

Rare occurrence of papillate epidermis and its diagnostic value in *Callicarpa macrophylla* Vahl (Verbenaceae)

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PALAEOBOTANISTS depend on coalified compressions to know about details of epidermal cells and stomatal characteristics (Stewart, 1983). They help in the classification as well as establishing evolutionary pathways in extinct flowering plants (Dilcher, 1974; Hickey & Doyle, 1977). However, the study of plant cuticles did not receive much attention due to the non-availability of data from extant plants. Therefore, it is desirable to have epidermal data in hand for purposeful comparison of the extinct and extant flora. Keeping this in view, the present authors have investigated different epidermal aspects of Verbenaceae involving more than sixty species. In the course of these investigations, a rare occurrence of papillate epidermis is observed in the leaf adaxial of *Callicarpa macrophylla* Vahl.

Occurrence of papillate epidermis in the leaves of dicotyledons appears to be an unusual phenomenon as it is restricted to certain taxa and its presence is still scarce in the leaf adaxial in comparison to leaf abaxial (Metcalf & Chalk, 1979). Further, this is the first such report in the Verbenaceae.

In *Callicarpa macrophylla*, almost all the adaxial epidermal cells possess unicellular papillate hair (Figs 1 - 3). In fact, this feature makes the taxon highly diagnostic and renders it as a taxonomically useful character.

Leaf adaxial of *Callicarpa macrophylla* Vahl showing unicellular papillate hair

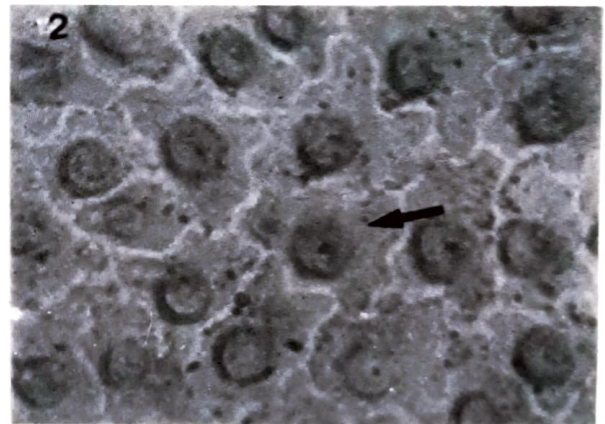


Figure 2. Surface view (LM), X 44.

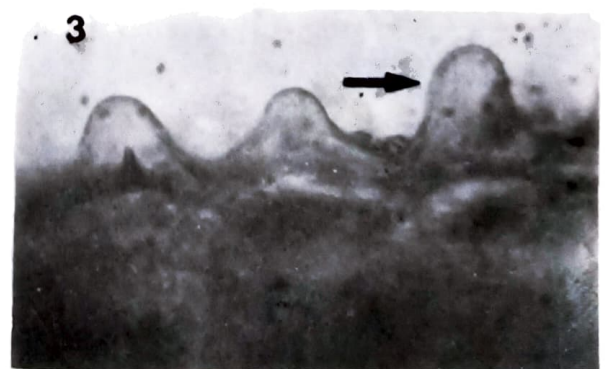


Figure 3. Side view (LM), X 42.

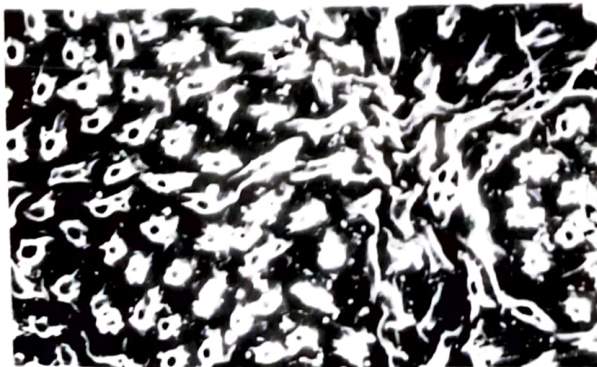


Figure 1. Surface view (SEM), X 200.

Uniseriate filiform clavate and uniseriate filiform peltate hair types (with a four-celled head) are the additional trichome types recorded in this taxon. The typical uniseriate macroform candelabra hair [=compound stellate hair of Clarke (1885)] of *Callicarpa* are absent on the leaf adaxial, though they are conspicuous on the leaf abaxial. Although several trichome types have been recorded in the Verbenaceae earlier (Mathew & Shah, 1979, 1981, 1983; Shanmukha Rao *et al.*, 1988; Yashodhara, 1990), this is the first record of the unicellular papillate hair and this trichome type makes *Callicarpa macrophylla* distinct and helps in its identification.

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