

THREE INTERESTING PYRENOLICHENS FROM THE RAIN FORESTS OF KARNATAKA STATE

THE lichen flora of India is still imperfectly known and large parts of the country are still unexplored for the lichens (Awasthi¹). Rich forests of the Karnataka State remained unexplored for lichens till early seventies. Patwardhan and his associates,³⁻⁶ however, described over 50 species of lichens from the Karnataka State during the last six years.

In our recently collected lichens from the rain forests of South Canara, Karnataka, we found three rare pyrenolichens of the genera *Campylothelium* Muell. Arg., *Pleurotrema* Muell. Arg. and *Lithothelium* Muell. Arg. The latter two genera constitute new generic records to the lichen flora of India. Only one species of the genus *Campylothelium*, *C. superbum* (Fr.) Muell. Arg. has been listed by Awasthi² in his *Catalogue of Indian Lichens*.

None of the 10 species of *Pleurotrema* and 2 species of *Lithothelium*, known on world level, resemble the species described below in respect of their morphology of the pseudothecium and the ascospore dimensions. *Campylothelium nitidum*, an addition to the Indian lichen flora, is also described in detail below.

1. *Pleurotrema filispora* sp. nov. Patwardhan, Makhija et Rane (Figs. 1, 2)

Thallus corticola, crustaceus, albidus, effusus, pro parte hypophloeodes, hypothallo nigricante limitatus; pseudothecia sparsa, solitaria, emergentia, fusca vel nigricantia, elongata usque ad 0.3 mm lata et 1.5 mm longa, ostiolo fusco-nigro, obliquo; hymenium hyalinum, tectus cum parites brunneum vel partem nigro; ascosporae 8: nae, incoloratae, filiformes, multiseptatae, plusquam 450 μ m longae et 1.5 μ m latae.

Thallus crustose, corticolous, smooth, pale gray, no distinct hypothallus; pseudothecia black to dark brown, solitary, emergent, scattered, obliquely oriented with ostiole on lateral side, partly covered with thallus, carbonized on upper surface, lower surface non-carbonized; ostiole followed by long narrow neck into ovate hymenium; asci bitunicate, cylindrical, narrow; ascospores 8/ascus, hyaline, filiform transversely many septate, 225—more than 450 μ m long \times 1.5 μ m.

Holotype: Peercode, near Hiriadka, on Udipi-Agumbe Road, in rain forest, elev. app. 200 m, leg P. G. Patwardhan and M. B. Nagarkar, 27-1-1980, 80.210 (AMH).

2. *Lithothelium indicum* sp. nov. Patwardhan, Makhija et Rane (Figs. 3, 4)

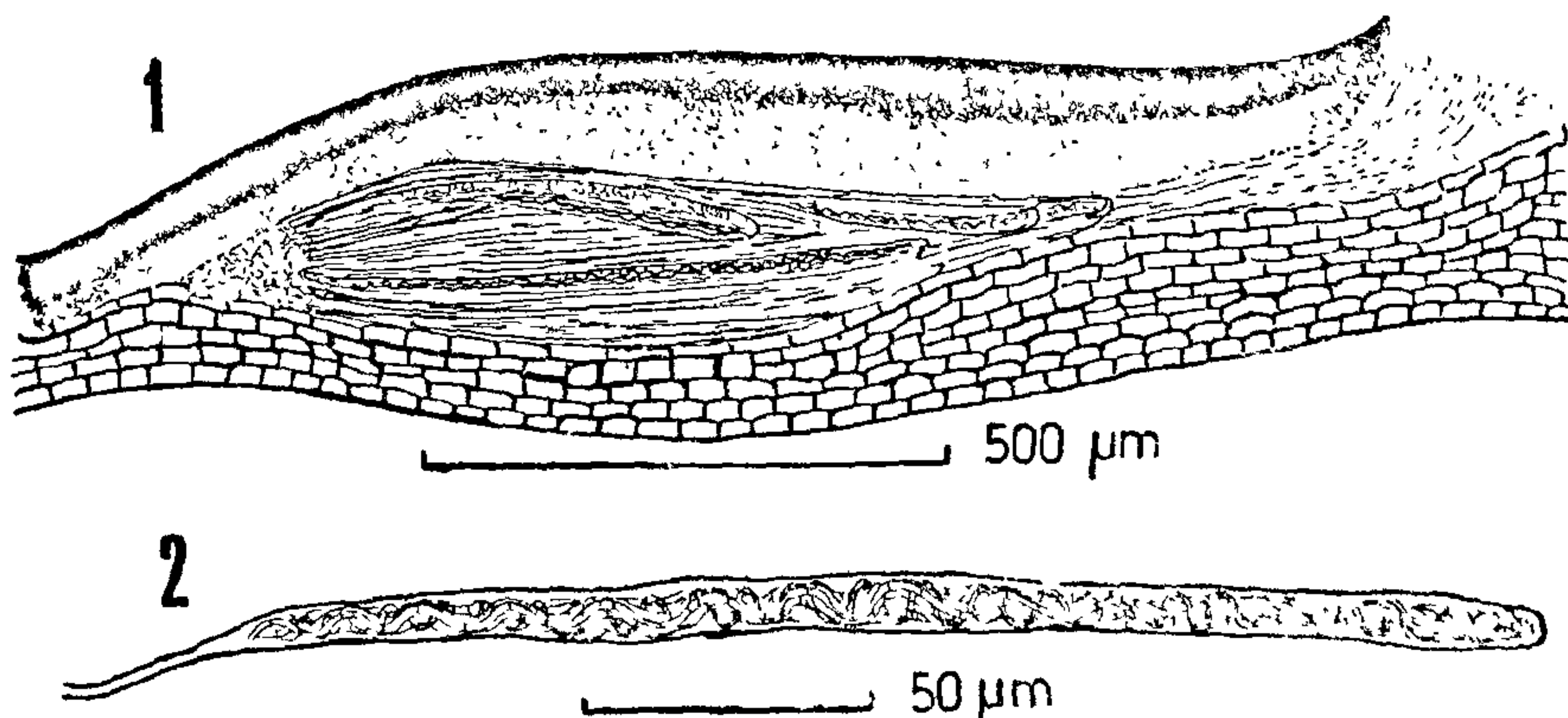
Thallus crustaceus, laevigatus, olivaceo-brunneus; pseudothecia solitaria vel 2-3 confluentia, 0.5-0.8 mm diametro, hemisphaerica, ostiolo nigro, oblique; hymenium hyalinum, tectus cum parites nigrum, carbonaceus; ascosporae 6-8: nae, hyalinum, 3-septatae, loculis lenticularibus 10 \times 17-20 μ m.

Thallus crustose, corticolous, determinate, smooth, dark brown; pseudothecia solitary or 2-3 aggregated in stroma, black, partly emergent, emergent part conical, wall carbonized, ostiole on lateral side, followed by a neck, hymenium hyaline; ascospores 6-8/ascus, transversely 3-septate, hyaline, 10 \times 17-20 μ m in size.

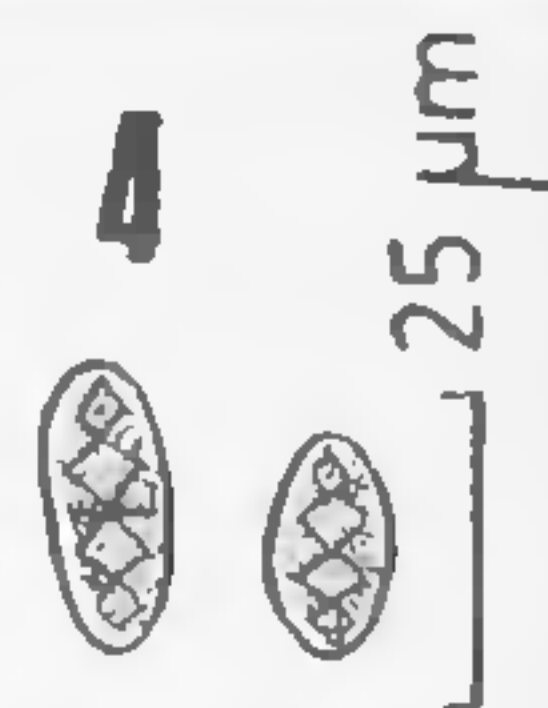
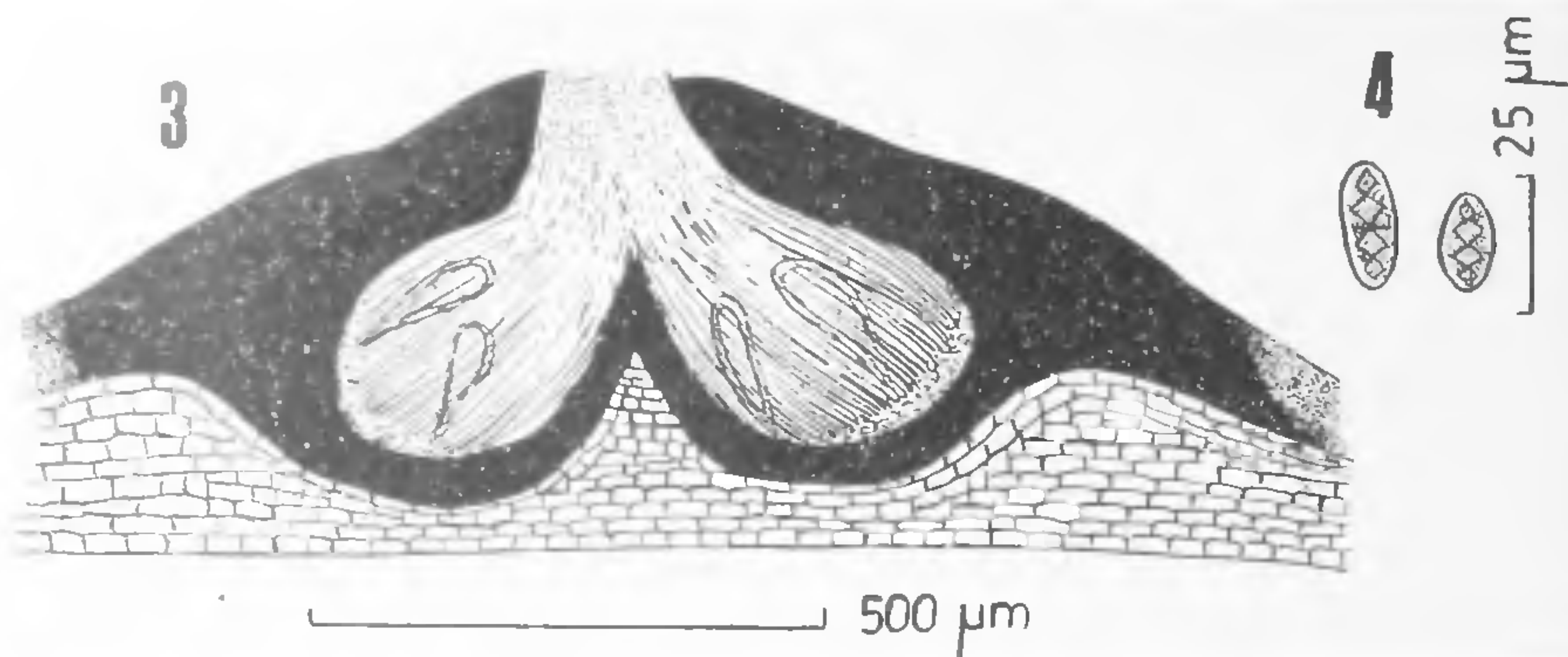
Holotype: Katakka, on the bark of Cashewnut, leg. P.G. Patwardhan and M. B. Nagarkar, 27-1-1980, 80.274 (AMH).

3. *Campylothecium nitidum* Muell. Arg. in *Nuov. Giorn. Bot. Ital.* 23, p. 401, 1891 (Figs. 5, 6)

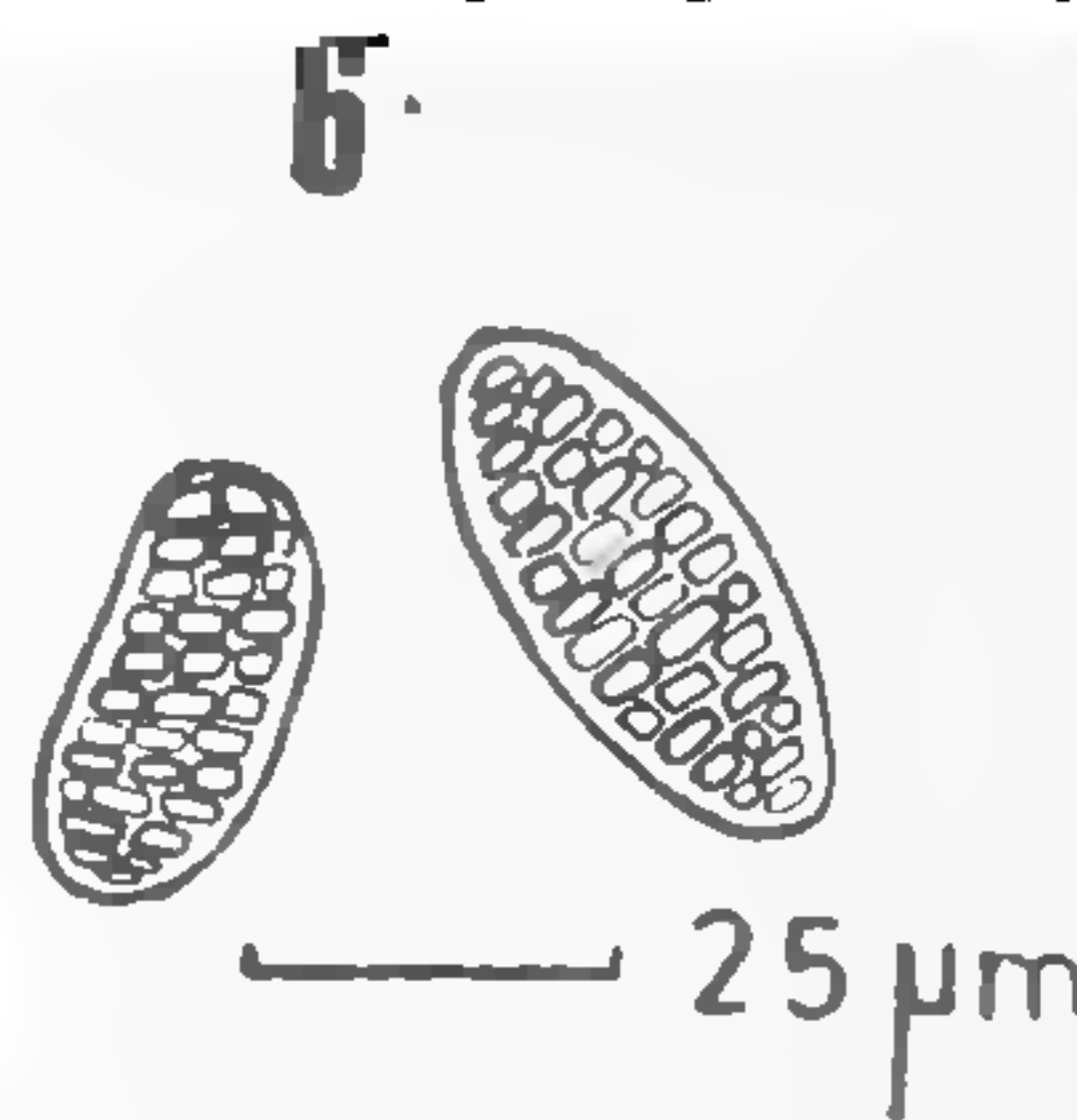
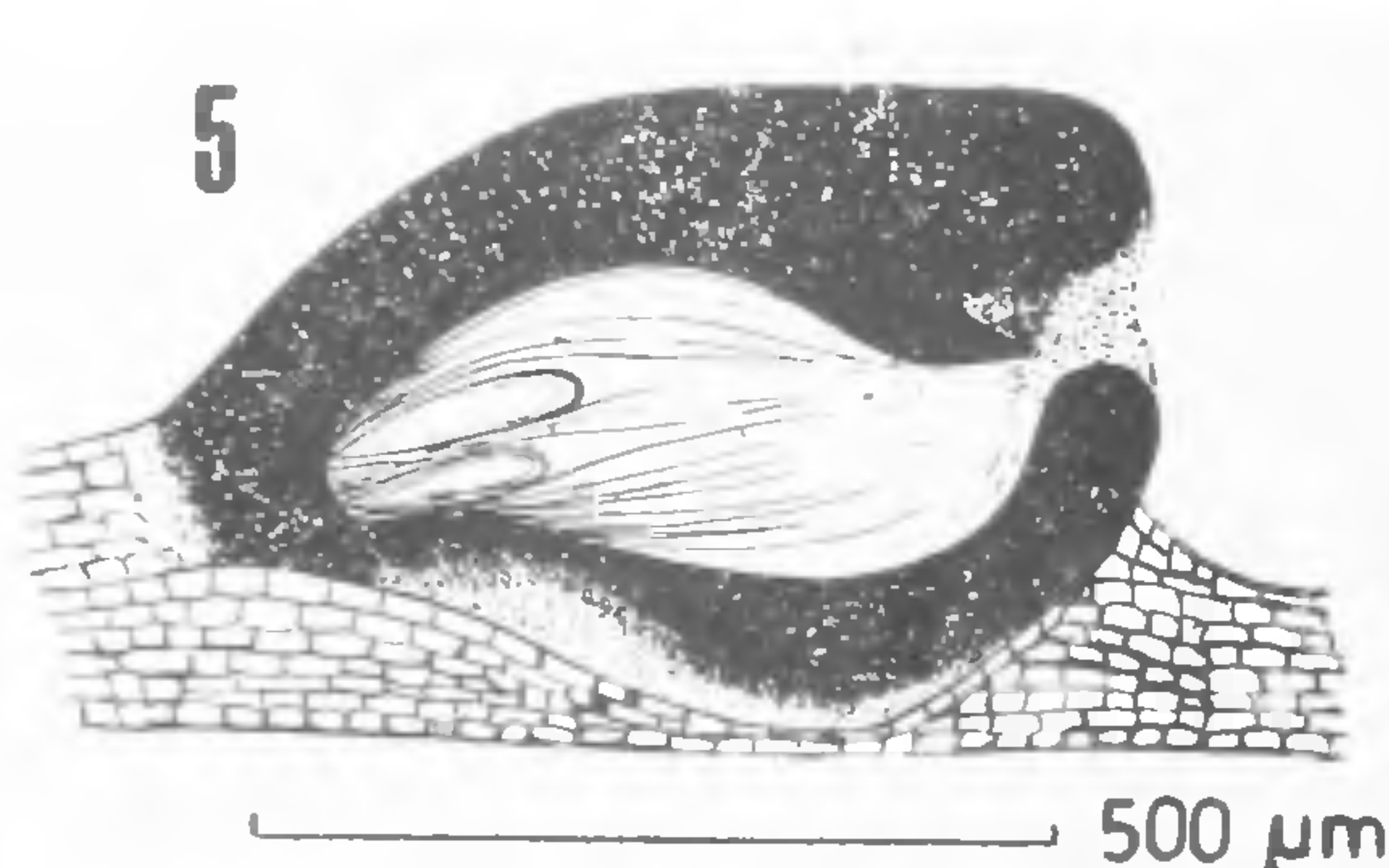
Thallus crustose, corticolous, white to pale gray, no distinct hypothallus, smooth, thin, not determinate;



FIGS. 1-2. *Pleurotrema filispora* Patwardhan, Makhija and Rane. Fig. 1. Vs of ascocarp. Fig. 2. Ascus with filiform, spirally arranged ascospores.



FIGS. 3-4. *Lithothelium indicum* Patwardhan, Makhija and Rane. Fig. 3. V.s. of ascocarp. Fig. 4. Ascospores.



FIGS. 5-6. *Campylothecium nitidum* Mull. Arg. Fig. 5. V.s. of ascocarp. Fig. 6. Ascospores.

pseudothecia black, solitary, emergent, scattered, obliquely oriented with ostiole on lateral side, wall carbonized; asci cylindrical, bitunicate; ascospores 8/ascus, hyaline, muriform, I+, oblong, 17-19 × 40-50 μm in size.

Specimens examined: Peercode, near Hiriadka, South Canara, in rain forest, leg. P. G. Patwardhan and M. B. Nagarkar, 80-194 (AMH); Australia, Brisbane, Bailey 460, 1889-Lectotype: G.

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ARTIFICIAL FERTILIZATION AND LARVAL DEVELOPMENT OF *CRASSOSTREA MADRASENSIS* (PRESTON) FROM PORTO NOVO WATERS

EDIBLE oyster *Crassostrea madrasensis* (Preston) is one of the common species occurring on the east coast of India. There is a great demand for the oyster meat during the monsoon months when the major fishery operations come to an almost halt. Oyster culture is being extensively practised in commercial scale in many western countries¹⁻⁴. The percentage of edibility of *Crassostrea gryphodes* Schlotheim and the effects of salinity on spawning development and setting