

SOME ABNORMALITIES IN PLANT STRUCTURE.

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In looking over large numbers of microscopic slides made during the past few years, I have noted many instances of abnormalities in structure, some of which have not been reported, to my knowledge. Assuming that some of them may be of interest to members of the Academy, I submit drawings of a number of them.

In cutting some fern prothallia of an undetermined species collected in the Washington Park greenhouse at Chicago, I noticed large numbers of imbedded archegonia and a few instances of deeply imbedded antheridia. As will be seen from the drawings, these structures occurred several cells below the surface of the prothallium. An imbedded archegonium was generally associated with an ordinary one, though not always. The imbedded archegonium begins as a single cell, distinguishable by its larger nucleus and denser cytoplasm. The axial row develops like that of an archegonium of the usual type, except that there are usually two neck canal cells, if such they can be called here, instead of the usual single binucleate one. This is perhaps due to the differences in the pressure of the surrounding cells. A variation in the imbedded archegonia was found in one instance, in which there were two archegonia, with the position of the cells in the axial rows reversed, as shown in the figure.

Stages in the development of the imbedded antheridia were not found.

In sectioning some ovaries of *Lilium* of unknown origin, I found several sacs in which the four free nuclei following the second mitosis all gathered at one end of the sac, instead of two at each end, as usual. One instance of a mature embryo-sac that had evidently resulted from the further development of such a condition as that mentioned above showed six nuclei at one end of the sac completely surrounded by walls, while two nuclei remained free.

The "three-story" reproductive branch of *Vaucheria* shown in the figure was found in some material which was collected near Baton Rouge, Ala. The other, in which a secondary sexual branch was formed in the place of an oogonium, was collected near Earlham College, Richmond, Indiana.

The megaspore tetrad of *Selaginella* shown in the figure shows the outer wall of the spore continuous around the group of spores instead of surrounding the individual spores.

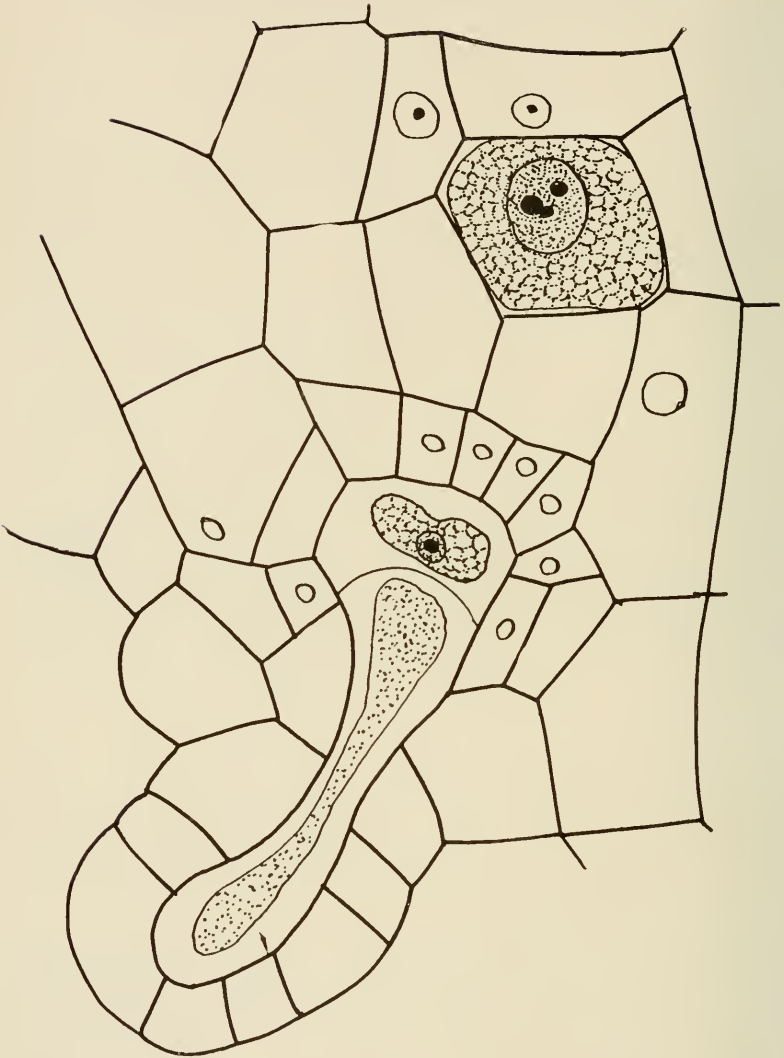


Fig. 1

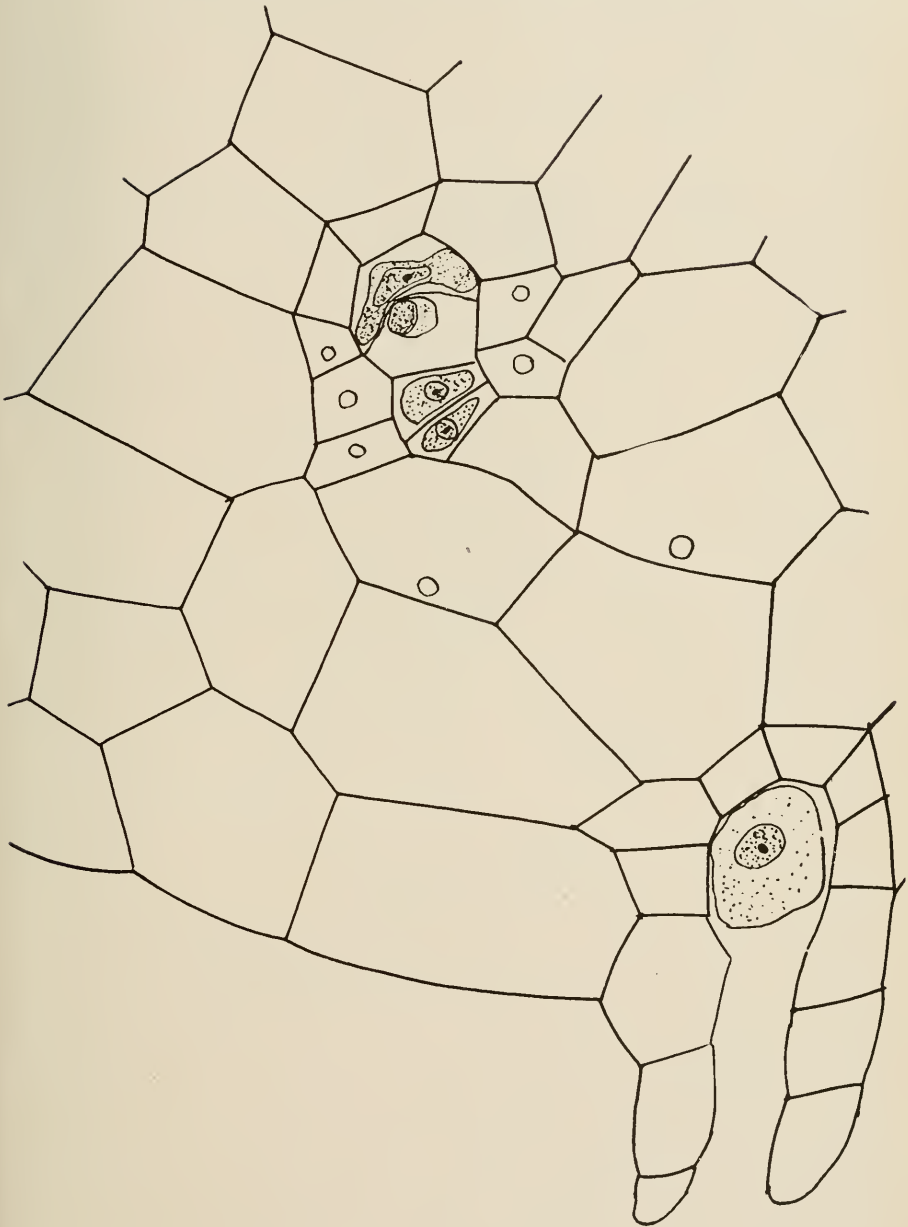


Fig. 2.

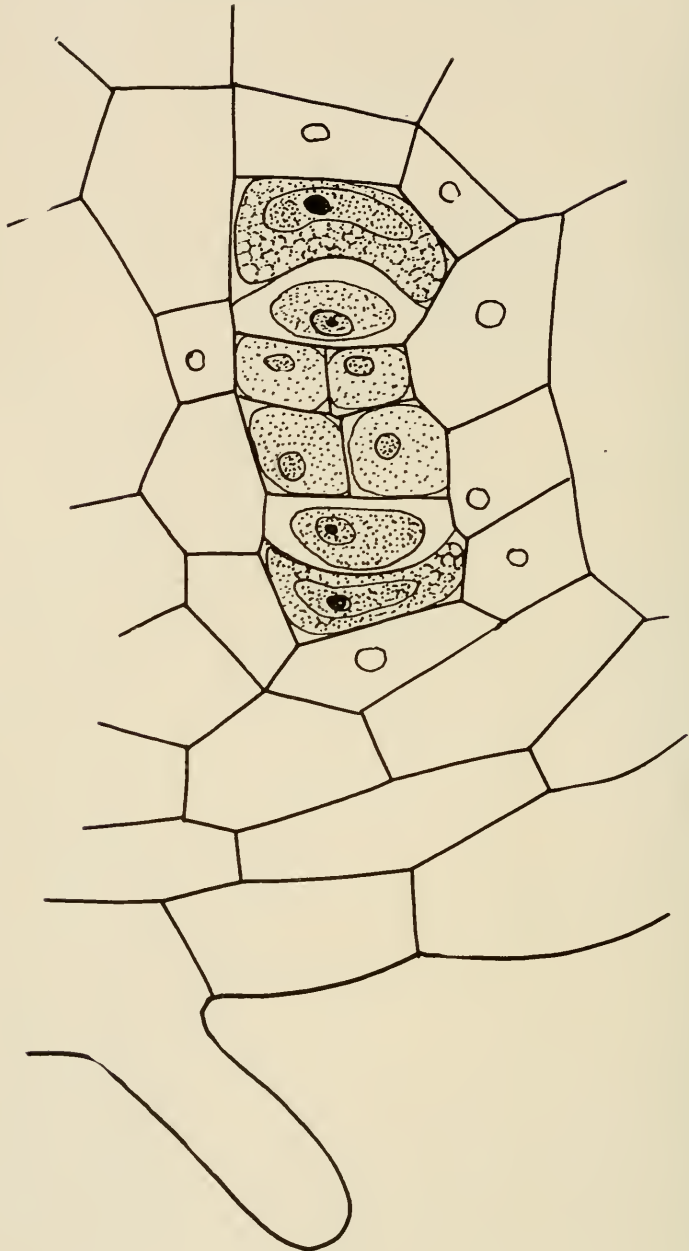


Fig. 3.

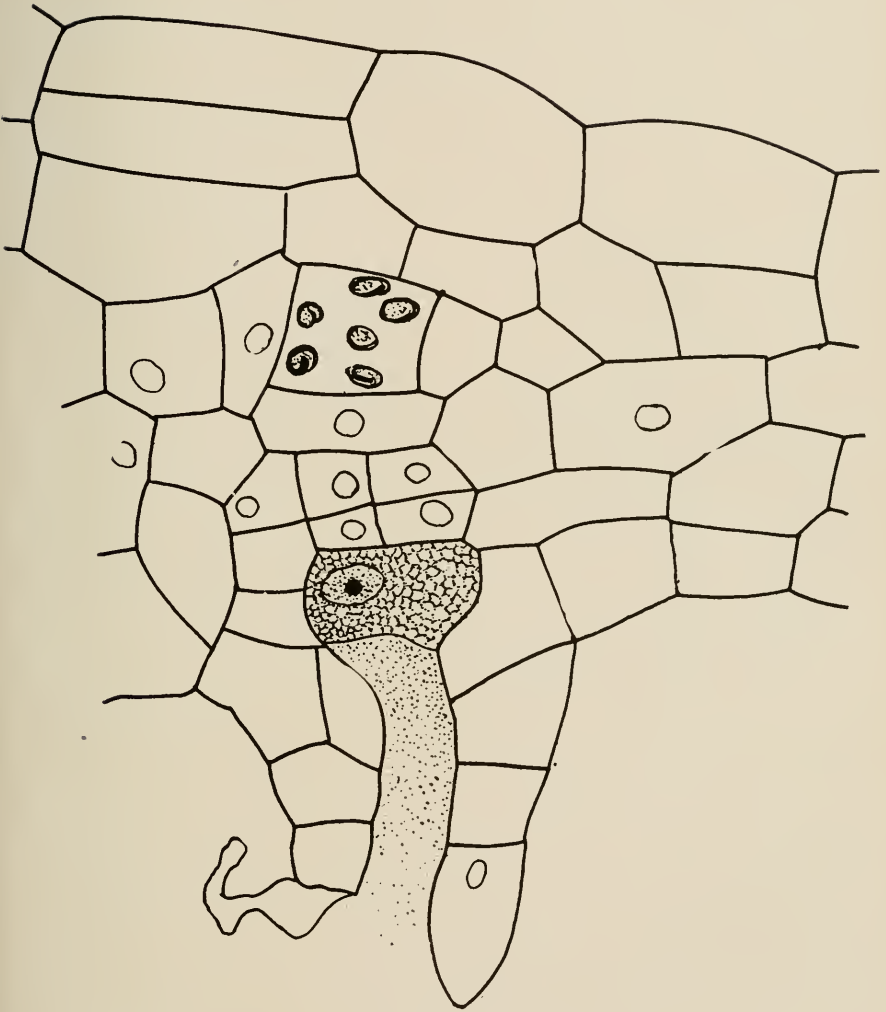


Fig. 4.

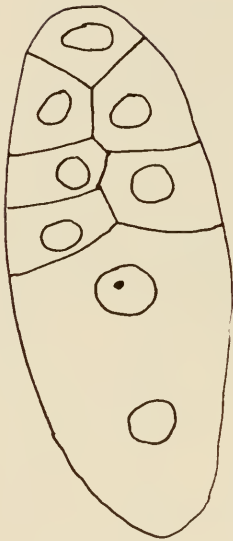


Fig. 5.



Fig. 6.



Fig 7.

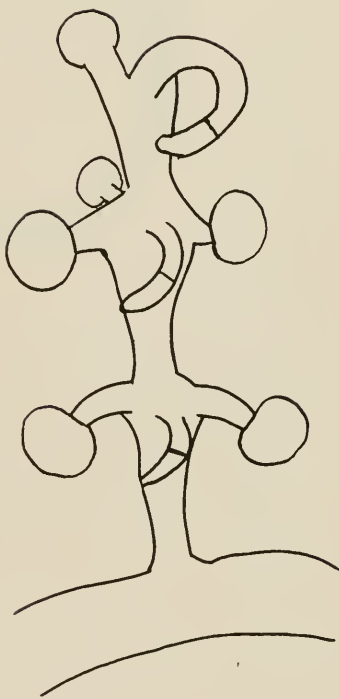


Fig. 8.

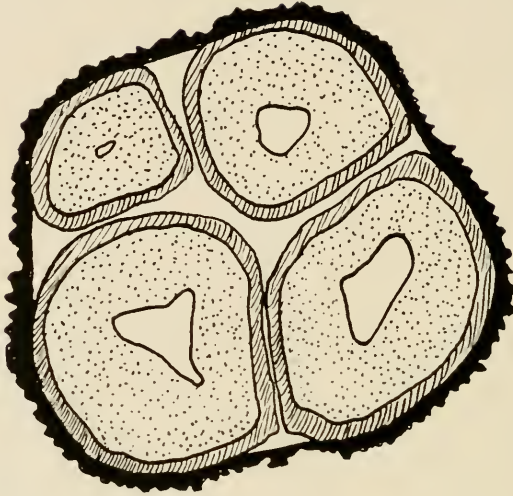


Fig. 9.

EXPLANATION OF FIGURES.

- Fig. 1. Initial of imbedded archegonium.
 Fig. 2. Completely formed imbedded archegonium.
 Fig. 3. Two imbedded archegonia with axial rows reversed.
 Fig. 4. Imbedded antheridium.
 Figs. 5 and 6. Abnormal embryo-sacs of *Lilium*.
 Figs. 7 and 8. Abnormal sexual branches of *Vaucheria geminata*.
 Fig. 9. Abnormal megaspore tetrad of *Selaginella*.