

## Additions To Indian Dung Fungi

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The occurrence of *Ascodesmis microscopica* (Cr. & Cr.) Seaver, *Lasiobolus microsporus* Bezerra & Kimbrough and *Lasiobolus diversisporus* (Fuck.) Seaver. belonging to the order Pezizales is described.

Three species of coprophilous fungi belonging to the order Pezizales of the subdivision Ascomycotina are described in this paper. One of the species belongs to the genus *Ascodesmis* van Tiegh. and the other two belong to the genus *Lasiobolus* Sacc. emend. Kimbrough apud Kimbrough & Korf. The collections have been deposited in the Herbarium of the Panjab University, Chandigarh, abbreviated as PAN.

**SYSTEMATIC ACCOUNT** *Ascodesmis microscopica* (Cr.&Cr.) Seaver, Mycologia 8: 3. 1916.

Basionym: *Ascobolus microscopicus* Cr.&Cr., Ann. Sci. Nat. IV 7: 175. 1857. Figs. 1, 2.

Apothecia up to 0.3 mm diam, densely gregarious, sessile, turbinate, non-hairy, whitish at first, becoming brown to blackish at maturity; asci up to 90 x 30 µm, 8-spored, broadly clavate, round at the apex, protruding beyond hymenium at maturity, J-; ascospores (10-) 10.8-15.8 x 8.6-12.8 µm without markings and 13-17.5 x 11.8-14.3 µm with markings, broadly ellipsoid to subglobose, irregularly biseriate to crowded, hyaline to pale when young, dark brown at maturity, sculptured, sculpturing consisting of irregular and broken ridges which sometimes anastomose to form a rather incomplete reticulum, surrounded by a regular perisporium;

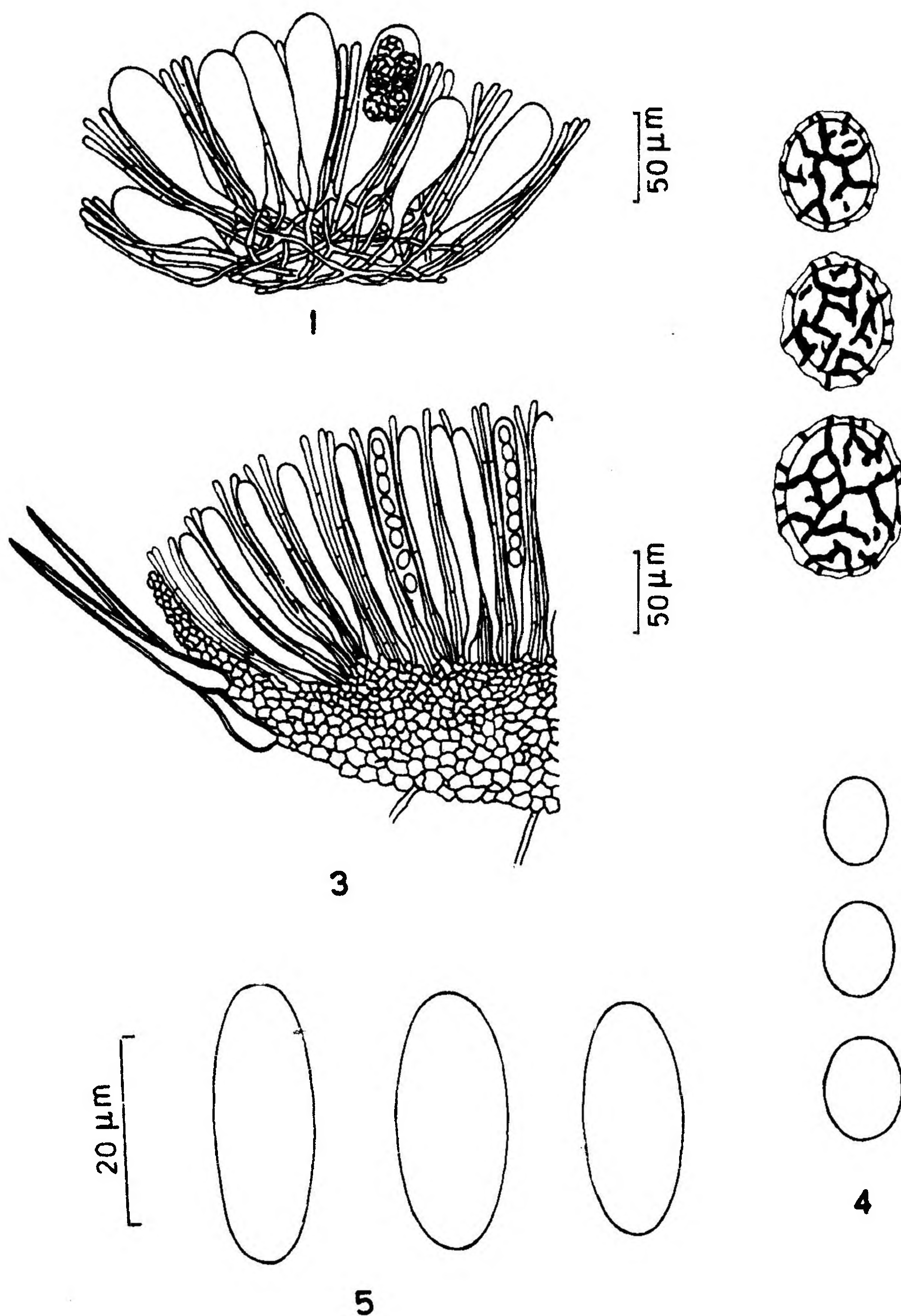
paraphyses up to 4 µm wide below, slightly enlarged at the apices, straight, septate; excipulum almost lacking, comprising few loosely intruding hyphae forming a thin hyphal mass below the hymenium.

**COLLECTION EXAMINED** PAN 7900, on duck dung and a piece of paper smeared with dung, Zoological Park, Chhat Bir, Punjab, on April 1980, leg. R.P. Bhatt (The dung sample was placed in moist chamber on 8.4.1980, apothecia appeared only at 20°C on 16.4.1980 and matured on 21.4.1980).

**COMMENTS** The Indian specimens are typical of *Ascodesmis microscopica*. It is close to *A.sphaerospora*, but the latter has smaller and spherical ascospores which are without any perisporium.

*Lasiobolus microsporus* Bezerra & Kimbrough, Can J Bot 53: 1221. 1975 Figs. 3, 4.

Apothecia up to 0.6 mm in diam, gregarious, sessile, discoid, white to light pink, externally hairy; hairs up to 225 x 16 µm, superficial, bristly, thick-walled (wall up to 2 µm thick), incrustated with characteristic cyanophilous markings, hyaline, aseptate, bulbous at the base; asci 115-155 x 11-13.5 µm, 8-spored, cylindrical, round at the apex, J-; ascospores 9-11 x 7-8.5 µm, broadly ellipsoid, with a single de Bary bubble, hyaline, smooth; paraphyses up to 2.5 µm wide below and up to 3.5 µm at the apex, straight, septate, simple or



Figs. 1-2 *Ascodesmis microscopica*. 1. V.S. of the apothecium. 2. Ascospores. Figs. 3-4 *Lasiobolus microsporus*. 3. V.S. of the apothecium passing through its margin. 4. Ascospores. Fig. 5 *Lasiobolus diversisporus*. 5. Ascospores.

branched below; excipulum up to 95  $\mu\text{m}$  thick, textura angularis throughout, cells up to 19 x 14  $\mu\text{m}$ , becoming smaller towards margin and hymenium.

**COLLECTION EXAMINED** PAN 7904, on goat pellets, village Purchh, Chandigarh, March 25, 1980, leg. R.P. Bhatt. (fresh goat pellets were placed in moist chamber on 12.3.1980. At 20°C apothecia appeared on 20.3.1980 and matured on 25.3.1980. At room temperature apothecia appeared on 19.3.80 and matured on 24.3.1980).

**COMMENTS** When apothecium of this fungus is stained in cotton blue, minute, blue incrustations on the walls of hairs become visible, and this feature along with bulbous hair-base, small asci, ascospores and hairs, distinguishes *L.microsporus* from other species of *Lasiobolus*.

*Lasiobolus diversisporus* (Fuck.) Sacc., Syll. Fung. 8: 538. 1889. Basionym: *Ascobolus diversisporus* Fuck., Jb. Nassau. Ver. Naturk. 23-24: 289. 1870 Fig. 5.

Apothecia up to 0.4 mm in diam, gregarious, sessile, discoid, orange, externally hairy, anchored by the mycelial hyphae up to 4.2 (-5.5)  $\mu\text{m}$  wide which are hyaline, aseptate and unbranched; hairs up to 440 x 30  $\mu\text{m}$ , superficial, projecting beyond margin and forming a fringe around it, hyaline, thick-walled, wall up to 3.6  $\mu\text{m}$  thick, aseptate, somewhat swollen immediately above the base, bristly; asci 142-212 x 21-28.5  $\mu\text{m}$ , 8-spored, clavate, obtuse at the apex, narrowed below, J-; as-

cospores 24.2-30 x 10-11.5  $\mu\text{m}$ , ellipsoid, uniseriate to irregularly biseriate, hyaline, smooth, with a single de Bary bubble; paraphyses up to 2  $\mu\text{m}$  wide below, slightly enlarged above, filiform, thin-walled, septate, simple or branched below, straight; excipulum throughout of textura angularis, cells up to 21.5 x 15  $\mu\text{m}$ , hypothecium inconspicuous.

**COLLECTION EXAMINED** PAN 18370, on mule dung in a mixed forest, Chuzom, Ha Dzong, Bhutan, October 1, 1980, alt. 10,000', leg. R. Kaushal.

**COMMENTS** Except for narrower and slightly smaller ascospores, the description agrees well with that given by Bezerra & Kimbrough (1975) for *L. diversisporus*. In ascospore size it is somewhat similar to *L. ruber* (Quel.) Sacc., but the latter has elliptic-fusoid to almost fusoid ascospores and longer hairs.

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## REFERENCES

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