

13 TO MAKE PREPARATION OF STAGES IN THE DEVELOPMENT OF EMBRYO *RAPHANUS SATIVUS*

13.1 INTRODUCTION

In angiosperm a perfect specialised reproductive structure as a flower is present. Its major function is the production of egg and sperms. The egg is formed in female gametophyte within ovule which has integuments and nucellus. Sperms are generated in pollen grains while pollen grains develop in anther. After fertilization the seed is formed. The zygote undergoes divisions and differentiates to form embryo. In this experiment, you will observe various stages in the development of embryo.

Before doing this experiment you should go through unit 5 of LSE-06.

Objectives

After doing this experiment you will be able to

- identify various stage of embryo development
- recognise dicot embryo

13.2 MATERIALS REQUIRED

Plants of *Raphanus* or *Brassica* or *Heliant'*

Needles

Microscope

Iodine solution

13.3 PROCEDURE

Fruits in various stage of development will be provided to you. Here we are giving the example of *Raphanus sativus*. You have to select fruits of different sizes or ages. Collect the fruits in watch glass and mark them differently. Tease out gently one or two ovules from each fruit on a slide in a drop of iodine solution. Cover the ovule with a coverslip and press gently with the handle of a mounting needle. This should squeeze out the embryo unharmed. Put a coverslip on embryo and tap gently. The slide is ready for observation.

13.4 OBSERVATION AND RESULTS

You should observe major phases of embryo genesis by working out the gross morphology of the embryo at different stages of development.

- i) linear stage of embryo
- ii) globular stage of embryo which usually appears spherical
- iii) heart shape embryo with 2 primordia
- iv) mature embryo with two cotyledons

Draw each stage and compare it with the various stages drawn in your book. Also, tabulate the differences at every stage. Try to see each stage which is given in your book but if you don't find them, you can see them in P.M. provided by your councillor.

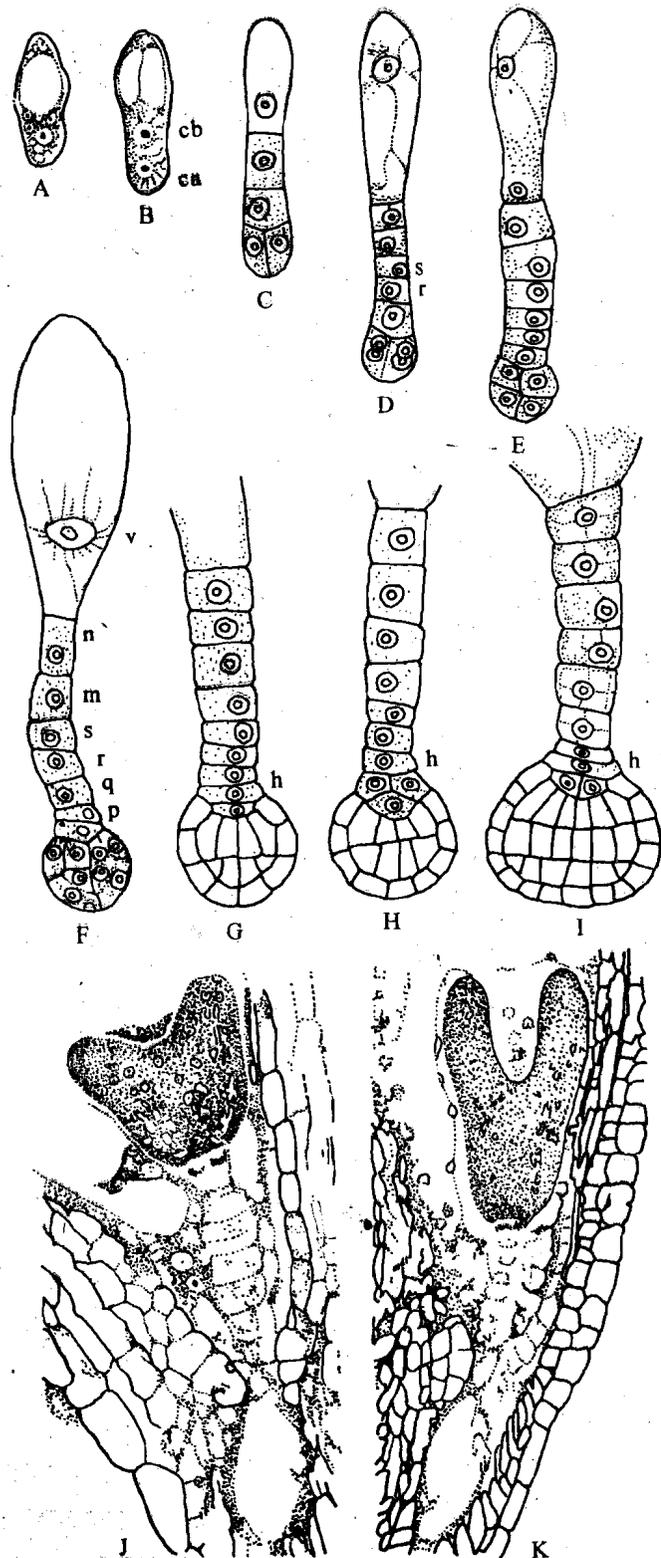


Fig. 13.1 : Various stages in the development of *Raphanus* embryo.

Now you have seen various stage of embryogenesis. First try these SAQ.

To Make Preparation of
Stages in the Development of
Embryo *Raphanus Sativus*

SAQ

1. Draw a labelled diagram of the major parts of dicot embryo and what is the destiny of each one?

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2. What is the function of suspensor cell in embryo?

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3. At what stage you can differentiate monocotyledonous embryo from dicotyledonous embryo?

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