RECENT ADVANCES IN PHYSIOLOGY OF REPRODUCTION OF PLANTS

By Professor A. E. Murneek

Our knowledge of the physiology of sexual reproduction in plants is still rather limited and of quite recent origin. This is undoubtedly due to the fact that most higher plants are hermaphrodites and that the sexual organs are rather minute and ephemeral. It should be possible, however, to overcome this difficulty imposed by the material, at least in certain restricted phases of investigation of reproduction, by the use of large numbers of individuals, which permits the isolation of sufficient quantities of desirable tissues for a physiological and chemical assay. Then, too, the relatively small size and comparative ease of manipulation of many plants would seem to fit them to a variety of experimental observations and treatments.

For the purpose of orientation, sexual reproduction of higher plants may be subdivided into certain steps or phases, of which the following appear to be of major importance: (1) Initiation or "ripeness" of the sporophyte for reproduction; (2) chromosome conjugation (synapsis) and spore formation—the beginning of the gametophytic generation; (3) pollination and growth of the male gametophyte; (4) fertilization or union of gametes and (5) development of the embryo and its influence on the mother sporophyte.

For various reasons, which can not be taken into account here, some of these phases have been investigated more extensively or more thoroughly than others.
Editor's Summary

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