This species resembles *S. longispora* in a number of ways but can be distinguished from it by certain important and characteristic differences. The arrangement of ascospores in these two species is different. In *S. longispora* four ascospores are arranged in a parallel fashion, more or less at an equal level in the upper part of the ascus, the remaining four are at different levels below the level of the uppermost group. In *S. longisporopsis* the ascospores are somewhat obliquely arranged, one spore at the highest level, then the second, third, and fourth overlapping in succession. The ascospores of *S. longispora* spread easily when the asci are mounted on a slide in lactophenol while those of *S. longisporopsis* possess a tendency to stick together. The ascospore cells of *S. longispora* are rectangular in an optical section and separate less readily, whereas in *S. longisporopsis* the corners of the cells are distinctly rounded. The ascospore septation may be slightly oblique in *S. longispora* but in *S. longisporopsis* it is strictly transverse.

35. ***Sporormiella megalospora*** (Auersw.) Ahmed & Cain, comb. nov. Figs. 90–93

BASIONYM: *Sporormia megalospora* Auersw., Hedwigia, 7: 68. 1868.

Perithecia scattered or aggregated in small groups, immersed when young, becoming more or less superficial when old, subglobose, 300–450 μ in diam, smooth, bare, dark brown to black; neck short cylindrical or occasionally elongated, smooth, bare, black. Peridium thin, slightly coriaceous. Asci eight-spored, cylindrical-clavate, 180–220(–250) × 30–40 μ, broadly rounded above, broadest near the apex, gradually narrowing below into a short, stout stipe. Paraphyses abundant, filiform, septate, constricted at the septa, guttulate, longer than the asci and mixed with them. Ascospores bi- to tetra-seriate, four-celled, fusiform-cylindrical, 65–80(–85) × 15–18 μ, hyaline at first, ranging through yellowish brown to dark brown and opaque; septa transverse; constrictions at septa broad and deep; segments easily separable; terminal cells nearly ovoid, slightly longer than the mid-cells, which are barrel-shaped, germ slit diagonal; gelatinous sheath hyaline, broad.

HABITAT: On dung of carnivore, cow, horse, moose, rabbit, and sheep.

TYPE: Europe.

SPECIMENS EXAMINED: CANADA: Alberta, TRTC 38989, 39018. Ontario: Algoma Dist., TRTC 35863. Bruce Co., RFC 6152. Brant Co., RFC 5378, 6147, 6569. Haliburton Co., RFC 6157. Halton Co., RFC 6348. Manitoulin Dist., RFC 6155. Muskoka Dist., TRTC 35899, 35907. Nipissing Dist., RFC 6153, 6154, TRTC 5367. Oxford Co., RFC 6156, TRTC 5375. Timiskaming Dist., TRTC 36095. York Co., RFC 6145, 6146, TRTC 39218. Quebec: Gaspé East Co., TRTC 36430. Montmorency Co., TRTC 36372. EUROPE: With *Sporormia ambigua* Niessl, *Niessl* 823 (G). MEXICO: San Luis Potosi, TRTC 39826. UNITED STATES: Arizona: Coconico Co., TRTC 32020. Colorado: Chaffee Co., TRTC 38052, 38118. Teller Co., TRTC 37404. Iowa: Washington Co., RFC 6720. Kansas: Rooks Co., TRTC 39341, 39343, 39345. Montana: Yellowstone Co., TRTC 36856. Nevada: Elko Co., TRTC 35732. South Dakota: Meade Co., TRTC 39424, 39430, 40151. Wyoming: Big Horn Co., TRTC 40631. Crook Co., TRTC 39067. Park Co., TRTC 39054.

A large number of collections of this species were examined from Ontario, United States, and Mexico. A pronounced variation was found in the ascospore dimensions of specimens collected from Ontario (70–85 × 15.5–18.0 μ) as compared with those of United States and Mexico (65–70 × 15–17 μ). There was no other difference observed.

36. ***Sporormiella minima*** (Auersw.) Ahmed & Cain, comb. nov. Figs. 24–26

≡ *Sporormia minima* Auersw., Hedwigia, 7: 66. 1868.

= *Sporormia evallata* Pass., Nuovo Giorn. Bot. Ital. 7: 190. 1875.

= *Sphaeria multifera* Berk. & Rav., Grevillea, 4: 143. 1876.

≡ *Philocopra multifera* (Berk. & Rav.) Sacc., Syll. Fung. 1: 251. 1882.

Perithecia scattered or loosely aggregated, immersed when young, becoming nearly superficial when old, subglobose to nearly pyriform, 100–200 × 90–120 μ, smooth, bare, dark brown to nearly black; neck small, papilliform, smooth, bare, black. Peridium thin, membranaceous. Asci eight-spored, short and broad, more or less cylindrical, (80–)90–100 × 13–18 μ, broadly

rounded above, broadest part below the middle, abruptly contracted below into a very short stipe. Paraphyses scanty, filiform, septate, equalling the asci and mixed with them. Ascospores obliquely bi- or tri-seriate, four-celled, cylindrical, 28–32(–34) × 5–6 μ, broadly rounded at the ends, straight or curved, ranging from hyaline when young through yellowish brown to dark brown and opaque, transversely septate; constrictions at septa broad and deep; segments readily separable at the central septum, easily separable at the other septa; cells nearly equal in size; terminal cells very slightly narrower toward the ends; germ slit nearly parallel with a kink near the middle; gelatinous sheath hyaline, narrow.

HABITAT: On dung of bear, carnivore, cow, deer, fox, goat, horse, moose, rabbit, and sheep.

TYPE: Europe.

SPECIMENS EXAMINED: CANADA: Ontario: Algoma Dist., TRTC 37550, 37562, 36761, 38907, 38915, 39697. Brant Co., RFC 5380, 6162, 6164, 6168. Bruce Co., RFC 6184, TRTC 5379. Kent Co., RFC 6175, 6180. Leeds Co., RFC 6167. Middlesex Co., RFC 6174, 6176. Muskoka Dist., RFC 6172, TRTC 36035. Nipissing Dist., RFC 6171, 6178, 6182, TRTC 36657, 36645, 36681. Norfolk Co., RFC 6181. Sudbury Dist., TRTC 36231, 39715. Wentworth Co., RFC 6179. York Co., RFC 6158, TRTC 12175, 22793, 36951. Quebec: Gaspé East Co., TRTC 36436. Kamourkash Co., RFC 6943. Montmorency Co., TRTC 36431. West Charlevoix Co., TRTC 36370, 39746. EUROPE: Editae Museum Hist. Nat. Vindobonensis 2620 (G); C. Roumeguere: Fungi Selecti Exsiccati 2167 (G); with *Sporormia fimetaria* De Not., Fuckel 997 (G); G. L. Rabenhorst: Fungi Europaei Exsiccati 1339 (G). MEXICO: Durango, TRTC 37469, 39794. Hidalgo, TRTC 39677, 39790, 39791, 39799. San Luis Potosi, TRTC 36591, 37446, 37479, 39798. Sinaloa, TRTC 36777. Nayarit, TRTC 39795. Tamaulipas, TRTC 36715, 37479, 38923, 38929, 39634, 39784, 39787. UNITED STATES: Colorado: Fremont Co., TRTC 38098. Florida: Bay Co., RFC 1291. Iowa: Eureka, RFC 6759.

37. ***Sporormiella minimoides*** Ahmed & Cain, sp. nov. Figs. 27–29

Perithecíis sparsis vel aggregatis, semiimmersis, erumpentibus subglobosis usque piriformibus, 180–240 × 100–150 μ, atro-brunneis usque nigris, denudatis; collo breve papilliforme, 50–80 × 40–50 μ, nigro, denudato. Peridio tenui membranaceo. Asci octosporis, subcylindraceis, 90–105(–110) × 16–19(–20) μ, superne late rotundatis, prope mediam partem latissimis inferne attenuatis, breve stipitatis; stipite circa 4–6 μ longa. Paraphysibus filiformibus, septatis, 2.0–2.5 μ crassis, ascos superantibus. Ascosporis 2- aut 3-stichis, obliquis, 4-cellularibus, cylindraceis, 28–36 × 6–7 μ, utrinque late rotundatis, rectis vel curvatis, demum atro-brunneis opacisque, transverse septatis, profunde constrictis, facile secedentibus; articulis similibus. Stria germinationis per obliqua usque diagonali. Strato mucoso hyalino angusto.

HOLOTYPUS: In fimo lupi. Ontario, Algoma Dist., Aubinadong R., Twp. 3F, 9 Aug. 1960, *Cain*, TRTC 36242. In University of Toronto Cryptogamic Herbarium.

ETYMOLOGY: Latin, *minima*, and the suffix *-oides*, referring to the resemblance to *S. minima*.

Perithecia scattered or loosely aggregated, semi-immersed, becoming nearly superficial when old, subglobose to nearly pyriform, 180–240 × 100–150 μ, smooth, bare, dark brown to nearly black; neck small, papilliform, measuring 50–80 × 40–50 μ, smooth, bare, black. Peridium thin, membranaceous. Asci eight-spored, subcylindrical, 90–105(–110) × 16–19(–20) μ, broadly rounded above, broadest near the middle, abruptly contracted below into a very short stipe, measuring about 4–6 μ in length. Paraphyses filiform, septate, longer than the asci and mixed with them, measuring 2.0–2.5 μ in diameter. Ascospores obliquely bi- or tri-seriate, four-celled, cylindrical, 28–36 × 6–7 μ, broadly rounded at the ends, straight or curved, olivaceous brown when young, becoming dark brown and opaque when mature, transversely septate; constrictions at septa narrow and deep; segments easily separable; cells more or less equal in length; terminal cells very slightly narrower toward the ends; germ slit prominent, very strongly oblique to diagonal; gelatinous sheath hyaline, narrow.

HABITAT: On dung of carnivore, fox, rabbit, and wolf.

SPECIMENS EXAMINED: CANADA: Ontario: Algoma Dist., TRTC 36110, 36242 (TYPE), 39838. Muskoka Dist., TRTC 35895. Sudbury Dist., TRTC 36012. MEXICO: Durango, TRTC 39781. Tamaulipas, TRTC 39792.

This species resembles *Sporormiella minima* in several characters but may be differentiated from it by the width of the ascospore, the separability of the segments, and the nature of the germ slit. In *S. minimoides* the ascospores are comparatively broader and the segments are equally separable at all the septa whereas in *S. minima* the segments are readily separable at the central septum. The germ slit in *S. minimoides* is strongly oblique to diagonal, without a kink near the middle while in *S. minima* it is nearly parallel, with a kink.

38. ***Sporormiella minipascua*** Ahmed & Cain, sp. nov. Figs. 142–144

Peritheciis sparsis vel aggregatis, immersis, subglobosis, 180–220 μ diam, atro-brunneis usque nigris, denudatis; collo breve cylindraceo, nigro, denudato. Peridio tenui membranaceo. Ascis octosporis, cylindraceo-clavatis, 120–140 × 14–16(–17) μ, latissimis prope apicem, inferne attenuatis, breve stipitatis. Paraphysibus filiformibus, septatis, ramosis, 2–3 μ crassis, ascos superantibus. Ascosporis supra 2- aut 3-seriatis, infra 1-seriatis, 8-cellularibus, fusiformi-cylindraceis, 32–36 × 5.5–6.5 μ, utrinque late rotundatis, demum atro-brunneis opacisque, septatis, septis non obliquis, leniter constrictis, cohaerentibus, articulo quarto majore. Stria germinationis obliqua usque diagonali. Strato mucoso angusto.

HOLOTYPUS: In fimo cervino, Ontario, Nipissing Dist., Pickerel Lake Portage from Lake Timagami, 10 Aug. 1933, *Cain*, TRTC 5390. In Cryptogamic Herbarium, University of Toronto.

ETYMOLOGY: Latin, *minus* = smaller, and the species name *pascua*, referring to the smaller ascospores.

Perithecia scattered or loosely aggregated, immersed, subglobose, 180–220 μ in diam, smooth, bare, dark brown to nearly black; neck short, cylindrical, smooth, bare, black. Peridium thin, membranaceous. Asci eight-spored, cylindrical-clavate, 120–140 × 14–16(–17) μ, broadest near the upper end, gradually tapering below into a short stipe. Paraphyses filiform, septate, branched, longer than the asci and mixed with them, measuring 2–3 μ in diameter. Ascospores bi- or tri-seriate above, uniseriate below, eight-celled, fusiform-cylindrical, 32–36 × 5.5–6.5 μ, rounded at the ends, dark brown when mature, septa transverse, constrictions at septa broad and shallow, segments not easily separable; fourth cell from the upper end largest, cells becoming narrower toward each end; germ slit strongly oblique to almost diagonal; gelatinous sheath hyaline, narrow.

HABITAT: On dung of deer.

SPECIMENS EXAMINED: CANADA: Ontario: Nipissing Dist., TRTC 5390 (TYPE), RFC 6266. UNITED STATES: New York: Warren Co., RFC 6267, 6268. Wyoming: Teton Co., TRTC 32027, 32322.

Cain (1934) provided a description of *S. pascua* Niessl, based on examinations of Ontario collections. At that time he was unable to examine the European collections of *S. pascua* but stated that there was some doubt whether Ontario specimens should be referred as *S. pascua*, which was described with ascospores measuring considerably broader. Since that time these authors have been able to examine some of the European collections of *S. pascua* Niessl, and it is clearly evident that Ontario and European collections determined as this species are distinctly different from each other.

39. ***Sporormiella muskokensis*** (Cain) Ahmed & Cain, comb. nov. Figs. 41–43

≡ *Sporormia muskokensis* Cain, Univ. Toronto Stud., Biol. Ser. No. 38: 96. 1934.

Perithecia scattered, immersed, subglobose, 170–250 μ in diam, smooth, bare, dark brown to black; neck moderately long, cylindrical, smooth, bare, dark brown to black. Peridium thin, membranaceous. Asci eight-spored, cylindrical-clavate, (140–)145–150(–168) × 13–15 μ, broadly rounded above, narrowing gradually from the broadest part near the apex into a fairly long, rather persistent stipe, measuring about 27–30 μ in length. Paraphyses fairly abundant, filiform, septate, slightly longer than the asci and mixed with them. Ascospores bi- or tri-seriate above, uniseriate below, four-celled, cylindrical-fusiform, 27–32 × 5.5–6.0 μ, straight or slightly curved, hyaline at first, ranging through olivaceous brown to dark brown and opaque, obliquely septate; constrictions at septa broad and deep; cells nearly equal in length; terminal cells prominently narrowing toward the ends; germ slit diagonal; gelatinous sheath hyaline, narrow.

HABITAT: On dung of deer, moose, partridge, porcupine, and rabbit.

TYPE: On rabbit dung, Ontario, Muskoka Dist., Gravenhurst, *Cain*, TRTC 5317.

SPECIMENS EXAMINED: CANADA: Ontario: Bruce Co., RFC 6189. Haliburton Co., TRTC 36335. Muskoka Dist., TRTC 5317 (TYPE), 6186, 6187. Nipissing Dist., TRTC 39701. Thunder Bay Dist., TRTC 37526. Quebec: Portneuf Co., RFC 6892. UNITED STATES: New York: Warren Co., RFC 6190.

40. *Sporormiella nigropurpurea* Ell. & Ev., North American Pyrenomycetes, p. 136. 1892. Figs. 53–55

Perithecia aggregated into small groups, embedded when young, becoming semiembedded at maturity, subglobose, 300–350 μ in diam, smooth, bare, dark brown to black; neck short papilliform, smooth, bare, black. Asci eight-spored, cylindrical-clavate, 95–125 × 10–12 μ, broadly rounded above, broadest near the upper end, gradually narrowing below into a short stipe, measuring up to 20 μ in length. Paraphyses abundant, filiform, septate, longer than the asci and mixed with them. Ascospores more or less obliquely disposed, biseriate above, uniseriate below, four-celled, subcylindrical, 16–22 × 4.5–5.5 μ, nearly straight, light brown and translucent when young, becoming dark brown and opaque when mature; septa transverse; constrictions at septa moderately broad and deep; terminal cells subovate, slightly narrower toward the ends, 4.5–5.5 μ in length; mid-cells nearly subglobose, 3.5–4.5 μ in length; germ slit diagonal; gelatinous sheath hyaline, narrow.

HABITAT: On cow dung.

TYPE: Newfield, New Jersey.

SPECIMEN EXAMINED: UNITED STATES: New Jersey: Gloucester Co. (TYPE) (NY).

S. nigropurpurea resembles *S. pulchella* in many respects but it may be distinguished from the latter on the basis of ascospore arrangement. The ascospores in *S. nigropurpurea* are biseriate in the upper part of the ascus and uniseriate in the lower part, whereas in *S. pulchella* the ascospores are uniseriate throughout. *S. nigropurpurea* may also be confused with *S. dakotensis*, from which it is separable by its broader and comparatively shorter ascospores as well as its diagonal germ slit.

41. *Sporormiella octomera* (Auersw.) Ahmed & Cain in Kobayasi, Hiratsuka, Otani, Tubaki, Udagawa, and Soneda, Bull. Natl. Sci. Mus. Tokyo, 12: 311–430. 1969. Figs. 134–135

≡ *Sporormia octomera* Auersw., Hedwigia, 7: 70. 1868.

Perithecia scattered, immersed, subglobose to nearly pyriform, 360–550 × 300–350 μ, smooth, bare, black; neck small, papilliform, smooth, bare, black. Peridium thin, membranaceous to slightly coriaceous. Asci eight-spored, clavate, (140–)148–171 × 16–18 μ, broadly rounded above, broadest near the upper end, gradually tapering below into a long, crooked stipe, measuring 35–50 μ in length. Paraphyses filiform, septate, slightly longer than the asci and mixed with them. Ascospores bi- or tri-seriate, eight-celled, fusiform-cylindrical, (37–)40–48(–50) × 7–8 μ, rounded at the ends, light brown when young, becoming dark brown and opaque when mature, septa transverse, constrictions at septa deep, segments easily separable; third cell from the upper end largest, cells becoming smaller toward each end, terminal cells slightly longer and somewhat bluntly conical, measuring 8–9 × 5.0–5.5 μ; germ slit oblique to diagonal; gelatinous sheath hyaline, broad.

HABITAT: On dung of elk, goat, grouse, horse, moose, partridge, porcupine, and rabbit.

TYPE: Europe.

SPECIMENS EXAMINED: CANADA: Alberta: TRTC 40421. Manitoba: RFC 6545. Ontario: Algoma Dist., TRTC 36763, 38282, 38884, 39626. Brant Co., RFC 6494, 12386, TRTC 35831, 36048. Bruce Co., RFC 6224, 6225, 6227, 6229, 6246, 6249, TRTC 35924. Grey Co., RFC 6223, 6232. Haliburton Co., RFC 6236, TRTC 36348, 36352. Kenora Dist., TRTC 35825. Muskoka Dist., TRTC 35891, 35957, 35958, 36023, 36054. Nipissing Dist., RFC 5386, 6222, 12008, TRTC 39707, 32403, 39703. Norfolk Co., TRTC 36175, 39706. Ontario Co., TRTC 39708. Oxford Co., RFC 6245. Simcoe Co., TRTC 36616, 38926, 39704. Sudbury Dist., TRTC 38911, 39619, 39622. Victoria Co., RFC 6233, TRTC 36402. York Co., RFC 6230, 6250, 6672. Quebec: Gaspé East Co., TRTC 39753. Montmorency Co., TRTC 39751. Portneuf Co., RFC 6891. West Charlevoix Co., TRTC 36268. Saskatchewan: RFC 6252, 6553, 6555. UNITED STATES: Kansas: Rooks Co., TRTC 39376. North Dakota: Billings Co., TRTC 36219. Nevada: Elko Co., TRTC 39606. New York: Cattaraugus Co., TRTC 37367, 37378, 37602. Warren Co., RFC 6253, 6254. Utah: Duchesne Co., TRTC 36300. Wyoming: Crook Co., TRTC 39111. Teton Co.,

TRTC 32327. EUROPE: with *Sordaria rabenhorstii* Niessl, *Rabenhorst*: Fungi Europaei 1528 (NY); with *Sporormia intermedia* Auersw., Flora Exsiccata Austro-Hungarica 3573 (G).

42. ***Sporormiella octonalis*** Ahmed & Cain, sp. nov. Figs. 131–133

Peritheciis sparsis, immersis usque semiimmersis, erumpentibus, 200–250 μ diam, atro-brunneis usque nigris, denudatis; collo breve papilliformi, nigro, denudato. Peridio tenui membranaceo. Ascis octosporis, cylindraceo-clavatis, 160–185 × 28–34 μ, superne late rotundatis, abrupte in stipitem brevissimum attenuatis. Paraphysibus filiformibus, septatis, fines ascorum egressis. Ascosporis 2- aut 3-seriatis, 8-cellularibus, oblongo-ellipsoideis, 48–58 × 12–14 μ, utrinque late rotundatis, demum atro-brunneis opacisque, septis transversis non obliquis praeditis, leniter constrictis, cohaerentibus, strato mucoso angusto hyalino obductis; articulis terminalibus hemisphaericis, articulo teritio majore. Stria germinationis obliqua usque diagonali.

HOLOTYPUS: In fimo vaccino, Ontario, Bruce Co., Hepworth, 11 July 1930, *Cain*, TRTC 5354. In Cryptogamic Herbarium, University of Toronto.

ETYMOLOGY: Latin, *octonalis* = consisting of eight, referring to the eight-celled ascospores.

Perithecia scattered, immersed, becoming superficial when old, subglobose, 200–250 μ in diam, smooth, bare, dark brown to black; neck short, papilliform, smooth, bare, black. Peridium thin, membranaceous. Asci eight-spored, cylindrical-clavate, 160–185 × 28–34 μ, broadly rounded above, abruptly contracted below into a very short stipe. Paraphyses filiform, septate, slightly longer than the asci and mixed with them. Ascospores obliquely bi- or tri-seriate, eight-celled, somewhat oblong-elliptical, 48–58 × 12–14 μ, broadly rounded at the ends, yellowish brown when young, becoming dark brown and opaque when mature, septa transverse, constrictions at septa broad and shallow, segments not easily separable; third cell from the upper end broadest, cells broader than long, terminal cells hemispherical; germ slit strongly oblique to diagonal; gelatinous sheath hyaline, narrow.

HABITAT: On dung of arctic hare, cow, partridge, rabbit, and wapiti.

SPECIMENS EXAMINED: CANADA: Ontario: Bruce Co., TRTC 5354. Haliburton Co., RFC 5993. Muskoka Dist., TRTC 36098. Peterborough Co., RFC 5994. Quebec: West Charlevoix Co., TRTC 36267. UNITED STATES: Idaho: Fremont Co., TRTC 40636. Oregon: Harney Co., TRTC 40187. Wyoming: Park Co., TRTC 39135.

As a result of examination made on the authentic European collections of *Sporormia corynespora* (Rehm Ascomyceten 748) it was found that the Ontario specimens, previously interpreted as *S. corynespora* and reported as such by Cain (1934), were distinctly different from the European specimens and could be retained as a separate entity.

Sporormiella octonalis may be distinguished from *S. corynespora* by the broader asci which are abruptly narrowed below into a very short stipe. It may further be differentiated from *S. corynespora* by the broader ascospores with hemispherical terminal cells.

43. ***Sporormiella ontariensis*** (Cain) Ahmed & Cain, comb. nov. Figs. 139–141

BASIONYM: *Sporormia ontariensis* Cain, Univ. Toronto Stud., Biol. Ser. No. 38. p. 104. 1934.

Perithecia scattered, immersed, pyriform, 340–400 × 200–250 μ, smooth, bare, dark brown to black; neck small, conical, smooth, bare, black. Peridium membranaceous to slightly coriaceous. Asci eight-spored, cylindrical, 175–200 × 22–24 μ, broadly rounded above, broadest near the base, abruptly contracted below into a very short, stout stipe. Paraphyses filiform, septate, slightly longer than the asci and mixed with them. Ascospores somewhat obliquely bi- or tri-seriate, eight-celled, more or less cylindrical, 49–58(–60) × 9–10 μ, broadly rounded at the ends, dark brown and opaque when mature, septa transverse, constrictions at septa broad and shallow, segments not easily separable; terminal cells and fourth cell from the upper end slightly longer than the rest, fourth cell larger than the remaining cells, about 8 × 10 μ, remaining cells slightly narrower; germ slit strongly oblique to diagonal; gelatinous sheath hyaline, narrow.

HABITAT: On dung of bear, goose, porcupine, and rabbit.

TYPE: On rabbit dung, Ontario, York Co., West Hill, TRTC 5319.

SPECIMENS EXAMINED: CANADA: Ontario: Algoma Dist., TRTC 37561. Brant Co., RFC 6261. Bruce Co., RFC 6256, 6257. Muskoka Dist., RFC 6258, 6260. Nipissing Dist., RFC 6262. Parry Sound Dist., RFC 5388, 6259. Sudbury Dist., TRTC 36256, 36326. York Co., RFC 6255, 6263, TRTC 5319 (TYPE). MEXICO: Durango, TRTC 39802. UNITED STATES: Massachusetts: Middlesex Co., RFC 6409.

44. ***Sporormiella ovina*** (Desm.) Ahmed & Cain, comb. nov. Figs. 98–101

BASIONYM: *Hormospora ovina* Desm., In Ann. Sci. Nat., 3e Ser. (Bot.), 16: 317. 1851.

= *Sporormia ovina* (Desm.) Sacc., Syll. Fung. 2: 127. 1883.

= *Sporormia gigantea* Hansen, Vidensk. Meddel. 1876: 319. 1877.

Perithecia scattered, immersed to semi-immersed, subglobose, 350–400 μ in diam, smooth, bare, dark brown to nearly black; neck short conical to long cylindrical, smooth, bare, black. Peridium membranaceous to slightly coriaceous. Asci eight-spored, cylindrical-clavate, 240–320 × 45–52(–55) μ, broadly rounded above, broadest above the middle, gradually narrowing below into a short stipe. Paraphyses abundant, filiform, septate, longer than the asci and mixed with them. Ascospores nearly parallel to somewhat obliquely bi- to tetra-seriate, four-celled, cylindrical to fusiform-cylindrical, (92–)95–118(–122) × 18–20 μ, straight or slightly curved, light brown when young, becoming dark brown and opaque when mature, septa transverse, constrictions at septa broad and deep, segments easily separable; cells nearly equal in length, mid-cells oblong-cylindrical, terminal cells narrowing toward the ends; germ slit nearly parallel to oblique, occasionally almost diagonal; gelatinous sheath hyaline, broad.

HABITAT: On dung of goose and sheep.

TYPE: Europe.

SPECIMENS EXAMINED: EUROPE: Plantes Cryptogames de France, *J.B.H.J. Desmazières* 98 (G, NY).

45. ***Sporormiella pascua*** (Niessl) Ahmed & Cain, comb. nov. Figs. 145, 146

BASIONYM: *Sporormia pascua* Niessl, Oesterr. Bot. Z. 28: 165. 1878.

Perithecia subglobose, 200–220 μ in diam, smooth, bare, dark brown to nearly black; neck short, papilliform, smooth, bare, black. Asci eight-spored, nearly cylindrical, 140–160 × 18–21 μ, broadly rounded above, slightly broader near the base, more or less abruptly contracted below into a short stipe. Paraphyses filiform, septate, longer than the asci and mixed with them. Ascospores bi- or tri-seriate, eight-celled, nearly cylindrical, (37–)40–49 × (7–)8–9 μ, broadly rounded at the ends, dark brown and opaque when mature, septa transverse, constrictions at septa shallow, segments not easily separable; fourth cell from the upper end larger than the remainder, 5–6 × 8–9 μ; germ slit oblique; gelatinous sheath present.

HABITAT: On dung of cow.

TYPE: Europe.

SPECIMENS EXAMINED: Det. by *G. Winter*, Fungi Helvetici Supplement 90 (NY). With *Sporormia fimetaria* DeNot. Nassau's Flora (G).

46. ***Sporormiella pentamera*** (Oud.) Ahmed & Cain, comb. nov. Figs. 110, 111

BASIONYM: *Sporormia pentamera* Oud., Nederl. Kruid. Arch. 2, 4: 276. 1885.

Perithecia subglobose, 300–400 μ in diam, smooth, bare, black; neck short, papilliform. Asci eight-spored, clavate, 180–220 × 35–40 μ, broadly rounded above, broadest near the middle, gradually narrowing below into a short stipe. Paraphyses filiform, septate, longer than the asci and mixed with them. Ascospores bi- or tri-seriate, five-celled, fusiform-cylindrical, (65–)70–80 × 17–19 μ, narrowly rounded at the ends, becoming dark brown and opaque, septa transverse, constrictions at septa broad and shallow, segments not easily separable, terminal cells more or less conical, measuring about 16.0–19.5 × 14–15 μ, second cell from the upper end broader than the remaining cells, measuring 11.5–13.5 × 16.0–18.5 μ; germ slit diagonal; gelatinous sheath present.

HABITAT: On the dung of rabbit.

TYPE: Europe.

SPECIMENS EXAMINED: ARGENTINA: With the type of *Sporormia pyriformis* Speg. 3559 (LPS). With the type of *Sporormia antarctica* Speg. 3500 (LPS). EUROPE: With *Sordaria maxima* Niessl, *Rehm*, Ascomyceten 744 (FH).

47. ***Sporormiella pilosa*** (Cain) Ahmed & Cain, comb. nov. Figs. 14–17

≡ *Sporormia pilosa* Cain, Univ. Toronto Stud., Biol. Ser. No. 38. p. 91. 1934.

Perithecia scattered or loosely aggregated, immersed to semi-immersed when young, becoming nearly superficial when old, subglobose to pyriform, 400–700 × 250–350 μ, slightly coriaceous, dark brown to black, upper part covered with long, septate, brown hairs; neck short to considerably elongated, cylindrical, stout, thickly covered with short, septate, light brown hairs. Asci eight-spored, clavate, 260–340 × 28–31 μ, broadly rounded above, broadest near the apex, gradually tapering below into a broad, stout stipe, measuring up to 35 μ in length. Paraphyses abundant, filiform, septate, slightly longer than the asci and mixed with them. Ascospores bi- or tri-seriate above, uni- or biseriate below, four-celled, fusiform-cylindrical, 56–63 × 12.0–14.5 μ, dark brown and opaque at maturity, transversely septate, and very deeply constricted; cells about equal in length; terminal cells ovoid-conical, tapering toward the ends; mid-cells slightly broader than the terminal cells; germ slit usually diagonal; gelatinous sheath hyaline, broad.

HABITAT: On dung of burro, deer, horse, porcupine, rabbit, and rodent.

TYPE: On porcupine dung, Ontario, Nipissing Dist., Lake Timagami, TRTC 5315.

SPECIMENS EXAMINED: CANADA: Ontario: Brant Co., RFC 6270. Bruce Co., RFC 6269. Grey Co., RFC 6273. Kent Co., RFC 6806. Manitoulin Dist., RFC 6279. Middlesex Co., RFC 6272. Muskoka Dist., RFC 6280. Nipissing Dist., RFC 6274, TRTC 5315 (TYPE), 36532, 36533. Oxford Co., RFC 6271. Peterborough Co., RFC 6275. Timiskaming Dist., RFC 6276. Thunder Bay Dist., TRTC 40661. Victoria Co., RFC 5391. Wellington Co., RFC 6277. York Co., RFC 6810, 12235. UNITED STATES: Iowa: Washington Co., RFC 6739.

48. ***Sporormiella pilosella*** (Cain) Ahmed & Cain, comb. nov. Figs. 18–20

≡*Sporormia pilosella* Cain, Univ. Toronto Stud., Biol. Ser. 38: 93. 1934.

Perithecia scattered or aggregated in small groups, almost immersed to semi-immersed when young, becoming nearly superficial when old, subglobose to pyriform, 450–550 × 300–450 μ, covered on the exposed parts with flexuous, light brown, sparingly septate hairs, olivaceous brown when young, becoming dark brown when mature; neck short, papilliform or conical, stout, hairy, black. Peridium moderately thick, membranaceous. Asci eight-spored, cylindrical-clavate, (160–)190–230 × 17.0–20.5 μ, broadest near the upper end, gradually narrowing below into a stipe, measuring 20–30 μ in length. Paraphyses filiform, septate, occasionally branched, slightly longer than the asci and mixed with them, measuring 2–3 μ in diameter. Ascospores biseriate above, uniseriate below, four-celled, fusiform-cylindrical, (29–)32–37 × 8–9 μ, curved, dark brown and opaque when mature, transversely septate; constrictions at septa broad and moderately shallow; terminal cells ovoid-conical, comparatively longer and narrower than the middle cells; germ slit diagonal; gelatinous sheath hyaline, narrow.

HABITAT: On dung of cow, deer, moose, porcupine, and rabbit.

TYPE: On porcupine dung, Stoneleigh, Muskoka Dist., Ontario, TRTC 5316.

SPECIMENS EXAMINED: CANADA: Ontario: Kenora Dist., TRTC 35885. Muskoka Dist., TRTC 5316 (TYPE), RFC 6280. Saskatchewan: RFC 6281, 6282, 6624. UNITED STATES: Colorado: Teller Co., TRTC 38079. Wyoming: Teton Co., TRTC 32354.

This species seems to be related to *Sporormiella pilosa*, which it resembles in several respects, but is distinguishable by the smaller size of asci and ascospores.

49. ***Sporormiella platymera*** Ahmed & Cain, sp. nov. Figs. 158–161

Peritheciis sparsis, immersis, globosis, 350–500 μ diam, crassis, atro-brunneis usque nigris, denudatis; collo breve papilliformi vel ad apicem aucto, circa 200 × 200 μ, nigro denudato. Peridio membranaceo vel leniter coriaceo. Ascis octosporis, clavatis, usque leniter fusiformibus, (210–)225–263 × 35–42 μ, superne late rotundatis, in mediam partem latissimis, inferne attenuatis, breve stipitatis. Paraphysibus filiformibus, septatis, copiosis, ascos superantibus. Ascosporis 2- aut 3-seriatis, 8-cellularibus, fusiformi-cylindraceis, 79–95(–99) × 14–16 μ, utrinque rotundatis, rectis vel curvatis, demum atrobrunneis opacisque, transverse septatis, profunde contrictis, facile secedentibus, articulis terminalibus angustioribus, ovoideis, 14–18 × 11.5–12.5 μ, articulis reliquis latioribus. Stria germinationis parallela in articulis terminalibus, aliquantum obliqua usque plus minus trans-

versa in articulis reliquis. Strato gelatinoso hyalino, lato.

HOLOTYPUS: In fimo cuniculorum, Mexico, Tamaulipas, Reynosa, 20 Aug. 1960, *Cain*, TRTC 36568. In Cryptogamic Herbarium, University of Toronto.

ETYMOLOGY: Greek, *platys* = broad, and *meros* = part, referring to the broad segments of the ascospores.

Perithecia scattered, immersed, subglobose, 350–500 μ in diam, smooth, bare, dark brown to nearly black; neck small papilliform or with an enlarged apex, measuring about 200 × 200 μ, smooth, bare, dark brown to black. Peridium thick, membranaceous to slightly coriaceous. Asci eight-spored, clavate to slightly fusiform, (210–)225–265 × 32–42 μ, broadly rounded above, slightly narrower near the upper end, broadest near the middle, contracted below into a short, stout, rather persistent stipe. Paraphyses abundant, filiform, septate, longer than the asci and mixed with them. Ascospores parallel to somewhat obliquely bi- or triseriate, eight-celled, fusiform-cylindrical, 79–95 (–99) × 14–16 μ, rounded at the ends, straight or slightly curved, light brown when young, becoming dark brown and opaque when mature, septa transverse, constrictions at septa broad and deep, segments easily separable; six middle cells broader than long, terminal cells longer than broad, more or less ovoid, measuring 14–18 × 11.5–12.5 μ; germ slit parallel in the terminal cells, obliquely transverse in the remaining cells, gelatinous sheath hyaline, broad.

HABITAT: On dung of rabbit.

SPECIMEN EXAMINED: MEXICO: Tamaulipas: Reynosa, TRTC 36568.

S. platymera resembles *S. herculea* in several respects, for example, the shape of the asci and ascospores as well as the transverse orientation of the germ slits. However, it can be distinguished from *S. herculea* by the absence of a large cell in the uppermost ascospore in the ascus and the distinctly smaller ascospores with a constant and smaller number of cells.

50. ***Sporormiella polymera*** (Cain) Ahmed & Cain, comb. nov. Figs. 179–182

BASIONYM: *Sporormia polymera* Cain, Can. J. Bot. 35: 263. 1957.

Asci eight-spored, clavate, 180–260 × 20–27 μ, broadly rounded above, broadest part below the apex, gradually narrowing below into a long stipe, measuring 28–60 μ in length. Paraphyses filiform, septate, with rather long cells, rarely branched, more or less equalling the asci in length and mixed with them, measuring 4–8 μ in diameter. Ascospores nearly parallel with the ascus tri- or tetra-seriate above, with a single ascospore at the base, 14- or 15-celled, fusiform-cylindrical, 63–82 × 9.5–11.0 μ, broadly rounded at the ends, dark brown and opaque when mature; septa transverse, constrictions at septa broad and deep, segments easily separable; seventh cell (in 15-celled ascospore) or fifth and sixth (in 14-celled ascospore) from the upper end abruptly larger, cells gradually decreasing in size toward both the ends; germ slit transverse to diagonal, gelatinous sheath hyaline, narrow.

HABITAT: On dung of caribou.

TYPE: On dung of caribou, Quebec, Ungava, TRTC 32264.

SPECIMEN EXAMINED: CANADA: Quebec, Ungava, esker east of George River, 55°9′ N lat., TRTC 32264.

51. ***Sporormiella pulchella*** (Hansen) Ahmed & Cain, comb. nov. Figs. 8–10

≡*Sporormia pulchella* Hansen, Vidensk. Meddel. 1876: 320. 1877.

=*Sporormia microspora* Plowright, Br. Mycol. Soc. Trans. 1: 63. 1897–1898.

Perithecia scattered or loosely aggregated, immersed, subglobose, 250–300 μ in diam, thin, membranaceous, smooth, bare, black. Asci eight-spored, cylindrical, 120–135 × 10–13 μ, abundant, broadly rounded above, narrowing below into a short, stout stipe. Paraphyses abundant, filiform, septate, equalling the asci in length and mixed with them. Ascospores obliquely uniseriate, four-celled, fusiform-cylindrical, (15–)17–24(–26) × 5–7 μ, straight or slightly curved, dark brown and opaque when mature, transversely septate, constrictions at septa broad and moderately deep; segments separable; terminal cells slightly longer than the mid-cells, bluntly conical, mid-cells oblong to oval; germ slit oblique to diagonal; gelatinous sheath hyaline, narrow.

HABITAT: On dung of cow, deer, goat, porcupine, rabbit, and sheep.

TYPE: Denmark.

SPECIMENS EXAMINED: CANADA: Ontario: Algoma Dist., TRTC 36871. Bruce Co., TRTC 39709. Manitoulin Dist., RFC 6286. Muskoka Dist., RFC 6284. Nipissing Dist., RFC 6283, 6285, 6452, TRTC 36039. EUROPE: as *Hormospora ovina* Desm., C. Roumeguere: Plantes Cryptogames de France 98 (NY). MEXICO: Nuevo Leon, TRTC 37456. Tamaulipas, TRTC 36569, 36718, 39804. UNITED STATES: Colorado: Saguache Co., TRTC 38105, 38107. Teller Co., TRTC 38081. Idaho: Elmore Co., TRTC 40140. Fremont Co., TRTC 40632. Kansas: Rooks Co., TRTC 39346. Montana: Prairie Co., TRTC 35787. Nevada: Elko Co., TRTC 35745. New Mexico: Santa Fe Co., TRTC 36475. South Dakota: Hyde Co., TRTC 39805. Meade Co., TRTC 39412. Utah: Duchesne Co., TRTC 36226, 36235, 36295. Wyoming: Crook Co., TRTC 39075.

The ascospore measurements of *Sporormiella pulchella*, as given in the above description are based on the examination of many specimens. This range of ascospore size covers the measurements given for *Sporormia microspora* (15 × 5 μ) and, because of this similarity, the two are considered identical.

52. ***Sporormiella pyriformis*** (Speg.) Ahmed & Cain, comb. nov. Figs. 85, 86

BASIONYM: *Sporormia pyriformis* Speg., Anal. Mus. Nac. Buenos Aires, 6: 280. 1899.

Perithecia pyriform, 300–540 × 150–360 μ, smooth, bare, black. Asci eight-spored, clavate, tapering below into a long stipe. Ascospores bi- or tri-seriate, four-celled, cylindrical, 70–80 × 15–17 μ, narrowly rounded at the ends, dark brown and opaque when mature; septa transverse; constrictions at septa broad and deep; segments easily separable; cells nearly equal in size; middle cells cuboid, end cells conspicuously narrower toward the ends; germ slit obliquely transverse; gelatinous sheath present.

HABITAT: On dung of goose.

TYPE: Argentina.

SPECIMENS EXAMINED: ARGENTINA: Tierra del Fuego, with *Sporormia antarctica* Speg., *Spegazzini* 3500 (LPS). Type packet, La Plata, *Spegazzini* 3559 (LPS) has drawings but no specimens.

This species overlaps *S. megalospora* in ascospore measurements but may be distinguished from it by means of the more nearly transverse germ slit.

53. ***Sporormiella scandinavica*** (I. Egel.) Ahmed and Cain, comb. nov.

BASIONYM: *Sporormia scandinavica* I. Egel., Nytt Mag. Bot. 16: 219. 1969.

Perithecia globose to pyriform, 230–460 × 200–385 μ, glabrous. Peridium thick, coriaceous, and opaque. Asci eight-spored, clavate to nearly cylindrical, 180–200 × 30–35 μ, tapering gradually into a stipe of variable length. Ascospores four-celled, clavate to nearly cylindrical, tapering toward the ends, 57–70 × 13.0–17.5 μ. Second cell is longer and broader than others and with the germ slit often nearly diagonal. Germ slit in all other cells parallel to the length of the ascospore.

HABITAT: On dung of sheep and cow.

TYPE: On sheep dung, Norway, *I. Egeland*, 262 (O).

54. ***Sporormiella schadospora*** Ahmed & Cain, sp. nov. Figs. 136–138

Peritheciis sparsis, immersis, subglobosis, 250–350 μ diam, atro-brunneis vel nigris, denudatis; collo breve papilliformi vel truncato-conico, nigro, denudato. Peridio membranaceo vel leniter coriaceo. Ascis octosporis, subcylindraceis, (136–)150–180(–190) × 18–21 μ, superne late rotundatis, prope media parte latissimis, inferne attenuatis, per breve stipitatis. Paraphysibus filiformibus, septatis, guttulatis, ascos superantibus. Ascosporis 2- aut 3-seriatis, 8-cellularibus, plus minus cylindraceo-clavatis, (50–)52–57(–60) × 8–9 μ, utrinque late rotundatis, rectis vel curvatis, demum atro-brunneis opacisque, transverse septatis, profunde constrictis, facile secedentibus; articulo tertio majore, 8–9 μ crasso, articulis terminalibus longioribus, 7.0–9.5 × 6–7 μ. Stria germinationis obliqua usque diagonali. Strato mucoso hyalino, lato.

HOLOTYPUS: In fimo animalis rosi, Mexico, San Luis Potosi, Villa Hidalgo, 18 Aug. 1960, *Cain*, TRTC 45734. In Cryptogamic Herbarium, University of Toronto.

ETYMOLOGY: Greek, *schadon* = larva of a bee or wasp, and *spora* = seed, referring to the larval shape of the ascospores.

Perithecia scattered, immersed, subglobose, 250–350 μ in diam, smooth, bare, dark brown to nearly black; neck small, papilliform, or bluntly conical, smooth, bare, black. Peridium membranaceous to slightly coriaceous. Asci eight-

spored, subcylindrical, (136–)150–180(–190) × 18–21 μ, broadly rounded above, broadest near the middle, contracted below into a very short crooked stipe. Paraphyses filiform, septate, guttulate, longer than the asci and mixed with them. Ascospores somewhat obliquely bi- or tri-seriate, eight-celled, more or less cylindrical-clavate, (50–)52–57(–60) × 8–9 μ, broadly rounded at the ends, straight or curved, golden brown when young, becoming dark brown and opaque when mature, septa transverse, constrictions at septa narrow and deep, segments easily separable; third cell from the upper end widest, measuring 8–9 μ in diam, cells narrowing slightly toward each end, terminal cells longer than the remaining cells, measuring 7.0–9.5 × 6–7 μ; germ slit usually diagonal, occasionally oblique; gelatinous sheath hyaline, broad.

HABITAT: On dung of burro, goat, porcupine, and rodent.

SPECIMENS EXAMINED: CANADA: Alberta, TRTC 38934. MEXICO: Chihuahua, TRTC 36563. Jalisco, TRTC 39610. San Luis Potosi, TRTC 39611, 45734 (TYPE).

This species resembles *S. octomera* but can be distinguished from it by the larger ascospores, broader asci, and more rectangular shape of the cells.

55. ***Sporormiella schotteriana*** (Breton & Faurel) Ahmed & Cain, comb. nov.

BASIONYM: *Sporormia schotteriana* Breton & Faurel, Bull. Soc. Mycol. Fr. 80: 248. 1964.

Perithecia glabrous, 300–500 μ diam. Asci clavate, 175–200 × 22–28 μ, eight-spored. Ascospores cylindrical, 16-celled (sometimes with one or two cells hyaline and collapsed), 60–80 × (7–)8–9(–10) μ, surrounded with a hyaline gelatinous sheath. Mid-cells nearly equal, discoid, with transverse germ slit. End cells elongate-conical with longitudinal germ slit.

HABITAT: On rabbit dung.

TYPE: Forest of Saint-Ferdinand near Zéralda, western Algeria, *A. Breton*, 30 April 1961.

56. ***Sporormiella septenaria*** Ahmed & Cain, sp. nov. Figs. 117–119

Perithecíis sparsis vel aggregatis, immersis usque semiimmersis, erumpentibus, subglobosis usque piriformibus, 270–310 × 225–250 μ, atro-brunneis usque nigris, denudatis; collo breve papilliformi, nigro, denudato. Peridio tenui membranaceo. Ascis octosporis, clavatis, 130–160 × 18–20 μ, superne late rotundatis, inferne attenuatis, breve stipitatis. Ascosporis superne 2- aut 3-seriatis, inferne 1-seriatis, 7-cellularibus, cylindraceo-clavatis, 43–54(–56) × 8–10 μ, utrinque rotundatis, demum atro-brunneis opacisque, transverse septatis, ad septa mediocriter constrictis; strato mucoso angusto hyalino obductis; articulo tertio majore 7–8 × 8.5–10 μ; articulis secundis-quartis longitudine majore quas latitudinem praeditis; articulis sexis-septis latitudine majore quam longitudinem praeditis; articulo septo longiore, 10–11.5 × 6.5–7.0 μ. Stria germinationis obliqua.

HOLOTYPUS: In fimo capri, Mexico, San Luis Potosi, Villa Hidalgo, 18 Aug. 1960, *Cain*, TRTC 36550. In Cryptogamic Herbarium, University of Toronto.

ETYMOLOGY: Latin, *septenarius* = consisting of seven, referring to the seven-celled ascospores.

Perithecia scattered or in small groups, immersed, becoming semi-immersed when old, subglobose to nearly pyriform, 270–310 × 225–250 μ, smooth, bare, dark brown to nearly black; neck small, papilliform, smooth, bare, black. Peridium thin, membranaceous. Asci eight-spored, clavate, 130–160 × 18–20 μ, broadly rounded above, tapering gradually below into a short stipe. Ascospores bi- or tri-seriate above, uni- or bi-seriate below, seven-celled, cylindrical-clavate, 43–54(–56) × 8–10 μ, rounded at the ends, hyaline at first, ranging through yellowish brown to dark brown when mature, septa transverse, constrictions at septa moderate, segments separable; third cell from the upper end abruptly larger than the remaining cells, measuring 7–8 × 8.5–10 μ; second, third, and fourth cells from the upper end broader than long; first, sixth, and seventh cells longer than broad; lower end cell longer than the other cells, measuring 10.0–11.5 × 6.5–7.0 μ; germ slit oblique; gelatinous sheath hyaline, narrow.

HABITAT: On dung of burro, cow, goat, rabbit, sheep, and wapiti.

SPECIMENS EXAMINED: MEXICO: Durango, TRTC 37063. Hidalgo, TRTC 39177, 39254, 39638, 39827. Nuevo Leon, TRTC 36722. San Luis Potosi, TRTC 36550, 36585, 36787, 37481, 39824. UNITED STATES: Nevada: Elko Co., TRTC 35734. Oregon: Deschutes Co., TRTC 40428. Wyoming: Crook Co., TRTC 39120.

S. vexans differs from this species in having ascospores with rhomboidal cells and a tendency for oblique septation. It also differs on the basis of the position of cells which are broader than long. In *S. septenaria*, it is the second, third, and fourth cells from the upper end, whereas in *S. vexans* it is the five middle cells which are broader than long.

57. ***Sporormiella splendens*** (Cain) Ahmed & Cain, comb. nov. Figs. 150–153

BASIONYM: *Sporormia splendens* Cain, Univ. Toronto Stud., Biol. Ser. No. 38: 107. 1934.

Perithecia scattered, immersed, pyriform, 550–625 × 350–410 μ, smooth, bare, dark brown; neck short, papilliform, 150–180 × 100–125 μ, roughened with small papillae or bare, dark brown to black. Peridium thin, membranaceous. Asci eight-spored, clavate, 200–270 × (40–)45–55 μ, broadly rounded above, considerably enlarged in the middle, contracted below into a short, broad stipe, measuring 10–15 μ in length. Paraphyses abundant, filiform, septate, sparingly branched, slightly longer than the asci and mixed with them. Ascospores nearly parallel with the ascus, bi- or tri-seriate, all overlapping in the middle, eight-celled, cylindrical, (130–)140–160 (–165) × 9.0–12.5 μ, dark brown when mature, septa transverse, constrictions at septa broad and deep, segments easily separable; terminal cells tapering toward the ends, apical cell more narrowed than the basal cell, remaining cells longer than broad, cylindrical; germ slit oblique to almost diagonal; gelatinous sheath hyaline, narrow.

HABITAT: On dung of rabbit and porcupine.

TYPE: On rabbit dung, Ontario, Nipissing Dist., Lake Timagami, *Cain*, TRTC 5321.

SPECIMENS EXAMINED: CANADA: Ontario: Algoma Dist., TRTC 32385, 35746, 36762, 37561, 40609, 40611. Haliburton Co., TRTC 36102, 36112. Kenora Dist., TRTC 35871. Muskoka Dist., TRTC 5394, 36044. Nipissing Dist., RFC 6288, 6294, 6299, 6300, 6301, 6302, 6303, 6387, 6705, 9081, TRTC 5321 (TYPE), 5393, 5395. Parry Sound Dist., TRTC 39711. Sudbury Dist., TRTC 36361, 39710, 40605. Timiskaming Dist., TRTC 35947, 35968, 35993, 36002. Quebec: Montmorency Co., TRTC 39754, 39755. Quebec Co., RFC 6878. UNITED STATES: New Hampshire: Cheshire Co., TRTC 32654.

58. ***Sporormiella subtilis*** Ahmed & Cain, sp. nov. Figs. 50–52

Peritheciis sparsis, immersis usque semiimmersis, subglobosis, 250–350 μ diam, atro-brunneis usque nigris, denudatis; collo breve cylindraceo, nigro, denudato. Peridio membranaceo tenui. Ascis octosporis, cylindraceo-clavatis, (120–)140–150(–160) × 12–14 μ; numerosis, superne late rotundatis, prope apicem latissimis, inferne attenuatis, breve stipitatis; stipite usque ad 25 μ longa. Paraphysibus filiformibus, septatis, copiosis, 2.5–3.0 μ crassis, ascos superantibus. Ascosporis superne 2- aut 3-stichis, inferne 1- aut 2-stichis, 4-cellularibus, cylindraceis, 23–29 × 5.5–6.5 μ, demum atro-brunneis opacisque, transverse septatis, profunde constrictis, facile secendentibus. Articulis terminalibus leviter longioribus et attenuatis. Stria germinationis obliqua usque diagonali. Strato mucoso hyalino, angusto.

HOLOTYPUS: In fimo burrici, Mexico, San Luis Potosi, Villa Hidalgo, 18 Aug. 1960, *Cain*, TRTC 37018. In Cryptogamic Herbarium, University of Toronto.

ETYMOLOGY: Latin, *subtilis* = slender, referring to the slender nature of the asci.

Perithecia scattered, immersed when young, becoming partially superficial when old, subglobose, 250–350 μ in diam, smooth, bare, dark brown to nearly black; neck short cylindrical, smooth, bare, black. Peridium thin, membranaceous. Asci eight-spored, cylindrical-clavate, (120–)140–150(–160) × 12–14 μ, abundant, broadly rounded above, broadest near the apex, gradually narrowing below into a stipe, measuring up to 25 μ in length. Paraphyses abundant, filiform, septate, longer than the asci and mixed with them, measuring about 2.5–3.0 μ in diameter. Ascospores bi- or tri-seriate above, uni- or bi-seriate below, four-celled, cylindrical, 23–29 × 5.5–6.5 μ, light brown when young, becoming dark brown and opaque when mature; septa transverse; constrictions at septa broad and deep; cells about equal in width; terminal cells slightly longer than the mid-cells, very slightly narrower toward the ends, mid-cells with the width about equal to the length; germ slit oblique to diagonal; gelatinous sheath hyaline, narrow.

HABITAT: On dung of burro, partridge, porcupine, and rabbit.

SPECIMENS EXAMINED: CANADA: Alberta: TRTC 39020. Ontario: Bruce Co., RFC 6308, 6310. Nipissing Dist., RFC 6311. Norfolk Co., RFC 6309. Quebec: Montmorency Co., TRTC 40639. MEXICO: Durango, TRTC 37485. Jalisco, TRTC 39287. San Luis Potosi, TRTC 36919, 37018 (TYPE).

This species can be differentiated from *S. dakotensis* by the broader asci, broader ascospores, and oblique to diagonal germ slit. It can also be distinguished from *S. leporina* by the comparatively shorter ascospores, deeper constrictions at the septa, and the ascospore shape.

59. ***Sporormiella systenospora*** Ahmed & Cain, sp. nov. Figs. 81–84

Peritheciis sparsis, immersis vel semiimmersis, erumpentibus, subglobosis, 350–400 μ diam, atro-brunneis, usque nigris, denudatis; collo breve conico, nigro, denudato. Peridio tenui membranaceo. Ascis octosporis, clavatis, 190–230 × 32–38 μ, superne late rotundatis, superne mediam partem latissimis, inferne attenuatis, breve stipitatis; stipite usque ad 15 μ longa. Paraphysibus filiformibus, septatis, ramosis, ascos superantibus. Ascosporis supra 3- aut 4-seriatis, infra 1- aut 2-seriatis, 4-cellularibus, plus minus cylindraceis, (65–)70–75(–80) × 12–14 μ, demum atro-brunneis opacisque, transverse septatis, profunde constrictis; articulis terminalibus leviter longioribus et attenuatis, 17–20 μ longis; articulis mediis 14–17 μ longis. Stria germinationis obliqua. Strato mucoso hyalino angusto.

HOLOTYPUS: In fimo burrici, Mexico, Durango, N of Durango, 18 Aug. 1960, *Cain*, TRTC 36986. In Cryptogamic Herbarium, University of Toronto.

ETYMOLOGY: Greek, *systenos* = tapering to a point, and *spora* = seed, referring to the shape of the ascospores.

Perithecia scattered, immersed or semi-immersed, becoming nearly superficial when old, subglobose, 350–400 μ in diam, smooth, bare, dark brown to nearly black; neck short, conical, smooth, bare, black. Peridium thin, membranaceous. Asci eight-spored, clavate, 190–230 × 32–38 μ, broadly rounded above, broadest above the middle, gradually narrowing below into a short, stout stipe, measuring up to 15 μ in length. Paraphyses abundant, filiform, septate, branched, longer than the asci and mixed with them. Ascospores somewhat obliquely disposed, bi- or tri-seriate above, uni- or bi-seriate below, four-celled, more or less cylindrical (65–)70–75(–80) × 12–14 μ, narrowly rounded at the ends, straight or slightly curved, yellowish brown and translucent when young, becoming golden brown and finally dark brown and opaque; septa transverse; constrictions at septa broad and deep; terminal cells usually slightly longer than mid-cells, 17–20 μ in length, conspicuously narrowing toward the ends; mid-cells barrel-shaped, 14–17 μ in length; germ slit oblique and distinct; gelatinous sheath hyaline, narrow.

HABITAT: On dung of burro and goat.

SPECIMENS EXAMINED: MEXICO: Durango, TRTC 36986 (TYPE). San Luis Potosi, TRTC 36476.

This species can be distinguished from *S. kansensis* by the broader ascospores and the terminal cells, which are distinctly narrow toward the ends. In addition, the germ slit in *S. systenospora* is oblique whereas in *S. kansensis* it is strictly parallel. *S. systenospora* can also be distinguished from *S. pyriformis* by the narrower ascospores and oblique germ slit.

60. ***Sporormiella teretispora*** Ahmed & Cain, sp. nov. Figs. 35, 36

Peritheciis sparsis, immersis, subglobosis, 250–400 × 150–300 μ, atro-brunneis usque nigris, denudatis; collo breve, papilliformi, nigro, denudato. Peridio membranaceo. Ascis octosporis, cylindraceis, 180–220 × 27–32 μ, superne late rotundatis, breve stipitatis. Paraphysibus filiformibus, septatis, ascos superantibus. Ascosporis bi- aut tri-stichis, obliquis, 4-cellularibus, cylindraceis, 60–66 × 10–13 μ, utrinque late rotundatis, demum atro-brunneis opacisque, transverse septatis, constrictis leniter. Stria germinationis parallelo ordinata. Strato mucoso hyalino.

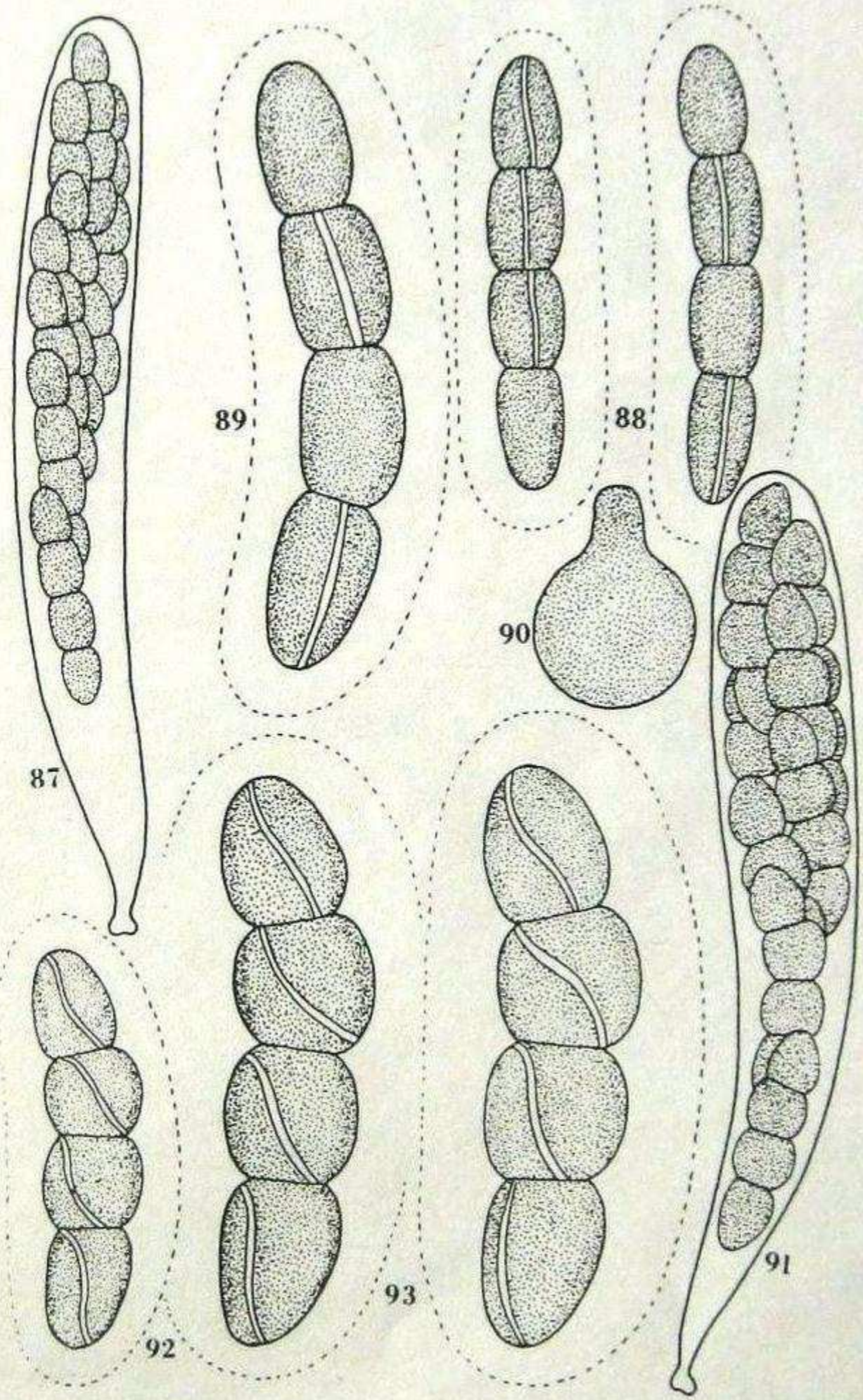
HOLOTYPUS: In fimo cuniculorum, U.S.A., Louisiana, Livingston Parish, Walker, 23 Aug. 1960, *Cain*, TRTC 36705. In Cryptogamic Herbarium, University of Toronto.

ETYMOLOGY: Latin, *teres* = cylindrical, and *spora*, referring to the shape of the ascospores.

Perithecia scattered, immersed, subglobose, smooth, bare, 250–400 × 150–300 μ, dark brown to black; neck short, papilliform, black, bare. Peridium membranaceous. Asci eight-spored, cylindrical, 180–220 × 27–32 μ, broadly rounded

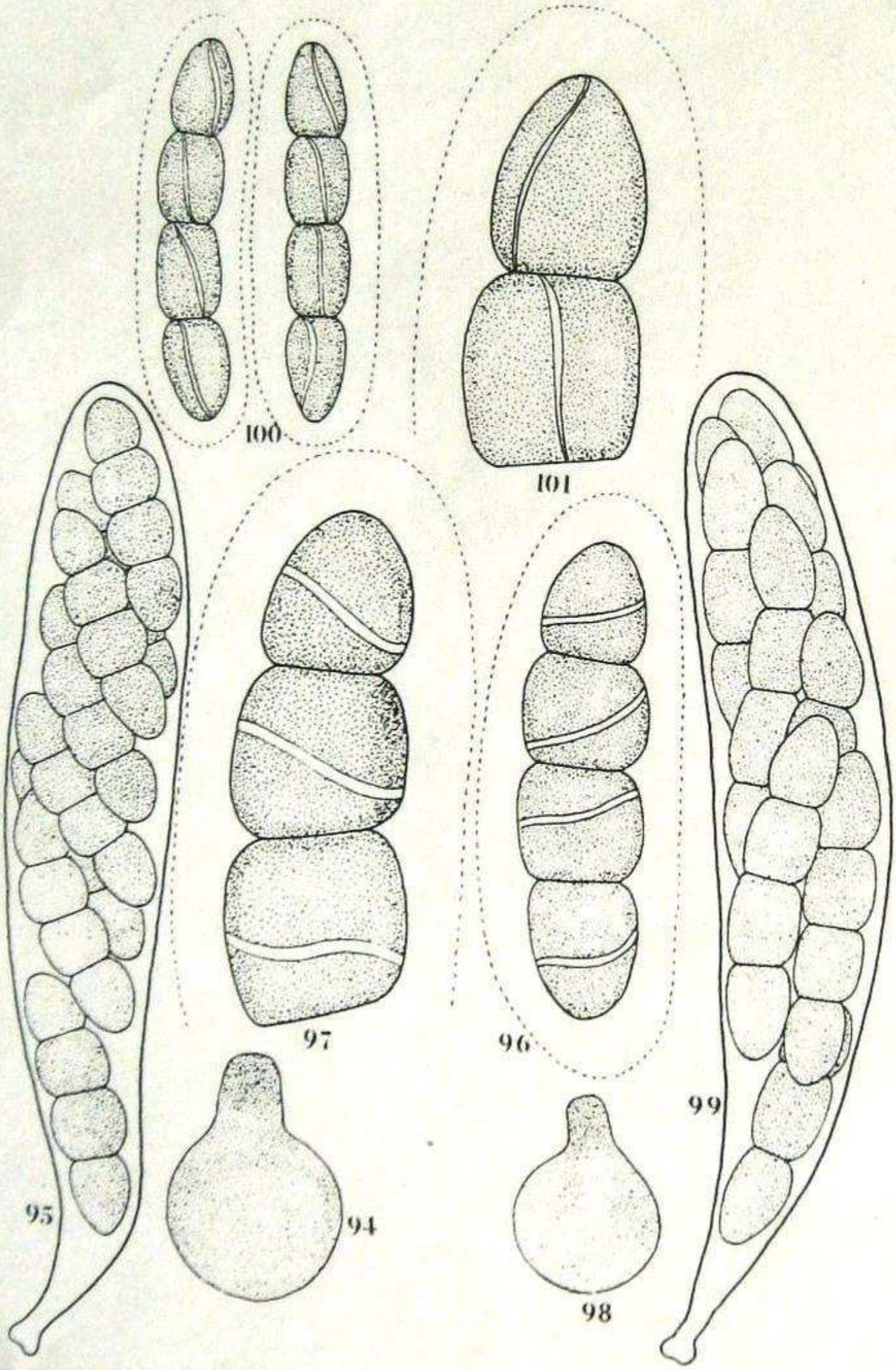
above, abruptly contracted below into a short stipe. Paraphyses filiform, septate, longer than the asci and mixed with them. Ascospores bi- or tri-seriate, four-celled, cylindrical, 60–66 × 10–13 μ, broadly rounded at the ends, upper cell more tapered than lower cell, dark brown and opaque when mature, septa transverse, constrictions at septa broad and shallow, segments nearly equal in size; germ slit nearly parallel; gelatinous sheath present.

HABITAT: On dung of burro, cow, goose, horse, rabbit, and rodent.



FIGS. 87–89. *Sporormiella kansensis* (TRTC 31529). Fig. 87. Ascus with ascospores, × 430. Fig. 88. Ascospores, × 660. Fig. 89. Ascospores, × 920. FIGS. 90–93. *Sporormiella megalospora* (TRTC 39218). Fig. 90. Perithecium, × 40. Fig. 91. Ascus with ascospores, × 430. Fig. 92. Ascospore, × 660. Fig. 93. Part of ascospore, × 920.

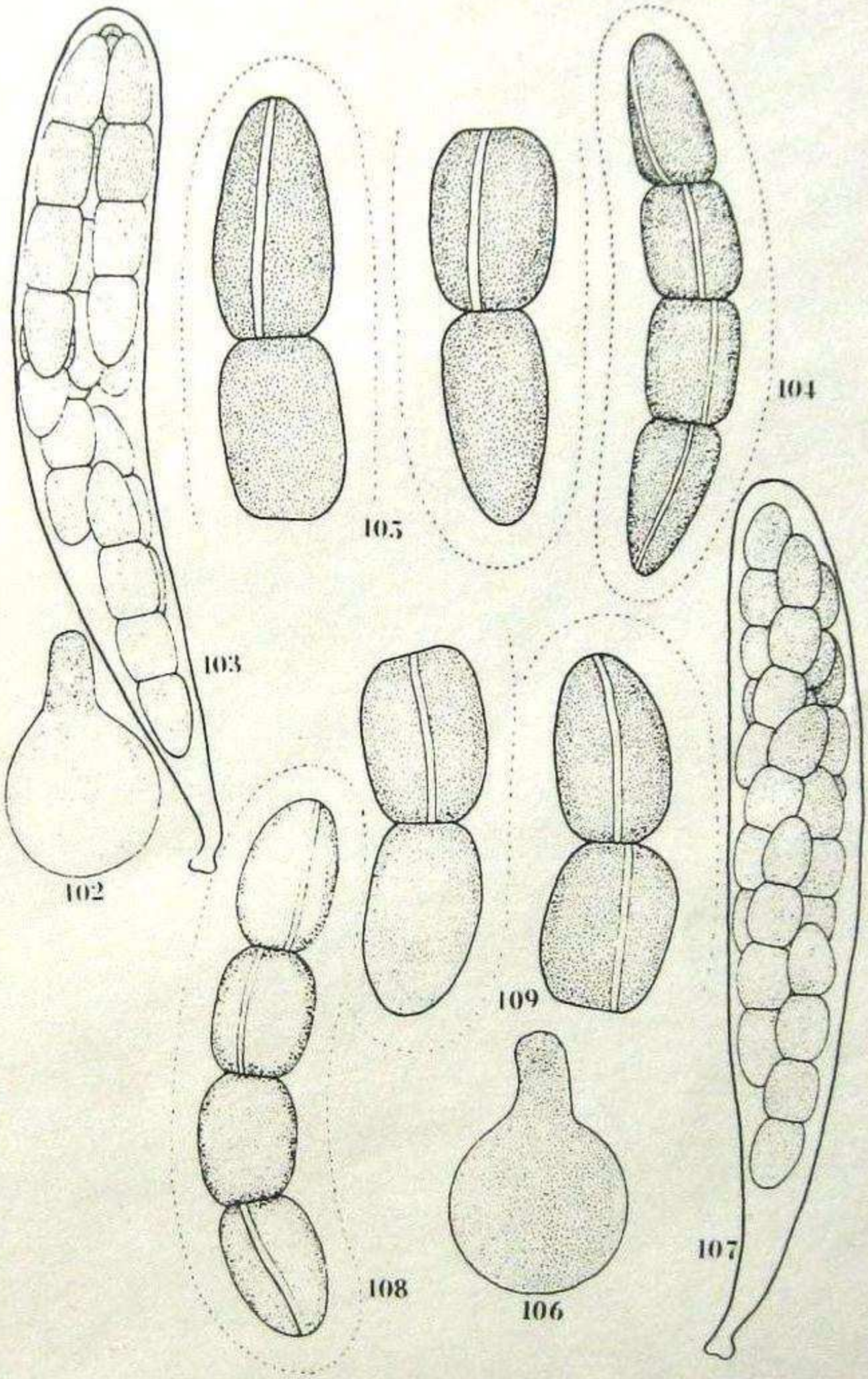
SPECIMENS EXAMINED: ARGENTINA: Tierra del Fuego, *Spegazzini*, LPS 3502. MEXICO: Durango, TRTC 38893, 39812. Hidalgo, TRTC 38873. Puebla, TRTC 39903. San Luis Potosi, TRTC 36548, 36965, 37491. UNITED STATES: Arkansas: Sebastian Co., TRTC 37579. Idaho: Fremont Co., TRTC 39860. Louisiana: Orleans Parish, TRTC 38125. Livingston Parish, TRTC 36705 (TYPE).



FIGS. 94–97. *Sporormiella euryspora* (TRTC 39010). Fig. 94. Perithecium, × 40. Fig. 95. Ascus with ascospores, × 430. Fig. 96. Ascospore, × 660. Fig. 97. Part of ascospore, × 920. FIGS. 98–101. *Sporormiella ovina* (Plantes Cryptogames par J. B. H. J. Desmazières 98 (NY)). Fig. 98. Perithecium, × 40. Fig. 99. Ascus with ascospores, × 430. Fig. 100. Ascospores, × 430. Fig. 101. Part of ascospore, × 920.

This species differs from *S. intermedia* in the larger dimensions of the asci and ascospores as well as the parallel germ slit. In some collections the germ slit is curved at each end.

The collections from Argentina labeled *Sporormia grandispora* Speg. by Spegazzini are different from the type of this species from Italy and belong to either *S. intermedia* or *S. teretispora*.



FIGS. 102–105. *Sporormiella longispora* (TRTC 5318). Fig. 102. Perithecium, × 40. Fig. 103. Ascus with ascospores, × 430. Fig. 104. Ascospore, × 660. Fig. 105. Parts of ascospore, × 920. FIGS. 106–109. *Sporormiella longisporopsis* (TRTC 38816). Fig. 106. Perithecium, × 40. Fig. 107. Ascus with ascospores, × 430. Fig. 108. Ascospore, × 660. Fig. 109. Parts of ascospore, × 920.