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SOME PYRENOCARPOUS LICHENS FROM 24-PARGANAS DISTRICT, WEST BENGAL, INDIA. I. *ANTHRACOTHECIUM*

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ABSTRACT

Three species of genus *Anthracothecium*, viz., *A. confine*, *A. ochrotropum* and *A. parvinucleum* from 24-Parganas district are described. The first two species are new records for India.

A collection of lichens from Sundarban area in 24-Parganas district, West Bengal by one of us was found to be rich in pyrenocarpous lichens. Several taxa have been found to be new for the Indian lichen flora and are being recorded in a series of papers, of which this is the first.

This paper deals with three species of *Anthracothecium*. Two species, i.e., *A. confine* and *A. ochrotropum* are new records for the Indian subcontinent. The third one, *A. parvinucleum* [=*Anthracothecium denudatum* (Nyl.) Müll.-Arg.] has been reported from Andaman Island (Nylander, 1873 ; Hue, 1892), Sri Lanka (Nylander, 1900), Western Ghats (Patwardhan & Makhija, 1980) and Assam (Nagarkar & Patwardhan, 1981).

Anthracothecium confine (Nyl.) Müll.-Arg., *Linnaea* 63 : 45. 1880. *Verrucaria confinis* Nyl., *Annals Sci. nat. Bot.*, ser. 4, 3 : 174. 1855.

Thallus hypophloedal, rough, continuous or somewhat cracked, grey, K-, C-, KC-, P-, with no visible hypothallus, corticiform layer indistinct or thin, 10-19 μm thick, phycobiont layer 46-60 μm thick, medulla indistinct.

Ascocarps solitary or in pairs, 0.3-0.5 mm in diameter, 200-280 μm high, convex, dull black, partly or completely covered with corticiform layer, ostiole indistinct ; excipuloid tissue black and carbonaceous, 40-70 μm thick ; ascigerous layer I+wine red ; paraphysoid threads unbranched to very sparingly branched and anastomosing near base ; asci clavate, 8-spored, 55-77 × 14-22 μm ; spores uni- or biseriate in ascus, ellipsoid, brown, muriform, cells arranged in 4-5 transverse series, 10-22 × 6-10 μm.

Remarks : *Anthracothecium confine* is closely related to *Anthracothecium parvinucleum*, but ascocarps in the former are covered with corticiform layer, whereas they are completely naked in the latter.

Specimens examined : WEST BENGAL : 24-Parganas district, Sundarban area, Hingalganj, *Roychaudhury* 1901 (CAL), on *Artocarpus heterophyllus*. Fezzarganj, *Roychaudhury* 2925 (CAL), on *Syzygium jambos*, *Roychaudhury* 2965 (CAL), on *Phyllanthus distichus*. Gosaba (Hamilton Estate), *Roychaudhury* 3837 (CAL), on *Hibiscus rosa-sinensis*, *Roychaudhury* 3838 (CAL), on *Ficus hispida*. Kalitala, *Roychuudhury* 3544A (CAL), on *Rhizophora mucronata*.

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Anthracothecium ochrotropum (Nyl.) Zahlbr., Catal. Lich. Univ. 1 : 465. 1922. *Verrucaria denudata* f. *ochrotropa* Nyl., *Bull. Soc. linn. Normandie,* ser. 2, 2 : 129. 1868

Thallus hypophloedal, smooth, continuous or cracked, grey, K+purple, C-, KC-, P-, with no visible hypothallus, corticiform layer indistinct, phycobiont layer 35-55 μm thick, medulla indistinct.

Ascocarps solitary or up to five grouped together, up to 0.3 mm in diameter, *ca.* 180 μm high, immersed to emergent, convex, partly to $\pm$ completely covered with corticiform layer or naked, dull black to black, ostiole indistinct ; excipuloid tissue black and carbonaceous, 25-32 μm thick at top and sides, 12-15 μm thick at bottom ; ascigerous layer I+wine red ; paraphysoid threads unbranched to sparingly branched and anastomosing near base ; asci clavate, 8-spored ; spores biseriate in ascus, ellipsoid, brown, muriform, cells arranged in four transverse series, 12-14 × 9-10 μm.

Remarks : *Anthracothecium ochrotropum* is distinguished from two of its allied species, *A. confine* and *A. parvinucleum* by its K+purple thalline reaction, which in the other two is K-.

Specimen examined : WEST BENGAL : 24-Parganas district, *Roychaudhury* 9 (CAL).

Anthracothecium parvinucleum (G. Meyer & Flotow) Zahlbr., Catal. Lich. Univ. 1 : 466. 1922. *Verrucaria parvinuclea* G. Meyer & Flotow, *Nova Acta Caesar. Leop. Carol.* 19 : Suppl. 231. 1843. *Anthracothecium denudatum* (Nyl.) Müll.-Arg., *Linnaea* 63 : 45. 1880. *Verrucaria denudata* Nyl., Expos. Synopt. Pyrenocarp. p. 49. 1858.

Thallus hypophloedal, smooth, continuous, whitish-grey K-, C-, KC-, P-, with no visible hypothallus, corticiform layer indistinct or thin, 18-22 μm thick, phycobiont layer 42-77 μm thick, medulla indistinct.

Ascocarps solitary, up to 0.5 mm in diameter, *ca.* 250 μm high, convex, naked, black, nitidous, ostiole indistinct or faintly umbilicate ; excipuloid tissue black and carbonaceous, 50-85 μm thick at top and sides, *ca.* 35 μm thick at bottom ; ascigerous layer I+wine red ; paraphysoid threads unbranched or sparingly branched and anastomosing near base ; asci clavate, 8-spored, 70-80 × 15-18 μm ; spores uniseriate in ascus, ellipsoid, brown, muriform, cells arranged in 4-5 transverse series, 9-15 × 6-10 μm.

Remarks : *Anthracothecium parvinucleum* is easily distinguished from *A. confine* and *A. ochrotropum* by its naked ascocarps. Sometimes they are naked in *A. ochrotropum* also, but this species can be differentiated by its thallus reaction with K.

Specimens examined : WEST BENGAL : 24-Parganas district, Kalitala, *Roychaudhury* 3557 (CAL), on *Excoecaria agallocha*. Gosaba (Hamilton Estate), *Roychaudhury* 3836A (CAL). Sajnakhali Forest, *Roychaudhury* 3918 (CAL), on *Dipterocarpus pilosus* (=*Dipterocarpus macrocarpus*).

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