

# Three New Species of Sporormia

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The new species *Sporormia borealis* I. Egel., *S. scandinavica* I. Egel., and *S. irregularis* I. Egel. are described on material from Norway .

The coprophilous fungus flora of Norway has never been the subject of a serious study. The present paper is the first of a series intended to cover the pyrenomycetous species that have so far been discovered in Norway.

Mostly the fungi have developed within a few weeks by placing the dung in moist chambers.

Specimens of the species described are deposited at the Botanical Museum, University of Oslo (O).

## SPORORMIA BOREALIS Egel. sp. nov.

(Fig. 1)

Pseudotheciis sparsis, immersis, erumpentibus, semiglobosis, 380-540×300-450  $\mu$ , atro-brunneis usque nigris, opacis, crassis parietibus coriaceis, denudatis. Collo cylindraceo, 170-300×90-140  $\mu$ , pallido-olivaceo, pertenuibus parietibus, translucido, cellulis prominentibus,

denudato. Parafysoidibus ventricosis, ascis superantibus. Ascis octosporis, cylindraceis, bitunicatis, 220-280×39-44  $\mu$ , superne late rotundatis, apice evidenter magni perforatis, per breviter stipitatis. Ascosporis oblique 2-3-seriatis, cylindraceis, 92-114×18-21  $\mu$ , 4-cellularibus, utrinque late rotundatis, initio hyalinis, olivaceis, dein atro-brunneis et opacis, Cellula secunda parum majore, 1-1.5  $\mu$ , leniter constrictis. Cellulis plus minus cohaerentibus, strato mucoso hyalino crasso, in aqua fumescente, obductis. Striis germinationis longitudinalis vel leniter obliquis.

In fimo vaccino, ex Hovden, Bykle, Aust-Agder, Norwegia, in laboratorio culta. Collect 244 J. Egel. (O).

Pseudothecia scattered, immersed, erumpent when ripe, globose to pyriform, 380-540  $\mu$  high and 300-450  $\mu$  wide. Peridium very dark

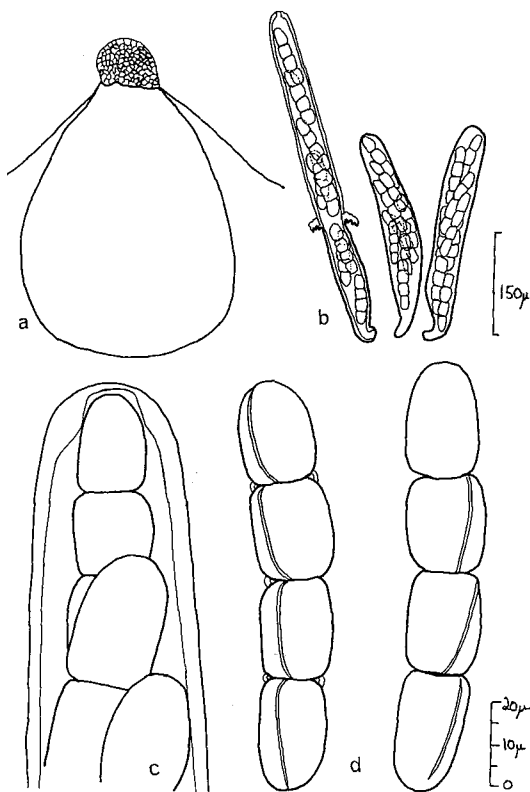


Fig. 1. *Sporormia borealis* I. Egel. (a.) pseudothecium with translucent neck. (b.) asci. (c.) top of ascus. (d.) spores.

brown to nearly black and opaque, thick and coriaceous, glabrous. Neck cylindrical  $170-300 \times 90-140 \mu$  glabrous, pale olivaceous, thin walled, membranaceous, pseudoparenchymatous.

Paraphysoids ventricose, slightly longer than the asci. Asci cylindrical, bitunicate,  $220-280 \times 39-44 \mu$ , broadly rounded above with a big apical pore, short stipitate, with eight spores arranged in two or three series. Spores four-celled, cylindrical, broadly rounded at each end,  $92-114 \times 18-21 \mu$ , at first hyaline to olivaceous, then dark brown and opaque when ripe. The second segment is slightly broader than the others. Constrictions at the septa are broad and shallow. The segments do not easily separate. The spores are surrounded by a broad, hyaline, gelatinous sheath, which swells in

water. Germ-slits prominent, parallel to the length of the spores, but sometimes nearly diagonal.

#### Specimens examined

Norway: Aust-Agder: Bykle, Hovden 800 m above sea level, 31 July 1962. Developed on cow-dung after one week in moist chamber. I. Egeland No. 244, Type! (O). Oppland: Dovre, Moldalen farm, 520 m above sea level 2 August 1963. Developed on cow dung after two weeks I. Egeland No. 358 (O).

#### Comments

*Sp. borealis* is close to *Sp. gigantea* Hansen and *Sp. ovina* (Desm.) Sacc. I have seen no type material of these species, but, according to the description (Hansen 1877) the asci of *Sp. gigantea* are clavate, and the neck is black.

Pirotta (1878) and Masee & Salmon (1901) regarded *Sp. gigantea* as synonymous with *Sp. ovina*. Under the latter name, Masee & Salmon (op. cit.) described the species as having cylindrical asci and a black neck.

Accordingly, *Sp. borealis* differs from both species in its translucent neck.

*Sp. longispora* Cain (Cain 1934) has narrower spores and clavate asci. *Sp. spegazzinii* Pirotta has broader spores, and *Sp. megalospora* Auersw., has smaller spores and clavate asci.

#### SPORORMIA IRREGULARIS I. Egel. sp. nov. (Figs. 2, 3)

Pseudotheciis sparsis, immersis, subglobosis,  $230-260 \times 200-220 \mu$ , flavo-brunneis, tenuibus, membranaceis, translucidis, denudatis. Collo cylindraceo,  $180-300 \times 90-110 \mu$ , atro-viridi usque nigro, denudato. Parafysoidibus ventricosis, septatis, ca.  $5 \mu$  crassis, ascis superantibus. Ascis octosporis, cylindraceis vel clavatis, bitunicatis,  $170-195 \times 35-42 \mu$ , superne late rotundatis, apice perforatis, breviter stipitatis. Ascosporis oblique 2-3-seriatis, cylindraceis, rectis vel curvatis, 4-cellularibus,  $50-58 \times 10-13.5 \mu$ , atro-brunneis, superne conicis vel rotundatis, inferne late rotundatis, plus minus oblique septatis, leniter constrictis, cellulis cohaerenti-

bus, strato mucoso hyalino angusto obductis. Striis germinationis longitudinalis.

In fimo vaccino, ex Hovden, Bykle, Aust-Agder, Norvegia, in laboratorio culta. Collect 244 I. Egel. (O).

Pseudothecia scattered, immersed, nearly globose, 230-260  $\mu$  high and 200-220  $\mu$  wide. Peridium yellowish brown, thin, translucent, membranaceous, glabrous. Neck cylindrical 180-300 $\times$ 90-110  $\mu$ , dark green to black, glabrous.

Paraphysoids ventricose, septate, measuring 5  $\mu$  in diameter. Asci cylindrical to clavate, bitunicate, 170-195 $\times$ 35-42  $\mu$ , broadly rounded above, with apical pore, tapering gradually to a short stipe, with eight spores arranged in two or three series.

Spores four-celled, cylindrical, slightly bent, 50-58 $\times$ 10-13,5  $\mu$ , dark brown, conical above and rounded below. Septa straight or oblique. Constrictions wide and shallow. The segments do not easily separate. Germ-slits short, parallel to the length of the spores. The spores are surrounded by a hyaline, gelatinous sheath.

#### *Specimens examined*

Norway: Aust-Agder: Bykle, Hovden 31 July 1962. Developed on cow-dung after three weeks in moist chamber. I Egel and No. 244, Type! (O).

#### *Comments*

The species is characterized by the septa of the spores, some being straight, some oblique. In size of spores the species is closest to *Sp. intermedia* Auersw., which, however, has different pseudothecia.

**SPORORMIA SCANDINAVICA** I. Egel. sp. nov. (Fig. 4).

Pseudotheciis sparsis, semiimmersis, subglobo-sis usque piriformibus, 230-460 $\times$ 200-385  $\mu$ , atro-brunneis, parietibus mediocriter crassis,

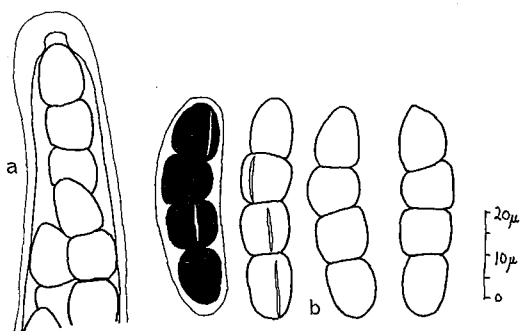


Fig. 2. *Sporormia irregularis* I. Egel. (a.) top of ascus. (b.) spores.

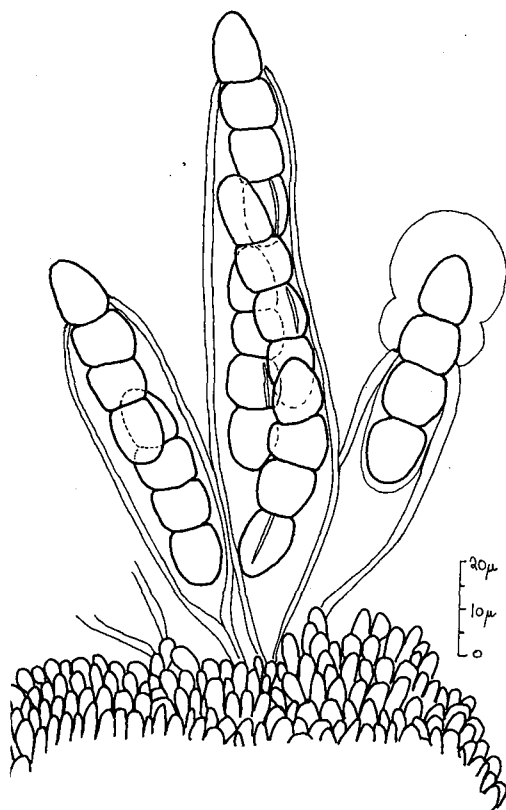


Fig. 3. *Sporormia irregularis* I. Egel. top of pseudothecium with erumpent ripe asci.

membranaceis usque coriaceis, opacis, denudatis. Collo brevi, cylindraco, 100-375 $\times$ 75-150  $\mu$ , nigro, denudato. Parafysoidibus destitutis. Ascis octosporis, clavatis vel cylindracois, bitunicatis, 180-200 $\times$ 30-35  $\mu$ , superne late rotun-

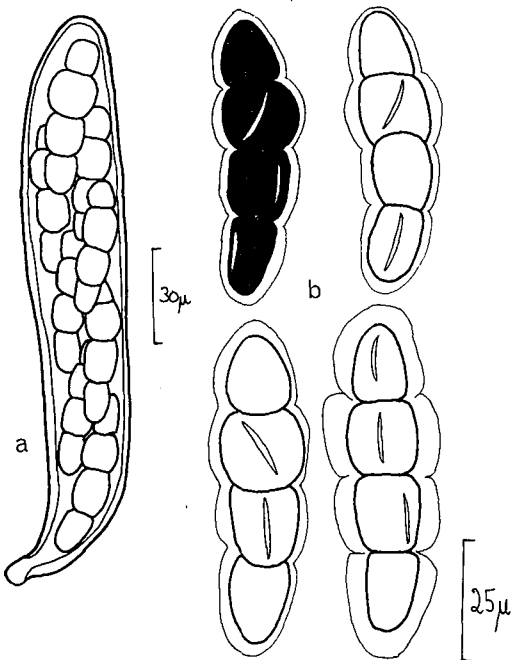


Fig. 4. *Sporormia scandinavica* I. Egel. (a.) ascus. (b.) spores.

datis, longiuscule stipitatis. Ascosporis supra 2-3-seriatis, infra 1-seriatis, cylindraceutis usque clavatis, 4-cellularibus,  $57-70 \times 13-17.5 \mu$  atro-brunneis, utrinque rotundatis vel usque conicis. Cellula secunda majore, leniter constrictis, articulis plus minus cohaerentibus, strato mucoso hyalino angusto, in aqua fumescens, obductis. Striis germinationis longitudinalis, sed in cellula secunda plus minus diagonalibus.

In fimo ovino, ex Oppdal, Sör-Trøndelag, Norvegia, in laboratorio culta. Collect 262 J. Egel. (O).

Pseudothecia scattered, semi-immersed, globose to pyriform,  $230-460 \mu$  high and  $200-385 \mu$  wide. Peridium dark brown and opaque, thick and coriaceous, glabrous. Neck short cylindrical,  $100-375 \times 75-150 \mu$  black, smooth without hairs.

Paraphysoids not seen. Asci clavate to cylindrical, bitunicate,  $180-200 \times 30-35 \mu$ , broadly rounded above, tapering gradually to a short or

long stipe, with eight spores arranged in two or three series above and one series below.

Spores four-celled, cylindrical to clavate,  $57-70 \times 13-17.5 \mu$ , dark brown, rounded to conical at each end, the second segment is longer and broader than the others. Constrictions broad and shallow at the septa. The segments do not easily separate. The spores are surrounded by a hyaline, gelatinous sheath, which swells in water. The germ-slits are short, parallel to the length of the spores, but in the second segment they are often nearly diagonal.

#### *Specimens examined*

Norway: Sör-Trøndelag: Oppdal: Hemre Gjevilvasskam, 1300 m above sea level 9 August 1962. Developed on sheep-dung after 25 days in moist chamber. I. Egel and No. 262, Type! (O). Nord-Trøndelag: Nordli: Southwest of Otersjøen, on cow-dung. N. Lundqvist No. 3435 f. (UPS).

#### *Comments*

The species is characterized by the second cell of the spore being larger than the others, and by the germ-slits being parallel with the long axis of the spore in all cells except the second one.

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