

**SCANNING ELECTRON MICROSCOPIC STUDIES ON THE TESTA SURFACE
PATTERN OF *BAUHINIA NERVOSA* AND *B. WALLICHII* (FABACEAE:
CAESALPINIOIDEAE)**

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Scanning electron microscopic studies on the testa surface pattern of some species of *Bauhinia* (Fabaceae: Caesalpinioideae) have been undertaken by Trivedi *et al.* (1980), Gunn (1991), Kaur *et al.* (1992), Bandyopadhyay *et al.* (1993), and Bandyopadhyay and Thothathri (1996a, b). The present paper describes the testa surface patterns of *Bauhinia nervosa* (Wall. *ex* Benth.) Baker and *B. wallichii* J.F. Macbr., which have not been studied earlier.

Mature seed samples were obtained from specimens deposited in the herbarium of the Botanical Survey of India, Eastern Circle, Shillong (ASSAM) and Central National Herbarium, Howrah (CAL). The light microscopic photograph was taken with the help of an Olympus SZX 12 microscope with photographic attachments. For scanning electron microscopic studies the seeds were cleaned with cotton soaked in absolute ethanol, air dried and mounted on metallic stubs after correctly orienting them (Gunn 1991). Observations were made with Quanta 200 in the High Vacuum mode at an applied voltage of 12.5 kV. In case of *B. nervosa* the scanning electron micrographs were captured from the central part of the seed and those of *B. wallichii* from the periphery of the seed.

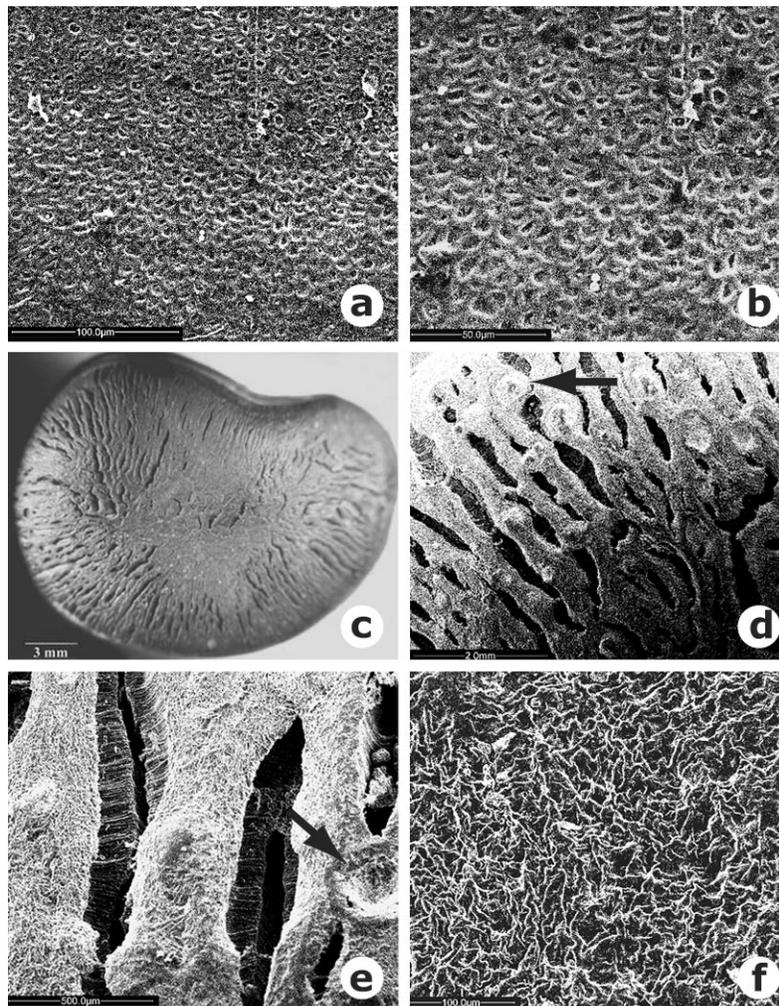
Specimens examined: Bauhinia nervosa, K. & J. Hills, Dawki forest, 13.2.1942, G. K. Deka 20926 (ASSAM). *B. wallichii*, Arunachal Pradesh, Dibang Valley, along the Ehipani River, near Malo Basti, 250 m, 13.8.2000, M.K. Pathak & M. Bhaumik 2724 A (CAL).

Observations

Bauhinia nervosa. Seeds brown, $1.9-2.2 \times 1.5-1.9 \times 0.3$ cm, suborbicular to ovate-oblong, with scar mark of unequal funicular aril-lobes running along $7/8$ of its circumference. To the naked eye and under light microscope the testa surface appeared to be faintly wrinkled. With the help of scanning electron microscope it was found to be pitted (Figs 1a, b). The pits were closely situated and varied in size. They were angular to elongated, sometimes more or less circular, but rarely slit-like.

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***Bauhinia wallichii*.** Seeds brownish black, c $2.4 \times 2.0 \times 1.1$ cm, ovate-orbicular, with scar mark of funicular aril-lobes running along $7/8$ of its circumference. To the naked eye the testa surface appeared to be more or less smooth with fine cracks all over the testa surface. Under light microscope the testa surface appeared to be somewhat striated (Fig. 1c). With the help of scanning electron microscope the testa surface was found to be rugulate (Fig. 1f) with very prominent fracture lines (?) (Figs 1d, e). The central portion of the seed was also rugulate, but not as prominent as on the periphery. A few tuberculate structures (Fig. 1d) and shallow circular depressions (Fig. 1e) were also found on the periphery.



Figs 1a-f. *Bauhinia nervosa*: a, b. Scanning electron micrographs of testa surface pattern; *B. wallichii*: c. Light microscopic photograph of testa surface pattern, d-f. Scanning electron micrographs of testa surface pattern. Arrows in d & e point a tuberculate structure and a shallow depression, respectively.

There are about 300 species of *Bauhinia* in the world (Wunderlin *et al.* 1987), but so far scanning electron microscopic studies on the testa surface pattern have been carried out only on about 4% of them. Studies on many other species are, however, certainly necessary to assess the taxonomic value of the ultramicroscopic pattern on the seed surface of the genus.

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