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ENDOSPERM OF *SCLERIA FOLIOSA* HOCHSTETTER Ex A. RICHARD

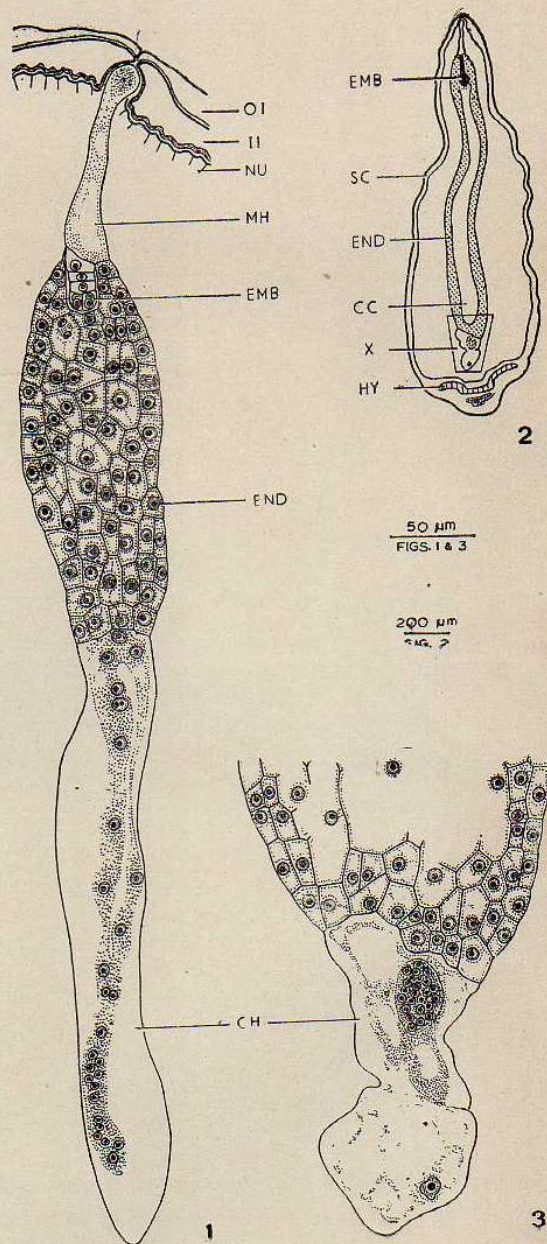
THE endosperm in the Cyperaceae has been remarkably uniform in being nonhaustorial and in following the nuclear ontogeny. However, our investigations on *Scleria foliosa* revealed some strikingly unusual features which have not been previously described in any other taxa of the family, and these are presented here.

The endosperm development is of the nuclear type. The primary endosperm nucleus, by repeated free nuclear divisions, gives rise to several nuclei which become distributed in a thin peripheral layer of cytoplasm. The central part of the endosperm is occupied by a large vacuole. At the binucleate stage of the endosperm, a tubular extension is formed at the micropylar end of the embryo sac. This outgrowth reaches the micropyle and functions as the micropylar haustorium. It remains enucleate with a relatively scanty cytoplasm (Fig. 1).

The centripetal wall formation begins around the proembryo and is restricted only to upper one-third of the endosperm forming the endosperm proper (Fig. 1). The chalazal part which remains coenocytic elongates right up to the base of the nucellus. It has dense cytoplasm and often shows "nodule-like" nuclear aggregations and serves as the chalazal haustorium (Figs. 2 and 3). The latter destroys the nucellar cells adjacent to it and remains active up to the late globular stage of the proembryo. As the growth of the cellular endosperm increases, the chalazal haustorium folds up and eventually degenerates. However, its remnants are noticeable even at the older stages of the seed. Thus, the endosperm of *Scleria foliosa* differentiates into micropylar haustorium, endosperm proper and chalazal haustorium. As the development proceeds, some of the cells in the central core of the endosperm proper disintegrate as they fail to keep pace with the rapidly expanding peripheral endosperm tissue and result in the formation of a central cavity (Fig. 2) which persists even at maturity.

FIGS. 1-3. Endosperm of *Scleria foliosa*. Fig. 1. Cellular endosperm with micropylar and chalazal haustoria. Fig. 2. L.S. of seed showing a central cavity in the endosperm. Fig. 3. Portion marked 'X' in Fig. 2 is enlarged to show nuclear aggregations in the chalazal haustorium.

(CC, central cavity; CH, chalazal haustorium; EMB, proembryo; END, endosperm; HY, hypostase; II, inner integument; MH, micropylar haustorium; NU, nucellus; OI, outer integument; SC, seed coat).



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