

## Notes on Fungi from North-east India-XII. *Physarum laevisporum* sp. nov. from Assam.

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Species of *Physarum* are perhaps the commonest of Myxomycetes reported by the writer from Madras and Assam (Agnihothrudu, 1954 a, b, 1955, 1956 a, b, 1958 and 1959). In a recent collection of tea leaves received from Nazira (Assam), numerous fructifications of an undescribed *Physarum* were noticed. The plasmodium is greyish-black in colour and the fructifications are amphigenous, white to pallid in colour. The plasmodiocarps are terete, short, segmented into sporangia or long, sinuous up to 10 mm forming occasionally, an irregular discontinuous reticulum. The plasmodiocarp wall is typically didermous and the outer peridium dehisces irregularly and curls up exposing the inner iridescent, thin, translucent wall. The lime knots are angular and the capillitial tubules, hyaline and devoid of calcareous granules. No sign of any columella was observed. The spores are globose, smooth walled and pale purplish brown.

*Physarum laevisporum* Agnihothrudu. Spec. nov.

Plasmodium griseo-nigrum. Fructificationes vulgo plasmodiocarpicae, usque ad 10 mm. longae, acervatae, saepe in sporangia brevia, ovoidea vel sphaerica, alba, sordide alba vel pallida, supra

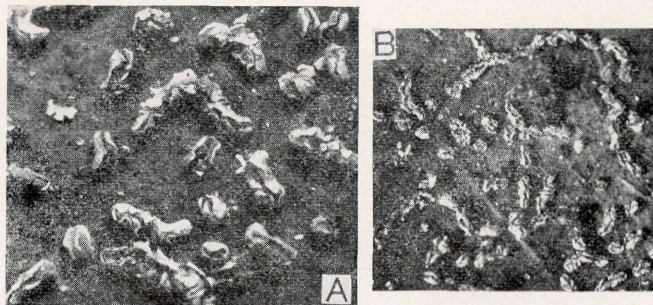


Fig. 1. A. *P. laevisporum* showing the plasmodiocarps and sporangia with the didermous peridium ( $\times 20$ ). — B. Showing the habit of the myxomycete. White calcareous nodes of the capillitium are seen in a few dehisced plasmodiocarps ( $\times 10$ ).

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irregulariter dehiscentia divisae. Peridium plerumque duplex, strato exteriori laevi vel tenuiter areolato, e granulis calcareis dense confertis, albidis usque ad 2  $\mu$  diam. metientibus et in lobos distinctos separatis composito. Peridium interius subpurpurascens, tenue, translucens, iridescens, capillitium denso, e nodis calcareis majusculis albidis angularibusque usque ad 100  $\mu$  diam. metientibus tubulis tenuibus hyalinis connexis composito; sporae acervatim nigrae, singulatim obscure pureobrunneae, sphaericae, leves, 7—8  $\mu$  diam.

Typus lectus in follis Theae (*Camellia sinensis* (L. O. Kuntze) et in aliis reliquiis vegetalibus a G. C. S. Barua, Nazira, die 18 maio anni 1960 in Assamia, et positus in Herbario Mycologico ad Toeklai exp. Sta.

**Physarum laevisporum** Agnihotrudu. Sp. nov.

Plasmodium greyish-black. Fructifications mostly plasmodiocarpous, upto 10 mm long, crowded, often segmented into short sporangia that are oval or spherical, white, dirty white or pallid, dehiscing irregularly on the top; peridium typically double, the outer layer smooth or somewhat areolate, made of densely compacted lime granules up to 2  $\mu$  in diam. separating out in distinct lobes; the inner peridium somewhat purplish, thin, translucent, iridescent, capillitium dense, composed of large, whitish angular calcareous nodes, measuring up to 100  $\mu$  in diam., connected by thin hyaline, tubules; spores black in mass, dark purplish brown under transmitted light, spherical, smooth walled, 7—8  $\mu$  in diam.

Type on leaves of tea (*Camellia sinensis* (L.) O. Kuntze) and other vegetable debris, Coll. G. C. S. Barua, Nazira, 18-5-1960, Assam, deposited in the Mycological Herbarium, Toeklai experimental station.

The specific epithet *laevisporum* is chosen to denote the smooth-walled spores.

The species described here differs from *Physarum echinosporum* Lister, *P. bivalve* Pers., and *P. retisporum* Martin, Thind et Rehill in the terete nature of the sporangia and in the irregular median dehiscence of the sporangial wall. In *P. bogoriense* Racib. and *P. aeneum* (Lister) R. E. Fries the outer peridium is distinctly coloured, in the former it is yellow brown and in the latter as the name itself denotes, it is bronze. Besides, in *P. bogoriense* the dehiscence is by triangular reflexed lobes that expose the inner peridium which is whitish unlike the species under report where it is iridescent and purple. The nearest ally to this species is, perhaps *P. bitectum* G. Lister which has white plasmodium with the plasmodiocarps having smooth-walled lime knots and spores that are distinctly bigger and spinulose (10—13  $\mu$ ) with a paler smooth area of dehiscence. On the other hand, *P. laevisporum* is characterized by greyish-black plasmodium, pallid plasmodiocarps

with whitish angular lime knots and smooth walled, smaller spores (7—8  $\mu$ ).

Martin's (1949) Key 2 of the didermous species of *Physarum* is suitably modified herebelow to include *Physarum retisporum* Martin *et al.* (1959) and *P. laevisporum* described in this paper.

Key to species of *Physarum* with peridium typically double, the two layers firmly united or separable.

A. Primarily plasmodiocarpous, plasmodiocarps long, often branched or reticulate, usually accompanied by shorter plasmodiocarps or sporangiate fruitings.

B. Plasmodiocarps strongly compressed laterally; dehiscence by a longitudinal fissure.

C. Spores marked with ridges and spines., 11—14  $\mu$  diam.

*P. echinosporum* Lister.

C. Spores typically reticulate 9—11  $\mu$  diam.

*P. retisporum* Martin *et al.*

C. Spores spiny 8—10  $\mu$  in diam.

*P. bivalve* Pers.

B. Plasmodiocarps terete or nearly so; dehiscence not by a longitudinal fissure.

D. Plasmodiocarps white or pallid, usually rather short and unbranched.

E. Lime knots, smooth spores spinulose 10—13  $\mu$  diam.

*P. bitectum* G. Lister.

E. Lime knots angular, spores smooth 7—8  $\mu$  diam.

*P. laevisporum* Agnihotrudu.

D. Outer peridium distinctly coloured.

E. Outer peridium smooth, yellow-brown; dehiscence by triangular lobes exposing the white inner peridium.

*P. bogoriense* Racib.

E. Outer peridium bronze, wrinkled; inner wall iridescent, membranous, dehiscence not lobate.

*P. aeneum* (Lister) R. E. Fries.

The rest of the key for didermous species of *Physarum* which includes *P. diderma* Rost., *P. contextum* (Pers.) Pers., *P. mortoni* Macbr., *P. alpinum* (A. et G. Lister) G. Lister, *P. albascens* Macbr. and *P. rubronudum* G. W. Martin where the fruitifications are primarily sporangiate, but sometimes merge into short, rarely long, unbranched plasmodiocarps is not affected by the inclusion of the recently described *P. retisporum* Martin *et al.*, and *P. laevisporum* Agnihotrudu.

#### Acknowledgements.

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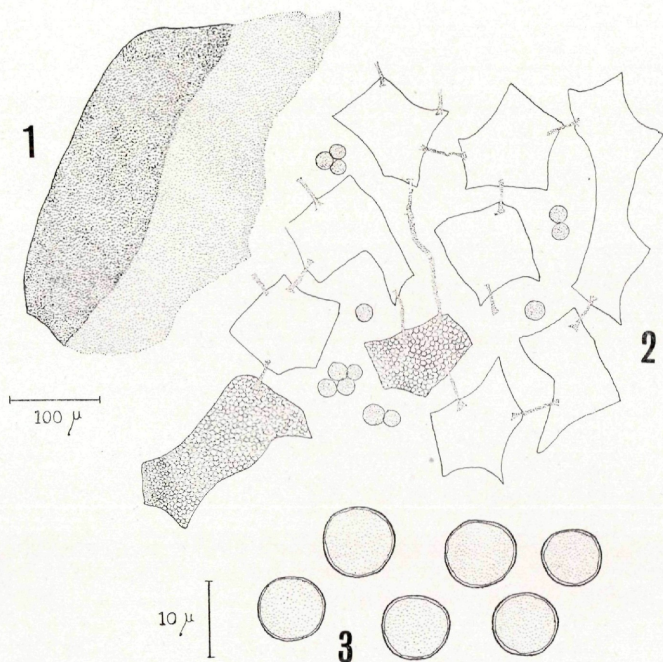


Fig. 2. *Physarum laevisporum* Agnihotrudu. - 1. The peridium showing the dideramous nature. - 2. Calcareous nodules of the Capillitium connected by hyaline tubules. - 3. Spores.

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