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Rare and new Laboulbeniales from Poland. XI

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Ten species of order *Laboulbeniales* (*Ascomycotina*), collected for the first time in Poland by the author, are reported. Four species are new for science: *Cryptandromyces bibloplecti* on *Bibloplectus ambiguus* (Reich.) (*Coleoptera, Pselaphidae*), *Laboulbenia atroseptata* on *Rugilus erichsoni* Fauv. (*Col., Staphylinidae*), *Monoicomyces matthiatis* on *Platystethus arenarius* (Fourcr.) (*Col., Staphylinidae*) and *Stigmatomyces biformis* on *Leptocera spinipennis* Hal. (*Diptera, Sphaeroceridae*). *Monoicomyces infuscatus* Speg. and *Stigmatomyces platensis* Speg. were found for the first time in Europe.

Cryptandromyces bibloplecti sp. n.

Thallus hyalinus. Cellula basalis receptaculi obtriangularis, cellula subbasalis minor, trapeziformis, secundum cellulam pedunculi appendicis posita. Appendix simplex, cellulae secunda et tertia appendicis antheridia antice formant. Perithecium gracile, collum eius indistinctum. Longitudo thalli 65-76 μm, appendix usque ad 70 μm longa, perithecium 43-48 × 15-18 μm, sporae 25 × 2 μm.

Thallus hyaline. Basal cell of receptacle obtriangular, somewhat bigger than the subbasal cell which is trapezoid. Stalk cell of appendage situated on the same level as the subbasal cell of receptacle, about 1.5 times longer than wide, rectangular. Antheridial appendage simple, straight or somewhat arcuated, erect or bent backwards, composed of elongated cells; antheridia are represented by small phialides in upper inner corners of the second and third cell of appendage; they may proliferate in the form of short branchlets. Stalk cell of perithecium elongate, broader distally; secondary stalk cell and basal cells distinct. Perithecium slender, symmetrical or its anterior margin is more convex, tapering gradually to a short indistinct neck and truncate tip; trichogyne stump is visible at the posterior side of perithecium. Total length to the tip of perithecium 65-76 μm, appendage up to 70 μm, perithecium 43-48 × 15-18 μm, spores 25 × 2 μm.

On *Bibloplectus ambiguus* (Reich.) (*Coleoptera, Pselaphidae*): Bachus

(Chełm voiv.), reserve Bachus I, section 71, *Tilio-Carpinetum*, bank of woodland lake, 5. 6. 1986, leg. T. Majewski (TM. 3618-3623; 3623 – holotype). Fig. 1.

There are 13 or 14 known species of genus *Cryptandromyces*; many of them have been transferred to this genus by Tavares (1985). Probably six of

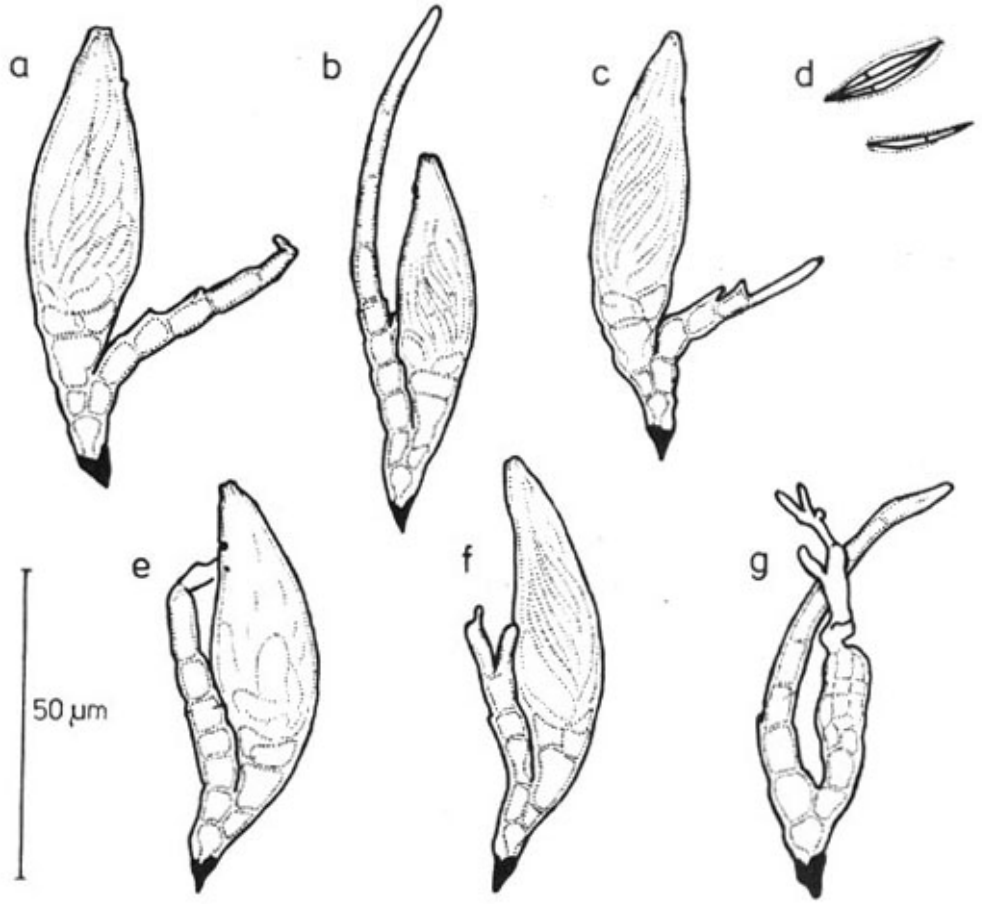

Fig. 1. *Cryptandromyces bibloplecti* sp.n. on *Bibloplectus ambiguus*, Bachus *a*, *b*, *d*, *e* – holotype, *c*, *f*, *g* – isotypes

them occur on *Pselaphidae*. It may be that *Cryptandromyces batrisoceni* (Thaxter) Tavares (Thaxter 1931, Pl. 36: 19-21) is most closely related to the new species. *Cryptandromyces bibloplecti* differs from the former in a somewhat smaller size (in *C. batrisoceni* thalli are 75-95 µm in length, perithecium 64-70 × 22 µm), absence of a distinct perithecium neck, and occurrence of antheridia on the anterior side of appendage. In *C. batrisoceni* the long appendage comprises only sterile cells. In fact, sterile appendages

happen also in *C. bibloplecti* (Fig. 1: *e*, *f*, *g*), but according to their close analysis they always result from proliferation after destruction of primary appendage in young thallus. Perhaps (according to Thaxter, 1931) in *C. batrisoceni* antheridia are formed exclusively on very young thalli which fail to develop any further.

One representative of genus *Cryptandromyces* on beetles of family *Pselaphidae* has been reported from Poland: *C. brachyglutae* Siemaszko et Siemaszko; according to the description and photo of type specimen (Siemaszko 1928; 1931, Pl. 9: 15), it resembles *C. bibloplecti* under the assumption that its initially long appendage has been broken off. However, its thalli are much bigger (length 100-160 μm, perithecium 80-100 × 30 μm) and darker, yellowish-brown. It occurs also on another host (*Brachygluta xanthoptera* Reich.) which is much bigger than *Bibloplectus ambiguus* and belongs to another tribe.

Laboulbenia egens Speg.

On *Tachys quadrisignatus* (Duft.) (*Col., Carabidae*): Szczawnica (Nowy Sącz voiv.), under stones on the left bank of the Dunajec river, in front of Hukowa Skała rock, alt. about 430 m, 11. 9. 1987 (TM. 3888).

Some few thalli were found on the lower side of host's body, on head and thorax. Their traits are fully consistent with the description and drawing of Huldén (1985) who has been the first to call attention to the often erroneous determination – by various authors – of *Laboulbenia* species on beetles of genus *Tachys*. *Laboulbenia egens*, initially described from Italy by Spegazzini (1915) under the already occupied name of *L. paupercula*, has recently been reported from various countries of Europe, Africa and Asia (Huldén 1985).

Laboulbenia atroseptata sp. n.

Thallus olivaceo-brunneus. Cellula I parva, triangularis, cellula II crassa, cylindrica, cellulae III et IV complanatae, cellula V minuta. Appendix externa simplex, atroseptata; appendix interna parva, in unum vel duo antheridia terminans. Perithecium elongatum, liberum. Longitudo thalli 140-215 μm, perithecium 58-90 × 23-33 μm, sporae 32-35 × 2,5-3 μm.

Thallus olive-brownish, in part darkened. Cell I small, triangular; cell II broader, elongate, cylindrical; cells III-V form a distinct, nearly oval, externally darkened complex. Cells III and IV flattened, cell V small, usually not connected with cell III. Insertion cell thick, dark; outer appendage simple, its lower cells darker, thick-walled, inflated, separated by dark septa; inner appendage composed of a small basal cell and one or two, also small,

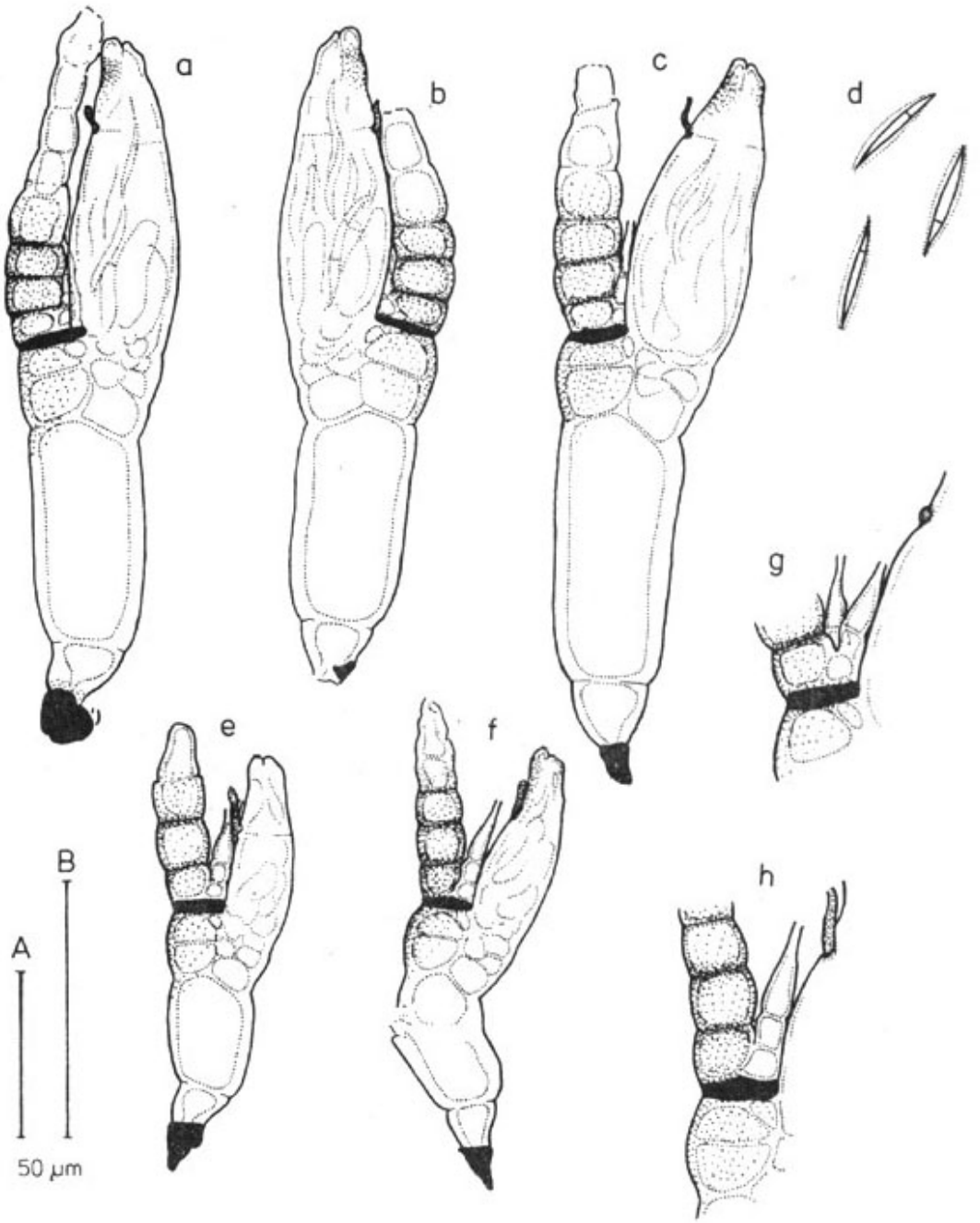

Fig. 2. *Laboulbenia atroseptata* sp.n. on *Rugilus erichsoni*
a-d – Sawin, holotype, *e-h* – Załom, paratype. Scale A for *a-f*, scale B for *g-h*

subbasal cells, each bearing one comparatively big antheridium. Stalk cell of perithecium nearly isodiametric, basal cells smaller; perithecium oblong, nearly wholly free, tapering gradually to the slightly differentiated, thick apical part with distinct lips on the tip; the posterior lip is longer. Below the lips there are blackish spots more distinct on the posterior side. Blackish

trichogyne stump visible on the posterior side of perithecium. Total length 140-215 μm, preserved part of outer appendage up to 100 μm, perithecium 58-90 × 23-33 μm, spores 32-35 × 2.5-3 μm.

On *Rugilus erichsoni* Fauv. (*Col., Staphylinidae*): Malinówka near Sawin (Chełm voiv.), in rotting straw on a meadow near a forest, 6. 6. 1986, leg. T. Majewski (TM. 3647 – holotype); Załom near Szczecin (Szczecin voiv.), in rotting hay on a meadow, 25. 5. 1986 (TM. 3576). Fig. 2.

The newly described species differs from other known representatives of genus *Laboulbenia* in specific stout habit of the cells III-V complex in which a pronounced flattening of cell IV is particularly striking. Moreover, the form of outer appendage comprising broad and short cells separated by dark septa is also specific. Antheridia are scarce (only 1 or 2). These traits distinguish between *Laboulbenia atroseptata* and the only so far reported – from beetles of genus *Rutilus* (= *Stilicus*) – species of this genus, i. e. *L. stilicicola* Speg., which has earlier been regarded as identical with *L. subterranea* Th. The descriptions and drawings of *L. stilicicola* type (Spegazzini 1915a, Fig. 23) as well as the data of other authors (Thaxter 1908, Pl. 53: 13, sub *L. subterranea*; Middelhoek 1943, Figs. 18-19, sub *L. subterranea*; Middelhoek 1945, Figs. 6-7, sub *L. subterranea*; Colla 1934, Fig. 53; Huldén 1983, Fig. 86) point to the occurrence of slender thalli with elongated cells III and IV and appendage comprising greatly elongated cells, with many antheridia. Also the present author's material so far collected in Poland from beetles of genus *Rutilus* represents only the typical form of *L. stilicicola*. On the other hand, the specimen found near Warsaw by Tenenbaum, shown on the photo by Siemaszko (1931), Pl. 9: 18) is probably identical with *L. atroseptata*. Perhaps the specimen of Middelhoek (1947, Fig. 5) also belongs to *L. atroseptata*. *Laboulbenia stilicicola* and *L. atroseptata* are doubtless related, both belonging to the *Laboulbenia vulgaris* group (Tavares 1985). Possibly, further search may lead to intermediate forms.

Thalli of *Laboulbenia atroseptata* were collected on abdomen of hosts.

Mimeomyces zeelandicus Middelhoek et Boelens

On *Heterothops quadripunctulus* Grav. (*Col., Staphylinidae*): Załom near Szczecin (Szczecin voiv.), in rotting hay on a meadow, 25. 5. 1986 (TM. 3577, 3578). Fig. 3.

Several mature and maturing thalli were found on the lower surface of host's abdomen. They may be considered identical with the only European representative of this genus, described from Holland (Middelhoek 1943). Polish specimens are somewhat smaller; the length of thallus is 160-180 μm, perithecium 85-95 × 30-35 μm, whereas for type specimen these dimensions have been reported to be 197 μm and 130 × 30 μm, respectively. The drawing

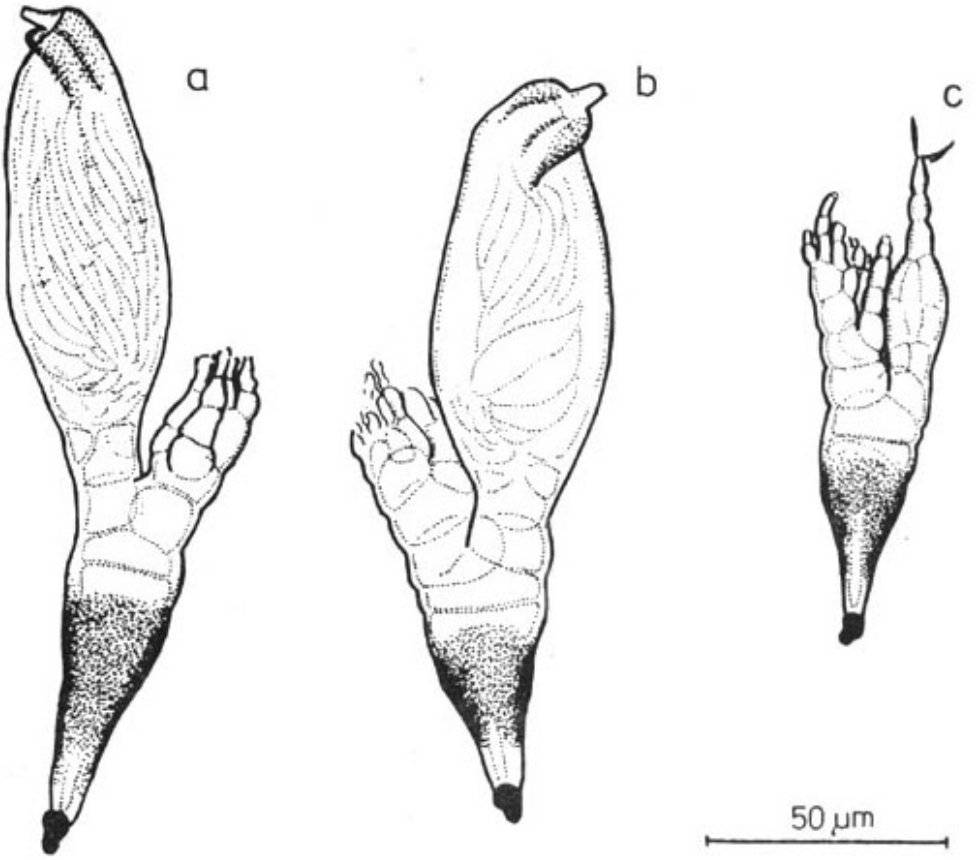

Fig. 3. *Mimeomyces zeelandicus* Middelhoek et Boelens on *Heterothops quadripunctulus*, Załom

by Middelhoek is somewhat too schematic, particularly with respect to the structure of appendage branches. *Mimeomyces zeelandicus* has so far been known only from locus classicus.

Monoicomyces infuscatus Speg.

On *Xantholinus longiventris* Heer (*Col., Staphylinidae*): Zawoja-Widły (Bielsko-Biała voiv.), litter near an *Alnus incana* forest above Jaworzyna stream, alt. 600 m, 5. 8. 1984 (TM. 3003, 3004).

Many thalli occurred at the end of host's abdomen. The length of the collected individuals is 165-230 µm, length of antheridia 38-50 µm, perithecia 100-140 × 25-35 µm. The number of perithecia in one thallus varies between 1 and 6. Doubtless the thalli can be classed among *Monoicomyces infuscatus*, since they are consistent with its descriptions and drawings by Spegazzini (1912) and Thaxter (1912, 1931). This species has so far been known only from Argentina and Uruguay.

Monoicomyces matthiatis sp. n.

Thallus pallide fuscus. Cellula basalis receptaculi magna, cellula subbasalis minor, distaliter rotundata; appendix primaria simplex, ex duabus elongatis cellulis formata. Cellula basalis axis secundarii parva, antheridium unicum cylindraceum sine appendicibus sterilibus. Pedunculus perithecii crassus, perithecium asymmetricum, pars apicalis postice flexa. Longitudo thalli 68-80 µm, appendix primaria 53 µm longa, antheridium 50×8-10 µm, perithecium 48-56 ×22-25 µm.

Thallus yellowish-brownish. Basal cell of receptacle comparatively big, triangular, up to 2 times longer than broad; subbasal cell smaller, 1.5-2 times longer than broad, rounded distally, pulled aside by the basal cell of the secondary axis. Primary appendage simple, two-celled (at least primarily), its cells cylindrical, elongate, separated by oblique dark septum, distal cell 3-4 times longer than the basal one. Basal cell of secondary axis much smaller than the basal cell of receptacle, and separated from the latter by oblique septum. One distal antheridium being cylindrical, rounded on the tip, without sterile appendages or with only their traces; the tip of antheridium reaches the centre of perithecium. Stalk cell of perithecium stout, nearly isodiametric, slightly broader upwards, its base connected with the basal cell of receptacle and – laterally – with the basal cell of the secondary axis; basal cells of perithecium flattened, indistinct. Perithecium removed anteriorly from the receptacle-antheridium axis, asymmetrical, broadest near the base, tapering gradually towards the apical part which is slightly differentiated and distinctly bent backwards; tip truncate, with posterior small tooth. Total length 68-80 µm, primary appendage 53 µm long, antheridium 50×8-10 µm, perithecium 48-56×22-25 µm.

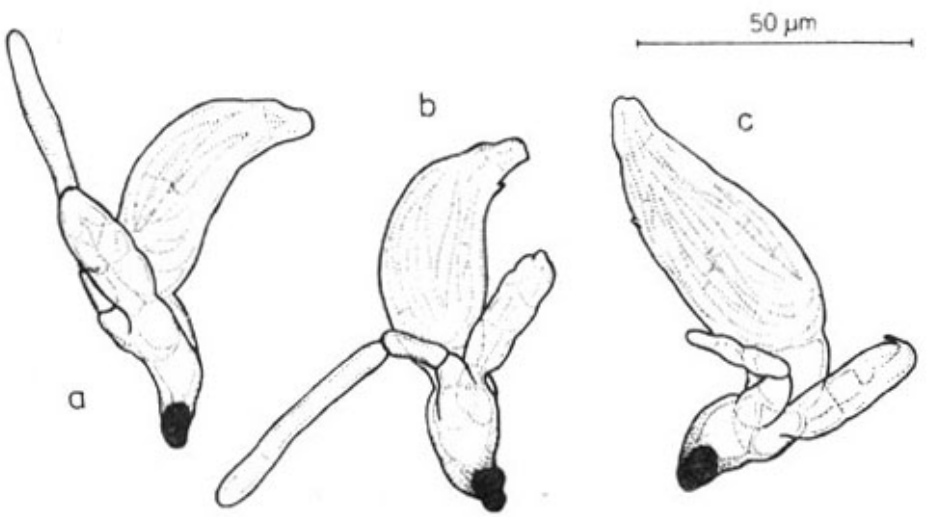

Fig. 4. *Monoicomyces matthiatis* sp.n. on *Platystethus arenarius*, Biała Woda; holotype

On *Platystethus arenarius* (Fourcr.) (*Col., Staphylinidae*): Biała Woda near Szczawnica (Nowy Sącz voiv.), cow feces on pasture near Biała Woda stream, alt. about 640 m, 5. 9. 1987, leg. T. Majewski (TM. 3825 – holotype). Fig. 4.

Monoicomyces matthiatis was found on the lower surface of host's abdomen. It evidently differs from other species of genus *Monoicomyces*. Exceptionally fine, stout, low-celled thallus and bent perithecium are its characteristic traits. It seems that the similarities are greatest between two fine species: *Monoicomyces athetae* Th. and *M. denticulatus* Th. (Thaxter 1931), though they evidently differ from *M. matthiatis* in a more extended thallus which always develops two secondary axes. The close relationship between these three species may also be testified to by traces of tooth near the top of perithecium in *M. matthiatis*; in both above-mentioned species of Thaxter it is much better developed.

I dedicate this species to my friend Maciej Gliński, San. Eng., who has contributed to its finding.

Peyritschiella furcifera (Thaxter) Tavares

On *Philonthus quisquiliarius* Grav. (*Col., Staphylinidae*): Laski, Kampinos National Park (Warszawa voiv.), in old hay on a forest clearing, 30. 4. 1986 (TM. 3524, 3525); on *Ph. rectangulus* Sharp: Kobyłka near Wołomin (Warszawa voiv.), compost in garden, 22. 7. 1986 (TM. 3688, 3689).

The collected thalli are characterized by only slight variation; they were consistent with the descriptions and drawings by Thaxter (1896), Sugiyama (1973) as well as by Lee and Lee (1981). Individuals with perithecial auricles and without them are found. They occurred on host's abdomen; only two deformed thalli were present on foot. *Peyritschiella furcifera* is a cosmopolitan species known from many countries of Europe, Asia, Africa, America and Australia.

Stigmatomyces biformis sp. n.

Thallus succineus. Receptaculum gracile, arcuatum. Cellula pedunculi perithecii secundum cellulam pedunculi appendicis et cellulam secundariae pedunculi perithecii posita. Cellulae axis appendicis elongatae, extra convexae. Venter perithecii inflatus, collum tenue, fere rectum vel valde flexum. Longitudo thalli erecti 170-230 μm, appendix antheridialis 40-65 μm longa, perithecium 110-150 × 25-45 μm.

Thallus brownish-yellow, ventral part of perithecium darker. Receptacle slender, basal cell 1.5-2 times longer than the subbasal cell, bent. Stalk cell of appendage elongate, externally convex in upper part; appendage consisting of

3-6 elongated and externally convex cells, with a single row of slender antheridia situated anteriorly or laterally. Stalk cell of perithecium triangular, situated nearly on the same level as the obtriangular secondary stalk cell of perithecium and stalk cell of appendage. Basal cells of perithecium distinct; ventral part of perithecium inflated, tapering into a long, slender, straight or bent neck; apical part slightly differentiated, tip rounded, with two small

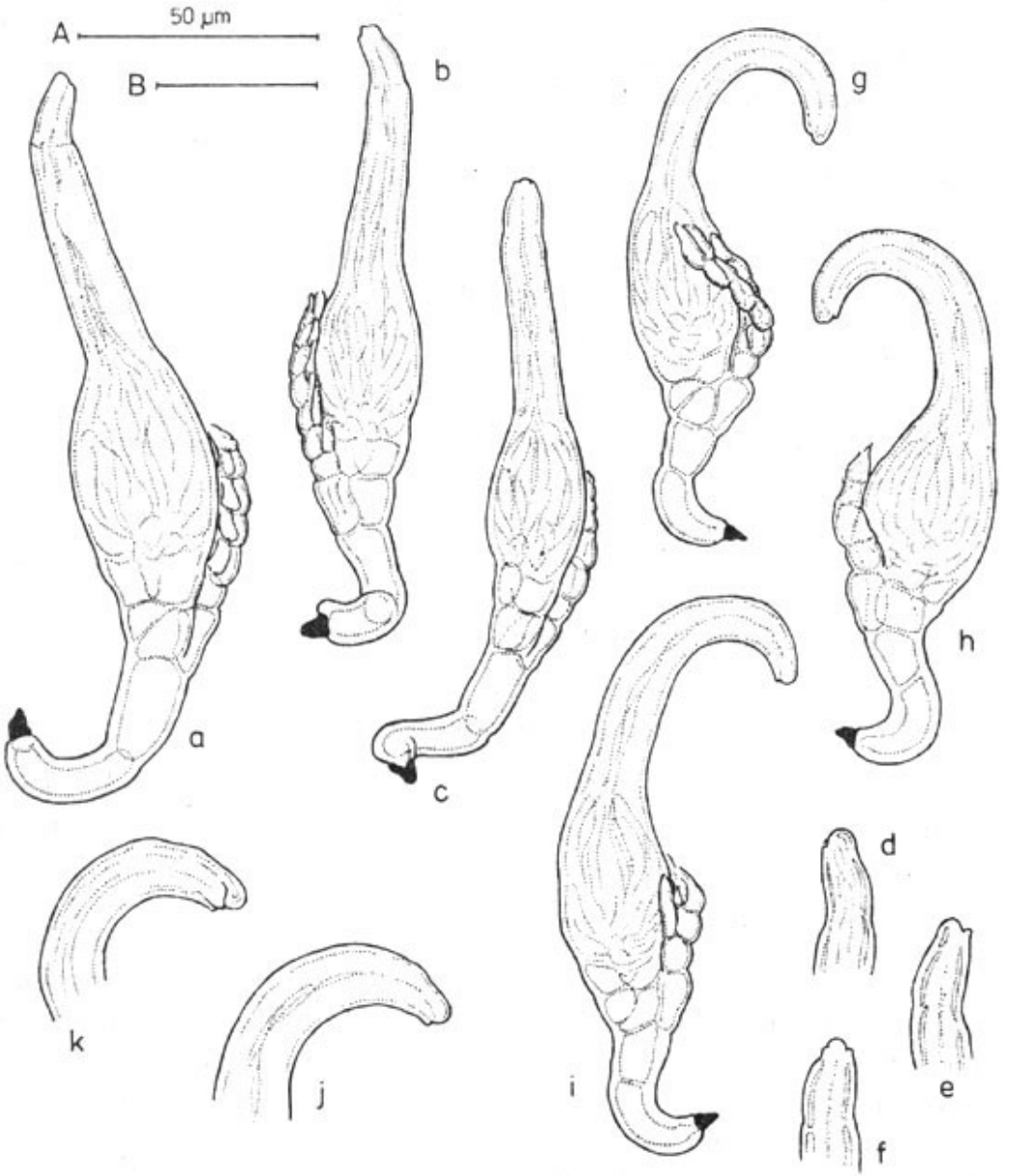

Fig. 5. *Stigmatomyces biformis* sp.n. on *Leptocera spinipennis*

a – Smrock, paratype, *b-g*, *k* – Białowieża, isotypes, *h-j* – Białowieża, holotype. Scale A for *a-c*, *g-i*, scale B for *d-f*, *j*, *k*

teeth situated posteriorly. Total length of straightened thalli 170-230 μm, antheridial appendage 40-65 μm, perithecium 110-150 × 25-45 μm.

On *Leptocera spinipennis* Hal. (*Diptera, Sphaeroceridae*): Stare Sioło near Wetlina, Bieszczady Mts. (Krosno voiv.), on cow feces, 16. 6. 1978 (TM. 1898); Białowieża (Białystok voiv.), cow dung on field, 16. 10. 1978, leg. T. Majewski (TM. 1954-1960; 1959 – holotype); Smrock near Maków Mazowiecki (Ostrołęka voiv.), in cow feces, 3. 7. 1979 (TM. 2218). Fig. 5.

This species is characterized by two, evidently different forms growing on various organs of host. As to the first form found on legs, it is characterized by thalli with the lower part of receptacle bent posteriorly and with perithecium neck pronouncedly bent in the same direction (Fig. 5, *g-k*); the length of straightened thalli is 170-215 μm. As concerns the second form found on the right wing of host, it exhibits somewhat longer thalli (190-230 μm), with the lower part of receptacle anteriorly bent (not always distinctly), and with a nearly straight perithecium neck (Fig. 5, *a-f*). In the abundant material from Białowieża, the forms from legs and wing are equally frequent.

Stigmatomyces biformis seems to be related to some species parasitizing on *Sphaeroceridae*. The latter are characterized by triangular cells VI and VII, situated on the same level; they comprise some forms of *S. crassicollis* Th., and particularly of *S. tortimasculus* Th. (Thaxter 1931). However, *S. crassicollis* differs from the new species in a perithecium top ending symmetrically in teeth as well as in flattened cells of the appendage axis. In contrast to *S. biformis*, the thalli of *S. tortimasculus* are straight, with long, irregularly divergent antheridial necks, and with stalk cell of appendage twice as long as the stalk cell of perithecium; the tip is not rounded, but oblique or blunt, according to the point of inspection.

Stigmatomyces platensis Speg.

On *Leptocera heteroneura* Hal. (*Dipt., Sphaeroceridae*): Giby-Dziemianówka near Sejny (Suwałki voiv.), in cellar, 9. 9. 1977 (TM. 1717); Warszawa (centre of the city), 5. 8. 1976, ex coll. Inst. Zool., Pol. Acad. Sci. (TM. 2112). Fig. 6, *c-e*.

This species differs from the related fungi parasitizing on *Sphaeroceridae* in an evidently distinguished neck of perithecium, subtended by conspicuous prominences, and in a sharply pointed, asymmetrical perithecium tip. Individuals collected from host's thorax (TM. 2112) are 180-210 μm in length, perithecium 95-113 × 28 μm; thalli from wing (TM. 1717) are smaller, being 155-170 μm long. *Stigmatomyces platensis* has been described from Argentina by Spegazzini (1917), and subsequently it was found by Thaxter (1931) in Camerun and Sumatra. Polish thalli are in agreement with the descriptions and drawings of the above authors.

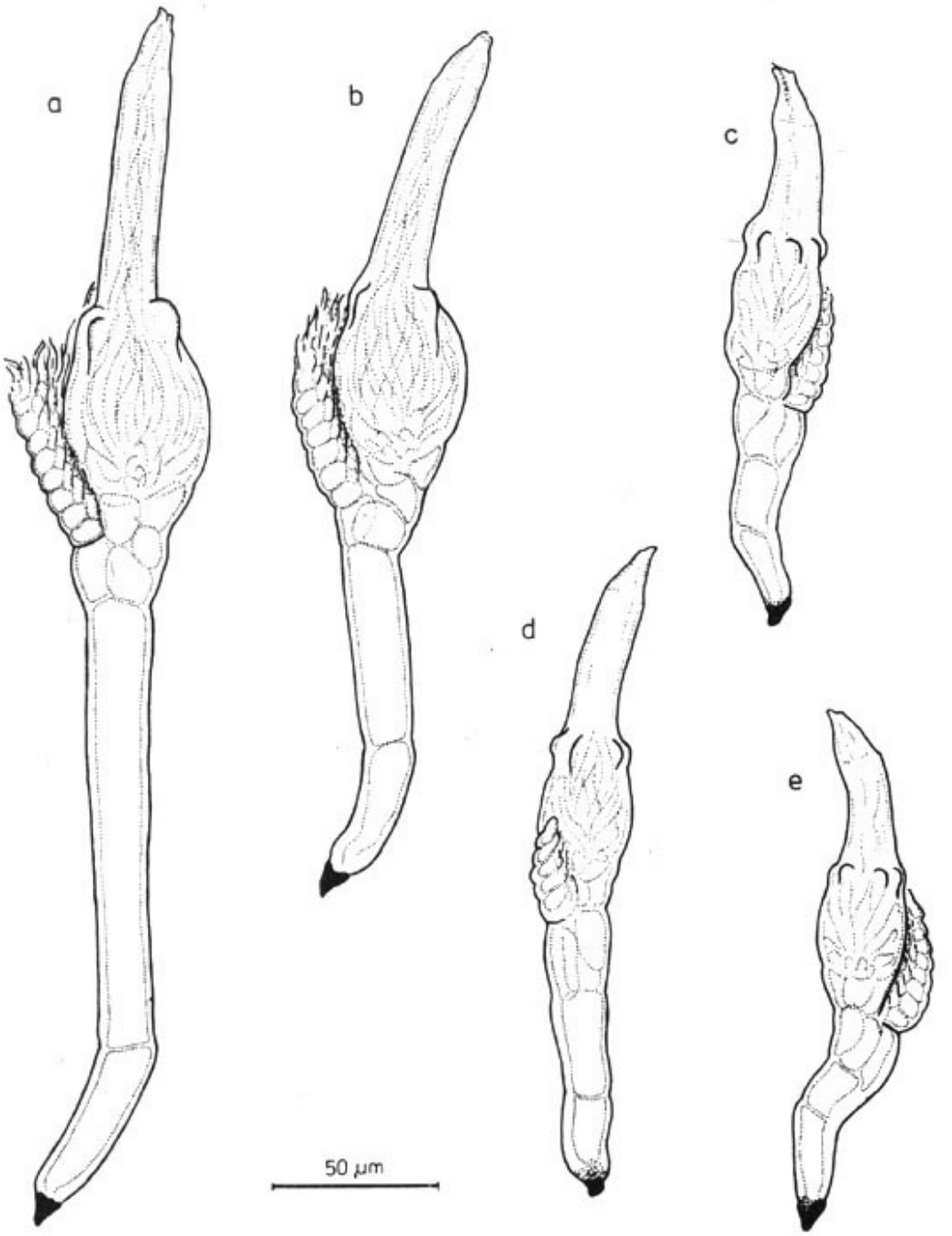

Fig. 6. *a, b*: *Stigmatomyces subterraneus* Huldén on *Leptocera cambrica*, Białowieża; *c-e*: *Stigmatomyces platensis* Speg. on *Leptocera heteroneura*, *c, d* – Warszawa, *e* – Giby.

Stigmatomyces subterraneus Huldén

On *Leptocera cambrica* Rich. (?) (*Dipt., Sphaeroceridae*): Białowieża National Park (Białystok voiv.), sect. 399, *Tilio-Carpinetum*, on rotting polypore, 21. 9. 1977 (TM. 1722, 1723). Fig. 6, *a-b*.

Stigmatomyces subterraneus has lately been described on *Limosina talparum* Rich. from Finland by Huldén (1983). Polish thalli grow on another host which probably (in contrast to *Limosina talparum*) is not associated with inhabited burrows of *Microtus* and *Talpa*. Their dimensions are as follows: length 220-390 μm, lower receptacle 75-200 μm long, perithecium 140-165 ×40-50 μm, antheridial appendage 63-76 μm. Therefore, their dimensions are almost completely consistent with those of Huldén's thalli; only some few thalli are somewhat bigger. The shape of thalli, in particular a long neck of perithecium with distinct, lower situated protuberances, as well as in a long and slender receptacle branching into branchlets on the top of antheridial appendage are also in agreement with Huldén's description. They differ from type specimen in: stout cells III and VI (in Huldén's drawing they are distinctly elongated), and in a darker – mostly yellowish-brown – colour of thallus (type individuals are nearly colourless). However, both these differences may not be very essential; this particularly concerns the colour of thallus, which may depend on the host's living environment.

Acknowledgements

I am very indebted to Dr. S. Mazur, Institute of Forest Protection, Agricultural Academy, Warsaw, for the determination of beetles of families *Pselaphidae* and *Staphylinidae*, and to Dr. J. T. Nowakowski, Institute of Ecology, Polish Academy of Sciences, for the determination of *Sphaeroceridae*.

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Rzadkie i nowe *Laboulbeniales* z Polski. XI

Streszczenie

Autor wymienia 10 gatunków z rzędu *Laboulbeniales* (*Ascomycotina*) zebranych po raz pierwszy w Polsce. Cztery gatunki są nowe dla nauki: *Cryptandromyces bibloplecti* na *Bibloplectus ambiguus* (Reich.) (*Coleoptera, Pselaphidae*), *Laboulbenia atroseptata* na *Rugilus erichsoni* Fauv. (*Col., Staphylinidae*), *Monoicomyces matthiatis* na *Platystethus arenarius* (Fourcr.) (*Col., Staphylinidae*) i *Stigmatomyces biformis* na *Leptocera spinipennis* Hal. (*Diptera, Sphaeroceridae*). *Monoicomyces infuscatus* Speg. i *Stigmatomyces platensis* Speg. znalezione zostały po raz pierwszy w Europie.