Topic: Embryo

B.Sc. Botany Subs. II

Group: B

Dr. Sanjeev Kumar Vidyarthi
Department of Botany
Dr. L.K.V.D. College, Tajpur, Samastipur
L.N. Mithila University, Darbhanga

Development of Embryo in Monocots:

- There is no essential difference between the monocotyledons and the dicotyledons regarding the early cell divisions of the proembryo, but the mature embryos are quite different in two groups.
- Here the embryogeny of Sagittaria sagittifolia has been given as one of the examples.
- The zygote divides transversely forming the terminal cell and the basal cell.
- The basal cell, which is the larger and lies towards the micropylar

end, does not divide again but becomes transformed directly into a large vesicular cell.

- The terminal cell divides transversely forming the two cells. of these, the lower cell divides vertically forming a pair of juxtaposed cells, and the middle cell divides transversely into two cells.
- In the next stage, the two cells once again divide vertically forming quadrants.
- The cell next to the quadrants also divides vertically and the cell next to the upper vesicular divides several times transversely.

- The quadrants now divide transversely forming the octants, the eight cells being arranged in two tiers of four cells each.
- With the result of periclinal division, the dermatogen is formed.
- Later the periblem and plerome are also differentiated.
- All these regions, formed from the octants develop into a single terminal cotyledon afterwards.
- The lowermost cell L of the three-celled suspensor divides vertically to form the plumule or stem tip. The cells R form radicle. The upper 3-6 cells contribute to the formation of suspensor.

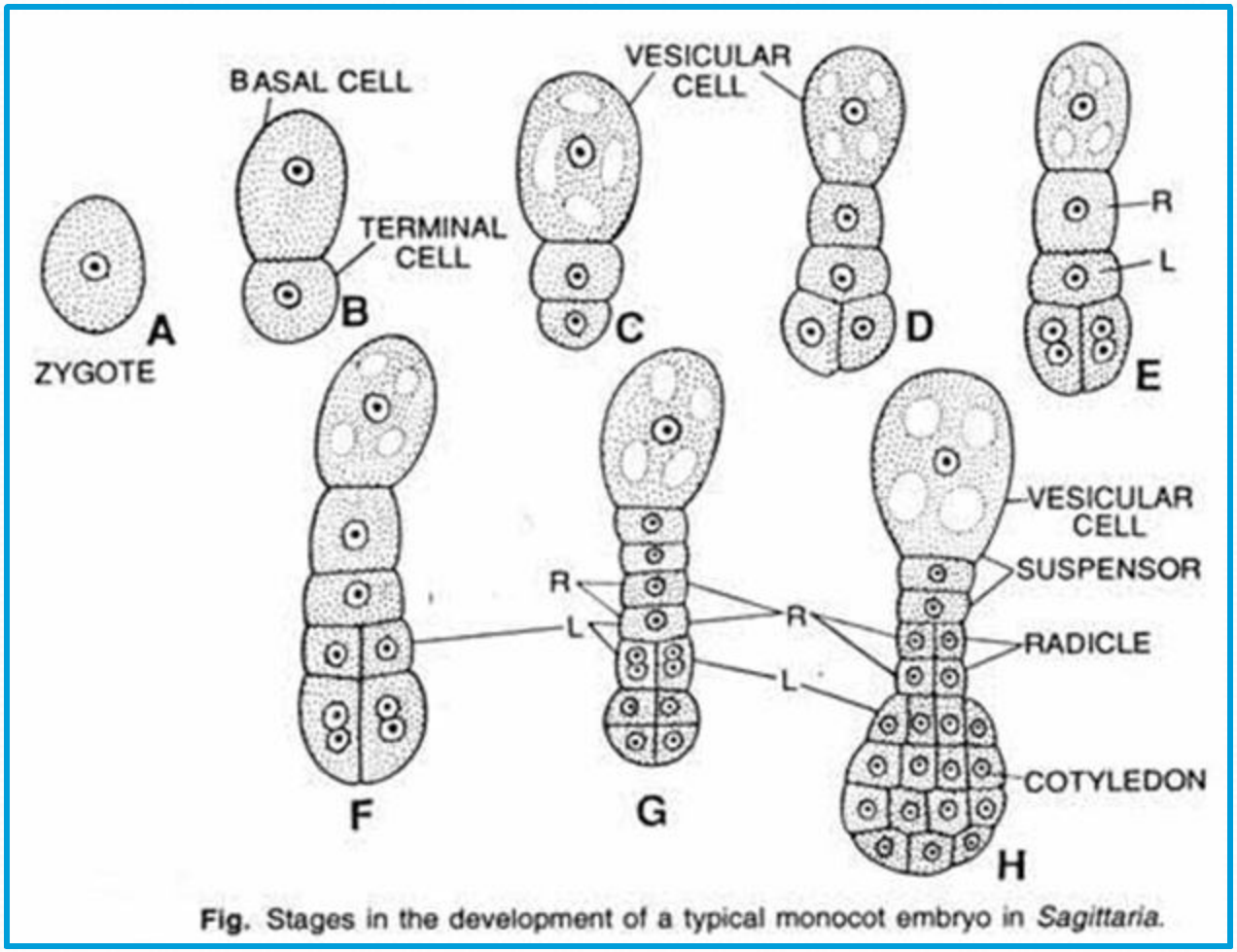

Fig. Stages in the development of a typical monocot embryo in *Sagittaria*.