

### Nucellar Polyembryony in the Rutaceæ. ripe seeds examined, the presence of more than

NUCELLAR polyembryony had been reported in two genera of the Rutaceæ, *Citrus* and *Zanthoxylum*,<sup>1</sup> and recently a third genus *Murraya*,<sup>2</sup> was added to this list. *Citrus* and *Murraya* belong to the tribe Aurantieæ and so it was suggested by Dr. M. A. Sampathkumaran that a further study of some more species of the Aurantieæ might yield interesting results. The present investigation was then undertaken with a view to examine a few local species of the above tribe.

Since *M. Kœnigi* Spreng had been reported to show nucellar polyembryony, another species of the same genus, *M. exotica* Linn., was examined. Out of a total of about 300

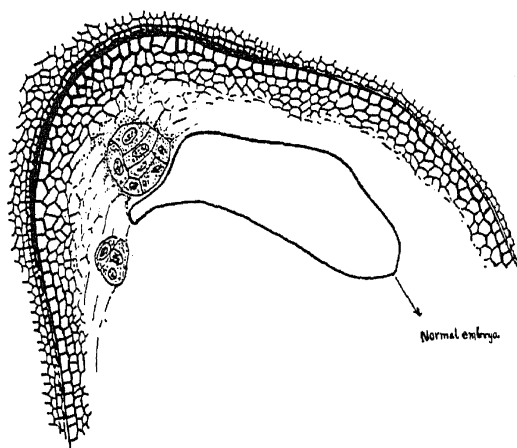


Fig. 1.

Long. Section of ovule of *M. exotica*. Egg-embryo shown in outline.

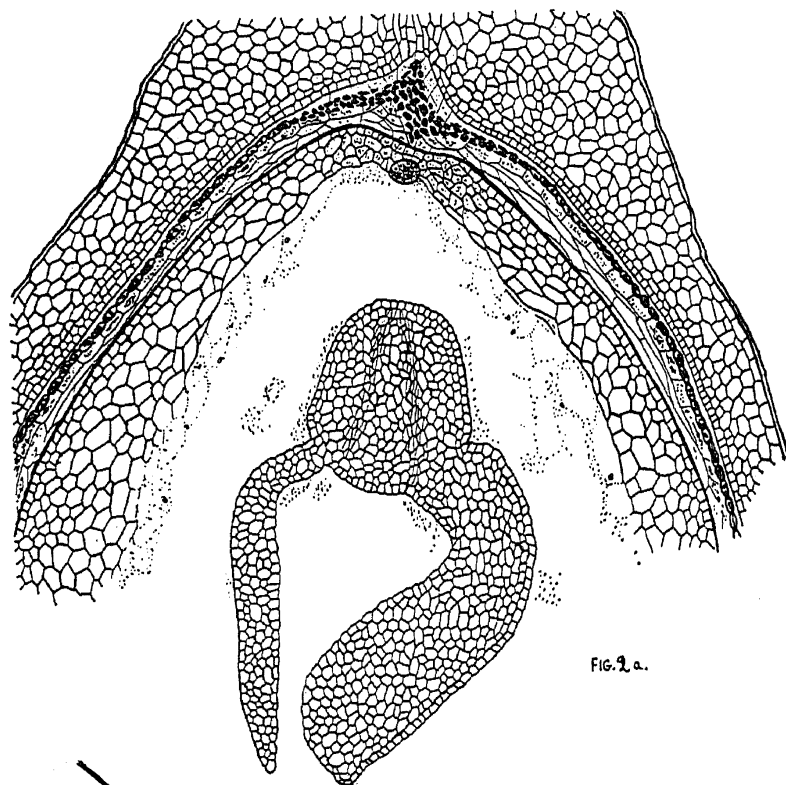


FIG. 2a.

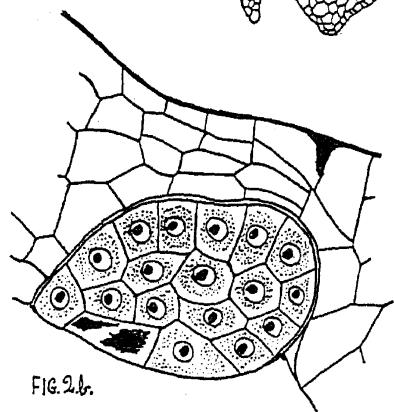


FIG. 2b.

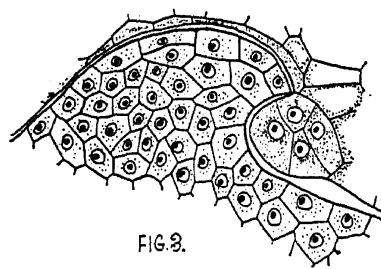


FIG. 3.

Fig. 2a. Long. Section of ovule of *Aegle Marmelos*. The nucellar embryo is imbedded in the nucellus near the micropyle.

Fig. 2b. Nucellar embryo of Fig. 2a enlarged.

Fig. 3. The small nucellar embryo and part of the curved beak-like suspensor region of the normal embryo.

one embryo was noticed in only four cases. The latter were almost always shrivelled in appearance, the individual embryos themselves being small and ill-developed. Recently another batch of about 300 seeds was examined but polyembryony was found in only one case. A large number of young ovules was sectioned and examined, but only a single case of nucellar embryogeny was observed, obviously due to the rarity of the phenomenon. The two embryos found here were just two groups of abnormally enlarged nucellar cells (Fig. 1).

*Aegle Marmelos* Correa was the next plant investigated. Though a large number of ripe seeds was examined, not a single case of polyembryony was seen. But on examining serially sectioned preparations of a large number of young seeds, two cases of nucellar embryos were noticed (Figs. 2b and 3). In both these cases the nucellar embryo is extremely small when compared with the normal egg-embryo by its side (Fig. 2a).

A large number of seeds of *Feronia elephantum* Correa was examined but without finding any case of polyembryony. A few tricotyledonous embryos were found, but their development was not studied. A few ovules were serially sectioned and examined but no clear case of nucellar embryogeny was seen.

Thus two more species of the Rutaceæ, including another genus, are found to show this interesting phenomena. Nucellar embryos are very rarely found in *Aegle* and even then they seem to stop development at a very early stage, whereas in *Citrus* and *Murraya* the nucellar embryos compete strongly during development with the normal embryo. It is probable that we see within the Aurantieæ a sort of progression beginning with the origin of nucellar embryogeny in a form like *Aegle*, leading to forms like *Citrus* and *Murraya Kænigi*. Within the genus *Murraya* itself we have a similar progression from *M. exotica* to *M. Kænigi*. A study of further genera of the Aurantieæ may prove to be interesting.

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<sup>1</sup> Schnarf, *Embryologie der Angiospermen*, 1929.

<sup>2</sup> Chakravarty, R. S., *Curr. Sci.*, 1935, 3, No. 8, 361-362.

### Teratological Notes.

ABNORMALITIES have been recorded in the following plants:—

- A. *Solanum Melongena* Linn. (*Solanaceæ*).
- B. *Phlox Drummondii* (*Polemoniaceæ*).
- C. *Jasminum humile* Linn. (*Oleaceæ*).
- D. *Bauhinia variegata* Linn. (*Leguminosæ*).

A. The plant of *Solanum Melongena* (Fig. 1) under consideration is very striking because of the following abnormalities:



Fig. 1.

1. Plant is devoid of prickles. This fact is not strange, as in rich soil prickles often disappear.

2. Lower and upper leaves are quite abnormal, more or less lanceolate. Leaves in the middle region are normal, but devoid of prickles.

3. (a) Flowers are quite abnormal; axillary, green. Sepals very much enlarged, pale-green. In the region of the corolla, there is only one leaf of the same size and shape as the sepals, somewhat like a spathe half-enclosing a small bunch of minute leaves on which still smaller leaves are attached. There is no ovary, only a disc-like structure is present above the pedicel.

(b) Calyx of 5 sepals, 3 small and 2 big, of the same shape as those in (a) but the biggest ones are half the size of those in (a). In the region of the petals are two green leaves, lanceolate in shape. Below the sepals is a cup-shaped 3-lobed structure. Ovary is raised on a stalk, resembling a gynophore or