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8, 9). The mature embryo is fleshy and has massive cotyledons, discernible shoot apex, short hypocotyl, root cap and disintegrating cells of the suspensor (Fig. 10).

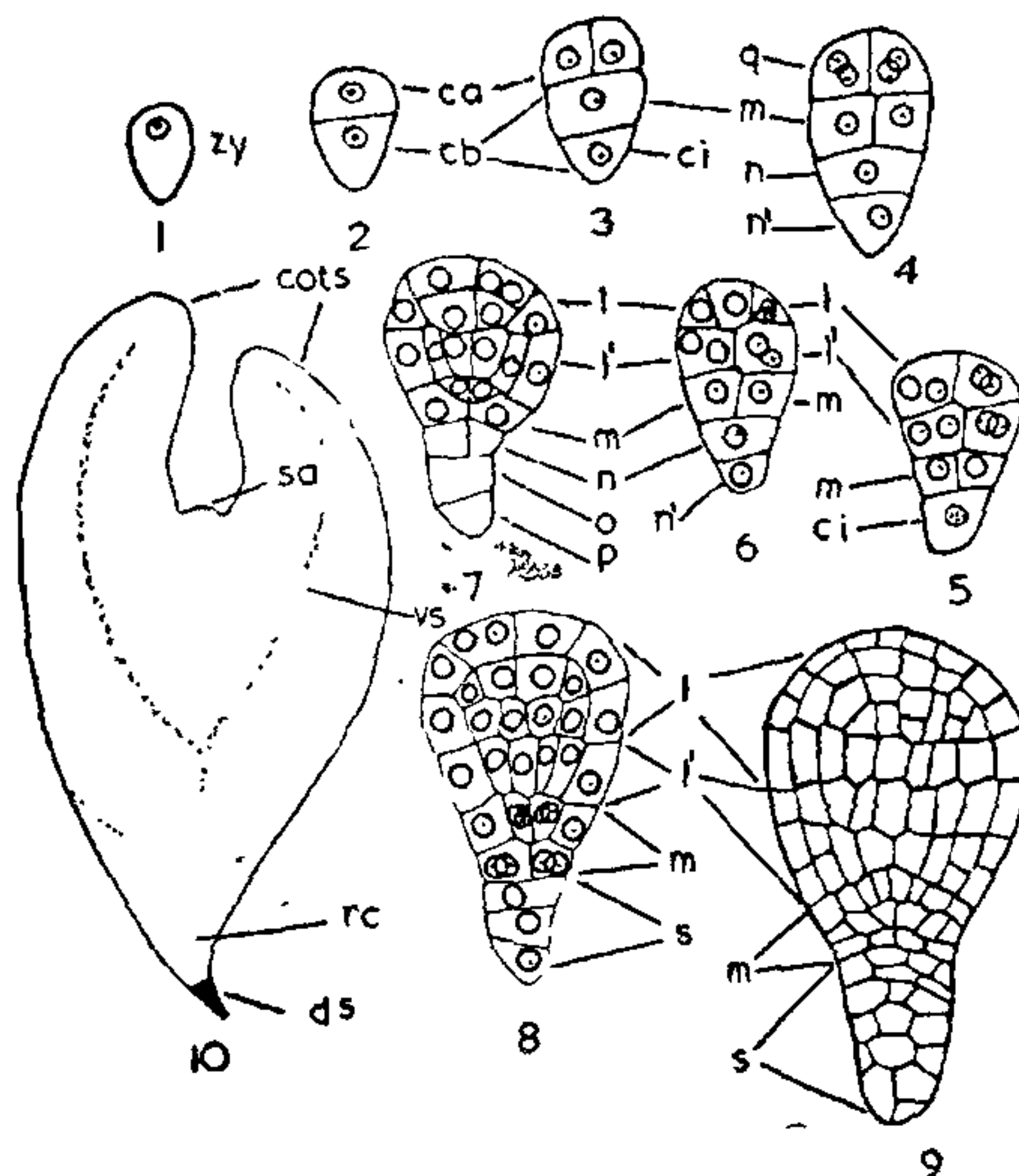
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#### EMBRYO DEVELOPMENT IN *MORINGA CONCANENSIS* NIMMO.

As there has been no report of the development of embryo in *Moringa concanensis* Nimmo, a study of it was undertaken and the observations are recorded in this report.

The zygote undergoes a period of rest and divides, when the fruit is about 6 cms long, transversely to produce the terminal cell *ca* and the basal cell *cb* (Figs. 1, 2). Both the derivatives of the zygote divide further in such a way to organise a T-shaped proembryo comprising 4 cells disposed in three tiers *ca*, *m* and *ci* (Fig. 3). The two cells of *ca* (Fig. 3) now divide vertically forming a quadrant *q*, while *m* divides vertically (Figs. 4, 5) and *ci* transversely giving rise to *n* and *n'* (Fig. 4). At the third cell generation (Fig. 4) the proembryo comprises eight cells disposed in 4 tiers. Figure 6 represents the proembryo with 5 tiers of cells, that is, the two terminal tiers *l* and *l'* of four cells each, the next *m* with two juxtaposed cells and the lower two tiers *n* and *n'* of one cell each. In each cell of the terminal tier *l* an oblique wall is laid down to form an inner and an outer cell. The former undergoes further division in transverse and longitudinal planes over and over again forming the plumule, while the latter constitutes the initial for the cotyledons (Figs. 7, 8, 9). Following the divisions in the tier *l*, the cells of the tier *l'* undergo periclinal divisions to demarcate dermatogen, periblem and plerome (Figs. 7, 8). Further divisions in *l'* result in the differentiation of hypocotyl and the radicle (Figs. 8, 9).

Further divisions in *m* result in root apex and root cap. The derivatives of *ci* divide rather irregularly forming the suspensor of 2 to 3 seriate cells (Figs. 7,



FIGS. 1-10. *Moringa concanensis* Nimmo. Figs. 1-9. Stages in the development of embryo,  $\times 160$ ; Fig. 10. Mature embryo,  $\times 10$ .

(*cots*—cotyledons; *dsc*—disintegrating cells of the suspensor; *rc*—root cap; *sa*—stem apex; *vs*—vascular supply, *zy*—zygote).

From the above the embryogeny conforms to the Myosurus variation of the Onagrad type of Johansen<sup>2</sup> (1950) or Megarchetype IV in the First Period of Souéges (*vide* Crété<sup>1</sup>, 1963); this is at variance with the Asterad type reported for *Moringa oleifera*, where the embryo was without a suspensor, as reported by Narayana<sup>3</sup> (1962).

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