

FIG. 1. *Jasminum nitidum* showing chlorotic rings and cak leaf pattern symptoms.

Characteristic symptoms were observed in nine species of *Jasminum*, viz., *J. angustifolium* Vahl., *J. arbuscula* L., *J. calophyllum* Wall., *J. flexile* Vahl., *J. multiflorum* Andr., *J. nitidum* Skan., *J. rigidum* Zenk., *J. sambac* Ait. and *J. suavissimum* L. The disease incidence in these susceptible varieties ranged from 10 to 100% in the existing populations depending upon the varieties/species. *J. auriculatum* Vahl., *J. beesianum* Forest. and Diels., *J. grandiflorum* L., (Pin and Thrum types), *J. humile* L. (Indian and Wallichianum types), *J. officinale* L. and *J. paniculatum* L. did not exhibit the symptoms indicating that they possess the factors for resistance to this disease. Mariappan and Ramanujam<sup>1</sup> screened only 10 species of *Jasminum* and the species which they reported to be resistant, like *J. angustifolium* Vahl., *J. calophyllum* Wall., *J. flexile* Vahl. and *J. rigidum* Zenk were found to be highly susceptible under Bangalore conditions. The natural occurrence of the yellow ring mosaic on some *Jasminum* species and the source of resistance is being reported in the present communication from our country. The sources of resistance for yellow ring mosaic of Jasmine noticed are being utilised for breeding and selecting resistant clones of Jasmine.

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#### A NEW SPECIES OF CHARACIUM— *CHARACIUM INDICUM* PATEL ET ISABELLA SP. NOV.

DURING the course of the investigations of fresh water algae in Gujarat, the authors collected one new species of *Characium*, *C. indicum* sp. nov. from Railway sidings at Vallabh Vidyanagar in August, 1965. *Characium indicum* Patel et Isabella Sp. nov. (Fig. 1)

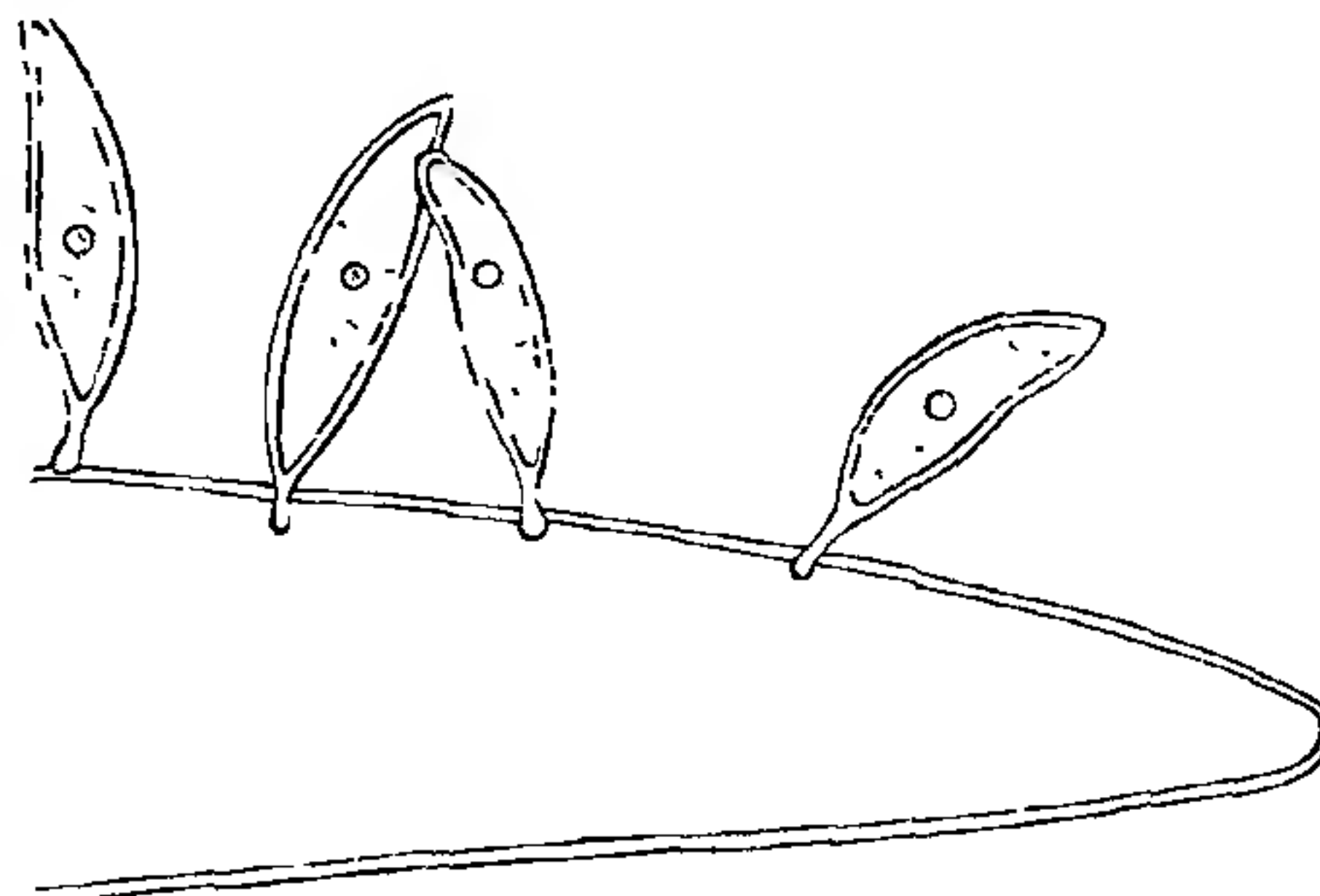


FIG. 1. *Characium indicum* Patel et Isabella sp. nov. Showing the nature and habitat of the plant with the host-*Closterium* Sp. ( $\times 1,700$ ).

Cells with a distinct basal stalk, not very long and provided with a small knob-like disc. Cells slightly curved and more or less lanceolate with both sides tapering somewhat gradually. Free end acute or somewhat rounded. Chloroplast single, parietal and with a pyrenoid. Cells 7.1–8.8  $\mu\text{m}$  broad, 27.6–34.7  $\mu\text{m}$  long. Stalk 3.5–4.7  $\mu\text{m}$  long.

Habitat: Growing on *Closterium* in Rly. sidings, Vallabh Vidyanagar, 7–8–1965 (No. 711).

#### Latin Diagnosis

*Characium indicum* Patel et Isabella Sp. Nov.

Cellulis distinctis stipitibus basalibus longis, habentibus parvis basalibus discis gongylodibus; cellulis plusminusve curvis, lanceolatis dumtaxat lateribus gradatim contractis. Terminis discretis acutis vel plusminusve rotundis. Chloroplastis singulis, parietalibus, pyrenoidibus. Cellulis 7.1–8.8  $\mu\text{m}$  latis, 27.6–34.7  $\mu\text{m}$  longis; stipitibus 3.5–4.7  $\mu\text{m}$  longis. Habitat: Crescentibus in *Closterium* in via ferrea laterali in Vallabh Vidyanagar, 7–8–1965 (No. 711).

The alga under consideration here resembles (1) *Characium acuminatum* A. Braun in having a knob-like basal disc but differs in that the cells are not as symmetrical as in *C. acuminatum*, the stalk is comparatively longer, the beak is not acuminate, the cells are not oblong to ellipsoid and the cells are much smaller, the dimensions of *C. acuminatum* being 15–25  $\mu\text{m}$  broad and 35–50  $\mu\text{m}$  long (See Brunthaler<sup>1</sup>, 1915, 79; Korshikov<sup>2</sup>, 1953, 161;

Philipose<sup>3</sup>, 1967, 84). (2) *C. braunii* Brueggat 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<sup>1-3</sup>.

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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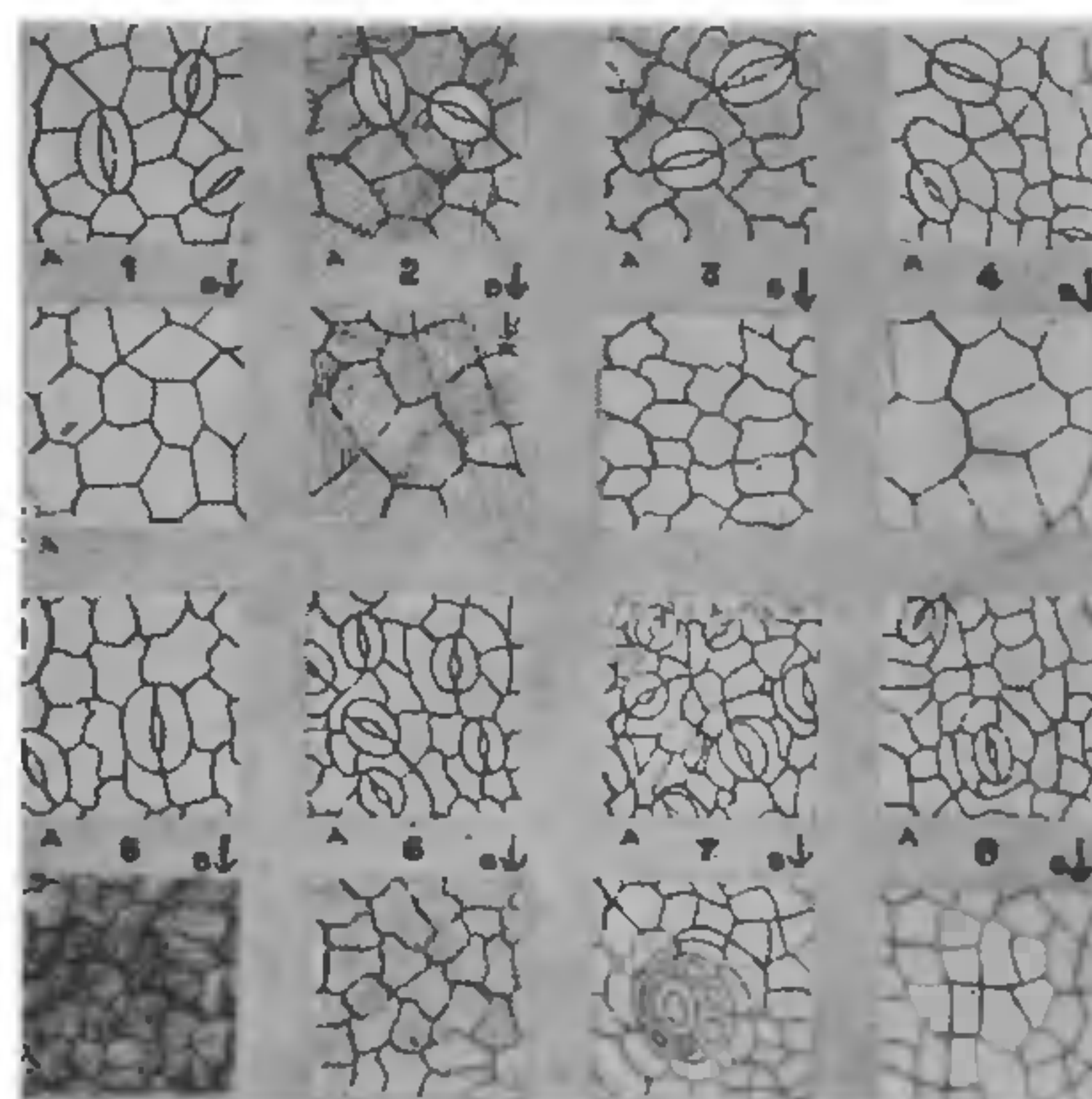
## EPIDERMAL STUDIES IN SOME MEMBERS OF OLEACEAE

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 dispersum* 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<sup>2</sup>.

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 dispersum* (Fig. 8 A-B) the cell walls are more or less arcuate. However, in *Ligustrum 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 dispersum* (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 frequency, 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<sup>1</sup> and Srivastava<sup>2-3</sup>.

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