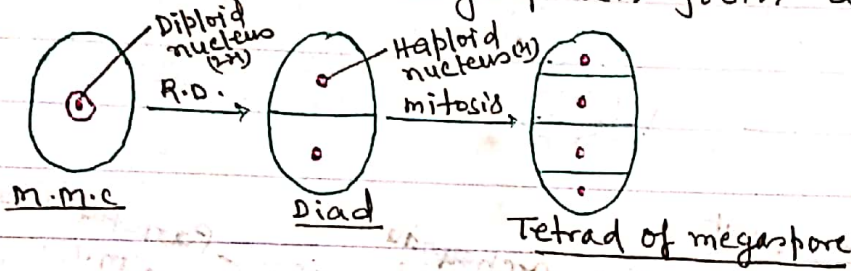


MEGASPOROGENESIS →

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Megasporogenesis is the process by which 4 haploid (x) megaspores are produced from diploid (2x) megaspore mother cell (= megasporocyte) on account of meiotic division.

The first meiotic division is of reductional type, so that the diploid (2x) number of chromosome in the nucleus of m.m.c. is reduced to haploid (x) being available in both the cells of a Diad, while the 2nd meiotic division is of equational or mitotic type. Thus, the sum total of megasporogenesis, as a rule, forms a linear-tetrad of 4-megaspores from a single m.m.c.



Other types of megaspore tetrad :-

- (i) T-shaped tetrad :- In this type, two microphyllar megaspores lie at right angles to that of chalazal megaspores which lie parallel to the long axes of the ovule. eg- Rheum, Rumex etc.
- (ii) I shaped tetrad :- Here the two microphyllar megaspore lie parallel to axes of the ovule and the two chalazal megaspores lie at right angles to it eg- Anogon, Ludwigia etc.
(Johnson, 31) (Matheshwari Gupta, 1934)

An isobilateral or tetrahedral arrangement of megaspore is very rare and has been reported only as an abnormality.

The genus Musa is of special interest, for here tetrads of four different kinds - linear, T-shaped, I-shaped and isobilateral - may occur in the same species (Wodds, 1945).

Development of megasporangium or ovule :-

The megasporangium or the ovule develops as a small protuberance of the placental tissue. In the very young ovule a single hypodermal cell is differentiated as the archesporium. This archesporium cell may or may not cut off some parietal cells and then becomes the megaspore mother cell. The megaspore mother cell now undergoes meiosis, and, usually a linear row of four haploid megaspore cells (linear tetrad) is formed. Meanwhile, the integuments develop from the base of the ovule.

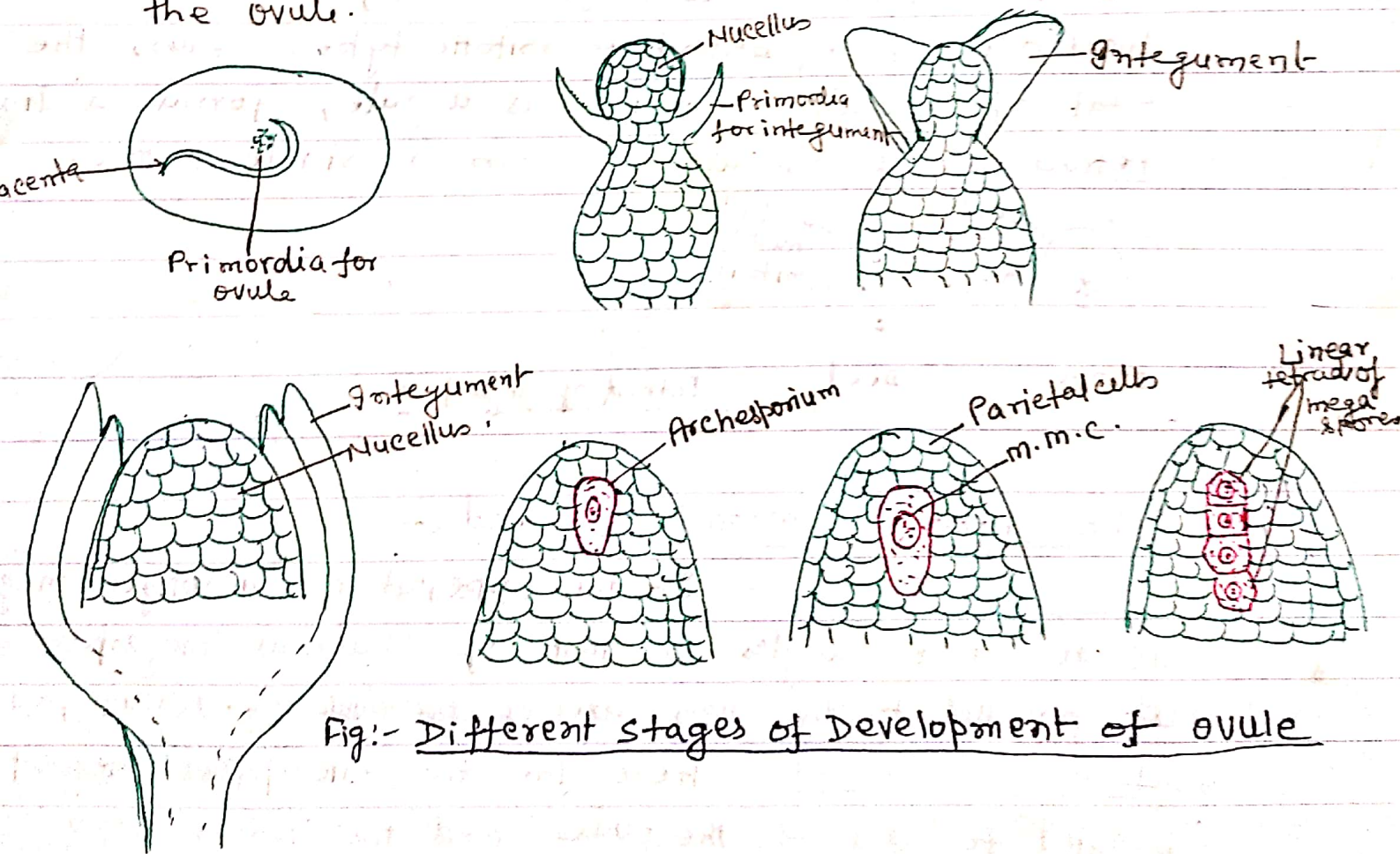


Fig:- Different stages of Development of ovule