

Slime-moulds of Delhi

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A systematic work on the slime-moulds of Delhi was started by Singh & Pushpavathy in 1964 and they published two research papers, describing fifteen species (1965, 1966). The present paper adds ten more species to the original list of fifteen. Two species and one variety amongst these are first reports from India and have been fully described and illustrated. All these specimens except *Badhamia macrocarpa* were collected from a low lying area on the old Delhi Ridge and from University Botanical Garden, on August 16, 1970. Fruiting bodies of *Badhamia macrocarpa* appeared on a thatched basket of *Phoenix* leaves which remained wet for about a week.

The specimens were glued to cardboard boxes and their details worked out following the methods of Thind & Sohi 1955, and Singh & Pushpavathy 1965. The specimens have been deposited in the Herbarium of Hans Raj College, University of Delhi, Delhi-7, constituting the numbers 112—122, and the duplicates of the new records have also been deposited in the Department of Botany, University of Texas, Austin, U. S. A. The identification of the specimens is based on 'The Myxomycetes' by Martin & Alexopoulos.

1. *Arcyria denudata* (L.) Wettst.

Collected on dead twigs, Delhi Ridge; August 16, 1970. Typical. Herb. No. 113.

2. *Perichaena depressa* Lipert

Collected on dead bark, August 16, 1970 and from bark of the living trees placed in moist chamber. The fructifications appeared within ten days, mostly on the side away from light. Plasmodium is yellowish. Quite typical. Herb. No. 112.

3. *Arcyria insignis* Kalchbr. & Cooke

Collected on dead twigs, Delhi Ridge, August 16, 1970. Typical. Herb. No. 114.

4. *Diachea subsessilis* Peck

Collected on dead twigs, Delhi Ridge, August 16, 1970. Herb. No. 115. The stalks of the fructifications in this collection are longer and the colour bluer than the expected, but quite typical otherwise.

5. *Badhamia macrocarpa* (Ces.) Rost. (Figs. C, E, G)

Collected on thatched basket of *Phoenix* leaves, August, 1970. Herb. No. 116. New record for India.

Fructifications: sporangiate, stipitate or sessile, up to 1 mm in total height; sporangia closely or loosely gregarious, erect or slightly bent, globose or subglobose, or reniform and umbilicate below, ash grey, white or greyish black, umbilicus orange brown, 0.2—0.5 mm in diameter; stipe: 0.4—0.5 mm long, dark brown to almost black and broad at the base, yellowish orange and narrow at the top, longitudinally rugose; hypothallus: inconspicuous, merging into the substratum, rotate, concolorous with the lower portion of the stipe; peridium: single, thin membranous, translucent, covered with thick lime flakes, white; dehiscence: irregular, but mostly the upper portion falling away, leaving behind the lower part as a deep cup; columella absent. Capillitium: appearing physaroid under binocular but calcareous throughout, hence badhamoid. Nodes large and irregular, internodes narrower and longer, both filled with calcareous granules. Spores: black in mass, dark violet brown by transmitted light, globose or subglobose, coarsely warty, 11—12 μ in diameter.

This collection resembles *B. macrocarpa* very closely. It differs from it in the absence of plasmodiocarps and in having smaller spores, 11—12 μ in diameter instead of 11—15 μ .

6. *Physarella oblongata* (Berk. & Curt.) Morgan f. *alba* Alexop. (Fig. A)

Collected on dead twigs and broken earthen pots, Delhi Ridge, August 16, 1971. Herb. No. 117. New record for India.

f. *alba* is characterised by grey-white sporangia, yellow stipes and white plasmodium. It is a consistent white variant of *Physarella oblonga*. This collection resembles f. *alba* in all respects.

7. *Physarum cinereum* (Batsch) Pers.

Collection on living *Cucurbita* leaves and stems, Botanical Garden, August 16, 1970. Typical. Herb. No. 118.

8. *Physarum pusillum* (Berk. & Curt.) G. Lister

Collected on decaying ropes, Delhi Ridge, August 16, 1970. Typical. Herb. No. 119.

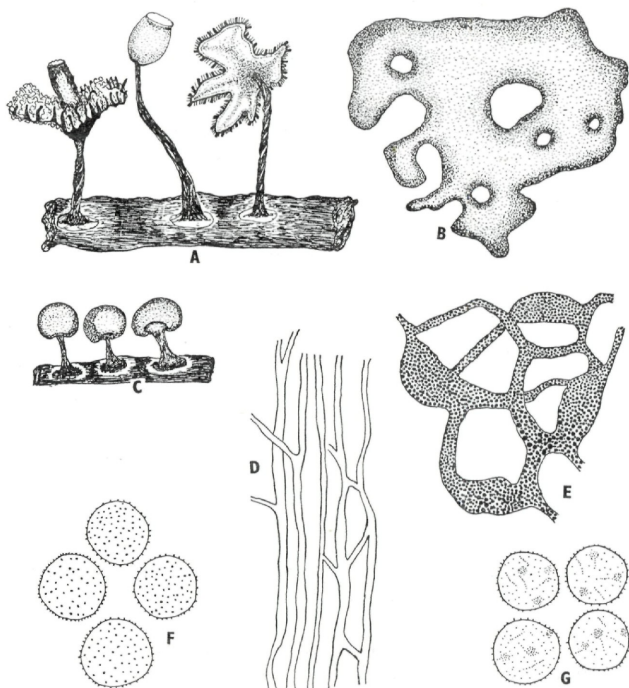
9. *Didymium squamulosum* (Alb. & Schw.) Fries

Collected on *Curcubita* leaves and dead twigs, Botanical Garden and Delhi Ridge, August 16, 1970. Typical. Herb. No. 120 & 212. No. 120 is a sessile form of *D. squamulosum*.

10. *Diderma platycarpum* var. *platycarpum* Nann. Brem. (Figs. B, D, F)

Collected on dead and decaying leaves, Delhi Ridge, August 16, 1970. Herb. No. 122.

Fructifications: plasmodiocarpous; plasmodiocarps up to 13 mm long and 7 mm wide, white, broadly effused, simple or branched and netted; hypothallus: inconspicuous; peridium double, outer layer thick, crustose, calcareous, brittle, inner layer closely applied to the outer layer, sometimes separate, becomes visible only when the outer



Physarella oblongata f. *alba*. Fig. A. Thimble shaped sporangia, $\times 10$.
Diderma platycarpum var. *platycarpum*. Fig. B. Broadly effused plasmodiocarp, $\times 10$. Fig. D. Hyaline, non-calcareous capillitium, $\times 1000$. Fig. F. Prominently warty spores, $\times 1000$.
Badhamia macrocarpa. Fig. C. Umbilicate sporangia, $\times 10$. Fig. E. Capillitium with calcareous nodes and internodes, $\times 400$. Fig. G. Warty spores with warts arranged in lines and clusters, $\times 1000$.

layer is broken obliquely, membranous, translucent; dehiscence: irregular. Columella poorly developed, represented by the raised base of the fructification, yellowish brown. Capillitium: composed of branched and sparingly anastomosed hyaline threads, flattened at the base and narrow at the tips. Spores: black in mass, violaceous brown by the transmitted light, globose, 10—11 μ in diameter, prominently verrucose, warts arranged in faint lines and distinct clusters.

This collection resembles *Diderma platycarpum* var. *platycarpum* very closely. However, it differs from the same in that the two peridial layers are not much distinct and the spores are distinctly warted and not minutely warted. Further the capillitium is quite characteristic. It is so profuse that the overlapping of the threads (which ordinarily have few anastomoses) gives the appearance of much branched threads.

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