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MICROSPOROGENESIS IN *RHIZOPHORA LAMARCKII* MONTR.

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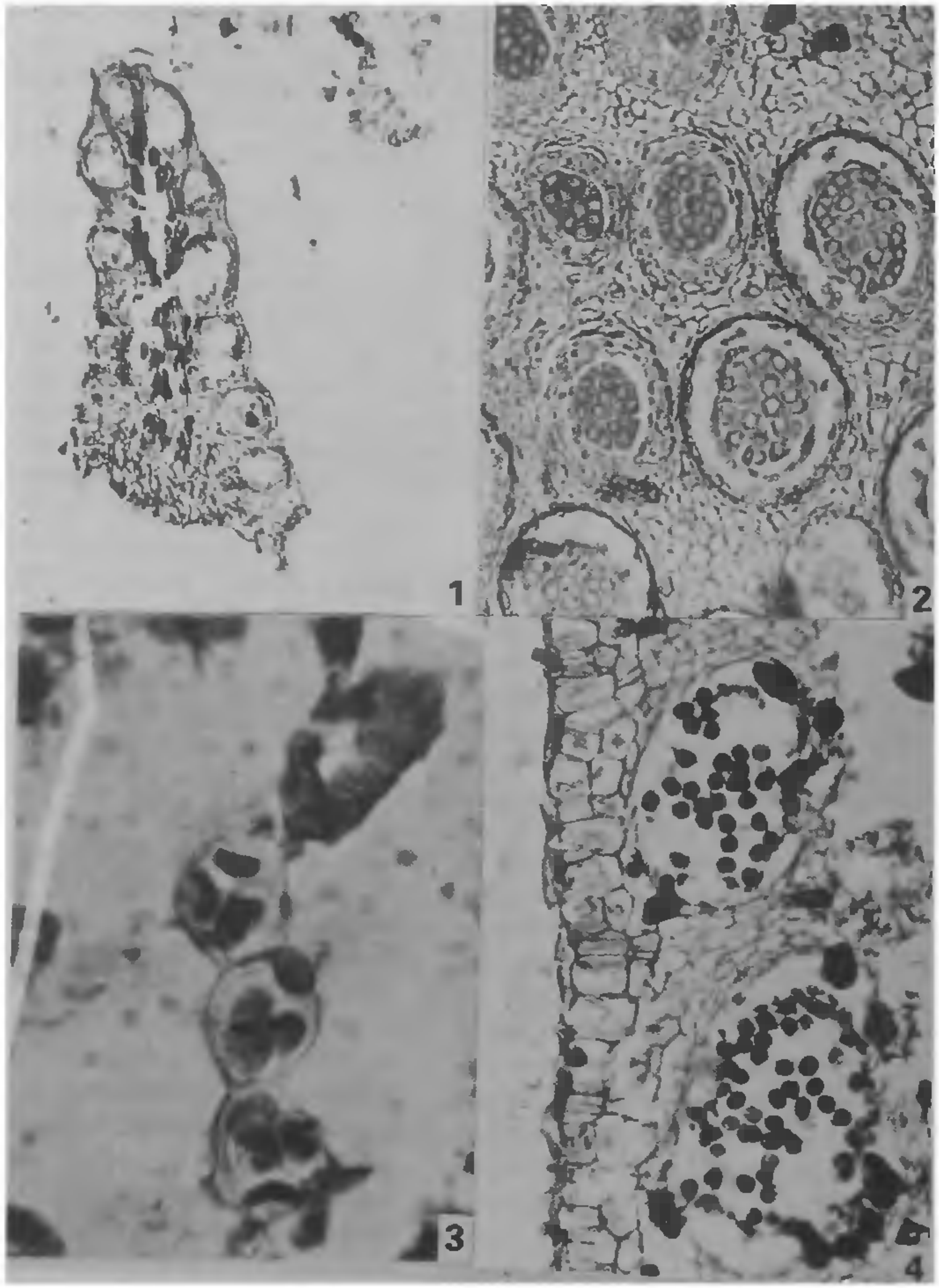
MANGROVES form a unique type of coastal vegetation, reaching their climax under tropical condi-



Figures 1–4. *Rhizophora lamarckii* Montr. **1.** TS of anther showing distribution of microsporangia; **2.** Tangential view of the anther with locules at different stages of development; **3.** Tetrahedral tetrads, one a degenerating triad and another with a microspore being liberated; and **4.** Mature anther with fibrous endothecium.

tions. *Rhizophora*, which dominates the vegetation, is represented by *R. apiculata* Bl., *R. mucronata* Lam., *R. stylosa* Griffith, and the rare, recently reported *R. lamarckii* Montr. Microsporogenesis in *R. lamarckii* is presented here, stressing the uniqueness of the genus. The flowers of *R. lamarckii* were collected from the Pichavaram Reserve Forest since 1983, and preparation of the slides was by the customary methods of microtomy.

Flowers in the same plant possess different numbers of stamens (7–16). The short filament bears a stout and conical anther. In transection, the anther is triangular in shape, with the short arm placed abaxially and devoid of sporangia. Along the two long arms are series of sporangia arranged in a row. The cells of the abaxial side and the central connective region are large and impregnated with tannin (figure 1).

The cells of the hypodermal layer become arranged in a distinct linear row and divide to produce 2–4 layers of cells. Several distinct groups of cells, characteristic of archesporium, can be recognized in this hypodermal region. In other words, no linear rows of archesporial cells are differentiated. These groups of cells are the archesporial cells that originated from the archesporial initials, the previous generation of cells.

The archesporial cells give rise to 2–4 concentric rings of tapetal cells peripherally. The tapetal cells are uninucleate and are of the secretory type. The entire tissue is digested layer by layer, centripetally, beginning from the tetrad stage of the microspores (figure 2).

The sporogenous cells undergo a limited number of mitotic divisions and form a compact mass of spore mother cells, withdrawn from the tapetum. Simultaneous reduction divisions in the microspore mother cells result in tetrads of tetrahedral configuration. In some of the tetrads one or two of the spores degenerate resulting in tetrads of three cells (figure 3). The dissolution of the callose wall leads to the liberation of the microspores from the tetrads which have already attained the spherical shape.

At maturity, one or two layers of fibrous endothecium run along the anther and also between a few pollen sacs. In open flowers, the pollen grains are uninucleate (figure 4).

The occurrence of multilocular sporangia derived from distinct units of archesporium in an anther is unique to angiosperm embryology. The multisporangiate condition reported in Gentianaceae and Loranthaceae[1] and in several other families[2] results from progressive sterilization of the sporogenous tissue or by partitioning of other tissues, but not by distinct groups of archesporial cells. In *Aegiceras corniculatum*[3] and *Xylopia nigricans*[4], even though the archesporial cells are in separate groups, the anther in transection appears as a tetransporangiate anther. The multisporangiate anther of *R. lamarckii* is unique among angiosperms.

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EFFECTS OF FEEDING *TRICHOSANTHES DIOICA* (PARVAL) WHOLE FRUITS ON BLOOD GLUCOSE, SERUM TRIGLYCERIDE, PHOSPHOLIPID, CHOLESTEROL AND HIGH DENSITY LIPOPROTEIN-CHOLESTEROL LEVELS IN THE NORMAL ALBINO RABBITS

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For a long time *T. dioica* (Parval) fruits have been described to possess anthelmintic, antipyretic, diuretic, aphrodisiac, laxative, cardiotonic, stomachic, fattening, appetising, expectorant and antirheumatic effects in the indigenous system of medicine. These are considered to be useful in the treatment of fever, bronchitis, headache, leprosy, ulcers, heart and blood diseases[1–5]. There are no reports regarding biochemical effects of feeding these fruits in the human subjects or animals.

An attempt has been made in this laboratory to study the effects of regular feeding of whole fruits of *T. dioica* on blood glucose, serum triglycerides (TG), phospholipids (PL), total cholesterol and high density lipoprotein cholesterol (HDL cholesterol) in the normal albino rabbits.

Fresh fruits of *T. dioica* bought from the local market were washed, cut into small pieces, air-dried, powdered at room temperature in an electrical grinder and stored in glass-stoppered bottles.