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Note on the habits of young *Limulus*.

Alexander Agassiz

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live in general upon animals which inhabit muddy bottoms, such as *Ophiocoma neglecta*, the *Linei*, and *Leptoplana tremellaris*. Such are *Balatro*, parasitic on the Limnicolous annelids, and *Saccobdella*, a parasite of *Nebalia* *. However, the Orthonectida possess neither the rotatory apparatus nor the mastax of the Rotifera, nor even the bifurcated tail or the pharynx of the Gastrotricha. The most interesting question to be solved in the history of our parasites is whether these animals have remained normally at the *planula*-stage, or have retrograded to this primitive state, just as the Dicyemida have returned to the *morula*-stage, in consequence of parasitism. The fact of retrogression does not seem to me to be doubtful in the case of the Dicyemida, which I regard as degraded Turbellaria (the *Dicyema* of the cuttlefish still possesses the bacilli so characteristic of the skin of the Planarians). The proofs of the degradation of the Orthonectida are far from being so evident; and these animals perhaps represent the most interesting step in the complicated phylum of the Vermes†.—*Comptes Rendus*, October 29, 1877, p. 812.

A new Species of Chimæra found in American Waters.

By THEODORE GILL.

One of the most unexpected discoveries recently made in American ichthyology is that of a species of the genus *Chimæra*, of which a specimen has lately been sent to the Smithsonian Institution. It was caught south-east of the La Have bank, in lat. 42° 40' N., long. 63° 23' W., at a depth of 350 fathoms, with a bait of halibut. An attentive comparison of the specimen with individuals of the European *Chimæra monstrosa* renders it evident that it does not belong to that species, but is an entirely distinct specific form. It may be named *Chimæra plumbea*, and diagnosed as follows:—

Chimæra plumbea.

A *Chimæra* with the snout acutely produced; the anteorbital flexure of the suborbital line extending little above the level of the inferior margin of the orbit; the dorsals close together; the dorsal spine with its anterior surface rounded; the ventrals triangular and pointed; the pectorals extending to the outer axil of the ventrals; and the colour uniformly plumbeous.

By these characters the species is readily separable from the *Chimæra monstrosa* and other species of the genus.—*Bulletin of the Philosophical Society of Washington*.

Note on the Habits of Young Limulus. By ALEXANDER AGASSIZ.

Mr. C. D. Walcott has called attention to the fact that when collecting fossils he finds large numbers of Trilobites on their back ‡;

* Claus still places *Saccobdella* among the Hirudinea; and this error has unfortunately not been corrected in the French translation of his treatise on Zoology.

† The preceding investigations were made at the Laboratory at Wimeroux, in September and October of the present year (1877).

‡ Ann. Lyc. Nat. Hist. xi. p. 155, 1875; Twenty-eighth Report N.Y. State Museum, Dec. 1876.

from this he argues that they died in their natural position, and that when living they probably swam on their backs. He mentions, in support of his view, the well-known fact that very young *Limuli* and other Crustacea frequently swim in that position. I have for several summers kept young horseshoe crabs in my jars, and have noticed that, besides thus often swimming on their backs, they will remain in a similar position for hours, perfectly quiet, on the bottom of the jars where they are kept. When they cast their skin it invariably keeps the same attitude on the bottom of the jar. It is not an uncommon thing to find on beaches, where *Limulus* is common, hundreds of skins thrown up and left dry by the tide, the greater part of which are turned on their backs. An additional point to be brought forward to show that the Trilobites probably pass the greater part of their life on their back and die in that attitude, is that the young *Limuli* generally feed while turned on their back; moving at an angle with the bottom, the hind extremity raised, they throw out their feet beyond the anterior edge of the carapace, browsing, as it were, upon what they find in their road, and washing away what they do not need by means of a powerful current produced by their abdominal appendages.—*Silliman's Amer. Journ.*, Jan. 1878.

New Species of Ceratodus from the Jurassic. By O. C. MARSH.

Among the interesting vertebrate remains recently found in the Jurassic of Colorado is a tooth of a *Ceratodus* in good preservation. The specimen is a left lower dental plate, having the inner side convex, and the outer divided into five prominent projections, which are separated by four notches. The front projection is longest and most pointed. The plate is attached to a portion of the dentary bone.

The length of this dental plate is 20 millims., and the transverse diameter 11 millims. The species is the first Mesozoic *Ceratodus* found in this country, and hence of much interest. It may be named *Ceratodus Güntheri*, in honour of Dr. A. Günther of the British Museum. The geological horizon of this species is in the *Atlantosaurus* beds of the Upper Jurassic.—*Silliman's Amer. Journ.*, Jan. 1878.

Sexual Dimorphism in Butterflies.

Mr. S. H. Scudder, in an article on sexual dimorphism in butterflies (to which special kind of dimorphism he applies the term *anti-geny*), states that it is not the male but the female that departs from the normal type of colouring of the group to which the species belongs, while it is the male that shows divergences from the type in structural characters. These structural divergences in butterflies appear in the wings and the legs, and sometimes in the antennæ. Mr. Scudder knows of no example in which the male alone diverges from the general plan of coloration belonging to the group.—*Proc. Amer. Acad.* 1877.