I am indebted to Dr. P. Maheshwari who suggested the problem and under whose directions the work was carried out.

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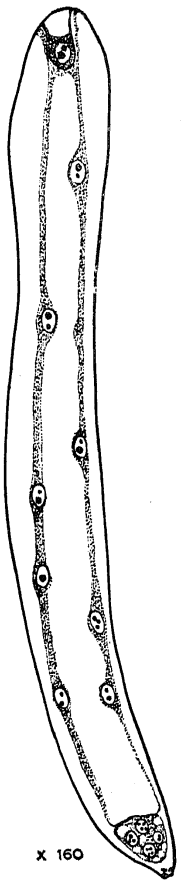
The Development of the Endosperm in *Asphodelus tenuifolius* Cav.

IN a recent paper written by me in collaboration with Singh[1] there appears a statement that "The endosperm nucleus divides first and a free nuclear endosperm is formed". Further study made by me shows that the latter part of the statement needs to be modified.

The primary endosperm nucleus lies at the base of the embryo sac just above the antipodal cells which begin to disappear very soon after fertilisation. When it divides a wall is formed separating a small chalazal chamber from a large upper chamber. The nucleus in the chalazal chamber divides only once or twice, while the other nucleus in the upper chamber undergoes several free nuclear divisions. The figure shows an embryo sac in which the fertilised egg is still undivided though the endosperm is separated into two chambers of which the upper has several free nuclei and the lower has only four nuclei. This type of endosperm development is known as the Helobiales type and has already been reported in another sp. of *Asphodelus* by Stenar[2], who writes:—



"Bei *Asphodelus fistulosus* ist die basale Zelle klein und kann leicht übersehen werden. In den wenigen Präparaten mit Endospermstadien, die mir zur Verfügung stehen, enthalt die untere Kammer vier Kerne. In dem ältesten beobachteten Stadium waren diese mehrfach grösser als die Kerne im zentralen Endosperm."

It is due to the small size of the chalazal chamber (as noted by Stenar also) and the lack of median sections that it was overlooked in my earlier preparations.

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June 12, 1933.

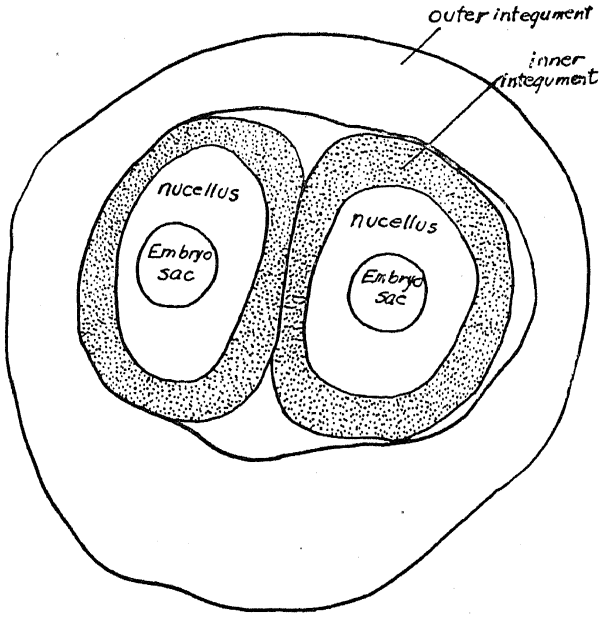
[1] Maheshwari, P., and U. B. Singh. "Development of the Female Gametophyte of *Asphodelus tenuifolius*." *Jour. Ind. Bot. Soc.*, **9**, 31, 1930.

[2] Stenar, Helge. "Zur Embryologi der Asphodeline-Gruppe." *Svensk. Bot. Tidskr.*, **22**, 145, 1928.

A Note on the Life History of *Hydrilla verticillata* Presl.

THIS note presents briefly the results of a detailed study of the flower and seed development of this plant, with special reference to the deviations from the normal course of development found in angiosperms.

Male flower: During the development of the microspores the tapetum forms a periplasmodium. The tetrads are isobilateral. The pollen is tri-nucleate at the time of shedding, consisting of a vegetative nucleus and two lenticular male cells. There is no fibrous layer in the anther, which is



evidently in adaptation with the aquatic habitat of the plant.

Female flower: The ovules appear as protuberances from the inner surface of the ovarian cavity and the archesporial cells are usually distinguishable at a surprisingly early stage. There are 1-3 sporogenous cells in each nucellus, but only one goes through