

STUDIES ON DISCOMYCETES—I
Types of species of *Ascobolus* and *Saccobolus*
in Spegazzini's herbarium

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The type collections of *Ascobolus laevisporus* Speg., *A. stictoides* Speg. and *Saccobolus aparaphysatus* Speg. are redescribed. *Ascobolus immersus* var. *andinus* Speg. is reduced to the synonymy of *A. immersus*, and *Saccobolus aparaphysatus* Speg. to that of *S. depauperatus*, while *A. megalospermus* Speg., *A. viridis* subsp. *microspermus* Speg. and *A. hansenianus* Speg. are regarded as nomina inquirenda.

The present paper, which is the first of a series of studies on Discomycetes, is concerned with type material of *Ascobolus* and *Saccobolus* from Spegazzini's her-

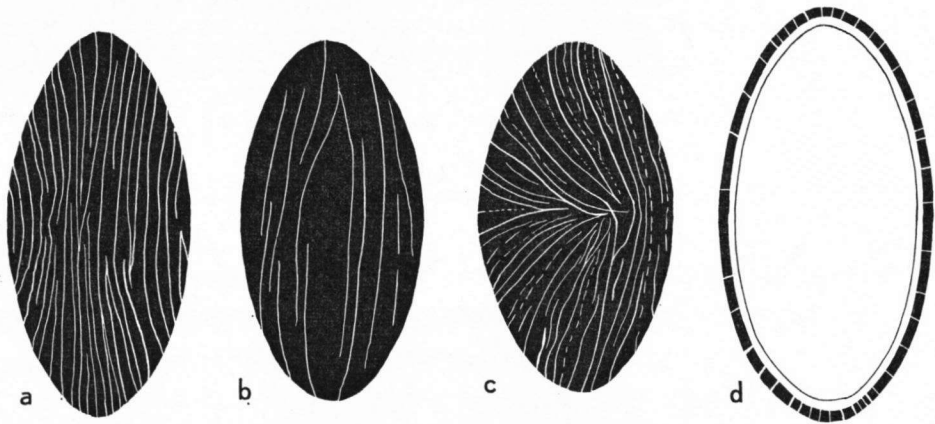


Fig. 1. *Ascobolus laevisporus*. Ascospores ($\times 2000$). — a-c. Lateral view. d. Optical section.

barium, deposited at La Plata (LPS). The author is indebted to Dr. J. C. Lindquist, for sending the herbarium specimens on loan.

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ASCOBOLUS LAEVIPOURUS Speg. — FIG. 1

Ascobolus laevisporus Speg. in An. Mus. nac. Buenos Aires 6: 307. 1899. — Holotype: LPS 26117.

Apothecia scattered or in small coherent groups, superficial, sessile, 3-8 mm in diameter. Receptacle at first globular, then expanding, and becoming scutellate,

externally coarsely white-furfuraceous, greenish; margin acute, more or less denticulate. Disk slightly concave or flat, becoming dirty greenish, the surface becoming dotted with the protruding ends of ripe asci. Hymenium about $175\ \mu$ thick. Hypothecium $20\text{--}25\ \mu$ thick. Flesh about $270\ \mu$ thick, of subglobular cells, $16\text{--}40\ \mu$ in diameter, accompanied by irregular undulating hyphae $6\text{--}10\ \mu$ thick. Excipulum $30\text{--}45\ \mu$ thick, composed of globular cells $10\text{--}25\ \mu$ in diameter, with round, cylindrical or pear-shaped cells only $7\text{--}12\ \mu$ wide near the margin and on the outside of the furfuraceous particles. Asci cylindrical-clavate, $200\text{--}250 \times 30\ \mu$, 8-spored, the wall blue in Melzer's reagent. Ascospores ellipsoid, at first hyaline, then pinkish-violet, becoming violet, $21.8\text{--}27.7 \times 12.0\text{--}13.4\ \mu$, ornamented with closely spaced, extremely fine subparallel ridges which only rarely anastomose and of which usually fifteen to twenty five are visible on each view of the spore, with lateral mucilaginous substance. Paraphyses slender, hyaline, often branched near the apex, about $3\ \mu$ thick, near the tip slightly enlarged up to $3\text{--}5\ \mu$, embedded in a greenish mucus.

On cow dung, La Plata, Argentina, 23.VIII.1888, C. L. Spegazzini (holotype, LPS 26117).

The difference between this species and *A. furfuraceus* (which is closely related) is evident because of the much finer sculpture of the ascospores and the larger apothecia.

ASCOBOLUS STICTOIDEUS Speg. — FIG. 2

Ascobolus stictoides Speg. in *Michelia* 1: 474. 1879. — Holotype: LPS 26119.

Apothecia scattered or gregarious, completely immersed in the substratum with only the extreme top and some mature asci protruding, $350\text{--}600\ \mu$ in diameter. Receptacle globular, opening by irregular rupturing of the wall, thinly tomentose, without true hairs, watery-white. Disk concave or flat, with the ripe asci strongly protruding, pale olivaceous. Hymenium about $280\ \mu$ thick, with $30\text{--}40$ asci. Hypothecium very thin. Flesh not sharply differentiated. Excipulum about $15\ \mu$ thick, composed of more or less isodiametric, polygonal cells, $15\text{--}25\ \mu$ wide (*textura angularis*), covered with a thin layer of interwoven cylindrical, irregularly branched,

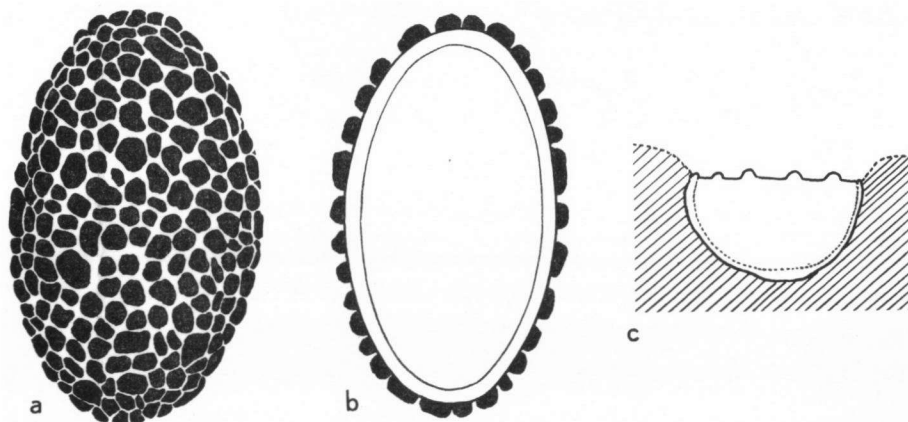


Fig. 2. *Ascobolus stictoides*. — a, b. Ascospores ($\times 2000$), a. lateral view, b. optical section. c. Diagrammatic section of apothecium ($\times 80$).

4–9 μ thick hyphae. Asci clavate-saccate, gradually tapering downward into a rather thick base, 150–160 \times 40 μ , 8-spored, the wall blued with iodine. Ascospores biseriata or irregularly disposed, ellipsoid, at first hyaline, smooth, then violet and sculptured, 25.3–28.0 \times 15.8–17.5 μ , the spore-sculpturing taking the form of rather coarse, rounded warts, the pigment in a rather thick layer, 0.7–1.5 μ thick. Paraphyses very slender, not thickened above, not branched, septate, hyaline, about 3 μ thick, embedded in a yellowish mucilaginous substance.

On dog dung, Conegliano, Italy, IV.1879, C. L. Spegazzini (holotype, LPS 26119).

This well-characterized species belongs to *Ascobolus* section *Dasyobolus*. It is difficult to find the small fruit-bodies on account of their hidden growth.

ASCOBOLUS IMMERSUS var. *ANDINUS* Speg.

Ascobolus immersus var. *andinus* Speg. in An. Mus. nac. Buenos Aires 19: 452. 1909. — Type: represented by a small drawing and some notes on a cover paper (LPS 26115). — Type locality: Mendoza, Cacheuta, Argentina.

A. immersus var. *andinus* was said to differ from the type variety of *A. immersus* only by the possession of 4-spored instead of 8-spored asci. In typical *A. immersus* the number of spores developed in one ascus may vary from eight to one, even in the same fruit-body. Therefore, I consider the two taxa conspecific. Spegazzini may have studied only one fruit-body, the one he used for his description.

SACCOBOLUS APARAPHYSATUS Speg. — FIG. 3

Saccobolus aparaphysatus Speg. in An. Mus. nac. Buenos Aires 6: 308. 1899. — Holotype: LPS 26139.

Apothecia scattered or gregarious, superficial, sessile, 150–200 μ in diameter. Receptacle at first globular, later expanding and becoming turbinate-hemi-

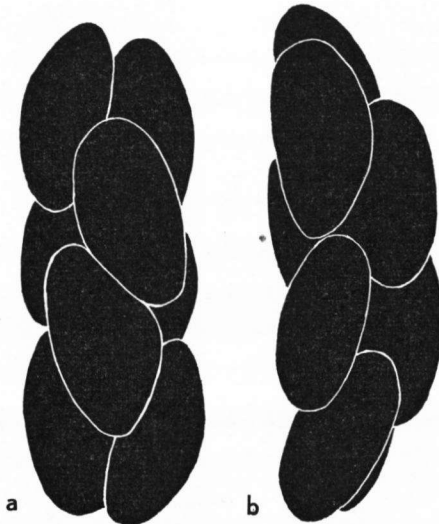


Fig. 3. *Saccobolus aparaphysatus*. — Spore-clusters (\times 2000).

spherical or discoid with narrow base, externally smooth, at first whitish, becoming violet. Disk flat or convex, becoming violet, soon dotted with the protruding ends of asci. Hymenium 80–100 μ thick. Hypothecium rather thin. Flesh not differentiated. Excipulum at the base consisting of small isodiametric cells which give rise above to a thin layer of parallel hyphae resembling paraphyses, with intercellular amorphous pigment. Asci very broadly clavate, with strongly truncate apex, 65–70 \times 18–20 μ , 8-spored, the wall staining blue with iodine. Spore-clusters compact, elongated, up to 32–37(–40) μ long and 11–13 μ in diameter. Ascospores more or less arranged in two rows of three and one of two spores, ellipsoid or fusiform-ellipsoid with blunt ends, at first hyaline, then pinkish, becoming dark-violet, 12.5–14.5 \times 5.8–7.0 μ , pigment-layer smooth or with an accidental small crack, sometimes with granules of pigment near the lines of contact of the spores. Paraphyses rather scarce, slender, not branched, slightly enlarged above, hyaline or faintly coloured, about 2 μ thick, near the tip up to 2.5–3 μ .

On horse dung, La Plata, Argentina, V. 1888, C. L. Spegazzini (holotype, LPS 26139).

According to Spegazzini (1899), *S. aparamphysatus* is related to *S. depauperatus* but is said to differ from this species by the lack of paraphyses. However, in species of *Saccobolus* paraphyses are often scarce, especially in old fruit-bodies. Therefore, it is easy to understand that Spegazzini overlooked the few paraphyses present among the remains of the emptied asci. This fungus fully agrees with *Saccobolus depauperatus* (Berk. & Broome) E. C. Hansen, the following collection of which is here considered lectotype: Broome (No. 319), 31.X.1864, on horse dung, Hanham, Great Britain (K, BM, E). Since *S. depauperatus* is an earlier name, Spegazzini's species falls into the synonymy of it.

Nomina inquirenda

The following species of *Ascobolus* and *Saccobolus* described by Spegazzini are known to the writer only from their original descriptions. No specimens are known to him to be in existence. None of them has ever been found again. The descriptions are insufficient to place the species correctly.

ASCOBOLUS MEGALOSPERMUS Speg.

Ascobolus megalospermus Speg. in An. Mus. nac. Buenos Aires 6: 307. 1899. — Type specimen: non-existing. — Type locality: near Colonia Resistencia, Chaco, Argentina.

This fungus would differ from all other species of *Ascobolus* thus far described by its enormous ascospores (50–60 \times 25–28 μ) formed in large apothecia (5–8 mm in diameter).

ASCOBOLUS VIRIDIS Curr. subsp. MICROSPERMUS Speg.

Ascobolus viridis Curr. subsp. *microspermus* Speg. in An. Soc. cient. argent. 12: 88. 1881. — Type specimen: non-existing. — Type locality: near la Recoleta, Argentina.

This fungus is certainly not a subspecies of *A. viridis* Curr., which has very characteristic ascospores. It might be a somewhat eroded *Ascobolus denudatus* Fr.

SACCOBOLUS HANSENIANUS Speg.

Saccobolus hanseianus Speg. in *Michelia* 1: 234. 1878. — Type specimen: not known to be in existence. — Type locality: Conegliano, Italy.

Probably a good species of *Saccobolus* with very big ascospores ($35-40 \times 25 \mu$). The description is, however, insufficient to place this species accurately.

LITERATURE

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