

Notes on the carabidicolous Laboulbeniales (Ascomycetes) of Taiwan II

Katsuyuki Terada*, Meng-Hao Hsu, and Wen-Jer Wu

Department of Entomology, National Taiwan University, No. 1, Roosevelt Road, Section 4, Taipei 106, Taiwan

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Abstract. Twenty species in eight genera of the Carabidae are identified and recorded as new hosts for thirteen known species of the Taiwanese Laboulbeniales. Some observational data with photographs are given for *Laboulbenia egens* and *L. olivacea*.

Keywords: Carabidae; *Dixomyces*; *Enarthromyces*; *Laboulbenia*; Laboulbeniales; New hosts; Taiwan.

The following list is continued from Part I of this series (Terada et al., 2004), dealing with *Dixomyces*, *Enarthromyces* and *Laboulbenia*. Eight genera and twenty species of the carabid beetles are added to the host-records for these Taiwanese Laboulbeniales.

List of Species

Dixomyces stomonaxi (Thaxter) I.I. Tavares, Mycologia Memoir 9: 208. 1985.—Type: R. Thaxter-593, on *Caelostomus* sp., China.

Basionym: *Misgomyces stomonaxi* Thaxter, Proc. Amer. Acad. Arts Sci. 35: 443. 1900. The host insect was erroneously listed as *Stomonaxus striaticollis* Dejean.

Specimens examined. On *Caelostomus picipes* MacLeay [Pterostichini]: Fushan, Taipei County, Jun. 5 1996, leg. S.H. Hsu, NTU-40; Wulai, Taipei County, Jun. 14 1994, leg. H.R. Wu, NTU-41.

Note. Taiwanese specimens were found on several parts of the body of *Caelostomus picipes*. *Caelostomus* sp. recorded from Taiwan by Juan and Chien (1996) seems also to be *C. picipes*. Two different forms of this fungus species were illustrated by Terada (1998, figs. 1-2).

Enarthromyces indicus Thaxter, Mem. Amer. Acad. Arts Sci. 12: 276. 1896.—Type: On *Pheropsophus marginalis* Schmidt-Goebel, India.

Specimens examined. On *Pheropsophus occipitalis* (MacLeay) [Brachinini]: Tahu, Taipei City, May 20 2001, leg. K. Terada, K. Terada-1596.

Other hosts in Taiwan. *Pheropsophus javanus* (Dejean) (Juan and Chien, 1994).

Note. Taiwanese specimens were found on the inferior part of the mesothorax of *Pheropsophus occipitalis*. This carabid is very abundant in Taiwan and is often found with *P. javanus* in wet and grassy places.

Laboulbenia egens Spegazzini, Anales Soc. Cient. Argent. 85: 325. 1918.—Type: On *Tachys* sp., Italy.

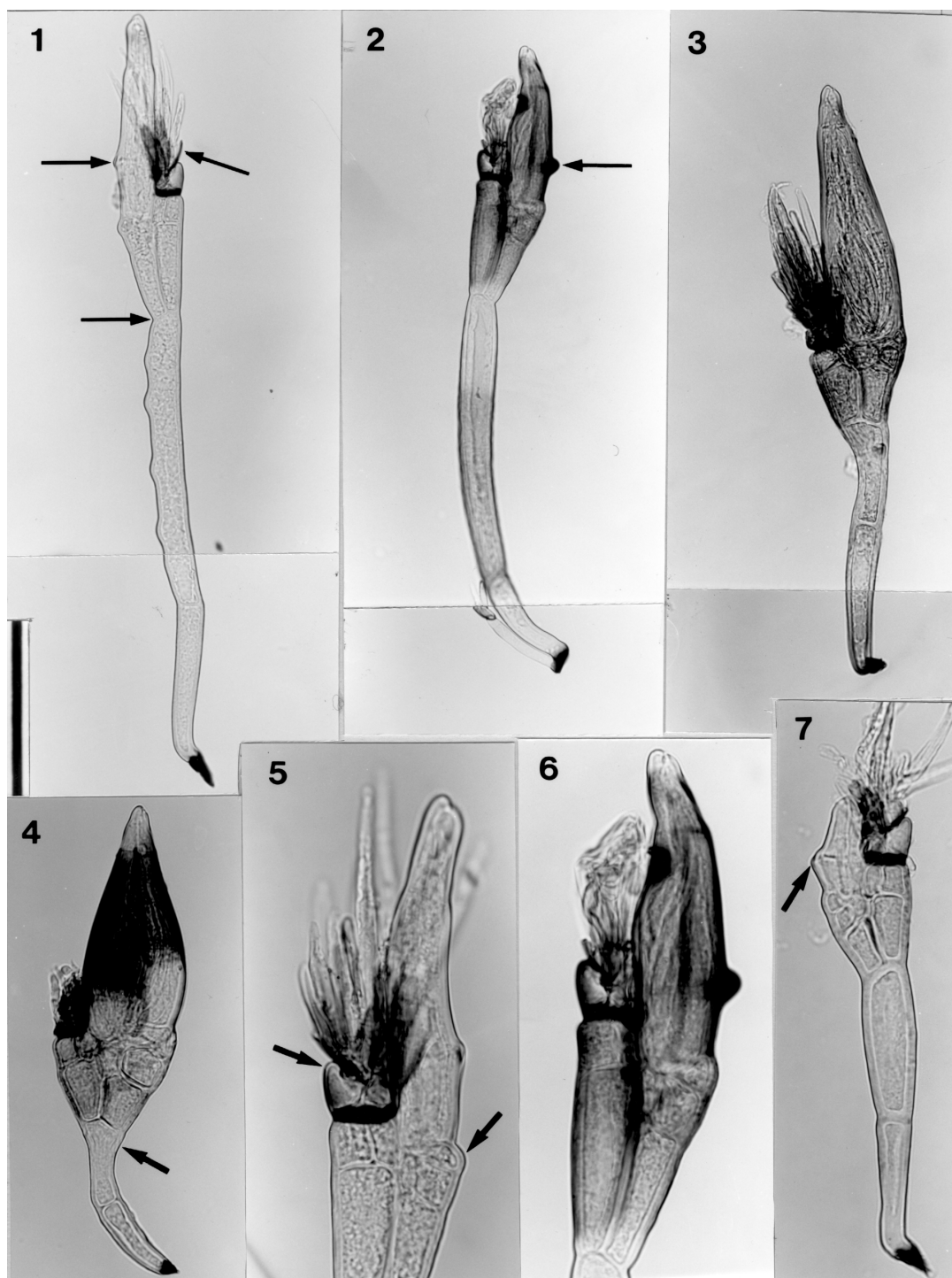
Laboulbenia paupercula Spegazzini, Anales Mus. Nac. Hist. Nat. Buenos Aires 27: 59. 1915 (nom. praeoc.; non *L. paupercula* Thaxter, Proc. Amer. Acad. Arts Sci. 25: 269. 1891). (Figures 1-7)

Specimens examined. On *Tachys (Tachyura) fuscatus* Motschulsky [Bembidiini]: Nan-ao, Ilan County, Feb. 13 2002, leg. K. Terada, K. Terada-1591; Yangmei, Taoyuan County, Aug. 22 2001 & Jun. 19 2001, leg. K. Terada & M. H. Hsu, K. Terada-1590 & -1601. On *Tachys (Tachylopha) ovatus* Motschulsky [Bembidiini]: Fulung, Taipei County, Oct. 1 2001, leg. K. Terada, K. Terada-1529; Sanchih, Taipei County, May 26 2001, leg. K. Terada, K. Terada-1566; Wanluan, Pintung County, Nov. 11 2001, leg. K. Terada & M.H. Hsu, K. Terada-1602.

Other hosts in Taiwan. *Tachys (Tachyura) klugi* Nietner (Sugiyama, 1978).

Note. Following the taxonomic treatment by Huldén (1985) who was the first to redescribe *Laboulbenia egens* on European *Tachys*, Majewski (1988) corrected all of the records of *L. tachyis* from Asia including a report from Taiwan (Sugiyama, 1978). *Laboulbenia egens* is characterized by the pyramidal perithecium with a blunt septal swelling and a basal bulge (sometimes these swellings are completely lacking), the receptacle with cell IV and V equal in height, the outer appendage with black edge above the protrusive basal cell (see Figure 1); the apical black zone of the perithecium is usually very vague. Taiwanese specimens were collected from several positions on the host body. Slender thalli of about 490 µm height occur on the elytral base and short thalli of about 160 µm height are on the mouthparts. The slender thalli (Figures 1-2) have a long cell II with a slight constriction at the upper end and

*Corresponding author. Present address: Omiya 1-2-20-203, Nishi-Ku, Hiroshima 733-0007, Japan. Tel: 0822388205; E-mail: terada@hjs.ed.jp



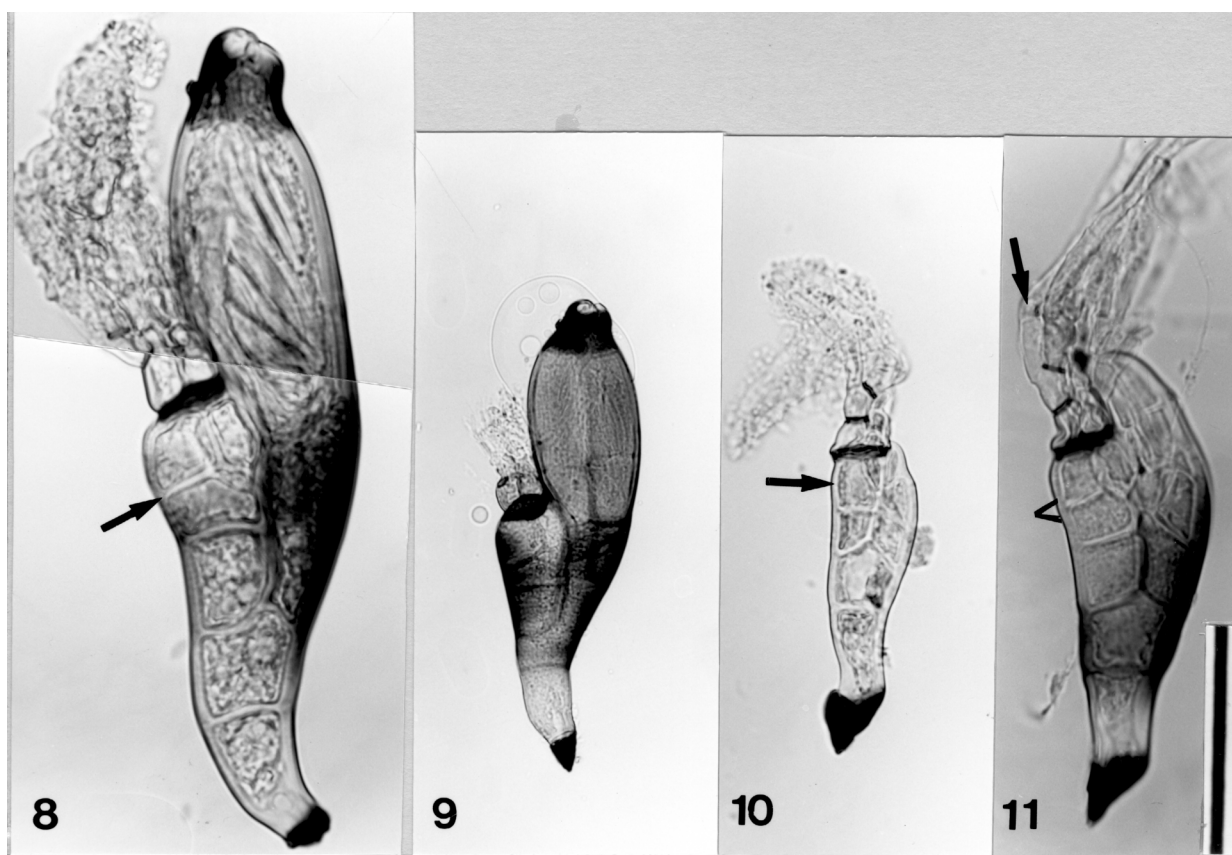
Figures 1-7. *Laboulbenia egens*. (1) mature thallus removed from the elytra of *Tachys ovatus*. Left arrow (upper) indicates a septal swelling of the perithecium. Right arrow indicates a blackish edge that separates the whole lower portion of the outer appendage from the basal cell. The upper end of cell II is slightly constricted (left arrow, lower). K. Terada-1602; (2) mature thallus removed from the elytral base of *Tachys fumicatus*. Arrow indicates a septal swelling of the perithecium. K. Terada-1601; (3) mature thallus removed from the mouthparts of *T. ovatus*. No septal swelling is formed along the outer margin of the perithecium. K. Terada-1529; (4) mature thallus removed from the head (near eyes) of *T. fumicatus*. No septal swelling is formed along the outer margin of the perithecium. Second tier of perithecial wall cells is conspicuously dark in color. The upper end of cell II is broadened (arrow). K. Terada-1591; (5) submature thallus removed from *T. ovatus*. Left arrow indicates a blunt protrusion of the basal cell of the outer appendage. One of the perithecial basal cells projects outward (right arrow). K. Terada-1602; (6) mature thallus (same as Figure 2). The perithecial swelling and protrusive basal cell of the outer appendage are conspicuous. K. Terada-1601; (7) young thallus removed from the elytra of *T. fumicatus*. The outer side of the young perithecium is angulate (arrow). K. Terada-1591. Scale bars: 1-4 = 100 μm ; 5-7 = 50 μm .

a septal swelling on the perithecial wall while in the short thalli (Figures 3-4) the upper end of cell II is broadened, and no perithecial swelling is formed. Perithecium size differs considerably; in the slender thalli, it is $95\text{--}120 \times 20\text{--}25\text{ }\mu\text{m}$, and in the short thalli, it is $148\text{--}153 \times 43\text{--}58\text{ }\mu\text{m}$. Thallus color seems to vary according to host species or position of growth of the fungus. Thalli on the elytral base of *Tachys ovatus* (Figure 1) are very pale yellow throughout, but thalli on the mouthparts of the same host species (Figure 3) are dull yellowish brown. Thalli on the elytral base of *Tachys fuscatus* (Figure 2) are mostly dark-colored, but subhyaline in the upper part of cell II and in the whole of cell I. However, thalli on the head of the same host species (Figure 4) have a bicolored perithecium (middle tier of wall cells is dark gray with brownish tinge and other tiers are subhyaline). Figure 1 shows a peculiar cell II with uneven margin on the anterior lateral side while in Figures 3-4, such undulations are not formed on cell II.

Laboulbenia olivacea Thaxter, Proc. Amer. Acad. Arts Sci. 41: 315. 1905.—Type: R. Thaxter-1396, on *Lebia* sp., Java. (Figures 8-11)

Specimens examined. On *Colpodes limbatus* Jedlička [Platynini]: Manyueyen, Taoyuan County, Jun. 22 2001, leg. K. Terada, K. Terada-1583.

Note. *Laboulbenia olivacea* is characterized by a subcylindrical perithecium with dark-colored apical and basal portions, and with a pale-colored middle portion; the outer appendage with two blackish septa; and the receptacle with cell IV divided into two superposed cells (Figures 8 and 11). Taiwanese specimens have broader perithecia and receptacles than Thaxter indicates; his figure shows a more slender specimen (Thaxter, 1908, pl. LV, fig. 3). Thaxter described the color of the perithecium as “olivaceous brown, paler and subhyaline distally on the inner side” while in the Taiwanese specimens, the perithecium is yellowish at first and then becomes dark yellowish brown, except for the blackish brown apical and basal parts; the receptacle is yellowish brown except for the subhyaline cell I, often suffused with blackish brown and covered with small black spots. Division in cell IV is complete before perithecium matures (Figure 11, v-line), but in very young thalli, only one IV cell is present (Figure 10, arrow). Almost all septa of the outer and inner append-



Figures 8-11. *Laboulbenia olivacea* removed from the elytral margins, apical sternites, and legs (tarsi and tibiae) of *Colpodes limbatus*. K. Terada-1583. (8) mature thallus. Arrow indicates a later-formed septum in cell IV. Middle portion of perithecium is paler than basal and apical portions; (9) mature thallus; (10) very young thallus. Cell IV is not divided yet (arrow). Two black septa are clearly visible in the outer appendage; (11) young thallus with divided cell IV (v-line). Arrow indicates a later-formed branch of the outer appendage arising from the outer side of the cell between the two black septa (arrow). Scale bars: 8, 10 & 11 = $50\text{ }\mu\text{m}$; 9 = $100\text{ }\mu\text{m}$.

ages are colorless, but only two septa near the base of the outer appendage are blackened (Figures 10-11). The upper blackish septum is located on the inner side because a later-formed branch is always located on the outer side (Figure 11, arrow). The Taiwanese specimens were found on the elytral margins, the apical abdominal sternites, and more frequently on the legs (tibiae and tarsi) of the hosts. Juan and Chien (1996) recorded this fungus species on *Colpodes* sp. from Taiwan, but the host species was not determined and unfortunately has been lost (Chien, personal communication).

Laboulbenia anoplogenii Thaxter, Proc. Amer. Acad. Arts Sci. 35: 156. 1899.—Type: R. Thaxter-665, on *Anoplogenus cyanescens* (Hope), China.

Specimens examined. On *Anoplogenus cyanescens* (Hope) [Harpalini]: Yangmei, Taoyuan County, Jul. 28 2001, leg. K. Terada & M.H. Hsu, K. Terada-1587.

Other hosts in Taiwan. *Anoplogenus philippinus* Jedlička (Sugiyama and Shazawa, 1977).

Note. Terada (2001) fully discussed and illustrated this fungus species. A record of a Taiwanese host, *Colpodes* sp. (Juan and Chien, 1995), is probably erroneous.

Laboulbenia stenolophi Spegazzini, Redia 10: 65, 1914.—Type: On *Stenolophus teutonius* (Schränk), Italy.

Specimens examined. On *Stenolophus (Egadroma) smaragdulus* (Fabricius) [Harpalini]: Nan-ao, Ilan County, Mar. 2 2002, leg. K. Terada, K. Terada-1585.

Other hosts in Taiwan. *Stenolophus (Egadroma) quinquepustulatus* (Wiedemann) (Terada, 1976).

Note. Terada (2001) discussed and fully illustrated this fungus species. The unidentified Taiwanese host, *Stenolophus* sp. (Juan and Chien, 1995), might be *S. quinquepustulatus* because this carabid species is quite common among the Taiwanese Harpalini.

Laboulbenia fasciculata Peyritsch, Sitzungsber. Kaiserl. Akad. Wiss., Math.-Naturwiss. Cl. Abt. 1 (Wien) 68: 248. 1873.—Type: On *Chlaenius (Chlaeniellus) vestitus* (Paykull), Europe.

Specimens examined. On *Chlaenius alesi* Jedlička [Callistini]: Nan-ao, Ilan County, Feb. 13 2002, leg. K. Terada, K. Terada-1562. On *Chlaenius inops* Chaudoir [Callistini]: Nan-ao, Ilan County, Mar. 4 2002, leg. K. Terada & M.H. Hsu, K. Terada-1553.

Note. Taiwanese specimens were collected from two species of *Chlaenius*, mainly on elytra. The occurrence of this fungus in Taiwan on *Pheropsophus javanus* (Juan and Chien, 1996) seems to be a mere accident or erroneous. The unidentified Taiwanese host, *Chlaenius* sp. (Juan and Chien, 1996), may be *C. inops* because this carabid is abundant in Taiwan.

Laboulbenia proliferans Thaxter, Proc. Amer. Acad. Arts Sci. 28: 168. 1893.—Type: Not designated. Thaxter

(1893) listed three host species: *Craspedophorus tropicus* (Hope), Sierra Leone, *Chlaenius auricollis* Gory, Syria, and *Dolichus*? sp., Japan.

Specimens examined. On *Chlaenius (Hololeius) ceylanicus* Nietner: Nan-ao, Ilan County, Mar. 8 2002, leg. K. Terada, K. Terada-1552. On *Chlaenius circumdatus* Brullé: Yangmei, Taoyuan County, Aug. 14 2001, leg. K. Terada & M.H. Hsu, K. Terada-1528. On *Chlaenius (Haplochlaenius) costiger* Chaudoir: Fulung, Taipei County, Oct. 1 2001, leg. K. Terada, K. Terada-1589. On *Chlaenius formosanus* Jedlička: no data, K. Terada-1564. On *Chlaenius hamifer* Chaudoir: Tahu, Taipei City, May 30 2001, leg. K. Terada, K. Terada-1584. On *Chlaenius luzonicus oricus* Jedlička: Fulung, Taipei County, Oct. 1 2001, leg. K. Terada, K. Terada-1588. On *Chlaenius monogrammus* Laferté: Tahu, Taipei City, May 20 2001, leg. K. Terada, K. Terada-1594. On *Chlaenius praefectus* Bates: Yangmei, Taoyuan County, Aug. 14 2001, leg. Y.L. Yang & M.H. Hsu, K. Terada-1522. On *Chlaenius sericimicans* Chaudoir: Yangmei, Taoyuan County, Oct. 8 2001, leg. K. Terada & M.H. Hsu, K. Terada-1597. On *Chlaenius tetragonoderus* Chaudoir: Sanchih, Taipei County, Jun. 29 2001, leg. K. Terada, Y.L. Yang & M.H. Hsu, K. Terada-1526. All hosts belong to the tribe Callistini.

Other hosts in Taiwan. Two species of *Chlaenius* were recorded by Terada (1976), of which *C. bioculatus* Motschulsky was later corrected as *C. lynx* Chaudoir (see Terada, 1978, p. 64), and *Chlaenius* sp. from Orchid Island, Taitung County (K. Terada-260) was later identified as *C. flaviguttatus* MacLeay (see Terada, 1995, p. 296).

Note. Ten species of *Chlaenius* are added to the host range of *Laboulbenia proliferans*. *Chlaenius* sp. as a host of this fungus species from Taiwan (Juan and Chien, 1995) is of uncertain identity, but unfortunately the host specimen has been lost (Chien, personal communication).

Laboulbenia torta K. Sugiyama, Trans. Mycol. Soc. Japan 20: 145. 1979.—Type: K. Sugiyama-2019, on *Chlaenius (Haplochlaenius) costiger* Chaudoir, Japan.

Specimens examined. On *Chlaenius (Haplochlaenius) costiger* Chaudoir [Callistini]: Fulung, Taipei County, Oct. 1 2001, leg. K. Terada, K. Terada-1589.

Note. Taiwanese specimens were collected from the elytra of *Chlaenius costiger*, on which the thalli of *Laboulbenia proliferans* were also found. Juan and Chien (1996) recorded this fungus from *Chlaenius (Haplochlaenius)* sp., but host identification was uncertain, and unfortunately the host specimen has been lost (Chien, personal communication).

Laboulbenia balazucii W. Rossi var. *exilis* Terada, Mycoscience 36: 307. 1995.—Type: K. Terada-1219, on *Chlaenius circumdatus* Brullé, Japan.

Specimens examined. On *Chlaenius circumdatus* Brullé [Callistini]: Yangmei, Taoyuan County, Aug. 22 2001, leg. K. Terada & M.H. Hsu, K. Terada-1595.

Note. *Chlaenius* (*Epomis*) sp., recorded as a host from Taiwan by Juan and Chien (1996), was not identified to species, but unfortunately the host specimen has been lost (Chien, personal communication). For the *Epomis* group of *Chlaenius*, only one species is known in Taiwan. It is *Chlaenius* (*E.*) *nigricans* Wiedemann, widely distributed in Southeast Asia. Therefore, Juan and Chien's host might be *C. nigricans*. In Japan, however, this carabid species is known to be parasitized by *Laboulbenia torta* (Terada, 1995).

Laboulbenia pheropsophi Thaxter, Proc. Amer. Acad. Arts Sci. 28: 170. 1893.—Type: Not designated. Thaxter (1893) listed two species of *Pheropsophus* as hosts: *P. aequinoctialis* (L.), South America, and *P. marginatus* Dejean var. ?, Zanzibar.

Specimens examined. On *Pheropsophus occipitalis* (MacLeay) [Brachinini]: Tahu, Taipei City, May 20 2001, leg. K. Terada, K. Terada-1596.

Other hosts in Taiwan. *Pheropsophus beckeri* Jedlička (Sugiyama and Shazawa, 1977; Terada, 1978); *Pheropsophus javanus* (Dejean) (Juan and Chien, 1995).

Note. Taiwanese specimens were obtained from various parts of *Pheropsophus occipitalis*. Sometimes this carabid species is also parasitized by *Enarthromyces indicus*.

Laboulbenia orientalis Thaxter, Proc. Amer. Acad. Arts Sci. 35: 191. 1899.—Type: Not designated. Thaxter (1899) listed as hosts two species of *Brachinus* from China and Philippines: *B. chinensis* Chaudoir and *Brachinus* sp.

Specimens examined. On *Brachinus scotomedes* Redtenbacher [Brachinini]: Wulai, Taipei County, May 4 1997, leg. F.Y. Su, NTU-2.

Note. *Laboulbenia orientalis* on *Brachinus scotomedes* presents strong variability in form (Terada, 1991). *Brachinus* sp. recorded as a Taiwanese host of this fungus (Juan and Chien, 1995) might be *B. scotomedes*, but the host specimen has been lost (Chien, personal communication).

Laboulbenia rougetii Montagne et Robin, In C.P. Robin, Hist. Nat. Veg. Paras. J.-B. Baillière, Paris. p. 622. 1853.—Type: Not designated. Robin (1853) listed three species of *Brachinus* as host: *B. crepitans* (Linnaeus), *B. explodens* Duftschmid and *B. sclopetae* (Fabricius), Europe.

Specimens examined. On *Brachinus scotomedes* Redtenbacher [Brachinini]: Wulai, Taipei County, May 4 1997, leg. F.Y. Su, NTU-2; Chialeshui, Pintung County, May 8 1992, leg. W.I. Chou, NTU-1.

Note. Thaxter (1908) described two varieties of *Laboulbenia rougetii*: var. *chinensis* and var. *japanensis*. Each variety has its own host species. Moreover, variation caused by positional preference on a host body may also occur (Terada, 1991). *Laboulbenia rougetii* and *L.*

orientalis are often found together on a single body of *B. scotomedes*. Juan and Chien (1995) recorded these two species of fungi on *Brachinus* sp. from Taiwan. This undetermined host specimen has been lost (Chien, personal communication).

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Literature Cited

- Huldén, L. 1985. Floristic notes on Palaearctic Laboulbeniales (Ascomycetes). *Karstenia* **25**: 1-16.
- Juan, L.Y. and C.Y. Chien. 1994. Study on the Laboulbeniales (Ascomycetes) of Taiwan: Five new record species. *Biol. Bull. NTNU*. **29**: 71-77.
- Juan, L.Y. and C.Y. Chien. 1995. Study on the Laboulbeniales (Ascomycetes) of Taiwan. *Biol. Bull. NTNU*. **30**: 11-22.
- Juan, L.Y. and C.Y. Chien. 1996. Study on the Laboulbeniales (Ascomycetes) of Taiwan (II). *Biol. Bull. NTNU*. **31**: 5-11.
- Majewski, T. 1988. Some Laboulbeniales (Ascomycotina) collected in Japan I. Species from Shizuoka Prefecture. *Trans. Mycol. Soc. Japan* **29**: 33-54.
- Peyritsch, J. 1873. Beiträge zur Kenntniss der Laboulbenien. *Sitzungsber. Kaiserl. Akad. Wiss., Math. -Naturwiss. Cl., Abt. 1* (Wien) **68**: 227-254. Taf. I-III.
- Robin, P.C. 1853. *Histoire Naturelle des Végétaux Parasites qui Croissent sur l'Homme et sur les Animaux Vivants*. J.-B. Baillière, Paris, vol 1, 702 pp. Atlas, 24 pp., plates I-XV.
- Spegazzini, C. 1914. Primo contributo alla conoscenza delle Laboulbeniali italiane. *Redia* **10**: 21-75. T. I-IX.
- Spegazzini, C. 1915. Segunda contribución al conocimiento de las Laboulbeniales italianas. *Anales Mus. Nac. Hist. Nat. Buenos Aires* **27**: 37-74.
- Spegazzini, C. 1918. Observaciones microbiológicas. *Anales Soc. Cient. Argent.* **85**: 311-325 (1-15).
- Sugiyama, K. 1978. The Laboulbeniomycetes of eastern Asia (2). On eight species from Japan and Formosa including two new species of *Rickia*. *J. Jap. Bot.* **53**: 154-160.
- Sugiyama, K. 1979. On new species of the genus *Laboulbenia* (Laboulbeniomycetes, Ascomycotina) I. *Trans. Mycol. Soc. Japan* **20**: 141-147.
- Sugiyama, K. and E. Shazawa. 1977. Notes on Laboulbeniomycetes of Formosa. *Trans. Mycol. Soc. Japan* **18**: 270-278.
- Tavares, I.I. 1985. Laboulbeniales (Fungi, Ascomycetes). *Mycologia Memoir No. 9*. J. Cramer, Braunschweig, 627 pp.
- Terada, K. 1976. Some species of the Laboulbeniales from Taiwan. *Trans. Mycol. Soc. Japan* **17**: 23-34.
- Terada, K. 1978. Additions to the Laboulbeniales from Taiwan, with descriptions of two new species. *Trans. Mycol. Soc. Japan* **19**: 55-64.
- Terada, K. 1991. Laboulbeniales — a strange fungal group coexisting with living insects. *Trans. Entomol. Soc. Hiro.* **30**:

- 21-38. (In Japanese)
- Terada, K. 1995. *Laboulbenia exigua* and related taxa (Ascomycetes, Laboulbeniales). *Mycoscience* **36**: 293-309.
- Terada, K. 1998. New records of the carabidicolous Laboulbeniales (Ascomycetes) of Japan. *Mycoscience* **39**: 77-84.
- Terada, K. 2001. Notes on *Laboulbenia stenolophi* and *Laboulbenia anoplogenii* (Ascomycetes, Laboulbeniales). *Mycoscience* **42**: 1-9.
- Terada, K., M.H. Hsu, and W.J. Wu. 2004. Notes on the carabidicolous Laboulbeniales (Ascomycetes) of Taiwan I. *Bot. Bull. Acad. Sin.* **45**: 87-94.
- Thaxter, R. 1891. Supplementary note on North American Laboulbeniaceae. *Proc. Amer. Acad. Arts Sci.* **25**: 261-270.
- Thaxter, R. 1893. New species of Laboulbeniaceae from various localities. *Proc. Amer. Acad. Arts Sci.* **28**: 156-188.
- Thaxter, R. 1896. Contribution toward a monograph of the Laboulbeniaceae. Part I. *Mem. Amer. Acad. Arts Sci.* **12**: 187-429. Plates I-XXVI.
- Thaxter, R. 1899. Preliminary diagnoses of new species of Laboulbeniaceae I. *Proc. Amer. Acad. Arts Sci.* **35**: 151-209.
- Thaxter, R. 1900. Preliminary diagnoses of new species of Laboulbeniaceae II. *Proc. Amer. Acad. Arts Sci.* **35**: 407-450.
- Thaxter, R. 1905. Preliminary diagnoses of new species of Laboulbeniaceae VI. *Proc. Amer. Acad. Arts Sci.* **41**: 303-318.
- Thaxter, R. 1908. Contribution toward a monograph of the Laboulbeniaceae. Part II. *Mem. Amer. Acad. Arts Sci.* **13**: 217-469. Plates XXVIII-LXXI.

台灣產寄生步行蟲之蟲囊菌目（子囊菌綱）II

寺田勝幸¹ 徐孟豪 吳文哲

國立台灣大學昆蟲學系

¹Present address: Omiya 1-2-20-203, Nishi-Ku, Hiroshima 733-0007, Japan

本文鑑定並記錄 8 屬 20 種步行蟲科甲蟲為已知的 13 種台灣產蟲囊菌目的新寄主。文中並附 *Lanoulbenia egens* 和 *L. olivacea* 的一些觀察資料及照片。

關鍵詞：台灣；步行蟲科；新寄主；蟲囊菌目；*Dixomyces*；*Enarthromyces*；*Laboulbenia*。