

SHORT COMMUNICATION

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A new species of the genus *Laboulbenia* (Laboulbeniales) on *Ophionea indica* (Coleoptera, Carabidae, Odacanthini) from Taiwan

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Abstract *Laboulbenia ophioneae* is described as a new species with illustrations. It is closely related to *Laboulbenia celestialis* and *Laboulbenia asiatica* because of some similarities in the morphology of appendages and perithecia. The present species from the latter two species can be distinguished by the shorter, inflated perithecia, the shorter receptacles, and the appendages consisting of more or less darkly colored, broader branches. This new species was found on elytra of *Ophionea indica* from Taiwan, which has been also known as a host of *Laboulbenia polymorpha*. A mature thallus noticed by Terada (2004) on the slide 673b (M. Ishikawa collection) and a young thallus illustrated by Sugiyama (1978, fig. 1-G as *L. polymorpha*) on 673d (M. Ishikawa collection) are both identified as *L. ophioneae*.

Key words Carabidae · Laboulbeniales · New species · Taiwan · Taxonomy

In my study of the specimens of the type collection of *Laboulbenia polymorpha* K. Sugiy., I noted several thalli of *Laboulbenia* found on the Ishikawa slide 673b (the lectotype of *L. polymorpha* is also included in this slide) and 673d whose form was clearly different from that of *L. polymorpha* (Terada 2004). The host was recorded as *Ophionea indica* (Thunberg) from Taiwan, but position of the fungus specimens on the host was not recorded.

In my collection of the Taiwanese Carabidae, I found several parasitized specimens of *O. indica* on which I found *L. polymorpha* and another species of *Laboulbenia* that seems to be the same species as that found on the M. Ishikawa slides 673b and 673d. My specimens of *L. polymorpha* collected in Taiwan have been already reported (see Terada 2004), but specimens of the latter species are still unreported. Here, I describe this fungus as a new species.

Laboulbenia ophioneae Terada, sp. nov.

Laboulbenia polymorpha K. Sugiy., pro parte, J. Jpn. Bot. 53: 284, fig. 1-G. 1978. Figs. 1–6

Thallus 175–210 µm longus. Receptaculum flavidum; cellula I basi attenuata; cellula II brevis; cellula III quadrata; cellula IV quadrata, infra cellulam insertionem protuberans; cellula V cum cellula III contigua. Cellula insertionis denigrata, discoidea, adnata. Appendix exterior fulvida, 155–180 µm longi, ex ramis longis aliquot constans, in ramo extimo nigro-marginata; cellula basalis cubica vel fere applanata, ex septis nigris ferens. Appendix inferior plus minusve fulvida, ex 2 ramis longis constans; cellula basalis quam cellula f multi parvior, ex septis hyalinis ferens. Antheridia basi denigrata, solitaria vel fasciculata. Perithecium fuscum, sed in parte inferne flavidum, crassum, 90–100 × 45–55 µm, lateribus inflatum, apice asymmetricice protrudens; cellula VI quadrata; cellula VII fere quadrata; trichogyne relative brevis, septis nigris, non ramificans; ascosporeae 40 × 3 µm.

Holotypus: K. Terada 1556a (TNS).

Etymology: From the generic name of the host beetle.

Thallus 175–210 µm long. Receptacle pale brownish yellow except hyaline cell I, becoming darkly colored in cells III and IV; cell I strongly narrowed to the base; cell II short (nearly as long as cell I); cell III nearly quadrate in section, subequal in size and shape to cell VI; cell IV nearly quadrate in section, equal in height to cell III, separating cell V by a vertical septum, bulging laterally below the insertion cell; cell V much narrower than cell IV, touching cell III at the lower end. Insertion cell blackened, discoid, located at the level somewhat above the bottom of the perithecial cavity, attached to the perithecial wall.

Outer appendage yellowish-brown (darker than the receptacle), consisting of several cubical cells on basal cell *f* and branches; branches 155–180 µm long, relatively thick, slightly tapering to the broad tip, usually divaricate at the base, consisting of lower short cells with black septa and upper elongated cells with colorless septa; outermost branch usually three forked, bearing black external edge. Inner appendage more or less paler in color than the outer appendage, extending into a branch on either side; basal

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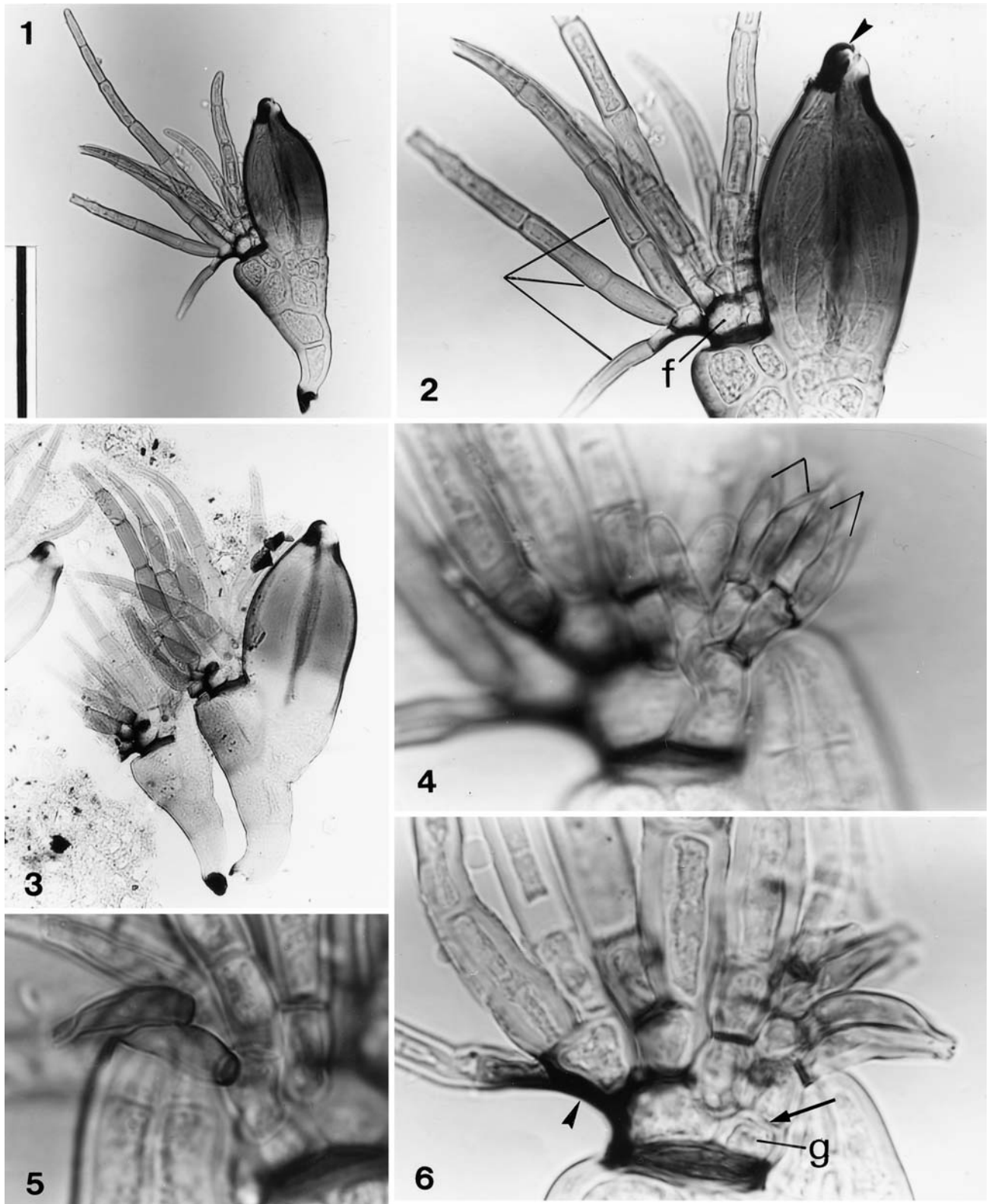


Fig. 1-6. *Laboulbenia ophioneae* from K. Terada 1556 and M. Ishikawa 673b. **1** Holotype from K. Terada 1556a. **2** Enlargement of **1**. Blackening along the margin of lip cells extends over the tip (*arrowhead*). An outermost cell on cell *f* of the outer appendage bears three simple branches (*lines*). **3** Mature thallus from M. Ishikawa 673b; it is somewhat inflated by pressure of the coverglass. **4** Branches with

antheridia in clusters (*V-lines*). **5** Two solitary antheridia in lateral position. **6** Lower portion of appendages of a young thallus. *Arrowhead* indicates black margin of the outer appendage; the black area extending down to the insertion cell. *Right arrow* indicates a colorless septum on cell *g*. *Bars 1, 3* 100 μ m; *2* 50 μ m; *4-6* 20 μ m

cell *g* much smaller than cell *f*, bearing colorless septa at the upper end. Antheridia sessile, laterally attached to branchlet, or arising in clusters on stalk cells; each antheridium bearing a basal black septum.

Perithecium blackish-brown, but pale brownish yellowish in the lower portion, 90–100 × 45–55 μm, rather stout and inflated, lip shaped (asymmetrically protruding) at the apex; posterior lip cells bearing apical dark zone that extends to the tip of each posterior lip cell; cells VI–VII and basal cells nearly quadrate in section; trichogyne simple, relatively short, bearing a few black septa; ascospores ca. 40 × 3 μm.

Specimens examined. On *Ophionea indica* (Thunberg) [Carabidae, Odacanthini], Taiwan: Kungkuan, Miaoli County, K. Terada 1534d, Aug. 1, 1996, collector unknown; Yangmei, Taoyuan County, K. Terada 1556a (holotype), 1556b, 1617f, Oct. 8, 2001, leg. K. Terada & M.H. Hsu; M. Ishikawa 673b, 673d, locality and collector unknown. Deposited in the Herbarium of Department of Botany, National Science Museum, Tsukuba (TNS).

Note. *Laboulbenia ophioneae* is undoubtedly related to *Laboulbenia celestialis* Thaxter and *Laboulbenia asiatica* Thaxter because of the similarities in the appendage structure and the color pattern of perithecia: (1) the basal cell *g* of the inner appendage bears colorless upper septa; the colorless septa of cell *g* in *L. asiatica* were confirmed by Tavares who studied the type specimens of *L. asiatica* (personal communication from Tavares); (2) the outer appendage bears black septa and black edge at the base; and (3) the depth of color in perithecia differs in tiers of the outer wall cells (see Thaxter, 1908, pl. LXV, figs. 13, 15; Sugiyama, 1973, pl. 11, figs. 3, 4). However, it is easily distinguished from the latter two species by the short, inflated perithecia,

the short receptacles, and the appendages consisting of more or less darkly colored broad branches, among which a three-forked outer branch is usually distinct.

Sugiyama (1978, fig. 1-G) illustrated an immature thallus, probably on the M. Ishikawa slide 673d, and considered it as *L. polymorpha*. However, this young thallus bore cell *g* with colorless septa and antheridia with black basal septa. A mature thallus found by Terada (2004) among thalli on M. Ishikawa slide 673b also bore the same characteristics. Evidently these thalli are not *L. polymorpha*, but typically *L. ophioneae* (see Fig. 3). The lectotype of *L. polymorpha* is also included in the same slide (673b).

Laboulbenia ophioneae and *L. polymorpha* occur on the same host species but are never found together on the same location of the host body; *Laboulbenia ophioneae* occurs on the apical half area of the elytra and *L. polymorpha* on the elytral margins and several parts other than the elytra (Terada 2004).

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