

THE DEVELOPMENT OF THE SPERMATOID OF CHARA.

BY D. M. MOTTIER.

(Abstract.)

The spermatozoid of *Chara fragilis* is a spirally-coiled body consisting of a nucleus and a specially differentiated part of the cytoplasm, the blepharoplast, existing in the form of a thread, or band, bearing two long cilia. The nucleus occupies the middle part of the spermatozoid. The anterior end of the blepharoplast is thinner than the posterior and tapers slightly toward the extremity. The two cilia are borne some distance back of the anterior extremity. The posterior end is broader and thicker and terminates bluntly. In cross section the blepharoplast is crescentic, being convex on the outside and concave within. With the exception of a strip of granular substance along the concave side of the posterior end, it is of a homogeneous structure. The entire spermatozoid makes two and one-half or three spiral turns.

The blepharoplast arises as a delicate thread-like differentiation of the cytoplasm at the surface of the cell, extending some distance along the cell from the nucleus and on opposite sides of the latter. It seems to be a modification of the plasma membrane. No centrosome-like body, or "Plasmahöcker," was observed from which the blepharoplast might develop as described by Belajeff, Strasburger and others.

The nucleus is transformed from an elliptical or oval body, with a hollow chromatin spirem, to a dense, homogeneous, sausage-shaped structure making one spiral turn or more.

The cilia were always found attached some distance back of the anterior extremity of the blepharoplast. Their origin was not traced to a centrosome-like body, but they seemed to grow directly from the thread-like blepharoplast.

CONTRIBUTION TO THE FLORA OF INDIANA.

BY STANLEY COULTER.

(By title.)