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Rare and new *Laboulbeniales* from Poland. IV.

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In the fourth of a series of papers dealing with *Laboulbeniales* in Poland descriptions of two new species: *Autophagomyces falcatus* sp.n. on *Cryptophagus pilosus* and *Euphoriomyces octotemni* sp.n. on *Octotemnus glabriculus* are given. The remaining seven species mentioned in the paper are new for Poland, and one of them (*Rhachomyces speluncalis*) was observed for the first time in Europe.

Autophagomyces falcatus sp.n.

Habitus pallidus luteo colore suffusus. Cellula basalis receptaculi ad basim angustatur et a cellula subbasali transverse separata est. Cellula subbasalis formam trianguli habet atque latior quam longior est. In cellula subbasali, paene in eius apice, obliqua cellula pedunculi perithecii posita est. Ibidem etiam obliqua cellula basalis appendici sita est. Haec cellula basalis et duae proximae cellulae appendicis tam latae quam cellula basalis atque elongatae sunt. In apice altissimae cellulae appendicii duo longa antheridia sunt vel unum antheridium atque cellula sterilis elongata cum altero antheridio vel rarius cum duobus antheridiis in extremo sunt. Cellula pedunculi perithecii ad basim paulo angustatur et longior quam latior apparet. Cellulae basales inferiores tam latae quam longae vel paulo longiores et paulo breviores quam cellula pedunculi perithecii sunt. Cellulae basales superiores compressae sunt. Regio basalis saepe tam longa quam cellula pedunculi perithecii est. Perithecium compactum, margo eius externa convexa atque regulariter arcuata est, attamen margo interna paene recta et paulo convexa vel concava est, ad apicem angustatur cum magno labio superiore et cum parvis labiis intra marginem.

Longitudo a basi usque ad apicem perithecii 97-110 μ, perithecium 60-80×(18-)22-30 μ, receptaculum 24-30 μ, appendices 48-55 μ.

Pale yellowish. Basal cell of the receptacle narrows towards the foot; it is obliquely overlapped by the subbasal cell which is triangular and broader than long. The subbasal cell bears subterminally and

obliquely the stalk-cell of the perithecium and — obliquely, too, but rather laterally — the basal cell of the appendage. The basal cell and the next two cells of the appendage are as broad as the basal cell, elongated; on the end of the distal cell are two long antheridia or one antheridium and a sterile cell with a second antheridium or — rarely — with two antheridia on the top. The stalk-cell of the perithecium slightly tapering to its base, rather longer than broad. The lower basal cells of the perithecium are as broad as long or somewhat longer, the upper basal cells are flattened. The basal cell region is usually as long as the stalk-cell of the perithecium. The perithecium rather stout, the outer margin convex, regularly arcuated, the inner nearly straight, somewhat convex or concave, tapering distally to the apex with the prominent, terminal lip and with the smaller lips on the inner margin.

Total length to the tip of the perithecium 97-110 μ, perithecium 60-80×(18-)22-30 μ, receptacle 24-30 μ, appendage 48-55 μ.

On *Cryptophagus pilosus* Gyll. (*Col., Cryptophagidae*): Kurzeszyn Nowy, Rawa Mazowiecka county, in a cellar, 20.6.1972, leg. T. Majewski (TM. 1001); as previously, 11.7.1972 (TM. 1043-1045; 1044 — holotype). Fig. 1.

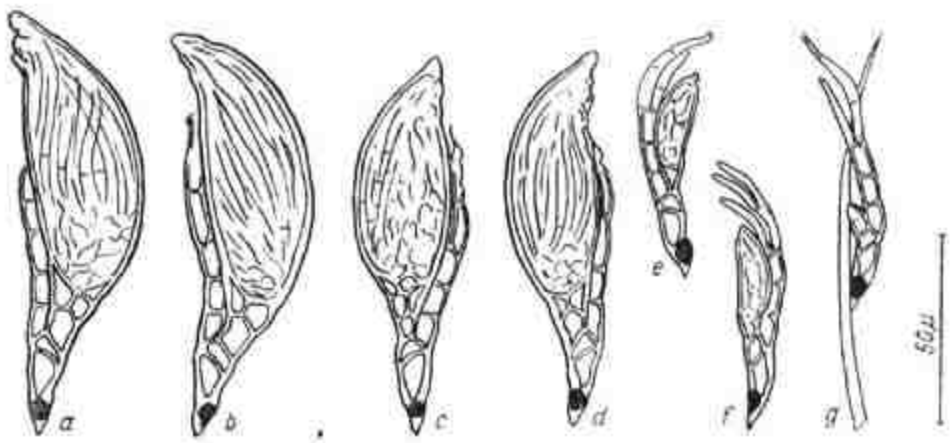

Fig. 1. *Autophagomyces falcatus* sp.n. on *Cryptophagus pilosus*, Kurzeszyn Nowy; *a-d* — mature specimens, *e-g* — young specimens, with antheridia (*a* — holotype)

The above-described species is the first representative of the genus *Autophagomyces* parasitizing beetles of the family *Cryptophagidae*; it was found on the ends of elytra. Most of its characters are in accordance with the supplemented and improved diagnosis of the genus (Thaxter 1931, p. 90). The new species differs from most of the other representatives of this genus by the lack of a distinct tapering of the stalk-cell of the perithecium; this cell is short, broad. Also the branching of the an-

theridial appendage is rather an exception in other species. Thaxter assumes that it is the result of death or destruction of the main axis of the appendage. In *A. falcatus* the branching of the appendage once, or more rarely twice (Fig. 1 *f*) is the rule. The structure of the appendage and also its short, broad appearance clearly distinguish this species from hitherto described species of the genus *Autophagomyces*.

It must be added that this new species somewhat resembles another fungus growing on *Cryptophagidae*, namely *Synandromyces tomari* Thaxter (Thaxter 1931, p. 106, pl. 20: 9–10); branched appendages with two or three antheridia in *Autophagomyces falcatus* would be a transitory form between typical *Autophagomyces* species with a single antheridium on the top of an unbranched appendage and *Synandromyces tomari* with three antheridia on a strongly shortened appendage.

Compsomyces lestevae Thaxter

On *Lesteva pubescens* Munh. (*Col., Staphylinidae*): Bereżki, Ustrzyki Dolne county (Bieszczady Mts.), under rocks on the banks of Bystry stream (650 m), 11.9.1972 (TM. 1105). Fig. 2.

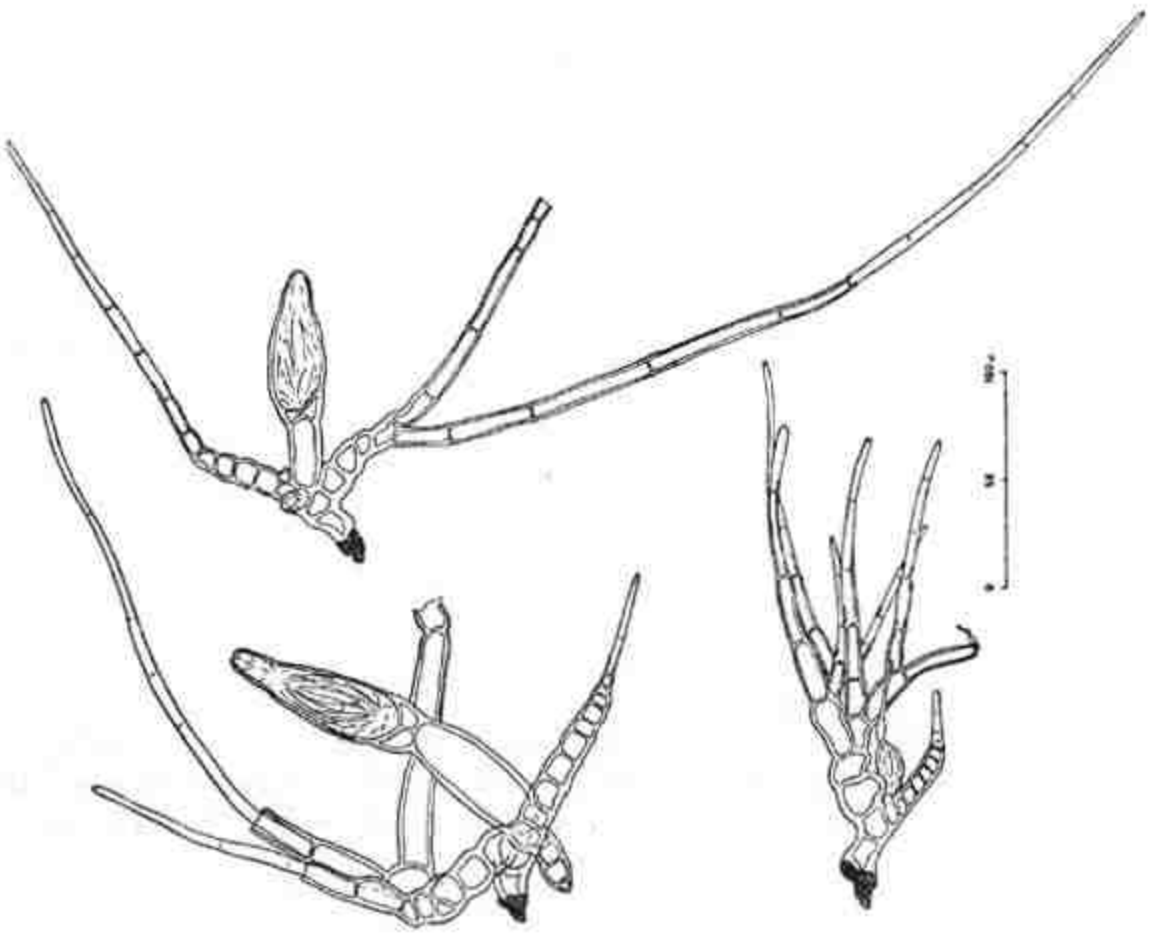

Fig. 2. *Compsomyces lestevae* Th. on *Lesteva pubescens*, Bereżki.

Only two mature and several immature representatives of this species were found on the pronotum, elytra, abdomen and metasternum of one host. They young specimens are slightly more branched than those in the descriptions of Thaxter (1908, p. 428, pl. 43: 9-10, sub. „*C. lestevi*"); Thaxter does not mention a short branch growing from the base of the stalk-cell, which is present at least as a bud in almost all specimens. The differentiation of the cells of the sterile branch is also very interesting, on its base the stalk-cell of the perithecium is placed. It consist of two types of cells: short, almost isodiametrical ones with slightly diagonal septa (especially in young specimens) and a terminal part of much narrower and elongated cells. The dimensions of the found specimens are in accordance with those given by Thaxter: perithecia (including basal cells) 76-100×28 μ, stalk-cells 76×30 μ, longer appendages — up to 470 μ.

Compsomyces lestevae is known in England, Scotland and France (Thaxter 1908, Picard 1917).

Dichomyces princeps Thaxter

On *Philonthus cephalotes* Grav. (*Col., Staphylinidae*): Kurzeszyn Nowy, Rawa Mazowiecka county, in a cellar, 20.6.1972 (TM. 994-996); on *Ph. sordidus* Grav.: as previously, 11.8.1972 (TM. 1067); as previously, 18.8.1972 (TM. 1068, 1069); Warszawa-Marymont, in compost, 5.9.1972 (TM. 1103).

Very numerous specimens of fungi in various stages of development agree to a great extent with the descriptions and figures of Thaxter (1896, p. 284, pl. 8: 11-14), Spegazzini (1912, p. 185) and Middelhoek (1943, 1947). This species is known in numerous countries of North, South and Central America, Asia, Europe, Africa and Australia.

Euphoriomyces octotemni sp.n.

Habitus hyalinus. Axis receptaculi e quattuor alia super alia positis cellulis constat. Cellula basalis paulo elongata, ad basim angustatur, aliae cellulae paene isodiametrae sunt. In secunda cellula, rarius etiam in tertia cellula axis oblique positae sunt atque in latere cellulae pedunculi peritheciorum, quae lateribus conjunctae sunt cum proxima cellula axis receptaculi. Cellulae pedunculi et perithecia in altera parte, vel raro symmetrae in duabus partibus receptaculi formantur. Appendices duae vel saepe tres, angustae et rectae nonnumquam dichotomae ramosae supra basim suam atque supra summam cellulam axis receptaculi, quae paulo minor est quam cellula infra posita, inveniuntur. Cellulae pedunculi pe-

rithecii isodiametrae sunt, margo earum externa convexa est. Perithecium unum vel duo, raro quattuor perithecia apparent (bina in unoquoque latere). Cellulae basales perithecii in maturis peritheciis non sunt distinctae. Perithecium asymmetricum, margo eius externa in parte inferiore valde ad extra arcuata est, apex rotundata et paulo arcuata ad extra conspicitur. Antheridia ignota restant.

Longitudo a basi usque ad apicem perithecii 58-71 μ, perithecium 28-38(-48)×14-18(-20) μ, appendices ad 250 μ.

Hyaline. The axis of the receptacle from four superposed cells. The basal cell somewhat elongated, narrower at the foot, the remaining cells nearly isodiametric. The second and — rarely — the third cell bears obliquely and rather laterally the stalk-cells of the perithecia, which are connected laterally with the next cell of the axis of the receptacle. The stalk-cells and the perithecia arise on one or — rarely — symmetrically on both sides of the receptacle. Two or usually three appendages on the upper cell of the axis of the receptacle, which is somewhat smaller than

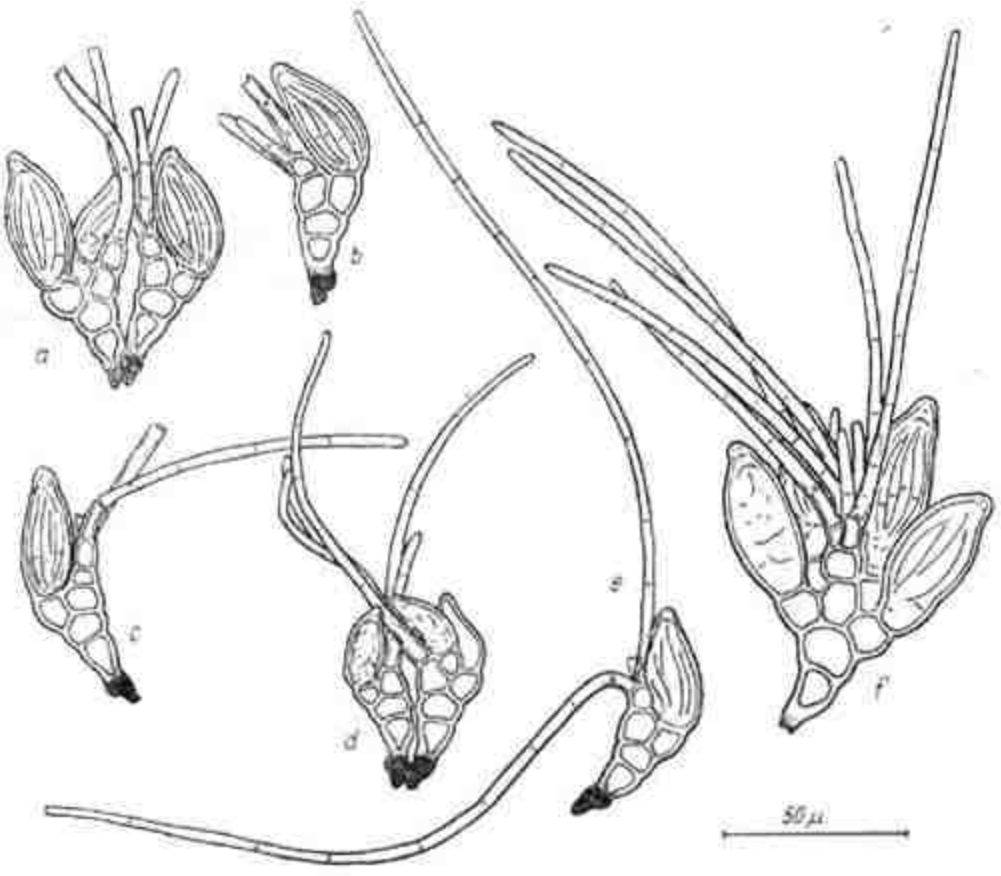

Fig. 3. *Euphoriomyces octotemni* sp.n. on *Octotemnus glabriculus*, Berežki; *a*, *d* — pairs of specimens, one of which has two developed perithecia, the second only one; *b*, *c* — mature specimens with one perithecium and broken appendages; *e* — a maturing specimen with one perithecium and well preserved, long appendages; *f* — specimen with four perithecia (holotype).

the cell below, slender, simple and sometimes dichotomically ramified above their base. The stalk-cells of the perithecia isodiametric, the outer margin convex. The perithecia one or two, rarely four (two on the one side). The basal cells indistinguishable when mature. The body of the perithecium assymetrical, in the lower part strongly convex externally, the rounted tip bent slightly outward. Antheridia unknown.

Perithecium 28-38(-48)×14-18(-20) μ, the total length to the tip of perithecium 58-71 μ, appendages up to 250 μ.

On *Octotemnus glabriculus* Gyll. (*Col., Cisidae*): Bereżki, Ustrzyki Dolne county (Bieszczady Mts.), in small polypores on lying trunks of trees in a beech wood on the right bank of Wołosaty stream (650 m), 12.9.1972 leg. T. Majewski (TM. 1128-1148, 1040 — holotype). Fig. 3.

This fungus has been found on various parts of the body, but mainly on the ends of the elytra of hosts in many numerous specimens. The specimens with an elaborate receptacle and numerous perithecia (Fig. 3 *f*) resemble typical representatives of the genus *Euphoriomyces* (*E. bilateralis, E. guatemalensis* Thaxter 1931) rather closely, but differ by a more simple structure and smaller body size. Asymmetrical specimens with one perithecium (Figs. 3 *b, c, e*) resemble *E. cioideus*, and to a lesser degree *E. cybocephali* Thaxter (1931) — thus species included by Thaxter in the genus *Euphoriomyces* only conditionally. The new species is a sort of intermediate form and it appears to confirm the correctness of including at least *E. cioideus* in the genus *Euphoriomyces*.

Another fungus parasitizing beetles from the family *Cisidae* closely resembles the newly described species, namely *Phaulomyces cis* Thaxter (Thaxter 1931, p. 261, pl. 38: 4-5). The character differentiating these two species is the presence of a well developed free stalk-cell of the perithecium in *Phaulomyces* while in *Euphoriomyces* this cell has disappeared and its part is played by one of the cells of the receptacle, joined laterally with the adjacent cells.

Euzodiomyces lathrobii Thaxter

On *Lathrobium filiforme* (Grav.) (*Col., Staphylinidae*): Kiełpin, Nowy Dwór Mazowiecki county, in bedding on the base of an alder trunk in meadows, 22.12.1971 (TM. 898).

Only 3 immature specimens have been found, but the character of the thallus is identical with the drawing and description on Thaxter (1908, p. 444, pl. 71: 23), Cépède and Picard (1908 pl. 4: 4-8), Middelhoek (1943), Benjamin and Shanor (1951). The relatively thick, 5-6 μ wide appendages make confusion with *Euzodiomyces capillarius* Cép. et Pic. impossible. *E. lathrobii* is known in seweral countries of West and South Europe and in North Africa and North America.

Misgomyces ptenidii Scheloske

On *Ptenidium fuscicorne* Er. (*Col., Ptiliidae*): Kurzeszyn Nowy, Rawa Mazowiecka county, a group of alders in a meadow, in bedding, 19.7.1972 (TM. 1050).

Only one of three found specimens was mature. It agrees with the description and drawing of Scheloske (1969): length 125 μ, perithecium 63×14 μ (the respective values for Scheloske's specimen were 143 μ and 73×15 μ).

This is the second stand of this recently described species. The number of *Laboulbeniales* in Poland parasitizing *Ptiliidae* has thus increased to four, but certainly more species will be found as a result of the presently conducted investigations. The author has in his collection specimens of two more fungi parasitizing *Ptenidium* which will be described in one of the next papers.

Rhachomyces lasiophorus (Thaxter) Thaxter

On *Badister dilatatus* Chd. (*Col., Carabidae*): Kurzeszyn Nowy, Rawa Mazowiecka county, in plant remnants carried by a flooding of the river Rawka, 21.8.1972 (TM. 1100); on *Badister peltatus* Panz: Białowieża primeval forest, border of a road near Leśna river between divisions

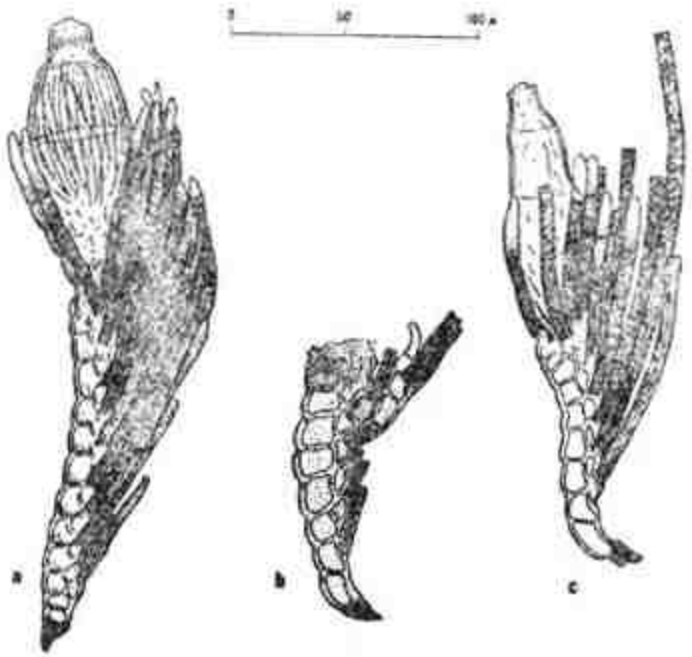

Fig. 4. *Rhachomyces lasiophorus* Th. on *Badister dilatatus*, Kurzeszyn Nowy, *a* — mature specimen; *Rhachomyces speluncalis* Th. on *Pseudanophthalmus pilosellus stobieckii*, Babia Góra National Park, *b* — dagamed specimen with constrictions in the receptacle, *c* — maturing specimen.

574/602, 6.5.1971 (TM. 520); Dziekanów Leśny, Nowy Dwór Mazowiecki county, ad lucem, 16.8.1972, leg. T. Plewka (TM. 1162). Fig. 4 *a*.

20 adult specimens of the fungus were examined from three beetles, almost all occurred on tarsi of the hosts, only one at the end of the tibia.

The receptacle did not show any great variability in respect to length and shape; it was composed of 11-14 cells with membranes darker in the lower part. Its length was 114-165 μ. It is thus slightly smaller than that of a typical individual (175 μ), but the other characters are in agreement with the typical, stout specimens of Thaxter (1896, p. 360, pl. 12: 7-8). The appendages were of the same size and shape as in the typical specimens. The greatest variation was observed in the shape and size if the perithecium; it was eggshaped, 92×45 μ or more elongated, up to 152×56 μ. In these bounds specimens identical to Thaxter's specimens in this respect were included. The only character of the Polish specimens not mentioned in Thaxter's original description is a dark, sometimes indistinct ring under the top of the pertithecium, which was also observed by Scheloske (1969).

This species has been described in the United States on beetles from the genera *Atranus*, *Acupalpus* and *Badister* (Thaxter 1896). It was recently observed in France on *Baudia anomala* subsp. *pseudopeltata* (Balazuc 1971) and in German Federal Republic on *Dromius agilis* by Scheloske (1969), who expressed some doubts as to the identity of his species with the American one. The material from Poland found on *Badister spp.* seems identical — on the basis of Scheloske's short description — with his material, and also there are no essential characters distinguishing it from the type of *Rhachomyces lasiophorus*. It was worth mentioning that a similar fungus was found in France on *Acupalpus exiguus* and described as *Rh. lasiophorus* subsp. *damauxi* Balazuc (1971) but unfortunatelly this name is not valid as there is no Latin diagnosis.

Rhachomyces speluncalis Thaxter

On *Pseudanophtalamus pilosellus stobieckii* (Cs) (*Col., Carabidae*): Babia Góra National Park, division 12 (920 m), in rotten tree trunk in an alder forest, 9.5.1972 (TM. 989). Figs. 4 *b*, *c*.

Over 20 specimens of this fungus were found on the pronotum and the upper surface of the head. Most were unfortunatelly immature, only two had developed perithecia. These specimens are the closest to *Rhachomyces speluncalis* — a species described by Thaxter (1896, p. 360, pl. 11: 23-25), also mentioned by Balazuc (1970). The specimens found in Poland differ in most cases considerably from Thaxter's diagnosis mainly by a slightly different receptacle, the cells of which are lighter — light brown — without evident constrictions. Only one specimen — un-

fortunatelly very damaged — seems to possess a receptacle identical with that of the typical specimens (Fig. 4 *b*). The dimensions of the specimens with perithecia are similar to those given by Thaxter and are: receptacle 88 and 105 μ (composed of 9 cells), perithecium 100-113×30 μ, total length 200-215 μ. The differentiation of appendages characteristic for *Rhachomyces speluncalis* (a few very long ones and the remaining ones not longer than the perithecium) can also be observed in the Polish specimens. Short, well preserved appendages surrounding the perithecium are numerous, and there are several broken ones, which must obviously have been longer. The hosts of both fungi — the type *Rh. speluncalis* and that of the Polish specimens belong to the same genus, and no other species of *Rhachomyces* are known on it (Balazuc 1970).

It thus seems that these Polish fungi may with some reservations be classified as *Rhachomyces speluncalis*. Finding more material of this fungus would facilitate its analysis, but this will not be easy due to the great rarity of the host in Poland.

Stigmatomyces stenichni Scheloske

On *Stenichnus collaris* Müll. (*Col., Scydmaenidae*): Kurzeszyn Nowy, Rawa Mazowiecka county, in bedding on a small, wooded elevation in meadows, 7.8.1972 (TM. 1066).

The only specimen of this fungus was found on the edge of the elytron. It was 142 μ long, the appendage 47 μ long, the perithecium 80× ×40 μ. It agrees to a great extent with the diagnosis and drawing of Scheloske (1969), but is slightly smaller (Scheloske's specimens were 165-176 μ long).

Acknowledgements

I should like to thank Dr. B. Burakowski who determined the beetles of the families *Cryptophagidae, Ptiliidae* and *Scydmaenidae*, Docent Dr. A. Szujecki for determining *Staphylinidae* and Mgr. T. Plewka for determining *Carabidae*.

Corrigendum

The host of *Misgomyces coneglanensis* (Speg.) Th. from Białowieża (Majewski 1972 p. 272) is not *Laccobius minutus* L. but *Laccobius alutaceus* Thoms.; the determination has been graciously corrected by Docent Dr. K. Galewski.

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Rzadkie i nowe *Laboulbeniales* z Polski. IV.

Streszczenie

W kolejnej pracy dotyczącej polskich *Laboulbeniales* podano opisy dwóch nowych dla nauki gatunków: *Autophagomyces falcatus* sp.n. na *Cryptophagus pilosus* i *Euphoriomyces octotemni* sp.n. na *Octotemnus glabriculus*. Pozostałych siedem gatunków omawianych w pracy jest nowych dla Polski, w tym *Rhachomyces speluncalis* znaleziony po raz pierwszy w Europie.