

THREE NEW TAXA OF LICHENS FROM PALNI HILLS, INDIA

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ABSTRACT

The paper deals with 3 new species of lichens viz., *Thelocarpon palniensis*, *Bacidia nigra*, *Psorella isidiophora* from Palni Hills, India.

INTRODUCTION

In publications by AWASTHI AND SINGH (1971, 1972) and SINGH (1973) several taxa of lichens either as new reports or new species from the Palni Hills have been described. In continuation of the same investigations the following three taxa are being described as new species.

1. ***Thelocarpon palniensis*** sp. nov. (Text-figs. 1-4).

Diagnosis—Thallus saxicolus, superficio \pm indistincto; cortice indistincte, stratum algarum externe perithecium obductis; alga Chlorophyceae pertinet. Verrucae crebrae vel dispersae, emergentiae, nigricantiae, semiglobosae vel hemisphaericae, 0.25-0.4 mm diam. Perithecia globosa, 0.18-0.23 mm diam., decolor, parva decolor, basi algifero obducta. Asci plurispori, cylindrici vel flasci; sporae simplices, monostichae, ovoideo-sphaericae, $2.5-3.8 \times 3.8 \mu\text{m}$; paraphyses simplices, I+coerulescens.

Description—Thallus rudimentary, superficial portion \pm absent or apparently formed as a continuation of algal sheath; cortex indistinct; algal sheath present all around the perithecium and tapering at the apex of perithecium, 28-40 μm thick, algal cells rounded, 5-7 μm . Verrucae black, scattered, emergent, subglobose to hemispherical. 0.25-0.4 mm. diam. epruinose. Perithecia seated on algal tissue, globose, 0.18-0.23 mm wide; perithecial wall colourless, 22-30 μm thick; hymenial jelly I+blue. Asci cylindrico-flask shaped, many spored, $38-57 \times 12-18 \mu\text{m}$, I+vinose; spores colourless, simple, thin walled, ovoideo-spherical, $2.5-3.8 \times 3.8 \mu\text{m}$; paraphyses, simple, as much long as asci, 2 μm thick.

Habitat—On rocks.

Locality—Palni Hills on way from Perumalmalai to Oothu, near Hill View, alt. ca. 1350 m, Dec. 20, 1970, K. P. Singh No. 70.1201 (Holotype: LWU).

Observations—SALISBURY (1966) recognized 13, (plus 2 doubtful) species in his monograph on the genus *Thelocarpon* Nyl. (Acarosporaceae), and none of them are known from India. These lichens are small and inconspicuous, mostly distributed in American and European countries. The occurrence of this genus here is the new report for India. The new species grows on rocks at higher elevations in Palni hills and is distinguished from all other species known so far by the rudimentary thallus, black erumpent verrucae, algal sheath all around the perithecium, ovoideo-spherical spores and simple paraphyses.

2. **Bacidia nigra** sp. nov. (Text-figs. 5-9).

Diagnosis—Thallus corticolus, crustaceus, epiphloedus, effusus, tenuissimus, albido-cinereus, subaequabilis, 38-76 μm altum; stratum corticale decolor, 20-28 μm altum; stratum algarum, 20-30 μm altum, alga Chlorophyceae pertinens. Apothecia numerosa, nigra, sparsa vel minusve densa, sessilia, basi bene constricta, 0.8-1.5 mm. diam.; margine nigricante, prominente, persistente; disco plano demum convexo, pruinoso; excipulum distinctius, nigricante, KOH non reagens; hymenium decolor, 80-100 μm altum, I+coerulescens; epithecium pallido-lutescens vel flavescens, KOH non-reagens; hypothecium fusco-nigrescens. Asci 8-spori; sporae decolores, transversis 5-9-septatae, fusiformis apice acutae, 38-57 μm longae, 3-5 μm crassae; paraphyses simplices.

Thallus K—, C—, KC—, P—.

Description—Thallus corticolous, crustaceus, epiphloedal, effuse, thin, whitish grey, uneven, 38-76 μm thick; corticiform layer colourless, 20-28 μm thick, hyphae irregular; algal layer 20-30 μm thick, algal cells globose, 5-7 μm . Isidia and soredia absent. Apothecia profuse, sparse to compact, rounded, black, 0.8-1.5 mm. in diameter, sessile, constricted at base; margin black, entire to irregular, much raised than the surface of disc; disc flat to convex, caesiopruinose. Exciple black, prosoplectenchymatous, 57-80 μm thick at margins, 90-133 μm thick below. Epithecium yellowish brown to pale brown, 7-9 μm thick, K—; hymenium colourless, 80-100 μm high, K—, I+blue then greenish; hypothecium brownish black, 28-30 μm thick, not differentiated from exciple, K—. Asci clavate, 8-spored, 76-95 \times 15-20 μm ; ascoplasm I+vinose; spores colourless, transversely 5-9-septate, fusiform, straight to curved, tapering on both ends, 38-57 \times 3-5 μm ; paraphyses simple, 1 μm thick furcated above; tips swollen brown.

Thallus K—, C—, KC—, P—.

Habitat—On bark of tree.

Locality—Palni Hills, on way to Thandikuddi, alt. ca. 1350 m, Jan. 5th, 1970, D. D. Awasthi & K. P. Singh No. 70.458 (Holotype: LWU).

Observations—The new species belongs to section *Bacidia* (*Eubacidia* Zahlbr.) and is unique in the brown-black hypothecium and black exciple. It appears close to *B. abductans* (Nyl.) Zahlbr. in many respects (convex apothecia, brownish black hypothecium and black exciple) but differs in larger size of apothecia, pruinose disc and nature of exciple.

3. **Psorella isidiophora** sp. nov. (Text-figs. 10-14).

Diagnosis—Thallus corticolus, verruculosus vel minute squamulosus, effusus, albido-cinereus, isidiatus, sed isidiis coralliformis. Apothecia sparsa vel minusve densa, adnata vel sessilia, rufescentia vel fusco-nigricantia, basi bene constricta, 0.7-1.3 mm. diam; margine tenue, primitus bene prominente, demum fere excluso disco convexulo, rufo-fusco-nigricanto, epruinoso. Excipulum decolor vel leviter lutescente, KOH non reagens, pars marginalis ex hyphis radiantibus arcte conglutinatis, pachydermatis, hymenium decolor vel lutescens, 45-65 μm altum, KOH non reagens, I+coerulescens; Asci 8-spori; sporae decolor, transversis 3-(4-) septatae, oblongo-ellipsoidae 12-28 μm longae, 3-4 μm crassae; paraphyses simplices.

Thallus K+flavescens, C—, KC—, P—.

FIGS. 1.5.10. DIAGR.

FIG. 2 $\overline{100\mu\text{m}}$

FIGS. 3.

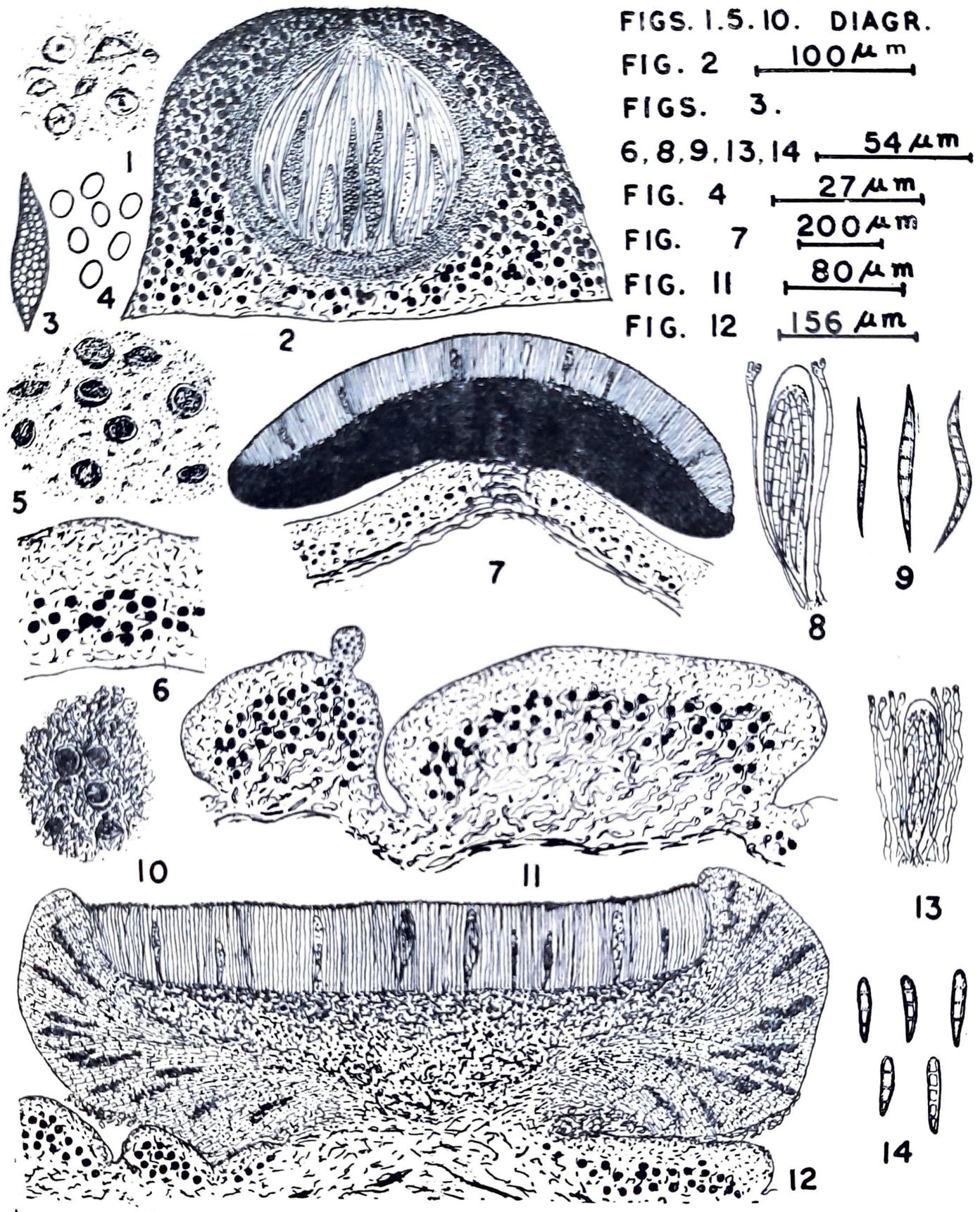
6, 8, 9, 13, 14 $\overline{54\mu\text{m}}$

FIG. 4 $\overline{27\mu\text{m}}$

FIG. 7 $\overline{200\mu\text{m}}$

FIG. 11 $\overline{80\mu\text{m}}$

FIG. 12 $\overline{156\mu\text{m}}$



Text-figs. 1—4. *Thelocarpon palniensis* sp. nov.—1, diagram of a portion of thallus; 2, V.S. through perithecial verruca; 3, an ascus; 4, spores.

Text-figs. 5—9. *Bacidia nigra* sp. nov. 5, diagram of a portion of thallus; 6, V.S. through thallus; 7, V. S. of apothecium; 8, an ascus and paraphyses; 9, spores.

Text-figs. 10—14. *Psorella isidiophora* sp. nov. 10, diagram of a portion of the thallus; 11, V. S. of squamule through a young isidium; 12, V. S. of apothecium; 13, an ascus and paraphyses; 14, spores.

Description—Thallus corticolous, effuse, verruculose to minutely squamulose; squamules minute, adpressed, up to 1 mm long and 100-140 μm thick; cortex colourless to yellowish brown, 20-25 μm thick; algal layer 28-38 μm , algal cells compactly arranged, rounded, globose, 7-9 μm , green; medulla white, 57-76 μm thick, composed of 2 μm thick loose hyphae; thallus isidiate; isidia sparse, coralloid-branched. Apothecia rounded, dispersed, adnate to sessile, constricted at base, 0.7-1.3 mm in diam., margin proper, yellowish grey to pale grey, entire, distinct in younger apothecia but later becomes thinner and excluded; disc reddish brown to black, plane to convex, epruinose. Exciple colourless to pale yellow with numerous inclusions within; 57-76 μm thick in marginal part, 95-133 μm thick in basal part, hyphae conglutinate, radiating at margins, compactly arranged, septate. Epithecium yellowish, 7-10 μm thick, K—, I—; hymenium colourless to yellowish, 45-65 μm high, K—, I+ blue; hypothecium pale brown to yellowish brown, 38-76 μm thick, K—. Asci clavate, 8-spored, 38-45 \times 10-12 μm ; spores colourless, transversely 3-(4-) septate, oblong ellipsoid with one end tapering, 12—28 \times 3—4 μm ; paraphyses simple, septate, 2 μm thick with obtuse apices.

Thallus K + yellowish, C—, KC—, P—.

Habitat—On bark of tree.

Locality—Palni Hills. Perumal to Palni road side, via short route, alt. 1350-1500 m, Dec. 15, 1970. K. P. Singh 70.951 (Holotype: LWU).

Observations—The species is distinctive in the possession of coralloid isidia. No other species of the genus is known to be isidiate. Only a single species *Psorella psorina* (Nyl.) Zahlbr. is known from India as s.n. *Lecidea psorina* Nyl. (Hue, 1892).

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