

PLATE II. Stratigraphy.

view that the owners of these artifacts would probably be the early Pithecanthropine counterparts found elsewhere in the Old World.

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A NEW SPECIES OF *UMBILICARIA* FROM LADAK, INDIA

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The genus *Umbilicaria* Hoffm. (family Umbilicariaceae) comprises 45 species (Poelt¹) of which 11 are recorded from the Indian subcontinent (Awasthi², Awasthi and Sing³). The present new species with an actinogyrose disc was collected from Jingral in the north-western Himalayan ranges in Ladak at an altitude of 5000 m. Of the few species of *Umbilicaria* with an actinogyrose disc (*Actinogyra* Schol. sensu Llano⁴), *U. polyrrhiza* (L.) Ach., reported from the Himalayas (Awasthi²), closely resembles the present taxon.

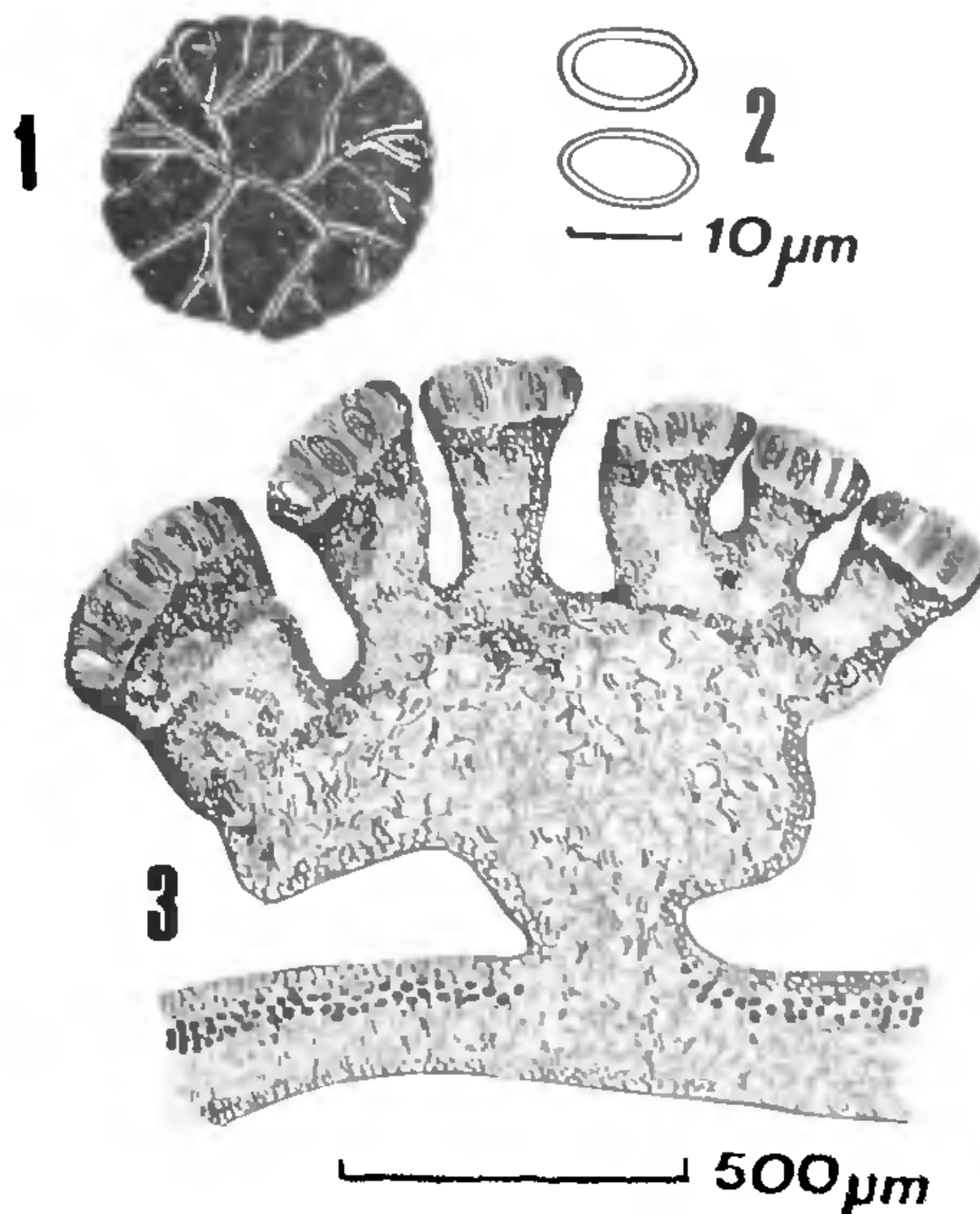
Umbilicaria jingralensis Nagarkar and Patwardhan sp. nov. (Figs. 1-3)

Differt haec species a *U. polyrrhiza* (L.) Ach. caracteribus sequentibus: Thallus parvior, 1.0-2.5 cm diam., subtus subbrunneo aurantiacus, rhizinis numerosis concoloris; rhizinae ramosae peripheriam versus, apicibus acutatis, non-crispis; apothecia frequentes (discis nigeris actinogyrosis ad maturitates).

Holotype: Jingral, on Leh-Chang La Road, Ladak, on rocks, elevation 5000 m, leg. M. B. Nagarkar, 24 May 1980-80.415 (AMH).

Thallus saxicolous, greyish yellow to greyish brown, more or less orbicular, 1.0-2.5 cm across, monophyllous, 235-450 μ m thick, coriaceous; umbilicus distinct, with folds; margins mostly entire, in some specimens deeply incised and appearing lobed; upper surface rough, granular, plane to distinctly wrinkled and cracked, with minute black dots marking pycnidia; lower surface brownish orange, profusely rhizinate leaving circular, non-rhizinal zone round umbilicus; rhizines simple to forked in the centre, becoming distinctly branched towards the periphery, concolorous with the lower surface, paler at the base, tapering, tips acute.

Apothecia frequent, black, circular, 1.0-3.5 mm in diameter, adnate, convex, solitary, lacking proper



FIGS. 1-3. Fig. 1, Habit—Actinogyrose disc (diagrammatic). Fig. 2, Ascospores. Fig. 3, V.s. of ascocarp.

margin at maturity; disc black, epruinose, plane in young apothecia, gyrose at maturity; gyri radial; parathecium dark brown, hypothecium brown, variable in thickness; thecium 92–113 μm in height, I+ blue; ascospores 8 per ascus, hyaline, simple, ovoid, 4–6 \times 8–12 μm in size. Pycnidia immersed in the thallus, with upper part and ostiole slightly protruding above the thallus surface, pycnidiospores rod-like.

Chemistry: Thallus K–, P–, KC+ rose; gyrophoric acid is present (TLC).

Specimens examined: Ladak, Leh to Chan La Road, Jingra, elev. 5000 m approx., 89-415, 426—AMH.

Remarks: *Umbilicaria polyrhiza* (L.) Ach., a similar species having an actinogyrose disc and hizinic lower surface, differs from the present new species in having black lower surface and black, ball tipped rhizines frequently curling over margins or protruding dorsally through thallus as black warts.

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ATACTOGASTER INDUCENS (WALKER), A NEW ROOT-GRUB PEST OF UPLAND PADDY AND MAIZE

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PADDY (*Oryza sativa* L.), and maize (*Zea mays* L.) have been associated with a large number of insect pests in tropics particularly in Asia. Hill¹ described

about forty major and thirty minor pests of paddy, and twenty-five each major and minor pests of maize of different parts of tropics. Nayar *et al.*² listed about 225 and 50 insect pests feeding on paddy and maize respectively, in India. Of these, about five per cent belonged to the family Curculionidae (Coleoptera). However, little has been mentioned regarding any species belonging to the genus *Atactogaster* (Curculionidae) infesting either paddy or maize. It has been reported that *Atactogaster finitimus* H. infests cotton, *Gossypium* sp.³ and sunflower, *Helianthus annuus*³.

An apocers grub was recorded feeding mainly on the roots of upland paddy, and maize in two adjacent fields at Medziphema (lat. 25° 45' 43" N; long. 93° 53' 04" E and altitude ca 420 m MSL), Nagaland, during March, April and May 1980. The infestation was first recorded when the crops were about three to four weeks old. The root-grub was identified as *Atactogaster inducens* (Walker) (Coleoptera: Curculionidae). The adults were moving and mating on the soil surface. The larvae were making tunnels into the main rhizome under the soil. The plant tissue at the edges of the tunnels was found slightly rotten. The leaves of the infested plants were characterised by dry patches, leading eventually to the stunting and wilting, and finally to the death of the plant. It is the first record of this insect feeding on the upland paddy and maize.

Data on the intensity of infestation at randomly selected plots indicated about fifteen to twenty and thirty to forty per cent of infestation in paddy and maize respectively. The infestation was confined to certain patches of the fields. The intercultural operations particularly hoeing and weeding proved to be efficient in controlling the pest, mechanically.

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