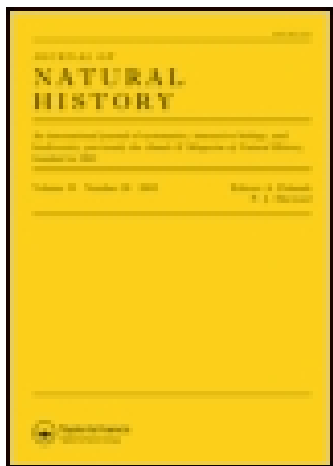


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suckers, as well as several other characters, escaped him ; and this led him to place his Infusorian among the Ciliata.

But, as we see, by certain characters it is a ciliated Infusorian, and by others an Acinetine ; it is therefore necessary to form for it, at least, a distinct family, which we propose to name Suctociliatæ. This family may be arbitrarily arranged in either of the orders as an intermediate form ; or, if it be preferred, we may make of it the new order Suctociliata.

It remains to be learned whether the Suctociliata are not ancient primitive forms which may have given origin, on the one hand, to the Ciliata, by the disappearance of the suckers ; and, on the other, to the Acinetina, by the suppression of the vibratile cilia ; or, indeed, should we not rather regard *Acarella siro* as a Ciliate which has acquired suckers without having any genealogical relations with the Acinetina ? or, lastly, as an Acinetine which may have retained its embryonic cilia until its adult age ? We cannot choose any one of these three suppositions as being the most probable, all three of them having considerations in their favour. The developmental history of the Infusorian, which is very difficult to study on account of its rapid movements, can alone decide the matter with certainty. The last of the suppositions, however, seems to us the least probable. — *Comptes Rendus*, December 11, 1882, p. 1232.

A new Fossil Orthopterous Insect from the Coal-measures of Commen-try, Allier. By M. CHARLES BRONGNIART.

Until the present year only 110 species of insects were known from the Carboniferous rocks of the whole world. In France none were known until 1877, when the author received from M. Grand'Eury some wings of Blattidæ from St. Etienne ; and in the same year M. Fayol sent him from Commen-try a Phasmanian, described under the name of *Protophasma Dumasii*. Since that date, at least 430 impressions have been obtained from the Coal-measures of Commen-try ; these include 300 Blattidæ and 130 insects of various orders.

From M. Fayol the author has just received a remarkable Orthopteron of gigantic size, found by M. Bellard in fine blackish shales at Commen-try. All parts of the body, except the upper part of the thorax and abdomen, are preserved. It approaches the Phasmidæ most closely ; and it is to that group that the author refers it as forming a new genus, under the name of *Titanophasma Fayoli*.

The genus *Titanophasma* comes nearest to *Protophasma* among fossil forms ; among recent types it resembles *Phibalosoma* in size and the general form of the body, and in the presence of numerous spines and warts upon its legs. In the length of the prothorax *Protophasma* differed from the existing Phasmidæ ; in this respect *Titanophasma* differs from *Protophasma*, and approaches the existing

species, having the prothorax rather shorter than the other divisions of the thorax. The body is stout, the legs robust, and the joints of the tarsi, five in number, are of nearly equal size. In living Phasmidæ the first joint is longer than the rest. Another character separating the new fossil from the recent forms is that the fore limbs are shorter than those of the second and third pairs. There are appendages at the extremity of the abdomen, as in the Phasmidæ of the present day.

Titanophasma Fayoli, C. Brongniart.—The species measures 0·25 metre in length. In the specimen the insect is lying upon one side, and the thorax and abdomen are uninjured only at the lower part. The head shows a large oval eye, but not very distinctly; part of the mandible is armed with strong denticulations. The antennæ are inserted in the middle of the forehead, short and slender; they measure 0·035 metre, are nearly cylindrical, with the joints nearest the head longer and broader. The joints are not sufficiently distinct to be counted; but there seem to be about twenty. The thorax appears to be warty or spiny. The prothorax is 0·02 metre high close to the head, and presents, as in *Protophasma*, a sort of spiny collar; the mesothorax and metathorax are longer than the prothorax, as appears from the relative positions of the legs.

The abdomen is 0·18 metre long, with eight segments of nearly equal length; the last is shorter and terminated by two falciform appendages, of which the extremity cannot be seen. On the lower surface of each segment there are two spinous lines, which, on the first and last segments, separate from one another and ascend towards the upper part.

In the legs the coxa is strong and presents several rows of spines; and the other parts of the legs are covered with numerous fine spines, generally arranged in four or six parallel or anastomosing lines, between which are observed two kinds of large tubercles. The insect was probably apterous, like the females of *Phibalosoma*. The author remarks, in conclusion, that in general the insects of the Coal-period differ but little from those of the same groups in the present epoch, and that they were already very highly organized.—*Comptes Rendus*, December 11, 1882, p. 1228.

Sexual Characters in Cephalotaxus.

Mr. Meehan exhibited some fruit of *Cephalotaxus Fortunei*, a Chinese tree, this plant growing on the grounds of P. J. Berckmans, at Augusta, Georgia. This tree had for many years produced male flowers only. During 1882 it produced abundance of fruit. It showed that the genus was not truly diceious; and, further, it afforded an illustration, now not uncommon, that trees a long time of one sex only would sometimes change to another. Sex is not an invariable characteristic in an individual tree.—*Proc. Acad. Nat. Sci. Philad.*, Oct. 17, 1882, p. 252.