaceo coriacea, subiculo tenui insidentia. Sporulae hyalinae, cylindraceae, 1-septatae utrinque 1-ciliata. Sporophora brevissima. A Discosia recedit sporulis didymis et praesentia subiculi."

*D. cylindrospora* sp. nov. "Mycelio apiphylo, raro hypophyllo, plagulas tenuissimas irregulares, indeterminatus, effusas, atras, 3-10 mm latas efformante, ex hyphis tenuibus 2.5-4  $\mu$  crassis, subhyalinis usque dilute fuscidulis, varie ramosis anastomos-antibusque, septatis, composito; pycnidiiis in mycelio

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sparsis, dimidiatis, leniter convexis, nitidulis, atris, 175–250  $\mu$  diam., irregulariter dehiscentibus, ambitu saepeparum fimbriatis, contextu opaco irregulariter radiatim, composito, sporulis numerosissimis, cylindraceutis, utrinque obtusis, rectis, medio 1-septatis, non constrictis, hyalinis, 12–15  $\times$  2–2.5, utrinque setula hyalina flexuosa usque falcata 8–18  $\mu$  longa, 1–1.5  $\mu$  crassa praeditis; sporophoris brevissimis, hyalinis. *Hab.* in foliis vetustis *Gelonii subglomerati*, Puerto Princesa, Palawan, ins. Philipp.” (Saccardo, 1931).

In the course of studies on Coelomycetes with appendaged conidia, we examined the type specimen of *D. cylindrospora* and a description of the fungus based on our study is given below (Fig. 1).

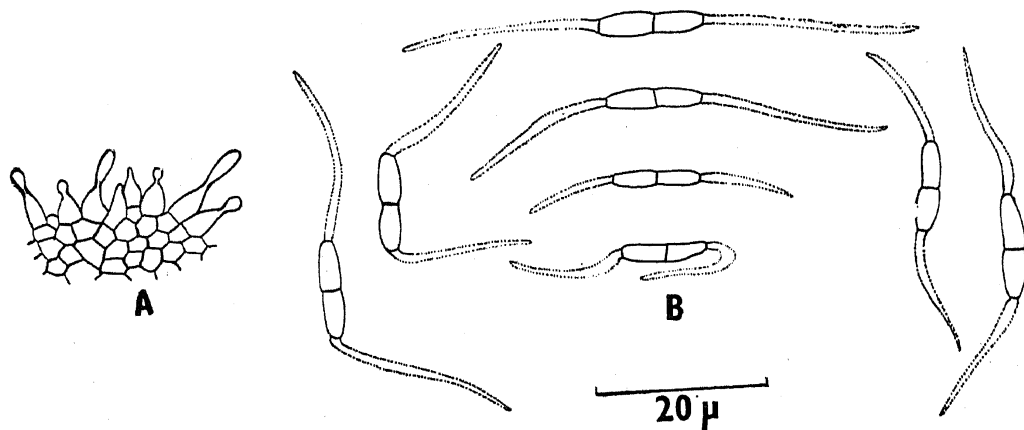


FIG. 1. *Discosiella cylindrospora*, from type material. A, Conidiogenous cells with developing conidia. B, Conidia.

*Fructifications* mostly on the upper side of the leaf, the fungus forming black, concentric, irregular, indeterminate patches, consisting of subhyaline to light brown, variously branched and anastomosing, septate hyphae. *Pycnidia* on a slender subiculum, epiphyllous, gregarious, separate or coalescent, sub-circular in outline, dimidiate, shield-shaped, slightly convex above, black, shiny, opaque, astomous, irregularly dehiscent, 182 (110–205)  $\mu$  in diam. *Conidiophores* arising from the upper cells of a basal stroma, hyaline, short, erect, aseptate, lageniform with a short base and a slender neck (Fig. 1, A), 3.5–4.2  $\times$  2.0–2.8  $\mu$ . *Conidia* formed singly as blown out ends of each conidiophore, hyaline, subcylindrical, rounded at both ends, thin-walled, 1-septate in the middle, occasionally slightly constricted at the septum; each bearing a single terminal appendage at either end (Fig. 1, B), 11.4 (10.5–12.6)  $\times$  2.3 (2.0–2.5)  $\mu$ ; appendages hyaline, mucoid in nature, flexuous, broader

at the base, attenuated towards extremity,  $14.0$  ( $11.0-21.0$ )  $\mu$  long,  $1.0-1.5$   $\mu$  wide at the base.

The conidiophores resemble phialides in shape, but secondary conidia have not been seen in the meagre material available.

On leaves of *Gelonium subglomeratum*, Puerto Princesa, Island of Palawan, March 1911 (TYPE) ex Herb. BPI (Herb. MUBL No. 2237-slide).

Since the mucoid nature of the conidial appendages was not mentioned in the original diagnosis of the Sydows, the following emended description of the genus is given below.

*Discosiella* H. and P. Sydow, char. emend.

Pycnidia on a slender subiculum gregarious, dimidiate, shield-shaped, black, opaque, astomous. Conidiophores hyaline, short, erect, lageniform, aseptate. Conidia formed singly as blown out ends of each conidiophore, hyaline, subcylindrical, rounded at both ends, thin-walled, 1-septate in the middle; each bearing a single, terminal appendage, at either end; appendages hyaline, mucoid in nature, flexuous, broader at the base, attenuated towards extremity.

Among the other species of this genus so far described, we have examined type material of *D. longiciliata* Agnihotrudu (Agnihotrudu, 1958), but we could not obtain the type specimens of *D. acrocomia-maculiformis* Batista (Batista, 1954), and of *D. vochysiae* Batista and Lima (Batista and Lima, 1955) described from Brazil, in order to check their taxonomic position.

Agnihotrudu (1958) described the conidia of *D. longiciliata* as follows: "Conidia borne singly, apically on the conidiophores produced abundantly, subcylindrical with obtuse ends, slightly narrower at the base, often allantoid or botuliform, rarely straight, hyaline, smooth-walled, two-celled with the septum placed subequatorially, dividing the spore into two somewhat unequal halves, non-constricted at the septum, measuring on average  $19.2$  by  $5.2$   $\mu$  (range:  $16$  to  $21$   $\mu$  by  $3$  to  $6.4$   $\mu$ ) and mostly  $19.8$  by  $5.5$   $\mu$ , guttulate, one-ciliate at either end; cilia hyaline, flexuous, subterminal, measuring on average  $18.8$   $\mu$  (range:  $16$  to  $28$   $\mu$ ) and mostly  $22$   $\mu$ ".

A fragment of the type material of *D. longiciliata* with a few pycnidia was examined by us and the following description is based on a study of this material (Fig. 2).

*Pycnidia* in ill-defined spots on dead stems, subcuticular, scattered, dimidiate, scutate to slightly hemispherical, orbicular, dark brown or black, 200–450  $\mu$  in diam, scutellum membranous to carbonous, composed of opaque, polygonal cells in the centre and elongate, rectangular translucent cells towards periphery, astomous, irregularly dehiscing, rather fimbriate at the margin (Fig. 2, A redrawn from Agnihotrudu, 1958). *Conidiophores* arising from a basal stroma, short, erect, simple, aseptate or one-septate at the base, 2.0–4.0  $\times$  1.5–2.0  $\mu$  (Fig. 2, B, redrawn from Agnihotrudu, 1958). *Conidia* formed singly from the apex of each conidiophore, oblong, curved or somewhat straight, slightly narrowing towards the indistinctly mamillate and truncate base, obtuse or rounded at the apex, thin-walled, hyaline, with a subequatorial septum, slightly constricted at the septum, with an appendage at either end (Fig. 2, C), 19.0 (16.8–21.0)  $\times$  5.6 (3.5–6.3)  $\mu$ ; appendages subterminal on the curved side, thread-like, long-flexuous, hyaline, 16.8–28.0  $\mu$  long.

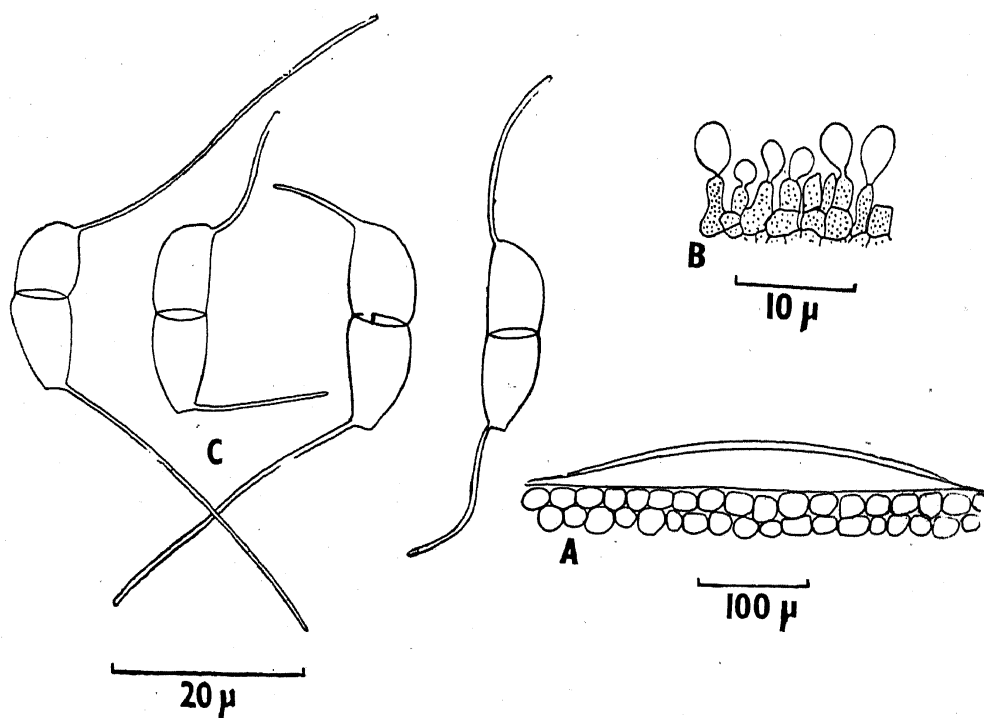


FIG. 2. *Discosfellina longiciliata*. A. Vertical section of a pycnidium. B. Conidiogenous cells with young conidia. C. Conidia (A, B, redrawn from Agnihotrudu, 1958; C, from type material).

The conidia of *D. longiciliata* differ from those of *D. cylindrospora* in that (i) the conidial appendages in the former are not mucoid as in the latter;

and (ii) the conidial appendages in the former are not terminal as in the latter, but subterminal. These differences in the nature and position of the conidial appendages indicate that *D. longiciliata* is not congeneric with *D. cylindrospora*.

From a study of literature, reference to and comparison with two genera of the Leptostromataceae appears to be relevant in settling the taxonomic position of *D. longiciliata*. They are: (i) *Tarsodisporus* Batista and Silva, type species *T. paraensis* Batista and Silva (Batista and Silva, 1964), and (ii) *Kilikiostroma* Batista and Bezerra, type species *K. peresii* Batista and Bezerra (Batista and Bezerra, 1961).

In *Tarsodisporus paraensis* the fructification is a superficial pycnostroma with a plate-like covering composed of radiating cells. The conidia are hyaline, oblong, 1-septate in the middle, with a single appendage at each end. The appendages are nearly terminal in position and appear to be non-mucoid as seen from the illustration (Fig. 1 in *Atas. Inst. Micologia* 2: 250, 1964) and description. In conidial morphology and in having apparently similar fructifications, *Discosiella longiciliata* resembles this genus. However, *D. longiciliata* does not appear to be congeneric with *Tarsodisporus paraensis* since the conidia in the latter are produced from the inner surface of the scutellum and not from the pycnidial base.

In *Kilikiostroma peresii*, the conidia are oblong and 2-celled with a single terminal appendage at each end and so resemble the conidia of *Discosiella longiciliata*. In *Kilikiostroma peresii* the conidia are brown, not hyaline as in *Discosiella longiciliata*: this difference is of little value for generic delimitation. However, the top of the pycnidium is not shield-like and composed of radially arranged plates of cells as in *Discosiella longiciliata* (see Fig. 3 in *Publ. Inst. Mic. Univ. Recife* 321: 17, 1961). Therefore, *D. longiciliata* cannot be accommodated in *Kilikiostroma*. A new genus is proposed here to take in *Discosiella longiciliata* and it is made the type of this new genus.

*Discosieilina* gen. nov.

Pycnidia dimidiata, scutata, atro-brunnea vel nigra, fimbriata ad margines, irregulariter dehiscentia. Conidiophora orientia ex stromate basali, brevia, simplicia, hyalina. Conidia hyalina, oblongata, curvata vel recta, truncata in basi, obtusa vel rotunda ad apicem, 1-septata in medio, cum appendice hyalina, subterminali, filiformi ad utrumque terminum.

Pycnidia dimidiate, scutate, dark brown or black, fimbriate at margins, dehiscing irregularly. Conidiophores arising from a basal stroma, short,

simple, hyaline. Conidia hyaline, oblong, curved or straight, truncate at the base, obtuse or rounded at the apex, 1-septate in the middle, with a hyaline, single, subterminal, thread-like appendage at each end.

*Type Species:*

*Discosiellina longiciliata* (Agnihotrudu) comb. nov.

= *Discosiella longiciliata* Agnihotrudu, 1958, *J. Indian Bot. Soc*  
37: 42-46

*Type:* On dead twigs of *Camellia sinensis* (L.) O. Kuntze, Experimental plots, Tocklai Experimental Station, Cinnamara, Assam State, Coll. Agnihotrudu, 1-11-1956 (Herb. MUBL No. 2238 slide).

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