Philipose[3], 1967, 84). (2) *C. braunii* Brueggar in the cell shape, short stalk and the dimensions of the cells which are 6·5–13 × 25 –32 µm. However the present alga is not as regular as *C. braunii*, the basal attaching portion is in the form of a knob-like disc which is brownish and the apex is not as pointed. (3) *C. angustum* in the lanceolate shape of the cell, the short stalk and the short beak which is sometimes slightly rounded and stumpy (as in *C. angustum* forma Stockmayer) but differs in the cells being less regular and much smaller and the attachment being in the form of a knob-like basal disc and not a knob[1-3].

Since the present alga does not completely agree with the three species mentioned above in spite of resemblance in a few features or any other species known to the authors, it is considered here as a new species *C. indicum* sp. nov.

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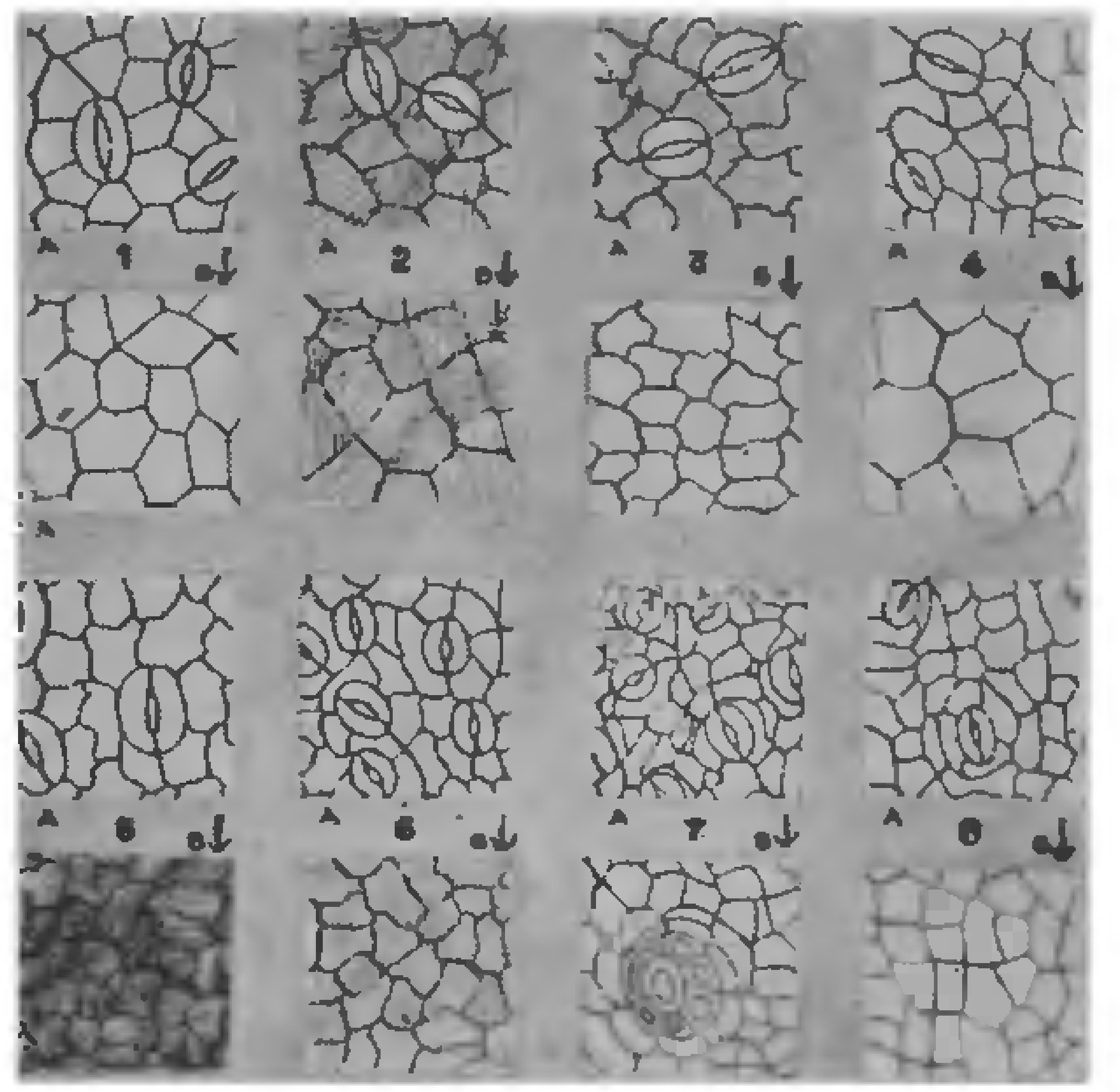
EPIDERMAL STUDIES IN SOME MEMBERS OF OLEACEAE

THE present communication which deals with the study of epidermal features of five genera (eight species) of Oleaceae has been undertaken for a better understanding of this family. The species investigated are: *Jasminum dispernum* Wall., *Ligustrum robustum* Blume, *Olea dentata* Wall., *O. glandulifera* Wall., *Osmanthus fragrans* Wall., *O. suavis* King, *Syringa persica* L. and *S. vulgaris* L.

Method employed for the preparation of slides and various measurements is after that of Srivastava[2].

Leaves are hypostomatic in all the species investigated. The cell walls are irregular in shape in *Olea dentata* (Fig. 5 A–B), *Syringa persica* (Fig. 3 A–B), *Osmanthus fragrans* (Fig. 6 A–B), *O. suavis* (Fig. 7 A–B). They are polygonal in *Olea glandulifera* (Fig. 1 A–B) and *Syringa vulgaris* (Fig. 2 A–B). The anticlinal walls of epidermal cells are straight in *Olea glandulifera* (Fig. 1 A–B) and *Syringa vulgaris* (Fig. 2 A–B) and sinuous in *Olea dentata* (Fig. 5 A–B), *Syringa persica* (Fig. 3 A–B) and *Osmanthus fragrans* (Fig 6 A–B). In species like *Osmanthus suavis* (Fig. 7 A–B) and *Jasminum dispernum* (Fig. 8 A–B) the cell walls are more or less arcuate. However, in *Lingustrum robustum* (Fig. 4 A–B) only the lower epidermal cells are arcuate and the upper are straight-walled.



FIGS. 1–8. Lower (A) and upper (B) epidermides of *Olea glandulifera* (1), *Syringa vulgaris* (2), *S. persica* (3), *Ligustrum robustum* (4), *Olea dentata* (5), *Osmanthus fragrans* (6), *O. suavis* (7) and *Jasminum dispernum* (8).

Stomata are of anomocytic type surrounded by 4–7 subsidiary cells. *Osmanthus fragrans* stands out among all the species possessing highest stomatal frequency (296 per sq. mm). The measurements of various epidermal characters such as epidermal cell size, stomatal frequendy, etc., in the different species are given in Table I. Cuticular striations are present in *Olea dentata* (Fig. 5 B), *Osmanthus fragrans* (Fig. 6 B), *Syringa persica* (Fig. 3 A) and *S. vulgaris* (Fig. 2 A–B). They are either confined to the upper surface (*Osmanthus fragrans, Olea dentata*) or present on the lower surface (*Syringa persica*) also. However, in *Syringa vulgaris* the striations are elongate and sometimes extend from one stoma to another in the form of rays or bands. Cuticular striations have also been reported in some genera of Oleaceae by Inamdar[1] and Srivastava[2,3].

Glandular peltate hairs are present along both the leaf surfaces in all the investigated species. However, in

TABLE I
Measurements of epidermal cell size and stomatal frequency

	Epidermal cell size in μ L	Epidermal cell size in μ U	Stomatal size in μ	Frequency of stomata per sq. mm.	Haris
Olea glandulifera	24 × 14	24 × 25	24 × 17	92	Ng—absent Pg —2–6
O. dentata	22 × 11	15 × 11	25 × 20	124	Ng—Absent Pg —2–7
Syringa vulgaris	28 × 15	40 × 16	23 × 15	100	Ng—Absent Pg —2–6
S. persica	24 × 13	24 × 14	25 × 18	110	Ng—Absent Pg —2–6
Ligustrum robustum	22 × 13	34 × 22	22 × 17	104	Ng—Absent Pg —2–6
Osmanthus fragrans	19 × 12	20 × 15	19 × 16	296	Ng—Absent Pg —2–7
O. suavis	23 × 11	23 × 11	21 × 18	260	Ng—Absent Pg —2–6
Jasminum dispernum	22 × 10	22 × 13	17 × 13	108	Ng—Absent Pg —2–6

L—Lower; U—Upper; Ng—Non-glandular hairs; Pg—Peltate glandular hairs.

Jasminum dispernum the hairs are borne only along the upper surface. The glandular peltate hairs consist of 2–7-celled head and a short slender stalk. These hairs are usually borne in the shallow depressions of epidermis.

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EVIDENCES FOR OUTBREEDING IN *CATHARANTHUS ROSEUS*

Catharanthus roseus (L.) G. Don. (Apocynaceae) commercially known as Vinca, occupies a place of eminence as the source of cancer drugs—the VLB compounds. The commercial crop grown for its roots consists of a free admixture of three horticultural varieties distinguished by pink, white and white with pink eye flower colours. The genetic consequences of cultivation of such varietal mixtures if any, is not understood for want of information on the breeding behaviour of the crop.

As a primary step in a breeding programme initiated at this Institute for the isolation of white and pink flowered plants, separate collections of bulked open pollinated seeds from a source population were used for raising progenies. In progenies of both pink and white flowered plants alien seedlings represented by green and pink stem colour, respectively, were detected and this has been adduced to result from out breeding. The present report examines evidences for out breeding based on data secured from progeny tests and genetic background of the source population.

The relevant genetic informations for this study were drawn from the report on the genetics of flower colour by Flory[1] and verified from observations made by the authors in natural and experimental populations. Flory ascribed pink flower colour to interaction of dominant alleles of genes '*R*' and '*W*'. In absence of such an interaction gene '*R*' causes pink eye and '*r*' white flower colour. In plants with pink and pink eye flowers, stem is pigmented while in white flowered plants stem is green. Since the pigmentation of stem is discernible at seedling stage, it serves as a good marker and facilitates reliable