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I. Wissenschaftliche Mittheilungen.

1. On the Eyes of *Polychaetae*.

A preliminary Communication¹.

By E. A. Andrews, Johns Hopkins University.

eingeg. 9. Juni 1891.

A study of the eyes in the adults of various *Sabellidae*, *Nereidae*, *Unicidae*, *Syllidae*, *Polynoidae* and other families together with some observations upon the formation of eyes both in egg development and in budding has led to the following conclusions.

The eye is a collection of pigment cells with clear refracting portions at the cuticular ends and nerve processes from the inner ends. In the branchial eyes of some sedentary, tubicolous forms these retinal cells are isolated by intervening pigment cells and each bears its own refracting medium in its cuticular end. There is thus no fusion of refracting media to form a common lens and the eye may be called »compound«.

In *Hypsicomus* each eye has but one such cell, sunk beneath the surface, but connected with the cuticle by an elongated lenticular process about which the adjacent pigment cells are arranged so as to form an approximation to the true »camera« eye of the higher errant *Polychaetae*.

¹ Two illustrated papers, upon the »Compound Eyes« and upon the »Camera Eyes«, will appear in the V. Vol. of the Journal of Morphology.

In these each eye is composed of many cells crowded into a spheroidal mass still connected with the cuticle in many cases.

The pigmented portions of these cells form a deep optic or retinal cup from the open pupil of which the lens mass may project towards the cuticle.

The retinal cup is lined by a layer of clear rods, each a part of one retinal cell.

Between these rods and the part of the lens occupying the pupil there may be interposed a »vitreous body« or the lens itself may fill all the central space within the layer of rods.

The lens and the vitreous body may present indications of being composed of elements regarded as prolongations of the rods and thus of the retinal cells.

The lens is frequently connected with the cuticle by a slender stalk. When the cuticle is invaginated this concerns only this stalk and not the whole eye.

The retina is to be regarded as a single layer of epidermal cells each of which has elongated in such a way that its nucleus in the pigmented part has receded from the cuticle while its clear, cuticular end has fused more or less with that of the other cells to form the layer of rods, the lens and the vitreous body when present.

Cases in which the eyes are buried within the brain are to be regarded as secondary and either degeneration or in addition partly retentions of larval conditions.

A few most complex eyes may prove to have closed retinal vesicles, secondarily removed from the epidermis.

The forming eyes show no sign of invagination, but strengthen the above conceptions.

Baltimore, May 25 1891.

2. Zur Embryologie der Insecten.

Von V. Graber in Czernowitz.

eingeg. 12. Juni 1891.

1. *Meloë scabriusculus* Brdt.

Primäre Segmentierung. Bei *M. proscarabaeus* läßt J. Nusbaum¹ zuerst — an der Gastral- oder Ptychoblastrinne — eine mikrosomitische, dann — nach erfolgtem Schluß des Blastoporus — eine

¹ J. Nusbaum, Przyczynek do embryologii Maika. Lemberg. Kosmos 1891. Das erste dicke Arbeit enthaltende Heft wurde bereits im Sommer des Vorjahres ausgegeben.

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