

pores. Pores simple (Fig. 5) with 2-4 concentric rings of 7-9 cells each; cell walls lack thickening. Air chambers in 4-5 rows (Fig. 7) in the midrib region, polygonal to oblong towards the wing, empty (without chlorophyllous filaments), separated by unistratose partitions; cells of the partition bulbous and green. Midrib region 10-18 cells thick in the middle and 3-4 cells on the margin; central region purple, of thick-walled cells. Monoecious or dioecious. Male receptacle (Fig. 4) sessile, oval to semi-circular, arising subapically, becoming dorsal by innovations or by continued growth, surrounded by short, purplish scales, ostioles protruding, air-pores simple. Female receptacles apical, stalked; stalk 2-3 cm long, purplish with one rhizoidal furrow, brown linear scales at apex and base of the stalk; disc convex, 2-3 mm in diameter, 4-5-lobed each with a single sporophyte which is black at maturity. Involucre 2-lipped; capsule ovoid with distinct lid; seta very short. Spores (Fig. 9) tetrahedral, yellowish-brown to brown,  $52-75\mu$  in diameter with wings up to  $16.5\mu$  wide, crumpled, outer face areolate, 2-3 areoles, 16-20  $\mu$  across, surface finely punctate; elaters (Fig. 9d) yellowish-brown, 228-295  $\mu$  long and 5-8  $\mu$  wide with three spirals (Figs. 1-9).

Recently Kachroo, Bapna and Dhar

(1977) considered *Reboulia hemispherica* (L.) Raddi var. *pangiensis* Kachroo (1954) not different from *R. hemispherica* (L.) Raddi and reduced to its synonym.

The material is deposited in the Department of Botany, University of Udaipur, Udaipur and Herbarium of the Botanical Survey of India, Calcutta.

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### ON ABNORMAL FRONDS OF *ASPLENIUM NIDUS* L. (ASPLENIACEAE) FROM MANIPUR, EASTERN INDIA

Bird's nest fern group includes three species, viz., *Asplenium nidus* L., *A. grevillei* Wall. ex Hook. et Grev. and *A. simonianum* Moore. These are simple-leaved ferns. Of these *A. nidus* is the most common and of greater ornamental value.

While making collections from Manipur State, Eastern India, in February-March

1978, a slight forking in the frond of *Asplenium nidus* L. was noticed. The plant was brought to Indian Botanic Garden, Howrah and was kept in green house in a pot for further observations. As many as six fronds were obtained with variable forkings. The term 'pinnae' is being used for the forkings in the present paper. The

'pinnae' also developed sori just like the main fronds. The number of 'pinnae' varied from 2-3 in most of the fronds (Plate) while the maximum number in one frond rose to 9. The plant is still showing the same tendency.

*Description of the abnormal frond:* Frond up to 117 cm long, 13 cm wide. "Pinnae" 61 cm long, 10.3 cm wide, 2-9 in number, soriferous, lanceolate, acute or acuminate at apex; with its own midrib, veins open dichotomous, areole formation at some places also seen.



Plate : Central portion of the frond showing one 'pinnae' on each side  $\times 0.268$

Hope (1901) mentioned in 'The ferns of North-Western India' that, "A frond in the Kew Herbarium, got by Hooker f. in Sikkim, is remarkable by having a lobe projecting  $2\frac{1}{2}$  inches beyond the margin of the frond, towards the apex with a midrib of its own, 4 inches long from the main rachis, with veins and sori normal to it. There is a similar frond in British Museum marked "Khasya(?). H. & T."

An examination of the specimens at CAL, also revealed a sheet collected from Western Himalayas (Falconer in 1849) which resembles very much with the description given by Hope (1901), but for the size of the lobe which is 13 cm long and without sori.

It is worth mentioning that "pinnae" developed on the fronds show considerable variation in their size and outline. It is suggested that varieties created on the basis of such characters of fronds need further study (cf. Bir, 1964).

*Specimens examined:* MANIPUR: Chura-chandpur (ca 1000 ft), 1.3.1978. Lal and Kar Fern-18 (CAL), living plant in IBG, Howrah. UTTAR PRADESH: Western Himalayas, 3.2.1849, Falconer No. 145, Acc. No. 10143 (CAL).

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### *SACCHARUM WARDII* (BOR) BOR EX COPE (POACEAE) —A NEW RECORD FOR INDIA

A grass collected from Lohit District, Arunachal Pradesh, on study was found to be *Saccharum wardii* (Bor) Bor ex Cope, so far known only from Burma. Two more