SUMMARY

The embryology of *Scleria pergracilis*, *Carex longicurria*, *C. longipes*, *C. baccane* and *C. glaucina* belonging to the subfamily Caricoideae of the family Cyperaceae have been investigated.

The development of anther follows the Monocotyledonous type. The anther wall is four-layered and consists of epidermis, endothecium, middle layer and tapetum. The epidermis is persistent and some of its cells become enlarged and show accumulation of tannin-like substances. The cells of the endothecium develop spiral thickenings. The tapetum is of the glandular type and its cells remain uninucleate throughout. The development of male gametophyte follows the pattern already established in a majority of cyperaceous taxa. The cytokinesis is rather delayed and is of the simultaneous type. Each microspore tetrad consists of a larger functional microspore on the abaxial side of the microsporangium and three smaller abortive microspore on the adaxial side. The functional microspore divides and cuts off a smaller lenticular generative cell towards the abortive microspores and a larger vegetative cell on the abaxial side. The generative cell divides and produces two male cells. The abortive microspores degenerate in situ and their remnants are noticeable even at the mature stage of the pollen grain. The latter is three-celled when shed.

The ovule is anatropous, bitemginal and crassinucellar.
In all species included in the present work, a funicular obturator and a chalazal hypostase are formed before and after fertilization respectively. The female archesporium is one-celled. The megaspore tetrad is linear and only the chalazal megaspore becomes functional. Occasionally, however, the persistence of non-functional megaspores is seen in *Scleria pergracilis* and *C. longipes*. The female gametophyte is of the *Polygonum* type. Twin embryo sacs have been occasionally observed in *S. pergracilis*.

The entry of pollen tube is porogamous and double fertilization takes place. The development of endosperm corresponds to the Nuclear type and wall formation is initiated either from the micropylar end (*Scleria pergracilis* and *Carex longicruris*) or simultaneously all along the periphery of the endosperm (*C. longipes*, *C. baccana* and *C. glauca*). In *S. pergracilis* the endosperm is differentiated into the micropylar and chalazal haustoria which are separated by a central endosperm proper. No such haurorial structures are formed in species of *Carex*.

The development of embryo follows the Asterad type. Both the epicotyl and the cotyledon arise from the adjacent sectors of the terminal tier of the proembryo and conform to the Haccius concept of the monocotyledonous embryo. The disposition of embryonal regions in the mature embryo is *Scleria pergracilis* corresponds to the *Schoenus* type and that of the species of *Carex* follow the *Carex* type.
The seed coat is formed by both the integuments. It is
four-layered in *Scleria pergracilis* and two-layered in species
of *Carex*. The pericarp is seven- to eight-layered in
*S. pergracilis* and it is four- to six-layered in species of
*Carex*. In all species examined, the pericarp becomes very
hard due to the formation of thickenings in its cells and
it remains free from the seed coat.

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