

**Figure 2.** Mature spores showing spore tetrads.  $\times 235$ .

348 m in November 1981, we came across rosettes of profusely fruiting material of an interesting member of Ricciaceae, subsequently identified as *Riccia curtisii* (Aust.) James. The overlapping dicotomously branched, spongy, thalli of this species were seen growing on shady, moist, soil in close association with *Riccia fluitans* and an acrocarpous moss *Physcomitrium* sp. at Sunmanthapla Sal forest, Chaurgalia.

The remarkable features of this species are its hetrothallic nature, prominent areolations, abundant smooth-walled rhizoids and very few tuberculate rhizoids, absence of scales, ventrally scattered well-defined sporophyte (figure 1) and spores remaining permanently adherent in tetrads (figure 2).

The identification of the species was confirmed by Dr A. J. Harrington of British Museum (Natural History) London. The collection has been deposited in the Bryology Lab., D.S.B. College, Nainital Herbarium No. C. 3.

We are grateful to Dr A. J. Harrington of British Museum (Natural History) London for confirming the identification. Thanks are also due to Miss Neerja Pande for her assistance.

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### **CATILLARIA MANIPURENSIS—A NEW SPECIES OF LICHEN AND A NOTE ON LOPADIUM AUSTROINDICUM FROM INDIA**

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TAXONOMIC investigations on lichens of Manipur have resulted in the discovery of a new species and a new combination which are dealt with. The specimens pertaining to the study are deposited in the CAL herbarium.

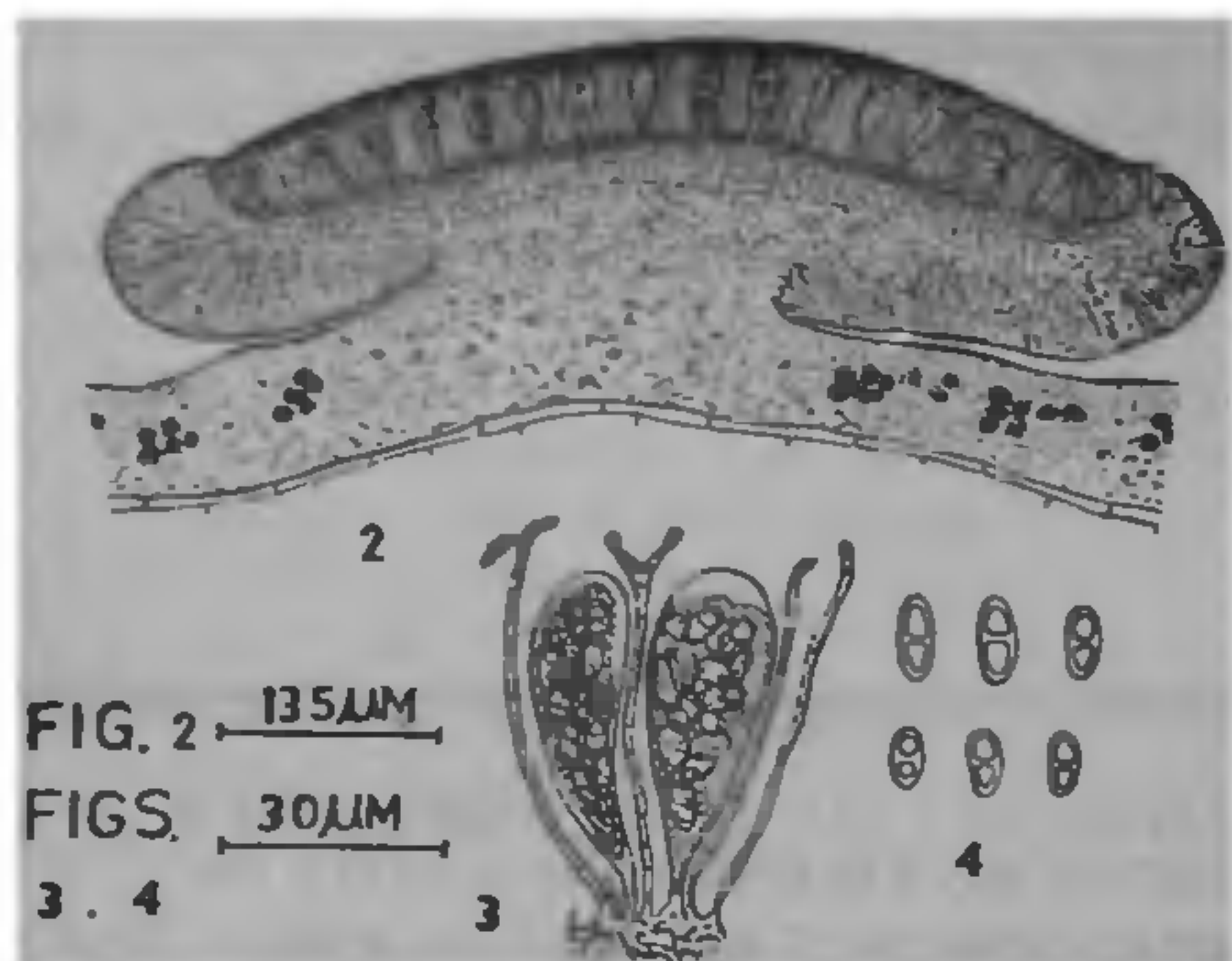
*Catillaria manipurensis* Singh sp. nov. (Figures 1-4)

Thallus corticolus, effusus, albido—cinereus, granulus vel minute verruculosus. Apothecia numerosa, porphyrea, dispersa adnata vel bene constricta, 0.4-0.6 mm diam.; margine tenue, indistinctae; disco pri-



**Figure 1** Part of the holotype of *Catillaria manipurensis* Singh  $\times 480$ .





Figures 2-4: *Catillaria manipurensis* Singh. 2: Vertical section through apothecium 3: ascus with ascospores 4: ascospores.

minus plano demum minute convexo, epruinoso. Epithecium porphyreus, K + violaceus; hymenium decolor, 39-65  $\mu\text{m}$  altum; hypothecium decolor. Excipulum decolor. Asci 16-spore, clavate; sporae decolor, transversis 1-septatae, ellipsoideae, 5-6.5 (7.5)  $\times$  3  $\mu\text{m}$ ; paraphyses simplices.

Thallus K + flavescens, C—, KC—, P<sup>-</sup>; atranoricum continens.

Holotypus: India, Manipur, Churachandpur—Kolbung, alt. ca 1050 m. K. P. Singh 550705 (CAL).

Thallus corticolous, occurring in circular irregular patches, whitish grey, effuse, granular to minutely verrucose, 49-72  $\mu\text{m}$  thick; corticiform layer indistinct; medullary region appearing  $\pm$  cellular; algal cells found in groups, 4-6  $\mu\text{m}$  in size; hypothallus absent. Apothecia numerous, red—brown, rounded to irregular; dispersed, adnate to constricted below 0.4-0.6 mm diam.; margin thin, indistinct; disc flat to little convex, epruinose. Epithecium reddish brown, 7-10  $\mu\text{m}$  thick K + violet; hymenium colourless, 39-65  $\mu\text{m}$  high, not inspersed; hypothecium colourless, hyphae irregular, 16-25  $\mu\text{m}$  high. Exciple colourless, 39-65  $\mu\text{m}$  thick at margin, 49-72  $\mu\text{m}$  thick below, hyphae radiating, algal cells absent at base of apothecium. Asci 16-spored, clavate, 35-50  $\times$  10-16  $\mu\text{m}$ ; asco-spores colourless, transversely 1-septate, ellipsoid, 5-6.5 (7.5)  $\times$  3  $\mu\text{m}$ ; paraphyses simple, septate, furcated above, 2.5  $\mu\text{m}$  thick.

**Chemistry:** Thallus K + yellowish, C<sup>-</sup>, KC<sup>-</sup>, P<sup>-</sup>; atranorin present in trace (TLC).

Usually the species of *Catillaria* have 8-spored asci but *C. manipurensis* is distinctive in having 16-spored asci with reddish brown apothecia. *Catillaria amebospora* (Hedl.) Zahlbr. from Scandinavia is also

known to have (8) 12-32 spored asci but differs from *G. manipurensis* by its indistinct thallus, black apothecia and larger asco-spores (4-10  $\mu\text{m}$ ).

*Phaeographine austroindica* (Awasthi et Upreti) Singh comb. nov. Basionym — *Lopadium austroindicum* Awasthi et Upreti, Curr. Sci. 50 (18): 822. 1981. Type collection: India, Karnataka, Bangalore Bannerghatta, Hazum Kalu, April 1979, Awasthi, Upreti et Misra 79. 120 (Holotype: LWU!)

Recently Awasthi and Upreti<sup>1</sup> described a corticolous species *Lopadium austroindicum* from Karnataka. An examination of type specimen preserved at LWU (l.c.), has revealed that it is not a *Lopadium* species, but a species of *Phaeographina* Müll. Arg. due to its rounded to oblong curved ascocarps, black—closed exciple with convergent labia and pale brown asco-spores (30-46  $\times$  9-18  $\mu\text{m}$  in size). Therefore, a new combination has been made as above. The rounded ascocarps and colourless—pale ascospores of younger stages may sometimes confuse to place the plant correctly under genus *Phaeographina*. Several specimens of the same species have been collected and studied by the author from Manipur that are morphologically and anatomically similar to the type specimen.

*P. austroindica* resembles *P. quassiaecola* (Fée) Müll. Arg. and *P. difformis* Fink, in the nature of exciple and to some extent in rounded ascocarps (younger stages) but *P. quassiaecola* has larger ascospores (Awasthi & Singh<sup>2</sup>, 95-133 (190)  $\times$  26-36  $\mu\text{m}$ ) while the ascocarps of *P. difformis* are immersed and irregularly branched at maturity.

The species commonly grows in open places usually on trunks of *Quercus* trees.

**Specimens examined from Manipur:** Korong, Kabrau Lakha, Singh 53050, 55083; Churachandpur, Singh 550725; Tegnoupal, Pallel, Singh 550973; Ukhul, Singh 54629, 54944.

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