

27. October 1981

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OCCURRENCE OF NUCELLAR POLYEMBRYONY IN *TODDALIA ASIATICA* LAMK.

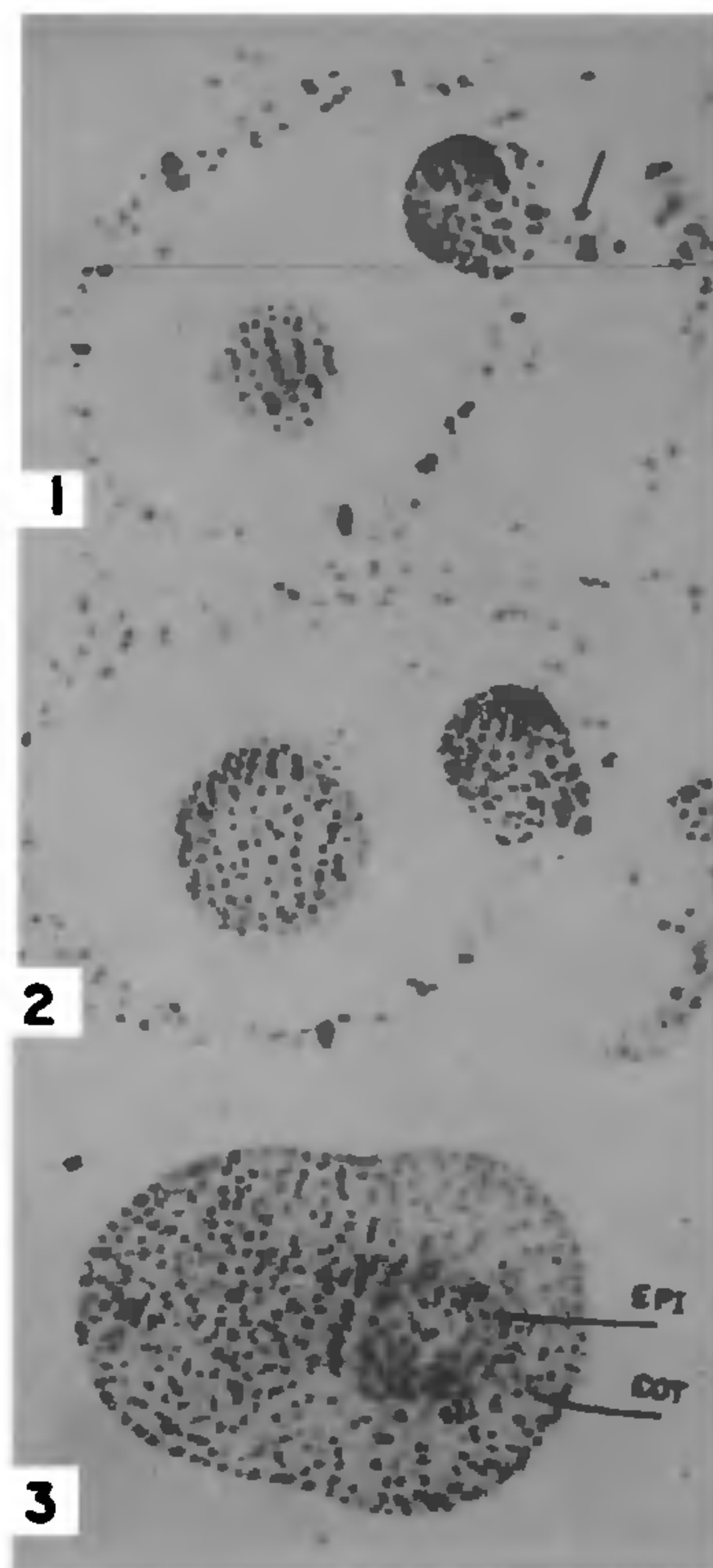
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NUCELLAR polyembryony has been reported in few members of the Rutaceae. Polyembryony is reported to have three different modes of origin resulting in nucellar polyembryony, cleavage polyembryony and, through the occurrence of more than one normal gametophyte in the same ovule. All the above three categories of polyembryony are reported to occur in *Citrus paradisi* and *C. aurantium*¹.

In the majority of the cases where polyembryony is prevalent it has been observed that stimulation through pollination or fertilization or the development of the zygote up to a certain stage is a prerequisite for the development of nucellar embryos. *Xanthoxylum*² and *Aegle*³ develop nucellar embryos without syngamy. It has been observed that in *C. trifoliata*⁴, both zygotic and nucellar embryos attain maturity and establish seedlings.

Toddalia asiatica is a monoembryonate form where nucellar polyembryony has not been reported so far. Nucellar polyembryony, a rare occurrence, has been reported here. The zygotic embryo has developed normally and the nucellar embryo appears a little later after the zygotic embryo has produced 32 to 64 cells. The nucellar embryo arises more or less from the middle region of the embryo sac, separated from it, by 2 or 3 layers of nucellar cells. As it reaches the embryo sac, the rate of growth is much faster than the zygotic embryo and attains a massive form. The nucellar embryo severed from the nucellar tissue is positioned in the embryo sac. The embryo shows a very well-developed epicotyl and the cotyledons, whereas the zygotic embryo remains more or less pear-shaped.

One of the authors (V. N. B.) is grateful to the University Grants Commission, New Delhi, for the award of a fellowship.



Figures 1-3. 1. Zygotic embryo and the surface view of the nucellar embryo. (Arrow points to suspensor) ($\times 170$). 2. Zygotic embryo with distinct suspensor ($\times 220$). 3. Nucellar embryo with well differentiated epicotyl and the cotyledons ($\times 475$) COT—cotyledon, EPI—epicotyl).

5 October 1981

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