mostly with the length of the pedicel. According to Cain (1934) C. Moreau (1953), and Mirza & Cain (1970) the caudae are longitudinally striate, but this phenomenon cannot be observed on the material I have seen. The authors do not seem to have had the longitudinal furrow in mind as it is not shown on their drawings. *P. pyriformis* may be close to *P. dasypogon*, from which it is easily distinguished by the more or less glabrous perithecia and longer spore pedicel.

10. *Podospora intestinacea* Lundq. n. sp. (Figs. 27, 28, pl. 23, 24 a–c)

Perithecia obpyriformia, 725–1200 × 400–625 μ, pilis flexuosis, olivaceo-brunneis ± sparse obtecta. *Peridium* membranaceum, semipellucidum vel subopacum, olivaceo-brunneum, tristratum, in collo nigrum carbonaceum, cellulis externis angulatis vel rotundatis, saepe inflatis, 4–8 μ diam. *Paraphyses* breves, crassae. *Asci* 8-spori, 360–420 × 55–70(–85) μ, clavati, longe stipitati, apicaliter late rotundati, sine annulo apicali. *Sporae* biseriatae, maturitate bicellulares; cellula superior nigro-brunnea, (43–)50–68 (72) × 22–32 μ, ellipsoidea, modice inaequilateralis, poro germinali subapicali instructa; pedicellus hyalinus, attenuatus, 22–30 × 12–14 μ, saepe persistens. *Cauda gelatinosa* apicalis 110–140 × 17–20 μ, proximaliter segmentata, in aqua prolongans et tumescens; basis caudae et pars apicalis sporae strato gelatinoso cinctae; cauda basalis pedicellum cingens, 90–140 × 15–18 μ, in aqua prope extremum pedicelli rumpens, prolongans et tumescens, parte medio segmentata; ambae caudae demum 250–400 (–500) × 20–28 μ attenuatae vel partim cylindraceae, distaliter persistentes et non inflatae, sulcatae. — Fimicola.

Perithecia non-stromatic, ostiolate, scattered or gregarious, immersed to almost superficial, ovoid, finally obpyriform, 725–1200 × 400–625 μ, with a long cylindrical neck, 190–400 × 145–200 μ, at first sparingly covered, especially above, with short, flexuous, olivaceous brown, ramified, septate, c. 2 μ thick hairs, later ± glabrous. *Peridium* 50–60 μ thick, pseudo-parenchymatous, membranaceous, semi-transparent to almost opaque, olivaceous brown, except in the black, carbonaceous neck, provided also with reddish brown, scattered patches, 3-layered; outer peridial cells angular to rounded, of irregular shape, rather thick-walled, 4–8 μ in diam., slightly inflated; middle layer composed of tangentially flattened, yellowish, thick-walled cells. *Paraphyses* in the form of short chains of vesicular cells, dissolving. *Asci* 8-spored, 360–420 × 55–70(–85) μ, clavate, with a broadly rounded apex and a c. 200 μ long stipe, unitunicate, non-amyloid, costate after dehiscens; no apical ring or light-refractive membrane. *Spores* biseriate, at first hyaline, one-celled, fusiform-obovoid, then clavate, transversely uniseptate; upper cell ranging through ochraceous, olivaceous to black-brown, smooth, ellipsoidal, slightly inequilateral, (43–)50–68(–72) × 22–32 μ, truncate at the base, with a subapical germ pore; septal pore present; pedicel hyaline, tapering, 22–30 μ long, 12–14 μ wide at the septum, 6–7 μ at the end, with some remaining plasma, but finally collapsing. Apical *gelatinous cauda* 110–140 × 17–20 μ, not covering the germ pore, extending and swelling in water, segmented in the proximal half, with a "granulate" microstructure at the base; this portion and the apex of the spore covered by an up to 40 μ broad rounded sheath; basal cauda surrounding the pedicel and base of the spore head, 90–140 × 15–18 μ, bursting in water at the end of the former, leaving a collar, extending and swelling, with a segmented intestiniform middle portion and a "granulate" microstructure at the end of the pedicel; both caudae after extension reaching 250–400(–500) × 20–28 μ, tapering, partly cylindrical with non-inflated, lash-

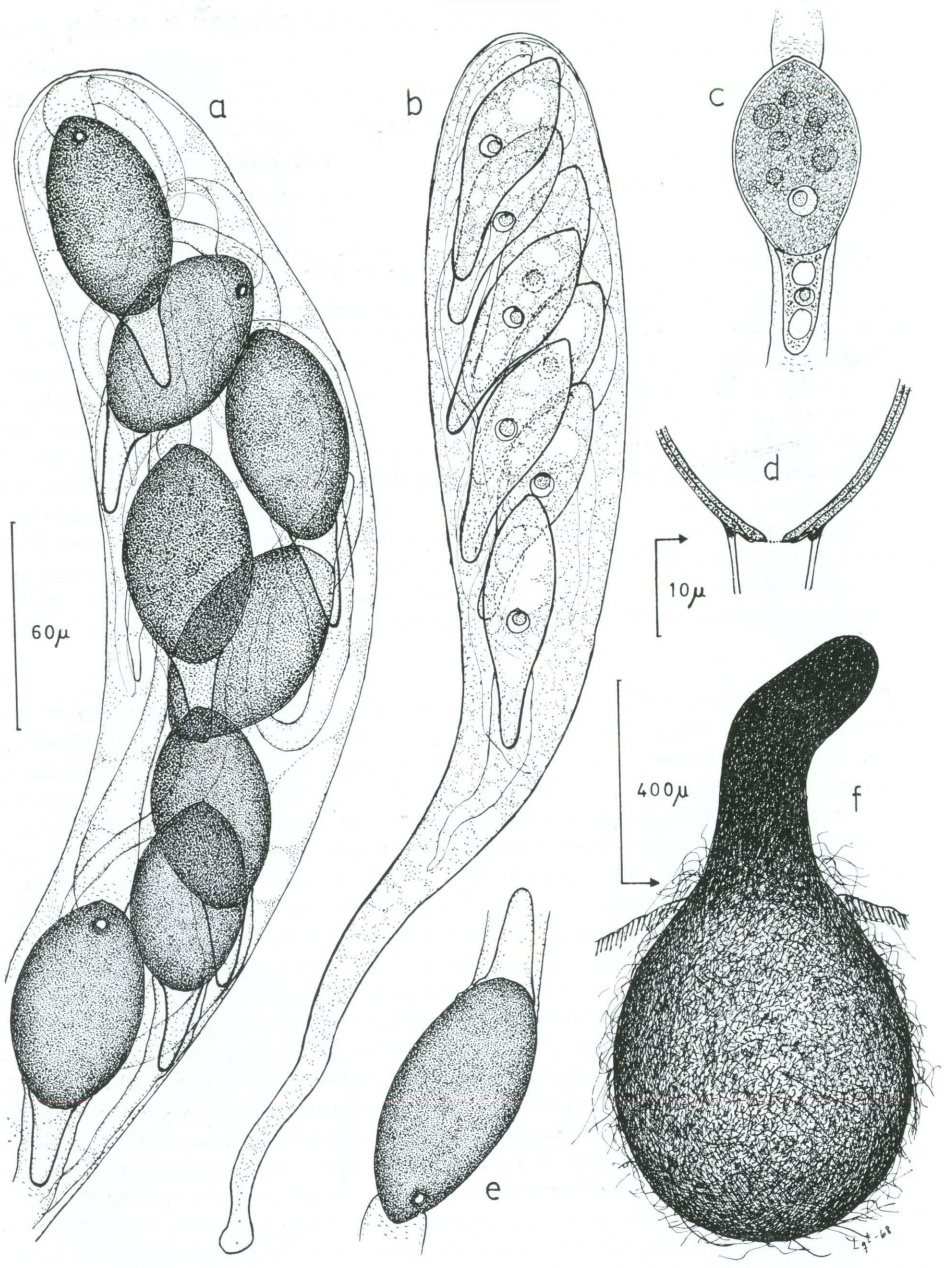

Fig. 27. *Podospora intestinacea*. *a–c, f:* S 19751-b (UPS). *d, e:* Holotype (UPS). Drawn from living specimens (*a–c, f*) and lactophenol mounts (*d, e*). *a:* Mature ascus and spores. *b:* Immature ascus and spores showing nuclei. *c:* Young spore at ochraceous-olivaceous stage showing nuclei, oil drops, and vacuols. *d:* Spore septum with pore. *e:* Mature spore. *f:* Old perithecium with elongated neck.

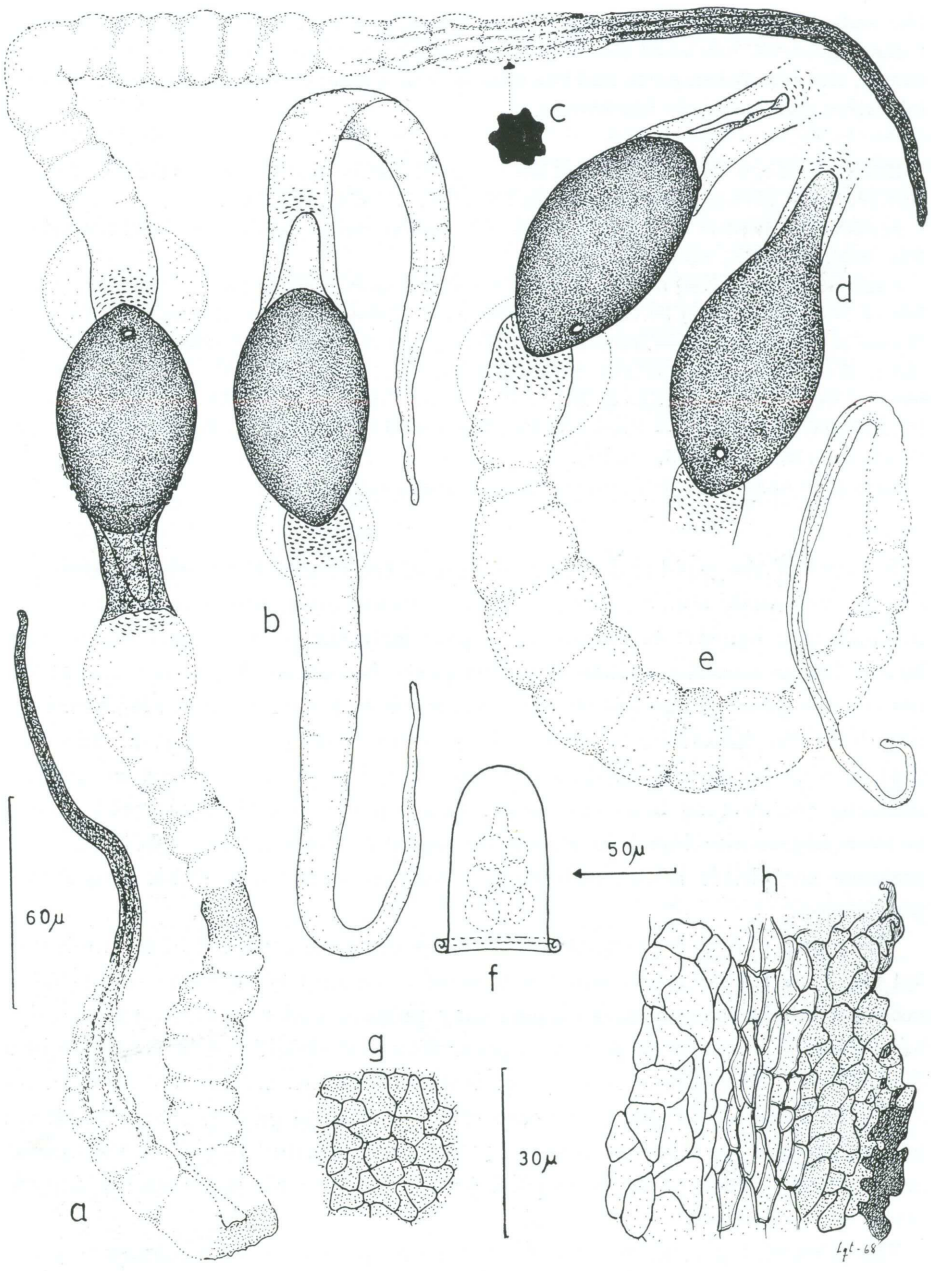

Fig. 28. *Podospora intestinacea*. S 19751-b (UPS). Drawn from living specimens. *a–e:* Mature spores. *a:* Spore with elongated caudae in Indian ink showing blackened portions. *b:* Spore before elongation of caudae. *c:* Cross-section of cauda. *d:* Abnormal spore pigmented throughout and without septum. *e:* Spore with extended upper cauda and collapsed pedicel (Indian ink mount). *f:* Ascus tip after spore discharge. *g:* Outer peridial layer in horizontal view. *h:* Longitudinal median section of peridium from middle part of perithecium; outside to the right.

like ends, circular in cross-section but with a crenulate margine owing to a few longitudinal grooves, furnished also with numerous, inner, longitudinal, indistinctly visible canals; the segmented parts and the sheath with a diffuse contour, hyaline in Indian ink, other parts strongly blackening.

Holotype on cow dung from NE of the mouth of Stabiacco River, Porto-Vecchio, Corsica, 16.v.1965, Lqt 4448-m (UPS); isotypes in IMI slide, NY slide, S, TRTC.

PARATYPES: **Sweden:** *Vg*, Rongedala, E of Rongedala railway station (h) 1960, Lqt 2426-a, Exs. ined. (BP, BR, SOM, UC, UPS).

England: [loc. illegible] (c, sic!) III.1915, hb. Grove as *S. fimiseda* (K). — **Scotland:** *Argyll*, Isle of Mull, Calgary (c) 30.VII.1968, Dennis as *S. globosa* (K); Isle of Ulva (h) 17.VI.1969, Dennis as *Sordaria* (K). — **Ireland:** *South Kerry*, Gap of Dunloe (sh) 1968, S 19673-k (UPS slide). *West Galway*, Connemara (h) 1968, S 19751-b (M, PAD, UPS). — **Spain:** *Asturias*, between Cabo Prieto and Cabo de Mar, NW of Posada (h) 1959, Lqt 1866-g (UPS). — *Burgos*, 10 km WSW of Miranda de Ebro (h) 1959, Lqt 1944-d (UPS slide). — **Corsica:** *Evisa*, Col de Vergio (c) 1965, Lqt 4533-e (UPS).

CHOICE OF SUBSTRATE: 10 finds: on dung of horse 5, cow 4, sheep.

Because of the rapid and strong swelling of the caudae their original form and size are not easily studied, and the measurements given are approximative. The portions that blacken in Indian ink, particularly the collar around the pedicel, have a firmer consistence than the other parts. No distinct collar is found at the base of the apical cauda, but there is rupture there too. In both cauda the transition from the intestiniform section to the firm distal part is gradual. It seems that the caudae have a rigid outer membrane that partly dissolves or ruptures releasing the swelling inner substance. This construction of two-layered caudae is even higher developed in *Podospora gigantea* Mirza & Cain, where the two portions are visible before rupturing. I hope to demonstrate this in a future publication.

The septal pore is a phenomenon that has not been reported in the literature for the *Sordariaceae* s.lat., and yet it should not be too rare since it probably occurs in all hyphal septa. This pore may perhaps under certain circumstances have evolved to a real germ pore, a possibility that should not be forgotten in a discussion of the origin of *Arnium* (p. 209). Another interesting feature in *P. intestinacea* is the occasional occurrence of two subapical germ pores (Lqt 4448-m; see the chapter on *Andreanszkya*, p. 203). Other aberrant details in the species are a lateral position of the germ pore, non-septation of the spore, and a pigmentation of the pedicel.

The persistent plasma in the pedicel is a rare phenomenon in *Podospora* sensu meo, found to my knowledge only in *P. intestinacea* and *P. prethopodalis* Cain. These species are closely related, united also by the broad-tipped asci without apical apparatus and by similarly constructed caudae.