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On the organization of Anchinia

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broke up into the individual joints. At last only the two oral disks remained.

The pinnules, when fished out, were in part filled with semen or covered with adherent ova in the *Blastula*-stage, so as to confirm the probable supposition that this entwining of the two individuals might be a process of fertilization.

The ova passed in the aquarium through a normal development as far as the *Pentacrinus*-stage. The two armless *Comatula*-calyces continued for some days to live in the aquarium, and were then killed for histological investigation.

This observation seems to support Studer's* supposition that, at least in many cases, the separation of the arms of many Asterida stands connected with the evacuation of the sexual products.—*Zoologischer Anzeiger*, no. 174, August 18, 1884, p. 448.

On the Organization of Anchinia. By M. N. WAGNER.

Last winter I found at Naples in great abundance a phase of development of *Anchinia rubra* different from that described by Vcgt, Kowalewsky, Barrois, and Corrotsyeff. As regards its general appearance, this phase is characterized by a regularly globular form of body, and, further, it did not possess that long caudal appendage which characterizes the form hitherto known.

This phase was agamic. Twice I met with individuals with a small stolon covered with buds; but this stolon differed essentially from that of the sexual form.

The nervous system of this phase presents two pairs of very strong nerves, which run towards the anterior and posterior apertures of the body, and to them I give the name of *anterior* and *posterior nerves*. These nerves are analogous to the nerves of *Doliolum* and *Ascidia*.

Besides these nerves the ganglion gives origin, at its posterior part, to the *epithelial nerves*, which terminate in the cells of the external and internal epithelium of the body; to a nerve running towards the olfactory organ (the issue of the hypophysary gland); and to a *pneumogastric nerve*, which ramifies in the endostyle, the vibratile bands, and the branchiæ. In its upper part the ganglion also gives off the nerves running towards the surface of the body. The two sides of the ganglion give origin to the nerves terminating in the epithelial cells. Lastly, the posterior part of the ganglion presents, besides the *posterior nerves*, the *cloacal nerves* and the nerves running to the *vibratile sac*, that is to say towards the sac in which the posterior extremities of the vibratile bands terminate. The termination of the nerves is excessively varied, which gives reason to suppose that the specialization of the organs here reaches a very high degree.

* Monatsbericht der Berlin. Akad. 1876.

Among the corpuscles of the general cavity of the body we find that two principal types predominate, which I propose to call *nutritive* or *plastic corpuscles* and *formative corpuscles*. The blood-corpuscles only present a slight modification of the former.

Certain facts lead us to think that the plastic corpuscles originate from the cells of the alimentary canal. In pathological cases, when an organ or one of its parts has been destroyed its restoration is effected by means of the plastic corpuscles.

The formative corpuscles may, in some cases, reconstruct or replace the terminations of the nerves.

The corpuscles which give origin to the buds differ by their very rapid motion and by the presence in their interior of small particles of crystalline form.—*Comptes Rendus*, October 13, 1884, p. 615.

On the Anatomy of the Tyroglyphi. By Dr. ALFRED NALEPER.

Digestive Apparatus.—The œsophagus enters the stomach about where the body is constricted by the divisional furrow which is characteristic of the *Tyroglyphi*. Its two posterior angles are continued into wide cæca, which lie on the two sides of the intestine and reach as far as the rectum. The intestine originates from the dorsal part of the stomach. It is divided into a globular section and the rectum. These two sections are united by a short and narrow tube, into which the urinary vessels open. Histologically, the intestinal canal consists of a delicate *tunica propria* and the epithelium; there is no intestinal muscular layer even in the rectum. The epithelial cells of the stomach are small and strongly convex at the upper end. In the cæca and also upon certain parts of the stomach they grow longer and clavate, and become filled with a finely granular secretion, which is only slightly stained by carmine. The epithelial cells of the intestine are pavement-like and covered with a cuticle. In the œsophagus there is no epithelial lining. The anal fissure is situated in a fold of the outer integument, and is supported by two narrow, fluted, chitinous plates, to which numerous muscular fibres are attached.

The *urinary vessels* have not previously been met with in the *Tyroglyphi*. They consist of two short tubes, placed on the two sides of the intestine, and opening in common into the upper part of the rectum. Their wall consists of a structureless *tunica propria* and of large, very convex secreting-cells, which have wide intercellular spaces between them. The product of secretion is finely granular, and consists of uric acid and urates—at least I detected these chemically in great abundance in the balls of excrement.

The *nervous system* is not, as hitherto supposed, a simple ganglion traversed by the œsophagus. There is rather in the *Tyroglyphi* also a separation of the central nervous system into a cordate supra- and a laminar infra-œsophageal ganglion. The two are closely