

presence of Dce-geo-woo-gen dwarfing gene in Tai-chung Native-1, in rice breeding programmes for improving the plant type and maximising production. However, it has been found to be highly vulnerable to diseases and insect pests of various kinds. Whether the dwarf, reported here, has any significance, remains to be seen. Further breeding and genetical works are now taken up with this new dwarf.

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#### RARE FRUITING IN *ALLAMANDA CATHARTICA* L. VAR. *GRANDIFLORA* (*A. GRANDIFLORA* HOOK.)

*Allamanda cathartica* Linn. is a common garden plant with bright yellow flowers and shiny dark green, ovate or lanceolate foliage. This genus is the native of Brazil and as per Bailey<sup>1</sup> there are three horticultural and 12 non-horticultural species in Brazil and 1 in Central America. The most commonly grown *Allamanda* in India is popularly known as *A. grandiflora* Hook. which is in fact a variety of *A. cathartica* L. *A. neriifolia* Hook. is also a horticultural species but is less common. The third species is *A. violacea* Gardn.

The fruiting habit of the three species of this genus is rather interesting. Bor and Raizala<sup>2</sup> state that the fruits are unknown in *A. neriifolia* and that

no fruit sets in India in *A. violacea*. Fruiting in *A. cathartica* is said to be very rare.

In July 1976 my attention was drawn to a "prickly body" in my domestic *A. cathartica* var. *grandiflora*. Surprisingly this happened to be the fruit which developed to maturity. This plant which was raised by a cutting 15 years ago had never yielded any fruit. No such fruit formation has been so far reported from India.

The fruit is green to start with, completely covered with green spines. At the end of the season when defoliation starts the fruit starts turning yellow. The mature fruit is a large oblong follicle, 105 mm (equatorial) × 135 mm (polar) (excluding spines) in circumference, spiny, with clear fusion joints, unilocular, dehiscing at the joint (Fig. 1 a). The spines are 15 mm long and pointed. The follicle produced 5 seeds. Seeds are flat, winged and obovate and measure 22 mm in diameter (Fig. 1 b). The seeds are perhaps borne in two groups, as could be seen from the erumpent placental tufts which are distributed one each in the distal, and the other in the proximal region (Fig. 1 b, arrow). When the fruit was split

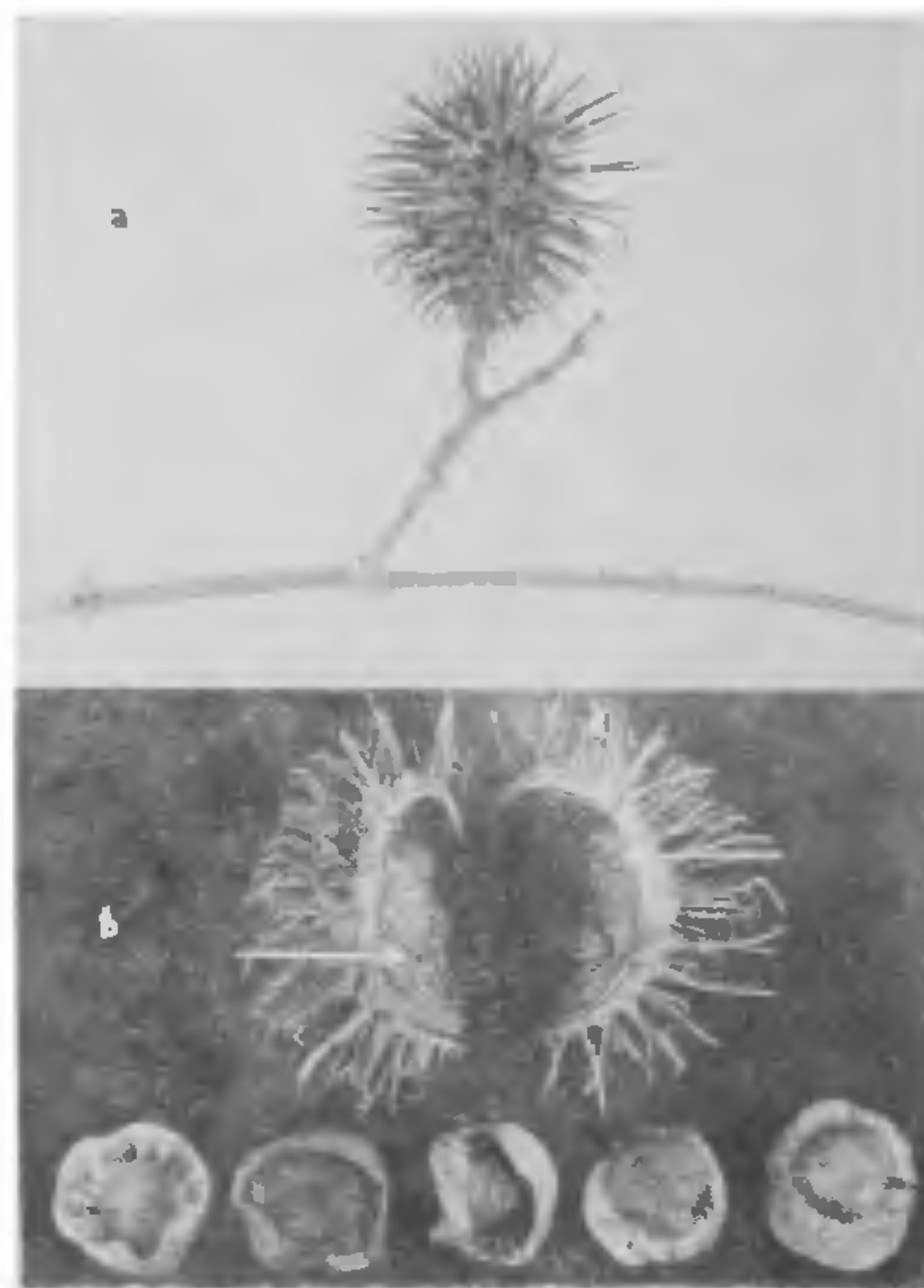


FIG. 1. a, Mature fruit (pod); b, Opened fruit and seeds.

open along the fusion joints the placental tufts aligned one on each half of the split fruit, one at distal and the other at proximal end of the stalk of the fruit. It is not clear how many of the total 5 seeds are

borne in each of the placental tufts since the fruit was opened when it was dry and seeds were already detached.

Bailey<sup>1</sup> states that fruit of the genus is seldom seen in conservatories.

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### VASCULAR ANATOMY OF *PITTIOSPORUM FLORIBUNDUM* WIGHT AND ARN. (PITTIOSPORACEAE)

PITTIOSPORACEAE have received little attention from the point of view of floral anatomy. Saunders<sup>3</sup>, Schaeppi<sup>4</sup> and Narayana and Radhakrishnaiah<sup>1</sup> studied a few taxa of this family. The present account deals with the vascular anatomy of the flower of *Pittosporum floribundum* Wight and Arn.

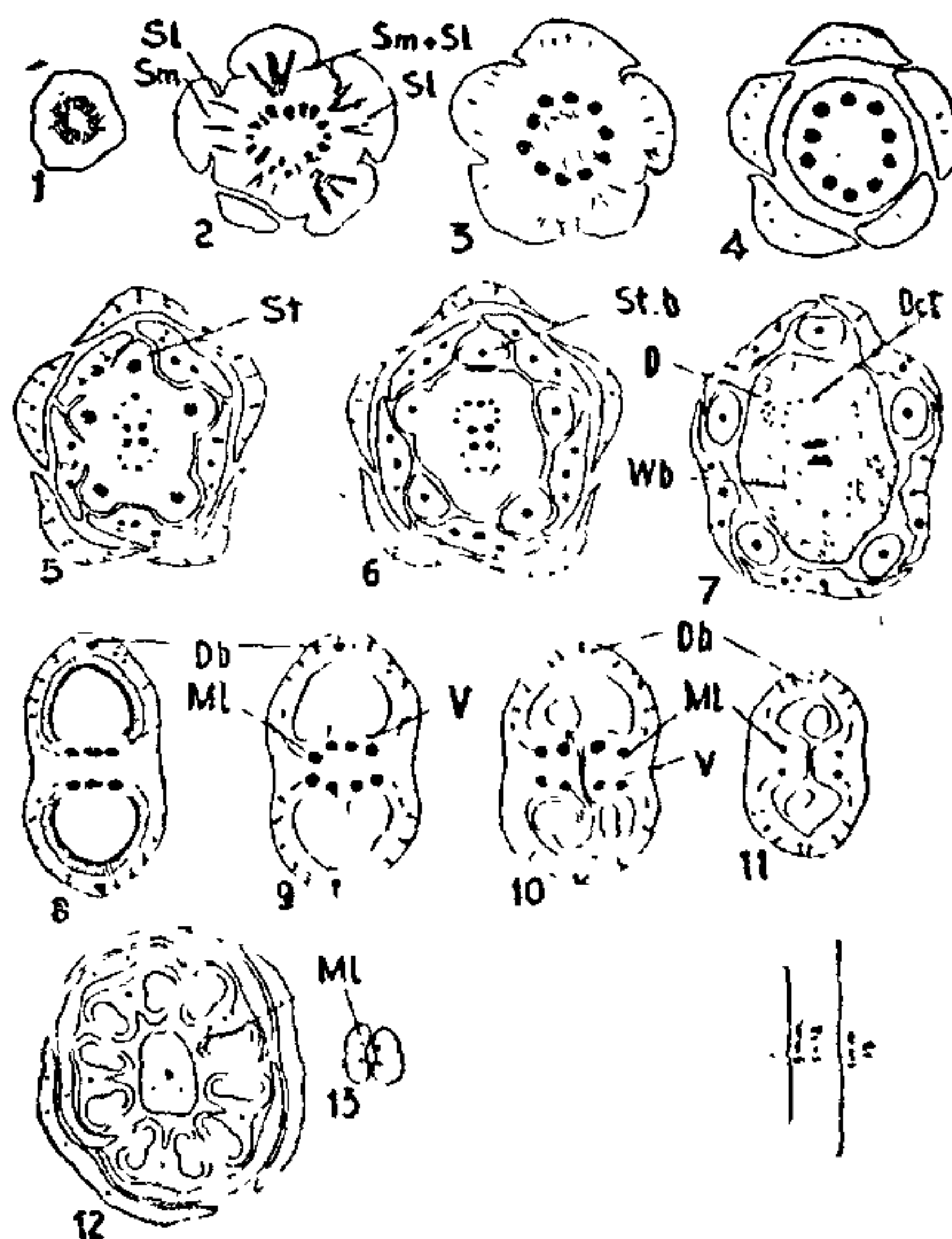
The flower is pedicellate, actinomorphic, bisexual, hypogynous, tetracyclic and pentamerous except the gynoecium. The two whorled perianth shows quin-cuncial aestivation (Figs. 4-7, 12). The androecium consists of five free stamens (Figs. 7, 12). The gynoecium is bicarpellary syncarpous, bilocular at the base and apex and imperfectly bilocular in the middle ovule-bearing region (Figs. 1-11). The style is single and solid and the stigma is bilobed (Figs. 12, 13).

The pedicel shows a ring of vascular tissue (Fig. 1). The sepals are three-traced and the origin of the sepal traces is interesting. For two of the sepals, the lateral traces arise conjointly with the midribs; for two other sepals, one lateral trace arises independently, while the other lateral trace arises conjointly with the midrib and for the fifth sepal, the midrib as well as lateral traces arise independently (Fig. 2).

After the demarcation of the sepal traces, the main stele organises into ten prominent bundles and these give off branches towards inside (Figs. 3, 4). Some of these branches converge at the centre and organise into two pairs of ventral bundles, while the remaining branches into two arcs of bundles and these constitute the supply to the wall of the ovary (Figs. 5-7).

From among the bundles of the wall of the ovary two bundles become distinguishable as dorsal bundles

at about the level where loculi appear and at about the middle of the ovary they undergo splitting (Figs. 8-10). The bundles of the wall of the ovary nearest to the ventral bundles function as median lateral bundles and these give off branches into the ovary wall (Figs. 8-11). The median lateral bundles extend to the top of the style while the remaining bundles fade away towards the top of the ovary (Figs. 11, 12). There is homocarpellary fusion of ventral bundles and the fused ventral bundles lie opposite the loculi (Figs. 7, 8). At about the level, where ovules arise, the fused ventral bundles divide and the ventral bundles of the two carpels stand in pairs and lie in the septum (Fig. 9). The ventral bundles remain free and are completely utilized in the ovular supply. Thus the carpels are five-traced and judging from the position of ventral bundles in the different ovule-bearing regions of the ovary the placentation can be described as axile below and anatomically parietal above (Puri<sup>2</sup>).



FIGS. 1-13. Serial transverse section of flower buds showing the origin and distribution of traces to the different floral parts.

D = "Disc"; Db = Dorsal bundle; Dct = Dorsal carpellary trace; Mb = Median lateral bundle; Sl = Sepal lateral trace; Sm = Sepal median trace; Sm + Sl = Sepal median + sepal lateral; St = Staminal trace; St.b = Staminal bundle; V = Ventral bundle.

After giving off branches towards the centre, five of the ten bundles on the sepal radii function as