

On some Species of *Endoxyla* Recently Found in Denmark

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Eighteen collections of asexual Pyrenomycetes with long ostioles growing in very rotten wood were examined in sections and squash-mounts. A comparative study gave the conclusion that the specimens belong in six clear cut species of *Endoxyla*, and that the range of variation within the single species is narrow for characters of asci and spores as well as for characters of peridium and ostiole, whereas the position of the perithecia in relation to the substrate is no reliable taxonomic character. The following new names and combinations are introduced: *Endoxyla laevirostris* n. sp., *E. hyalostoma* n. sp., *E. vestita* (SACC.) n. comb., and *E. excelsior* (MOUTON) n. comb.

Introduction

From April 1963 my occupation has been to collect Pyrenomycetes in Denmark. Since then many species have been found for the first time in this country; among them several appear to be new to science. The present paper deals with the specimens of *Endoxyla* found during the first year of this work.

The genus *Endoxyla* was established by FÜCKEL (1872: 321). As type is considered the phaeosporous *E. parallela* (FR.) FÜCKEL, basionym: *Sphaeria parallela* FRIES 1823 (Systema mycologicum II: 373), syn. i. a. *E. operculata* (ALB. & SCHW.) FÜCKEL, fide MÜLLER & VON ARX 1954. In 1954, MÜLLER & VON ARX transferred the hyalosporous species *Ceratostomella cirrhosa* (PERS. ex FR.) SACC. to the genus *Endoxyla*, an idea which has later been approved (e. g. MUNK 1957: 195). It will appear from the present paper that I still find this emendation of the genus very reasonable.

Previously (1952) VON ARX had treated *Ceratostomella cirrhosa* and established a long list of synonyms to this binomial, among which is

Ceratostomella rostrata (FR.) SACC. However, it does not appear from his list of specimens examined (l. c.: 206) that he has ever seen material determined to *C. rostrata*. VON ARX's description of asci and spores has: "... sporenführende Teil 50–80 μ lang, 5–8 μ breit. ... Die acht meist einreihig liegende Sporen ...". WINTER (1887: 250) writes for *C. cirrhosa*: "Asci ... 65–75 μ lang, 7–9 μ dick. Sporen einreihig ...", and for *C. rostrata* (l. c.: 249): "Asci ... 45 bis 46 μ lang, 9 μ dick. Sporen oblong oder fast elliptisch, einzellig oder mit undeutlicher Scheidewand, hyalin, 9–12 μ lang, 4 μ dick". Thus, WINTER has observed a significant difference in ascus length; to be sure, he does not write in so many words that the spores of *C. rostrata* are biseriate in the asci, but it is obvious from his measurements of asci and spores that they are in fact so. SACCARDO too (Sylloge I: 408) has noticed the difference in spore arrangement, writing in a note on *C. rostrata*: "*C. cirrhosa* ab hac praecipue differt sporidiis monostichis".

SACCARDO's description of *C. rostrata* has: "... rostro stricto, bisulcato vel quadrangulari" and for var. *levirostris* described below: "... rostro non vel vix sulcato". My specimens all agree with var. *levirostris*. The nomenclature problem involved seems to be solved by using the new name *Endoxyla laevirostris* for the "*rostrata*"-form examined.

In 1957 (: 196) I maintained *E. rostrata* as a distinct species beside *E. cirrhosa* on the basis of differences in the position of the perithecia in relation to the substrate as well as of differences in ascus structure. It appears now that the former set of characters is variable within the species, so my descriptions were partly misleading. In the present paper an attempt is made to clarify this problem of species concept in *Endoxyla*. Furthermore, it has appeared that at least three more hyalosporous species of the genus exist in Denmark.

Materials and Methods

In all cases the substrate for the *Endoxylas* was very soft rotten wood, most often stumps, but also trunks and thick branches lying on the ground. The perithecia are generally deeply immersed with only their ostioles projecting. Fragments of wood were examined under a dissecting microscope, then thoroughly dried. All specimens were examined in squash mounts made from living material in distilled water. The slides were preserved by addition of lactophenol with Cotton Blue and later sealed with nail varnish. Sections were made of dried material from most of the specimens: The wood was placed under a dissecting microscope,

thin sections of the perithecia were cut with a razor blade and mounted in lactophenol with Cotton Blue. Drawings were made with aid of camera lucida.

The specimens found during the period in question are listed here according to the date of collection. They will be referred to by the collection numbers given below.

1. On a stump of *Ulmus*, soc. *Lasiosphaeria spermoides* (HOFFM.) DE NOT. and *Herpotrichiella pilosella* (KARSTEN) MUNK. – Sjælland: Boserup 1/iv 1963.
2. On a stump of a frondose tree, soc. *Lasiosphaeria spermoides* (HOFFM.) DE NOT. – Sjælland: A wood west of Frederikssund 23/iv 1963.
3. On a stump of *Fagus*. – Sjælland: Jægerspris Nordskov 23/iv 1963.
4. On a log of *Fagus*. – Sjælland: Lellinge 3/v 1963.
5. On wood of *Fagus*. – Sjælland: Tokkekøb Hegn 19/viii 1963.
6. On a stump of *Fagus*. – Sjælland: Rude Skov 17/ix 1963.
7. On a stump of *Fagus*. – Sjælland: Rude Skov 17/ix 1963.
8. On a branch of *Fagus*. – Jylland: Staksrode Skov 12/x 1963.
9. On wood of *Quercus*. – Sjælland: Jægerspris Nordskov 4/xi 1963.
10. On wood of *Salix caprea*. – Møn: Klinten 26/xi 1963.
11. On a stump of *Fagus*. – Møn: Klinten 26/xi 1963.
12. On a stump of *Fagus*. – Sjælland: Dyrehaven 3/xii 1963.
13. On a stump of *Fagus*. – Sjælland: Dyrehaven 3/xii 1963.
14. On rotten wood. – Sjælland: Ermelunden 15/xii 1963.
15. On a stump of *Fagus*. – Sjælland: Rude Skov 4/ii 1964.
16. On wood of *Alnus*. – Sjælland: Rude Skov 4/ii 1964.
17. On rotten wood. – Jylland: Dalby Mølle near Kolding 9/ii 1964.
18. On rotten wood. – Sjælland: Grib Skov 17/iv 1964.

For each specimen, notes were taken on obviously relevant characters: Thickness and surface of the ostiole, structure of the outer wall of the ostiole, thickness and structure of the peridium, ascus size, and arrangement and size of spores. This done, the notes on the hyalosporous specimens were tentatively distributed according to spore length; the result appears from the following list:

Specimens 1, 2, 6, 12, 14, and 16: Spores 5–6.2 μ long.

Specimens 3, 5, 7, 8, 9, 10, 11, 13, 17, and 18: Spores from 7.5–10 μ to 9.5–12 μ in length.

Specimen 4: Spores 13–17 μ long.

It appears that all the specimens examined fell within one of three distinct, not overlapping spore-length groups: 13–17 μ , 7.5–12 μ and 5–6.2 μ . This alone suggests that the great variability in spore-length admitted by VON ARX (1952) for *Ceratostomella cirrhosa* seems to be too wide for a single species of *Endoxyla*. This suggestion was strongly

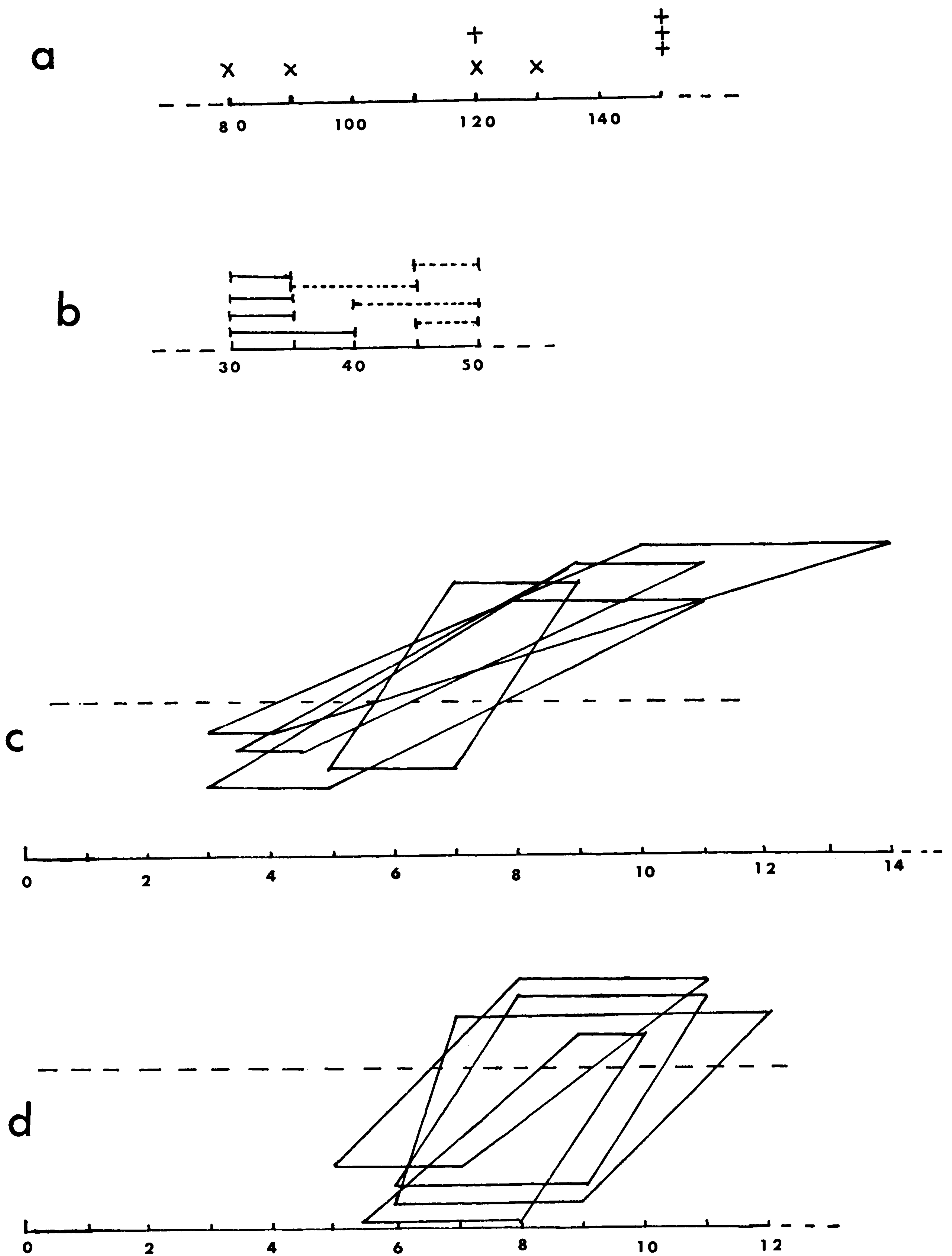


Fig. 1. Four collections of *E. laevirostris* compared with four collections of *E. cirrhosa*. a, maximal thickness of ostiole. \times = *E. laevirostris*, $+$ = *E. cirrhosa*; - b, ranges of peridium thickness. Continuous line *E. laevirostris*, dotted line *E. cirrhosa*; - c, ranges of length (above the dotted line) and width (below) of peridium cells in *E. laevirostris*; - d, same for *E. cirrhosa*. Figures in μ .

confirmed by examination of other characters, as it will appear from the descriptions and drawings of *E. hyalostoma* and *E. vestita*.

Only the 7.5–12 μ spore-length group presented taxonomic difficulties

after this preliminary procedure, because the largest number of specimens fell into this group, and because each species in the other two groups displayed quite special characters. Notes on eight specimens with spores 7.5–12 μ long were tentatively grouped according to uniseriate/biseriate spores; in each group came four specimens. It was evident, then, that the members of each group had several other characters in common than the ascus-character used for group-distinction:

1) All uniseriate spores contain two or three (or four) oil-drops so large that they induce the impression of one or two (or three) septa in the spore; whereas the biseriate spores always contain two moderate-sized oil-drops lying far apart.

2) The biseriate spores stain heavily with Cotton Blue (except the oil-drops), whereas the uniseriate spores stain but slightly.

3) All ostioles of specimens with uniseriate spores are more or less sulcate, whereas the ostioles of the biseriate-spored specimens all are non-sulcate.

Several other characters appeared to be good diagnostic characters, as illustrated in Fig. 1.

Key to Species Treated

- | | |
|--|------------------------|
| 1. Spores brown | <i>E. parallela</i> |
| Spores hyaline | 2 |
| 2. Spores 13–17 μ long | <i>E. excelsior</i> |
| Spores rarely exceeding 11 μ in length | 3 |
| 3. Spores 7.5–12 μ long | 4 |
| Spores 5–6.2 μ long | 5 |
| 4. Spores uniseriate | <i>E. cirrhosa</i> |
| Spores biseriate | <i>E. laevirostris</i> |
| 5. Ostiole subhyaline-brownish, spores spinulose | <i>E. hyalostoma</i> |
| Ostiole black, spores 9-angular | <i>E. vestita</i> |

Endoxyla cirrhosa (PERS. ex FR.) MÜLLER & VON ARX 1954: 355.

Fig. 2 a–b

Perithecia 350–450 μ diam., spheric, immersed, surrounded by a more or less distinct web of 4–5 μ thick, dark brown hyphae. Ostioles 120–150 μ thick, more or less projecting above the substrate, angular or often deeply 3(-4)-sulcate, slightly tapering above.

Peridium (35-)40-50 μ thick, the outer 10–15 μ often heavily carbonized; cells subisodiametric, 8–13 \times 5–8 μ , cell-walls brown, often with distinct pores. Tissue of ostiole almost solid, carbonaceous.

Asci (50-)55–65 \times (4-)6–8 μ , subcylindric, with a very short, stipe-

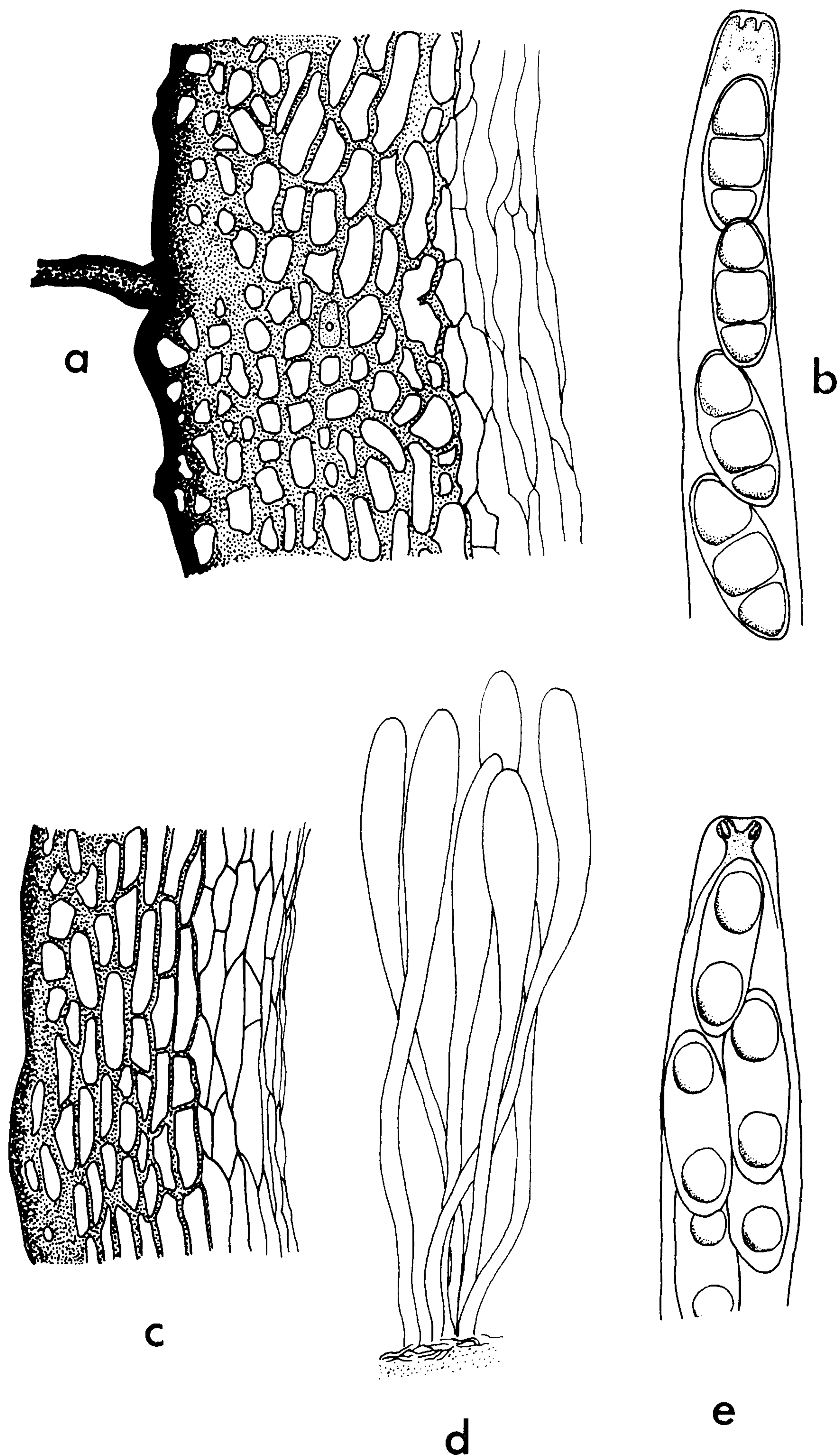


Fig. 2. a–b: *E. cirrhosa*. a, detail of peridium; – b, ascus-top; – c–e: *E. laevirostris*. c, detail of peridium; – d, young asci; – e, ascus-top. a and c $\times 690$, b, d and e $\times 1600$.

like, distinctly rounded part below, rather early loosening. Unripe asci in small bundles, short-clavate. Paraphyses longer than the asci, 3–4 μ thick, septate, flaccid, cells somewhat inflated.

Spores strictly or – most often – obliquely 1-seriate, 7.5–10(–11) \times 3.5–5 μ , oblong-oval, with 2–3(–4) large oil-drops, thus apparently 2–3(–4)-celled. The spore stains but slightly with Cotton Blue.

Collections: 3, 7, 10, 13, 17, 18.

Endoxyla laevirostris n. sp.

Fig. 2 c–e

Perithecia immersa, atra, glabra, 250–300 μ diametro. Ostiola atra, usque ad 1 mm longa, 80–130 μ crassa, plus minusve prominentia, fere cylindracea vel leniter clavata, saepe undulatonodulosa, numquam sulcata. – Peridium 30–35 (–40) μ crassum, ex cellulis applanatis, nigris, 7–14 \times 3–7 μ magnitudine constructum. – Asci 33–45 \times 7–10 μ parte sporifera, initio longe stipitati, ad maturitatem infra partem sporiferam disrumpentes. – Ascosporae biseriatae, 8,5–12 \times 3,5–4,5 μ , oblongae, ad latera strictae vel quidem concavae, duobus guttis oleariis distantibus instructae; substantiam colorantem “Cotton Blue” fortiter absorbentes.

In ligno putridissimo arborum frondosorum, in Dania frequenter collecta.

Typus: Die 12. Oct. 1963 in silva Staksrode prope Juelsminde Jutlandiae collectus.

Perithecia immersed, black, glabrous. Body 250–300 μ diam., subspheric or somewhat flattened at base; ostiole 80–130 μ thick, up to 1 mm long, more or less prominent, subcylindric to slightly club-shaped, not sulcate, but often wavy-nodulose, parabolically rounded at the top.

Peridium 30–35(–40) μ thick, cells rather flattened, 7–14 \times 3–7 μ , with blackish brown, moderately thick walls; a thin surface-crust of thickened, somewhat carbonaceous cell-walls may be present. Pores were never observed in the cell-walls. In the ostiole a small-celled, black texture the cells of which are not conspicuously vertically elongate. Porus 30–40 μ wide, densely periphysate.

Asci 33–45 \times 7–10 μ pars sporifera, loosening, rounded-truncate above with a small apical ring and a distinct “bourelet sous-apical”; a small apical invagination is often seen. Below the spores the ascus is contracted into a tapering, stipe-like part 10–15 μ long; the ascus is not rounded below, it seems to have its stipe broken at the loosening of the ascus. Unripe asci in large bundles, remarkably long-stipitate.

Spores biseriate, 8.5–12 \times 3.5–4.5 μ , oblong, with straight or even concave sides and parabolically rounded ends, with two moderately large, distant oil-drops. The plasma outside the oil-drops stains with Cotton Blue.

Collections: 5, 8 (type), 9, 11.

Endoxyla hyalostoma n. sp.

Fig. 3

Perithecia immersa, 300–400 μ diametro, fere globosa vel leniter angulosa, atra. Ostiola fulvo-subhyalina, pellucida, c. 150 μ crassa, fere cylindracea, plus minusve protuberantia, longitudine usque ad 700–800 μ . Peridium 30–40 μ crassum, cellulis 4–7 μ diametro. Peridium ostioli textura porrecta divergente, cellulis periphericis clavatis, parietibus crassissimis, hyalinis. Asci 30–35 \times 3,5–5 μ , cylindraceo-clavati,

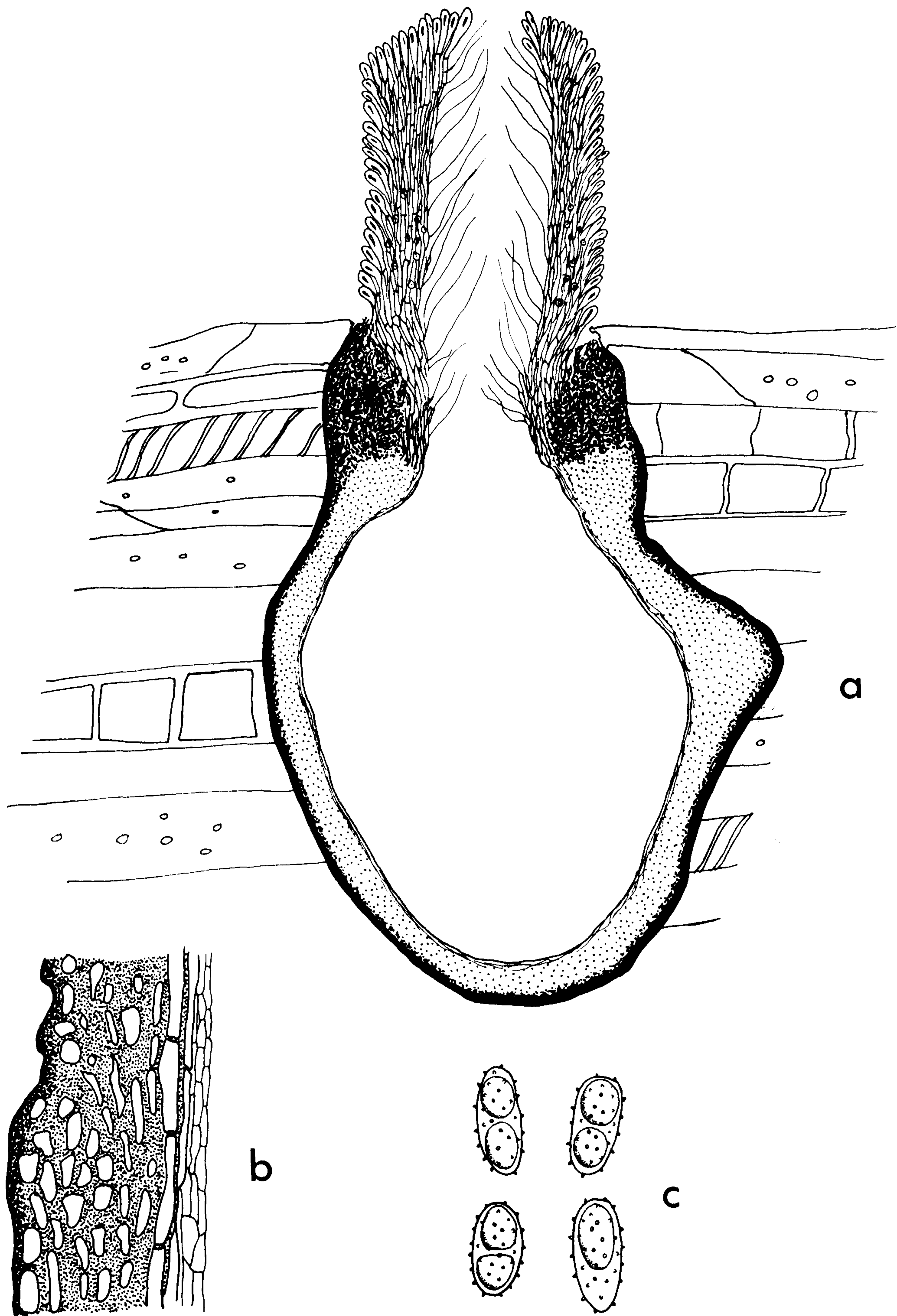


Fig. 3. *E. hyalostoma*. a, longitudinal section of perithecium; – b, detail of peridium; – c, ascospores. a $\times 160$, b $\times 690$, c $\times 1600$.

non stipitati, utrinque rotundati. Ascosporae uniseriatae, $5-6,2 \times 2,6-3,1 \mu$, utrinque late rotundatae, saepe ovoideae, duobus guttis magnis instructis (pseudo-l-septatae). Episporium hyalinum, delicatissime punctato-spinulosum (sub immersione).

In ligno putridissimo arborum diversorum, in temporibus humidis in Dania frequenter collecta.

Typus: Die 15. Dec. 1963 in silva "Ermelunden" prope Hafnias Daniae collectus.

Perithecia immersed, $300-400 \mu$ diam., subspheric or somewhat angular, black. Ostiole ca. 150μ thick, subcylindric, rounded above, more or

less projecting, up to 700–800 μ long, light fulvous, pellucid (ostioles projecting about 200 μ may be mistaken for perithecia of a small *Nectria*).

Peridium 30–40 μ thick, built up of 7–9 layers of rather irregular, 4–7 μ large cells which are thick-walled and dark brown to the outside, thinner-walled and collapsed to the inside. This texture also constitutes the basal portion of the ostiole; the projecting subhyaline portion originates from the inner layers of the peridium with thin-walled cells and is built up of a strongly divergent *textura porrecta* with 8–12 μ thick, clavate, very thick-walled cells at the surface. Porus ca. 50 μ wide, filled with 1–1.5 μ thick periphyses.

Asci loosening, filling the perithecium, 30–35 \times 3.5–5 μ , subcylindric to clavate, without a stipe, rounded below and above, with a delicate apical ring typical of the genus.

Spores strictly 1-seriate to obliquely or transversally 1-seriate, 5–6.2 \times 3.5–5 μ , broadly rounded at the ends, often slightly clavate, with two large oil-drops (pseudo-septate), not constricted. Epispore hyaline, finely spinulose (sub immers.).

Collections: 1, 2, 6, 14 (rich collection, type), 16.

***Endoxyla vestita* (SACC.) n. comb.**

Fig. 4 a–c

Basionym: *Ceratostomella vestita* SACC., *Michelia* 1: 370, 1878.

Synonym: *Lentomitella vestita* (SACC.) v. HÖHNEL, *Ann. Myc.* 3: 552, 1905.

Exs.: REHM *Ascom. exs.*: 891. (Examined by v. HÖHNEL l. c.).

Perithecia immersed with prominent ostioles, black all through. Body spheric, ca. 300 μ diam., sparsely covered with brown, 3–4 μ thick hyphae. Ostiole subcylindric, ca. 100 μ thick.

Peridium 25–30 μ thick, cells 7–8 \times 3–5 μ , often with a small pore in each wall. In the ostiole an irregular tissue of slightly vertically elongate cells with dark brown, very thick walls. Porus 40–50 μ wide, periphysate; the periphyses do not seem to fill the porus.

Asci loosening, filling the perithecium, 35–40 \times 5–6 μ , subcylindric or somewhat ventricose, rounded below, more broadly rounded above, with a minute apical ring and a slight subapical thickening of the wall (“bourrelet sous-apical”).

Spores strictly to partly transversely uniseriate, 5–6.2 \times 2.8–3.1 μ , with two large oil-drops (pseudo-septate), broadly rounded at the ends, indistinctly longitudinally striate; this striation is due to a very peculiar

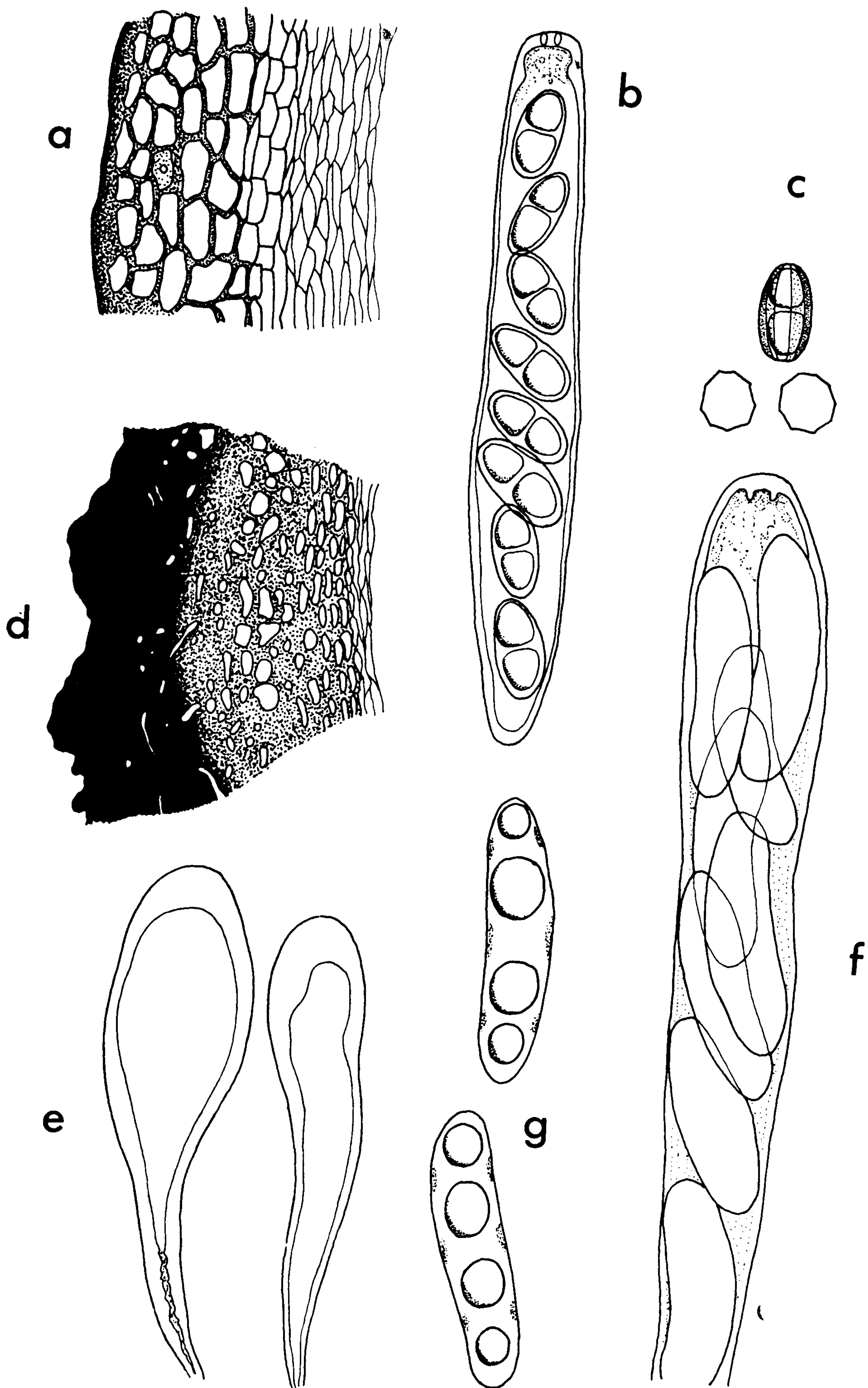


Fig. 4. a–c: *E. vestita*. a, detail of peridium; – b, ascus; – c, ascospores. – d–g *E. excelsior*. d, detail of peridium; – e, young asci; – f, ascus; – g, ascospores. a and d $\times 690$, b, c, e–g $\times 1600$.

phenomenon: Seen from one end, i. e. in optic cross-section, the spore appears as a perfectly regular polygon with generally 9 (8–10) angles. Epispore hyaline, smooth.

Collection: 12.

This fungus is the type of the genus *Lentomitella* v. HÖHNEL l. c. It seems to find a very natural place in *Endoxyla*: Macroscopically and in the peridium characters it can hardly be distinguished from the main bulk

of the genus. And the small asci and spores are so similar to those of *E. hyalostoma* that high-power oil-immersion is necessary to distinguish which is which.

***Endoxyla excelsior* (MOUTON) n. comb.**

Fig. 4 d–g

Basionym: *Ceratostomella excelsior* MOUTON, Compt. rend. Bull. Soc. Roy. Bot. Belg. 36,2: 12, 1897.

Perithecia immersed with prominent ostioles, black all through; body ca. 350 μ diam., spheric, abundantly surrounded by 3–4 μ thick, dark brown hyphae. Ostiole long, wavy, 90–130 μ thick.

Peridium ca. 25 μ thick, more or less distinctly plectenchymatous, especially to the outside, with heavily carbonized and very thick cell-walls; cells 2–4 μ thick. In the ostiole a blackish brown, very dense textura intricata-porrecta with 2–3 μ thick elements. Porus 30–35 μ wide, almost filled with very thin, entangled periphyses.

Asci 60–80 \times 6–8 μ , rather easily loosening, pointed below; clavate and very thick-walled when young. Paraphyses abundant, apparently tapering from 3–4 μ to 1–2 μ in thickness.

Spores 1–2-seriate, 13–17 \times 3.5–4 μ , subballantoid, slightly narrower towards the ends, with 3–4 distant oil-drops, hyaline.

Collection: 4. – The fungus was found again on the very same log on 14. v. 1964.

MOUTON's original diagnosis (l. c.) has: “– ascis oblongo-cylindraceutis, apice truncatis, filiforme stipitatis – –; sporidiis biseriatis, oblongis, obtusis, rectis vel leniter curvulis, 2–4 (vulgo 3)-guttulatis, 14–17 \times 4 μ . – – A ceteris sporidiis majoribus dignoscitur.” The rest of the diagnosis fits in reasonably well with my notes, but does not give very important diagnostic information. The accordance with the above description is so obvious that I do not hesitate to identify my fungus with MOUTON's.

***Endoxyla parallela* (FR.) FÜCKEL**

Fig. 5

Synonyms, vide MÜLLER & VON ARX 1954: 354.

Perithecia more or less immersed, ca. 350 μ diam., more or less covered with 3–7 μ thick, black, wavy hyphae, especially on the ostiole. Ostiole long and projecting, wavy, but hardly sulcate, ca. 135 μ thick.

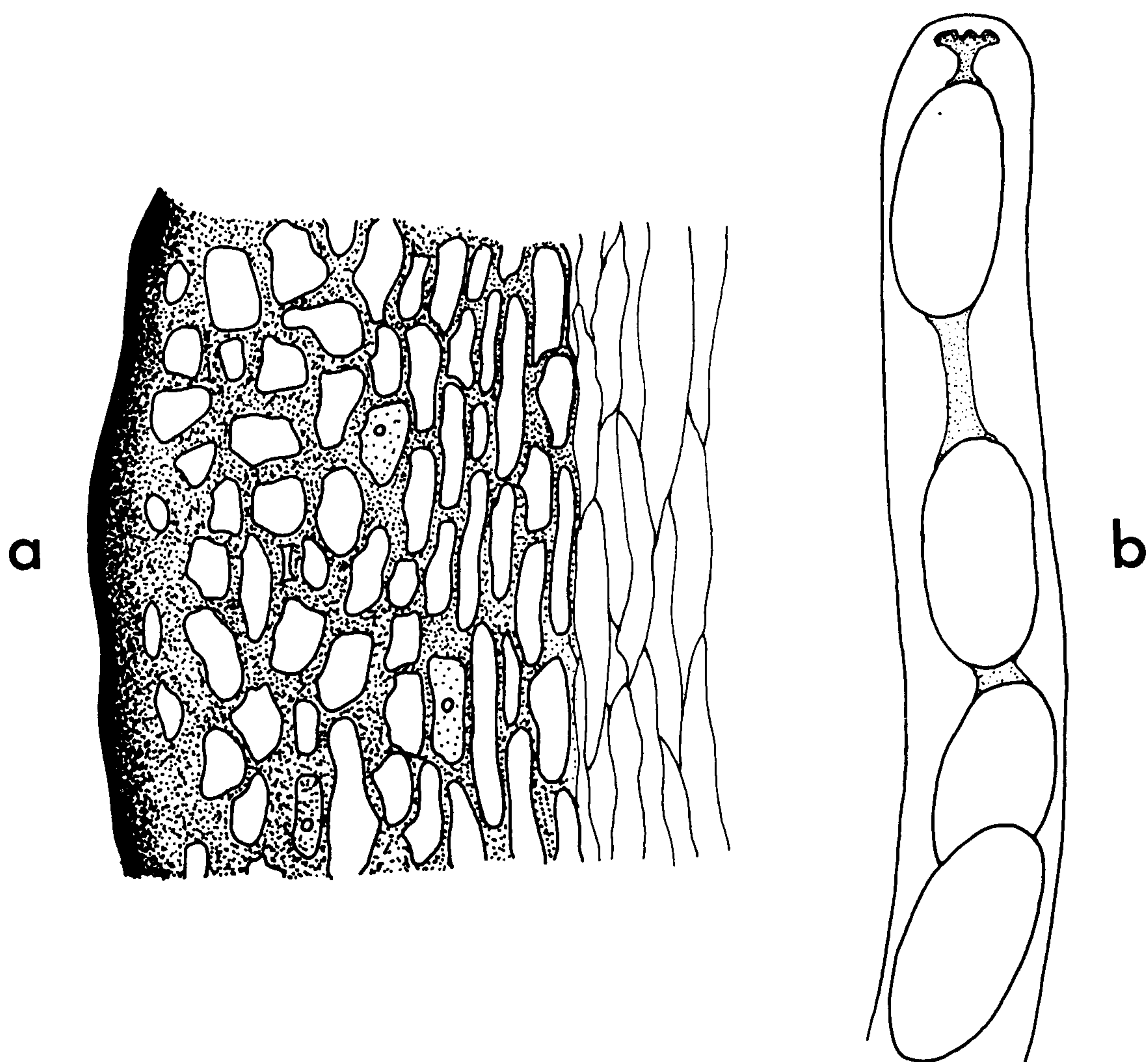


Fig. 5. *E. parallela*. a, detail of peridium; –
b, ascus-top. a $\times 690$, b $\times 1600$.

Peridium 45–70 μ thick; cells 11–18 \times 5–7 μ , subisodiametric to the outside, more flattened to the inside; cell-walls dark brown, moderately thick-walled, hardly carbonized, often with pores. Inside a hyaline, large-celled tissue with mostly empty cells and very thin, flaccid cell-walls. Near the ostiole, the cells of this tissue are filled with protoplasm; they are continuous with a periphysis-bearing cushion of much smaller cells below the porus. In the ostiole a coarse, brown textura porrecta to the inside, cells 4–5 μ thick; to the outside carbonized, more isodiametric cells. Pores ca. 60 μ wide, lined with articulate, ca. 2 μ thick hyaline periphyses.

Asci 66–75 \times 6.5–7.5 μ , with a small, distinct apical ring and a very pronounced “bourrelet sous-apical” (and similar inwards swollen parts of the ascus-wall at the spore-intervals). Paraphyses abundant, very long, articulate, with inflated cells, 5–8 μ thick. The asci spring from the bottom of the perithecium; it seems that they remain fixed to the ascogenous tissue for a long time, in spite of the rounded base they show when they are loosened.

Spores 1-seriate, 9–11 \times 4.5 μ , oblong with broadly rounded ends, brown, centrally or terminally uniguttulate. No germ pore or slit observed.

Collection: 15.

Discussion

The following generic diagnosis can be derived from the present investigation:

Endoxyla FÜCKEL, emend. MÜLLER & VON ARX.

Saprophytes of second or higher incidence on very rotten wood. Mycelium not very dense, often composed of heavily pigmented hyphae. Perithecia most often immersed with long, partly prominent ostioles. The ostioles are typically black and brittle, rarely subhyaline and cartilaginous. Peridium typically a brownish black *textura prismatica*; pores in the cell-walls present in some species, absent in others; a more or less plectenchymatic structure occurs. – Asci in most species short-clavate when young, becoming more or less cylindrical with a very short, rounded stipe, easily loosening. In a single species the young asci are very long-stipitate. Ascus-top with a small, but distinct ring. – Ascospores guttulate, single-celled, in certain species apparently septate because of large oil-drops, brown or – most often – hyaline. Spore-wall smooth, more rarely spinulose or angular.

The material investigated gives some support for the hypothesis that the genus in its present sense is a natural one, in spite of the fact that each species displays characters which might be considered a priori to be important enough for generic segregation – e. g. the brown spore of *E. parallela*, the angular spore of *E. vestita*, and the hyaline ostiole of *E. hyalostoma*: When all characters are considered, it appears that every species has most of its characters in common with a good deal of the other species. This is particularly true for the four species *E. parallela*, *E. cirrhosa*, *E. vestita*, and *E. hyalostoma*. For *E. laevirostris* and *E. excelsior* certain reservations must be taken:

E. laevirostris: The very long-stipitate young asci may indicate an important morphological difference between this species and the main bulk of the genus.

E. excelsior: The plectenchymatous peridium is quite different from the other species, and so are the very thick-walled young asci. I have seen similar thick-walled ascus-primordia in certain species which I am inclined to refer to *Calosphaeria*; some of these have the asci situated more or less in a single layer and not, as usual in the genus *Calosphaeria*, springing in different heights from long, branched ascogenous hyphae (cp. e. g. MUNK 1957: 278). However, I cannot at present with any

conviction refer this species to *Calosphaeria*; I am rather inclined to expect that *Calosphaeria* can be derived from some group in the vicinity of *Endoxyla*.

The peculiar pores in the cell-walls of the peridium look like the pores observed in *Coronophorales* (MUNK 1953: 96; 1957: 288) and in *Sordariaceae* (CARROLL & MUNK 1964: 86,88). This character alone seems to have no primary taxonomic value: First, it has now appeared to occur in widely different taxa – it does not seem possible to establish a relationship of *Endoxyla* neither with *Coronophorales* nor with *Sordariaceae*. Secondly, in one species of *Coronophorales* the pores seem to have an important physiological function in rendering the peridium very quickly water-absorbent (cp. the principles for taxonomic evaluation of characters previously discussed (MUNK 1962)).

The tendency of inwards swelling of the ascus-wall (“bourrelet sous-apical” etc.), which is so pronounced in the type species, varies very much within the genus; e. g. *E. cirrhosa* has a permanently thin-walled ascus. Now, just *E. cirrhosa* is in all other respects more like *E. parallela* than any other of the species here described, so the present observations on ascus-walls clearly indicate that the character “bourrelet sous-apical” is a character of inferior morphological value – in this part of the system, at least.

The genus *Endoxyla* is generally supposed to belong in *Diaporthaceae*. I placed it in subfam. *Rhamphorioideae* (1953, 1957) together with *Zignoëlla*, *Ceratosphaeria*, *Rhamphoria*, and (1957) *Debaryella*. With my present knowledge, this arrangement seems very dubious to me; in particular, *Debaryella* has certainly nothing to do with *Endoxyla*. Now, *Endoxyla* is the genus in “*Rhamphorioideae*” which is most likely to be a member of *Diaporthaceae*, inasmuch as it has small, loosening asci, a character generally believed to be a good diagnostic character for the family. It must be considered, however, that this character is the morphological manifestation of a type of spore discharge; the consequence is that it should be taken cum grano salis as a taxonomic criterion (cp. MUNK 1962), especially as *E. laevirostris* seems to represent a way to this type of spore discharge which is different from that of the other species. Furthermore, the occurrence of a hyaline ostiole on a black perithecium in the *Endoxyla* pattern of variation is quite a unique phenomenon in the Pyrenomycetes and raises some doubt about any close relationship with other genera; the same is true for the occurrence of angular spores. Thus, concerning the possible relationship of *Endoxyla* to other taxa the present paper can only add to the doubts.

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