

Three species of the Laboulbeniales (Ascomycotina) collected in Korea

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한국에서 채집된 3종의 라블베니아 균들에 관하여

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ABSTRACT: Three species of Laboulbeniales were collected from the insects in Kwangju City and Pogil Island, Korea, and described: *Corethromyces shazawae* Majewski et Sugiyama were observed on *Ochtheophilum densipenne* (Sharp) (Coleoptera, Staphylinidae), *Herpomyces periplanetae* Thaxter on *Blatta orientalis* (L.) (Blattaria, Blattidae), and *Rhachomyces philonthinus* Thaxter on *Philonthus micanticollis* Sharp (Coleoptera, Staphylinidae). Also, the morphological features of these three species were described in the detailed.

KEYWORDS: *Corethromyces*, *Herpomyces*, *Rhachomyces*, *Laboulbeniales*.

Enumeration of Species

1. *Corethromyces shazawae* M et S, Majewski and Sugiyama, *Trans.mycol.Soc. Japan* 26 : 295 (1985).

Host species in Korea: *Ochtheophilum densipenne* (Sharp)

Specimens examined: L-Y-0455, 0456, 0457, 0458 mounted and isolated from *Ochtheophilum densipenne* (Sharp). collected at Chunghyodong, Kwangju (Oct./1988).

Description: Thallus 412-554 μm long to the top of perithecium. Receptacle consisting of basal and distal portions, 123-132 μm ; the basal portion composed of two superposed one-celled layers, forming basally a blackish foot, 60-90 μm long; the first layer 32-39 μm long (including the foot), 15 μm thick, brownish, almost cylindrical; the second layer 34-49 μm long, 18-20 μm thick, brownish, posteriorly deeply blackened, separated by oblique septa from the first layer and from the stalk-cell of the perithecium, and by a horizontal septum from the distal portion of the receptacle; the distal portion of the receptacle 64-98 μm long, almost wholly blackened except for the anterior brownish

margin, composed of two or three superposed layer; the first layer one-celled, elongated; the second layer (maybe lacking) one-celled, flattened; the distal layer two-cell, thicker. Appendages borne on the distal end of the receptacle, numerous, hyaline, basally blackened, scarcely ramified especially in their subbasal region, consisting of elongated cells, up to 118-225 μm . Antheridia not visible.

Stalk-cell of the perithecium hyaline, almost cylindrical, suffused with brownish color and slightly tapering basally, 112-265 μm long, 25-34 μm thick; basal cells of perithecium hyaline or slightly olive-brownish, elongated, forming cylindrical prolongation of the stalk-cell, 69-147 μm long, 25-34 μm thick; perithecium proper 186-270 μm long, 24-40 μm thick, almost cylindrical, slightly tapering to the roundish, hyaline apex with four small teeth; the second, third and fourth layer of wall-cells olive-brownish suffused.

This species seems to be most closely related to *Corethromyces cryptobii*, *C. brasiliensis*, *C. purpurascens*, and *C. argentinus*, parasites of the beetles of the genus *Ochtheophilum* (Frank, 1982). All of them have slender perithecium proper and black

ish receptacle (Thaxter, 1896; 1908; 1931) However, *Corethromyces shazawae* is well distinguished from these species in having a comparatively long, thick stalk-cell, and basal cells of the perithecium which form a stalk of about the same length and thickness as the perithecium proper.

The receptacle of this species is deeply blackened only along its posterior margin, and the basal cell of the receptacle is not wholly blackened, while Thaxter's species mentioned above have the receptacle almost wholly suffused. The appendages of *Corethromyces shazawae* are different from those of *C. cryptobii* and *C. brasiliensis* in the lack of several erect, opaque branches and short lateral branchlets, but are somewhat similar to those of *C. argentinus* and *C. purpurascens*.

The thalli of *Corethromyces shazawae* are found on the whole body of the host.

자낭각 끝까지 균체의 길이 412-554 μm . 탁은 기부와 말단부로 이루어졌다. 기부는 아래쪽에 검은 측부를 형성하고 두개의 세포가 겹쳐져 하나의 층으로 되었다. 말단부는 대체로 뒷편의 갈색 가장자리를 제외하고는 거의 전체적으로 검으스름하고 2-3의 겹쳐진 층으로 이루어졌다. 부속체들은 탁의 말단까지 끝에 많이 달려 있고, 윗부분은 투명하고 아래부분은 검으스름하다. 아기구 부분은 거의 분리되어 있지 않고 길다란 세포로 이루어졌다. 장정기는 발견되지 않았다. 자낭각은 길고 원통형의 길다란 줄기세포로 되어 있다, 자낭각 자체의 크기는 186-270 \times 25-34 μm , 원통형에 가깝고, 4개의 작은 이빨같은 모양을 가진 둥글고 투명한 정단부 쪽으로 뾰족하게 되어있다. 4개의 벽세포로 되어있고 황갈색이다.

2. *Herpomyces periplanetae* Thaxter. Thaxter, *Proc. Amer. Acad. Arts Sci.* 38:13 (1902); *Mem. Amer. Acad. Acad. Arts Sci* 13; 285(1908), 16; 86 (1931), Sugiyama, *Journ. Jap. Bot.* 53: 154 (1978), Sugiyama and Majewski, *Trans. mycol. Soc. Japan* 26:134 (1985), Majewski, *Trans. mycol. Soc. Japan* 29: 38 (1988).

Host species in Korea: *Blatta orientalis* (L.).

Specimens examined: L-Y-0480, 0481, 0482 mounted and isolated from *Blattaria orientalis* (L.) collected at Duamdong, Kwang ju(Sept/1990)

Description: Male thallus hyaline 70-80 μm long, consisting of four superposed cells and many short branches and branchlets that bear simple elonga-

ted antherida. Female thallus hyaline, consisting of primary receptacle, secondary receptacle and perithecia; primary receptacle 20-25 μm long, cylindrical, composed of four superposed cells, terminated by a minute projection; the basal cell attached to the host's surface by a small foot; secondary receptacle multicellular, forming a billowed protective shield; prethecia usually 2 - 6 per thallus, slightly asymmetrical, 140-25 \times 25-34 μm , tapering from the slightly inflated base to the not clearly differentiated distal portion; the apex slightly bent, subtended by a pointed tooth.

This species is very common and widely distributed in the world. It occurs on the whole body of the genus *Blatta* in Korea, although this species occurs only on the antennae of the genus *Periplaneta* of the hosts (Sugiyama and Majewski, 1985). It is distinguished from another common species, *Herpomyces ectobiae* Thaxter, mainly in having an unicellular process below the pointed tip of it's perithecium.

자웅이체로 응성개체는 투명하고 길이는 70-80 μm 이며 4개의 겹쳐진 세포들로 되어있고 많고 짧은 가지들위에 단순조정기를 발생하고 있다. 자성개체는 투명하고 1차탁과 2차탁 그리고 자낭각들로 이루어졌다. 1차탁은 원통형, 4개의 겹쳐진 세포로 되어있고, 끝이 미소한 돌출부로 되어 있다. 2차탁은 다세포로 되고, 물결같은 지지기관을 형성한다. 자낭각들은 한 개체에 대하여 2-6개이고 비대칭형이다. 크기는 140-250 \times 25-34 μm 이고, 부풀은 기부에서 분명하게 분화되지 않는 말단부쪽으로 뾰족하다. 정단부는 약간 굽고, 침같은 이빨로 되었다.

3. *Rhachomyces philonthinus* Thaxter. Thaxter, *Proc. Amer. Acad. Arts Sci.* 35: 1435 (1900); *Mem. Amer. Acad. Arts Sci.* 13: 424 (1908), 16: 287 (1931); Sugiyama, *Ginkgoanu* 2: 73 (1973); Lee.Y.B., *Kor. J. Plant Tax.* 16(2) : 57(1986).

Host species in Korea: *Philonthus micanticollis* Sharp.

Specimens examined: L-Y-0467, 0477, 0489 mounted and isolated from *Philonthus micanticollis* Sharp, collected Pogil Island (Sept/1990).

Description: Thallus 350-524 μm long. Receptacle hyaline, simple, thickest at the middle portion, tapering towards both the basal and distal ends, consisting of 18-23 superposed layers, producing basally a small blackish foot, 250-367 μm long, 35-

Plate I

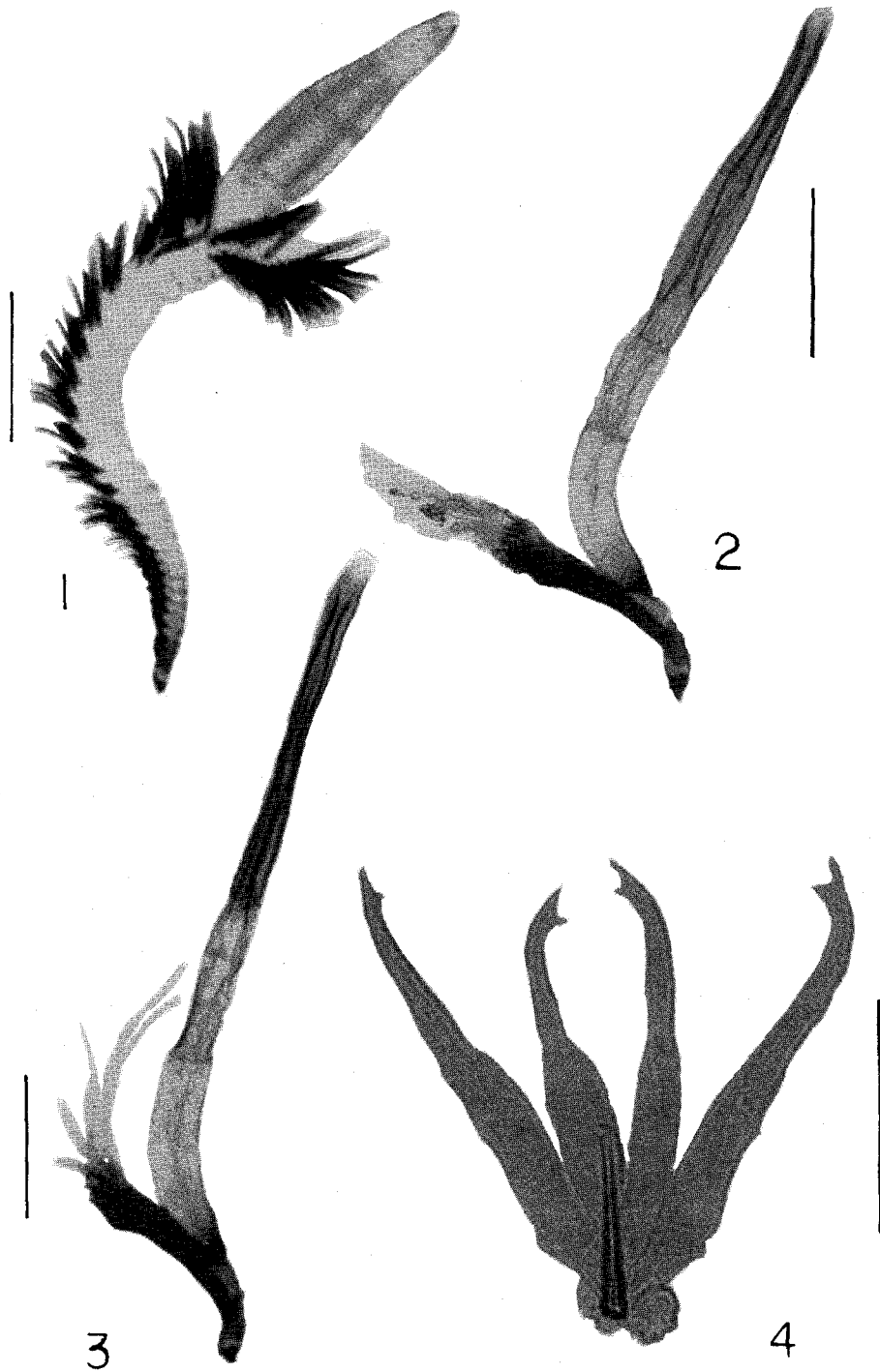


Fig. 1. *Rhachomyces philonthinus* Thaxter on *Philonthus micanticollis* sharp.
Fig. 2 and 3. *Corethromyces shazawae* Majewski et Sugiyama on *Ochtheophilum densipenne* (Sharp)
Fig. 4. *Herpomyces periplanetae* Thaxter on *Blatta Orientalis* (L.). Scales 100 μ m

49 μm thick; layers composed of two cells; except for the basal ones each layers composed of a large and small cells arranged transversely; the large and small cells of the layers forming longitudinal primary and secondary axis of receptacle respectively. Appendages dark blackish brown, bristle-like, thickest at the middle portion, pointed apically, formed on a outer side of the secondary axis of receptacle, 40-80 μm long, 3-4 μm thick. Perthecium obclavate, formed near the termination of the receptacle, consisting of four layers of wall-cells with very short stalk, 180-254 μm long, 50-64 μm in diameter; the basal layer of wall cells hyaline, distal layers more or less reddish brown; apex narrowly rounded. According to Thaxter's description, this species is most nearly allied to *Rhacomycetes oedichiri* and *R. arbusculus*, the latter differing in the form of its perthecium and the differentiation of its appendages. The main features of this species are the relatively short and thick receptacle composed of cells with distinct nuclei, and the obclavate brownish perthecium. Although Pogil Island is not belong to the main land of Korea, this species was found near the main land for the first time, after it was collected by Yong-Bo Lee at Mt. Hanra, Cheju Island (July, 1982).

균체의 길이 350-524 μm 이며, 탁은 투명, 간단하고, 중간부분이 가장 두껍고 기부와 말단 끝 양쪽으로 뾰족하다. 18-23개의 겹쳐진 층들로 되어 있고 기부에 작은 족부를 발생하고 있다. 길이 250-367 μm , 두께 35-49 μm 이며, 각각의 층들은 2개의 세포들로 구성되었다. 부속체는 어둡고 검은 갈색, 탁의 2차축의 외측에 형성되었다. 크기 40-80 \times 3-4 μm . 자낭각은 타원형, 탁의 정단 부근에 달려있고 4층으로된 벽세포들과 매우 짧은 줄기로 되어 있다. 크기는 180-254 \times 50-64 μm 이다.

摘 要

1988년 10월부터 1990년 9월까지 광주직할시와 보길도를 중심으로 초시목과 바퀴목의 곤충들 중에서 라블베니아 균류를 채집, 동정한 결과, 3종의 균류가 기록되었으며, 그들의 숙주 및 형태적 특징은 다음과 같다.: *Corethromycetes shazaware* Majewski

et Sugiyama는 *Ochthephilum densipenne* (Sharp) (초시목, 반날개과)에서 채집되었다. 원통형의 긴 자낭각과 같은 크기의 자낭각줄기, 검은색으로 된 탁의 중앙부, 층상을 나타내는 탁의 가지들이 특징이다. *Herpomyces periplanetae* Taxter는 *Blatta orientalis* (L.) (바퀴목, 바퀴벌레과)에서 채집되었다. 이 균류의 특징은 주로 뾰족한 자낭각 정점에서 아래로 난 세포의 돌기를 갖고있다. *Rachomyces philonthinus* Thaxter는 *Philonthus micanticollis* Sharp (초시목, 반날개과)에서 채집되었다. 이 균류의 특징은 뚜렷한 핵을 가진 세포들로 구성된 비교적 짧고 두꺼운 탁과 타원형으로 된 갈색의 자낭각이 발견되었다.

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