

A NEW *FOLIOCEROS* FROM SOUTH INDIA*

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ABSTRACT

A new species of *Folioceros*, *F. pandei* sp. nov., has been described from Kodaikanal, Palni Hills and Coonor, Nilgiris, South India. The species is dioecious with lamellate outgrowths on dorsal surface of thalli. There may be one or two sporophytes in a single involucre. A distinctive feature is the presence of irregular thickening bands in the inner layer of the capsule wall hitherto unknown in any other species. The spores are spiny with conspicuous tri-radiate mark. The elaters are four-celled, brown, with darkish narrow lumen and show a tendency of breaking into 1-3-celled pseudoelaters.

INTRODUCTION

The genus *Folioceros* Bharadwaj has received attention only in recent years (BHARADWAJ, 1971, 1972, 1973, 1975, 1978). A survey of species of *Folioceros* collected from Kodaikanal (Palni Hills) and Coonor (Nilgiris), South India, revealed a new species which is described here as *Folioceros pandei* sp. nov.

OBSERVATIONS

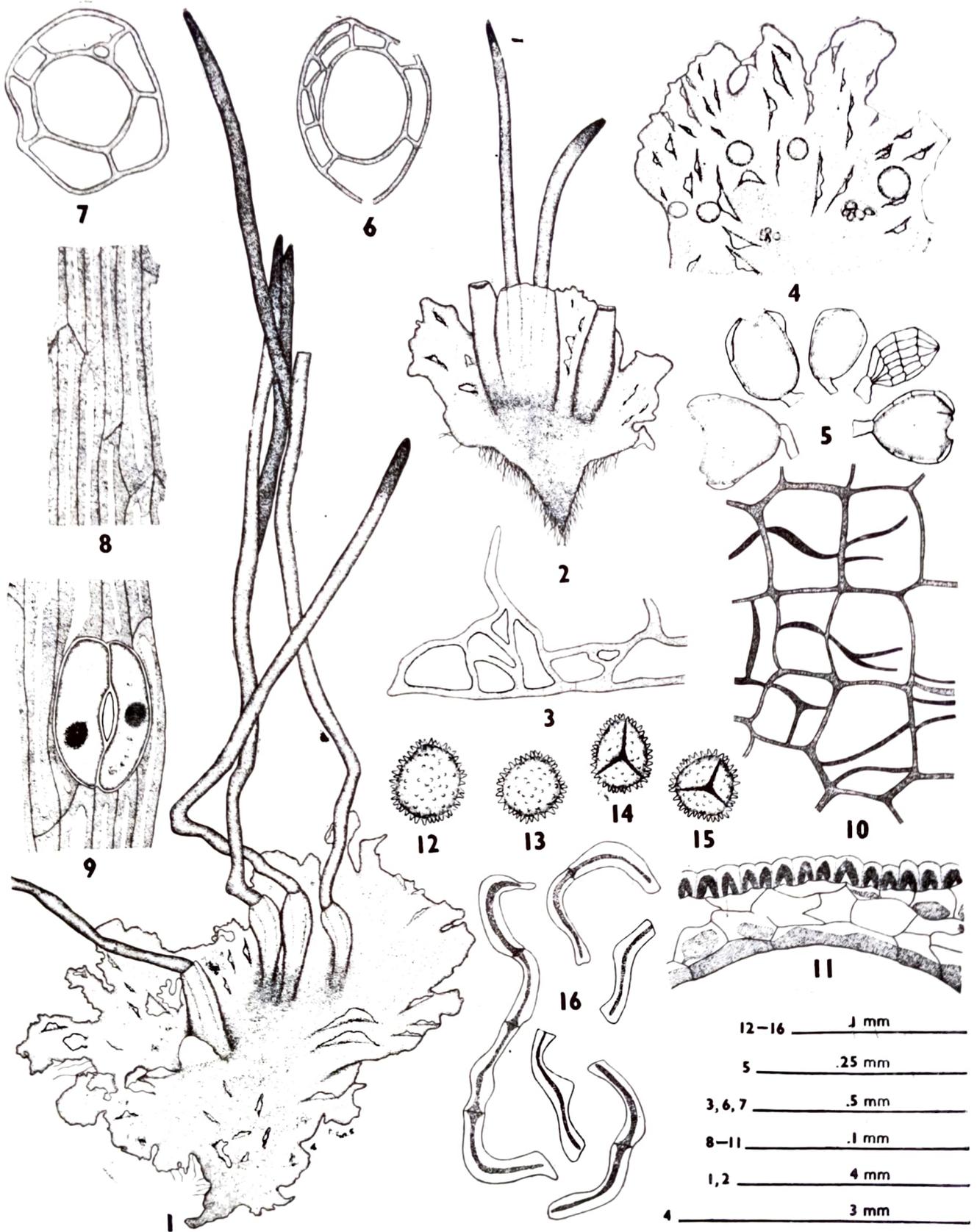
Folioceros pandei* sp. nov.*

Diagnosis—Planta dioica, superficie dorsali lamellata. Thalli cum cavus magnus, a cellularium separtione proceratis. Androecia sparsa on ramis, extra-elevatus, polyandria. Antheridia quorum corporum membrana quattuor cellularum ordinibus formata est., $89-106 \times 62-78 \mu\text{m}$. Involucra covernosa, cum cavitas in uno vel duobus ordinibus, glabra. Paries capsulae 4-stratosus, capsula exique stomatifera. Cellulae epidermales incrassationibus stratosus in parietibus transversus et radialibus praeditae. Cellulae strati interioris incrassationibus irregulares. Sporarum fuscus, $28-50 \mu\text{m}$ diam, ornamentum spineus, signum triradiatum conspicuum. Elateres $196-224 \mu\text{m}$ longi, septati, et lumine parvo, pseudo-elateres 1-2 (3) cellulae.

Dioecious. Thalli dark green, 1.1×0.7 cm, divided into irregularly lobed fronds, with scattered *Nostoc* auricles, upper surface lamellated, internally with 1-3 rows of schizogenous cavities, chloroplast usually single in each thallus cell, irregular in shape. Male thallus with androecia largely embedded in the thallus tissue with the upper part raised above the thallus surface, antheridia 4(6) in each androecium on a basal cushion maturing periodically, each antheridium with a body $89-106 \times 62-78 \mu\text{m}$ and stalk $26-36 \times 17-20 \mu\text{m}$, wall of body of antheridium of four superimposed tiers of cells. Surface of involucre smooth, internally with 1-2 layers of cavities. Sporophytes 1-2 in each involucre, capsule wall four layered thick, outer wall with sheet-like thickenings, stomatiferous, stomata $42-59 \times 34-45 \mu\text{m}$, inner layer of capsule wall with irregular, sometimes branched thicken-

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**Named after the late Professor S. K. Pande.



Text-figs. 1-16- *Folioceros pandei* sp. nov. 1, 2. Thalli bearing sporophytes; 3. T. S. of thallus (a portion); 4. Thallus bearing androecia; 5. Antheridia (with single mature antheridium); 6, 7. T. S. of involucre; 8. Cells of outer layer of capsule wall with stomata; 9. Cells of outer layer of capsule wall with stomata; 10. Cells of inner layer of capsule wall; 11. T. S. of capsule wall (a portion); 12, 13. Spores in distal view; 14, 15. Spores in proximal view; 16. Elater and pseudocelaters.

ings, cells $22-56 \times 28-42 \mu\text{m}$. Spores dark, $28-50 \mu\text{m}$ in diameter, exine spinose, tetrad mark distinct, elaters narrow, four-celled, walls thick with a narrow darker lumen, lumen broad between two cells, elaters with a tendency of breaking, four-celled elaters $196-224 \mu\text{m}$ long and two-celled pseudoelaters $84-140 \mu\text{m}$ long and $9-14 \mu\text{m}$ wide.

Specimens examined—Holotype : LWU No. 106/66, Loc : Coonoor, South India, Leg. R. Udar and Party, Jan. 2, 1966; Paratype : LWU No. 170/60, associated with *Phaeoceros*, Loc : Kodaikanal, South India, Leg. R. Udar and Party, Jan. 4, 1960.

DISCUSSION

The characteristic features of *F. pandei* are the presence of lamellae on thallus surface, antheridia usually four in each androecium, jacket of antheridium with four tiers of cells and inner capsule wall with irregular thickenings (not known so far in any other species). The spores are spinose with very prominent tetrad mark and the elaters are four-celled, with narrow darkish lumen and have a tendency of breaking into 1,2 (3)-celled units of pseudoelaters. The lamellate surface, lesser antheridial number and irregular thickenings on inner layer of capsule wall distinguish it from other known species.

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