

narial passage, and are termed by me the "septo-maxillaries," attain their highest development in serpents and lizards. I do not find them in the tortoises and crocodiles, but they re-appear—very small—in carinate birds, in connection, as in the snakes, with the vomers and labial cartilages.

In the mandible the upper part of Meckel's cartilage ossifies as the "articular," and now we get the full number of the splints, namely, *five*—the dentary, sphenial, coronoid, angular, and surangular. The pier is a single bone, the quadrate. These six pairs of bones forming the free mandible occur also in the lizards, crocodiles, and in most birds. In tortoises they are fewer, and in gallinaceous birds I have failed to find the coronoid piece at any stage.

The tongue of the snake shows no cartilage in its structure; neither cerato-hyal, basi-hyal, or thyro-hyal, have appeared in any of my dissections.

#### IV. "Observations on the Nervous System of *Aurelia aurita*."

By EDWARD ALBERT SCHÄFER, Assistant Professor of Physiology in University College, London. Communicated by W. SHARPEY, M.D., LL.D., F.R.S. Received October 31, 1877.

(Abstract.)

The author describes the nervous system of *Aurelia* as consisting, in addition to the lithocysts and certain tracts of specially modified epithelium in their neighbourhood, of an interlacement of nerve-fibres covering the whole of the under surface of the umbrella and lying between the ectodermal epithelium and the muscular sheet. Each nerve-fibre presents near the middle of its course a nucleated enlargement in the shape of a bipolar nerve-cell, which is thus interpolated in the course of the fibre. With regard to these nerve-fibres it is remarked—firstly, that they are of limited length, seldom exceeding four millimetres; secondly, that they never come into actual continuity with other fibres, although they frequently run closely parallel for a certain distance, and often form extremely intricate interlacements by the coming together of a number of fibres. The fibres occasionally branch. They are described as ending generally by finely-tapered extremities, which are in close contact with the substance of the muscular fibres, but sometimes the termination of the nerve is dilated into a flattened nucleated expansion, probably a primitive form of motorial end plate.

The structure and relations of the lithocysts are then treated of. The lithocyst is described as consisting of an ectodermic covering and an endodermic core, the two being nearly everywhere separated by a

thin layer of the jelly-like mesoderm. The ectodermic covering consists, except over the free end where the cells are simple and flattened, of long columnar, ciliated cells, the fixed ends branching into delicate fibres, which form a stratum underneath the epithelium. A similar condition of the ectoderm is described as met with in two depressions of the surface, one being situate above, and the other below, the lithocyst; and the resemblance which the elongated epithelium cells with the subjacent granular-looking, but in reality fibrous stratum, exhibits to the developing central nervous structures in the vertebrate embryo is pointed out. These parts, in fact, probably represent the first beginnings—phylogenetically—of a central nervous system. Some of the cells of the ectodermic covering of the lithocyst are pigmented, and these cells are provided each with an excessively long and fine (sensorial) filament instead of with vibratile cilia.

The endodermic core of the lithocyst consists of a prolongation from the nutritive canal of the margin, which at the terminal part of the lithocyst is continued as a solid projection, the cells of which contain calcareous crystals or otoliths.

A small lithocyst is further described, in which the otolithic prolongation of the nutritive canal penetrated the ectodermic covering, and projected freely into the surrounding medium.

Reference is made to the observations of Haeckel upon the nervous system of *Geryonia* and *Cunina*, and to a recently published preliminary notice by Oscar and Richard Hertwig, of the structure of the nerve-tracts and sense-organs in various other genera of *Medusæ*.

*January 17, 1878.*

Sir JOSEPH HOOKER, K.C.S.I., President, in the Chair.

The Presents received were laid on the table, and thanks ordered for them.

The following Papers were read:—

- I. "On Cobra Poison." By ALEXANDER PEDLER, F.C.S., Professor of Chemistry in the Presidency College, Calcutta. Communicated by Dr. FRANKLAND, F.R.S., Professor of Chemistry in the Royal School of Mines. Received November 1, 1877.

On my arrival in India my attention was strongly directed to the enormous number of deaths, annually resulting from the bites of poisonous snakes. Statistics of the deaths from such causes are