

fauna of the Mediterranean; there are besides, several ornithological papers by Oustalet and others.—*Zeitschrift für Wissenschaftliche Zoologie*, August 1, contains an elaborate memoir by H. Ludwig, on the embryology of a star fish, *Asteria gibbosa*. There is throughout the Echinodermata a mode of development, which must be spoken of as a metamorphosis, all the larvæ being ciliated, with a mouth and anus on one side. The processes by which the primary larva is converted into the echinoderm appear to be essentially the same in all cases; all that happens in a more complicated history, being the fact that in the secondary larvæ there is an absorption of those larval parts which had themselves become secondary. The secondary characters are not to be regarded as having anything to do with the future organization of the echinoderm, but as adaptations proper to the larval life, and disappearing at its close. There is no true solid morula in the earliest phases of development, but a blastosphere with a unilaminar wall; the gastrula is formed by invagination. Especial attention is given to the mode of origin of the hydrocœl, the blood vascular system and stomodæum, as well as the skeleton.

#### ENTOMOLOGY.<sup>1</sup>

A NEW RICE STALK-BORER: GENUS-GRINDING.—We quote the following from an article on a new Lepidopterous insect which, in the larva state, bores the stalks of rice. The article occurs in the annual report of the U. S. Entomologist for 1881-2, already printed:

“ We have had some difficulty in deciding as to the true specific determination of this insect, chiefly because of a close general resemblance which it must possess to other species. Mr. Grote, when we showed him a specimen last autumn in New York, thought it might possibly be his *Chilo crambidoides*, while Professor Fernald determined it, from a specimen which we sent him, as *Diphryx prolatella* Grote,<sup>2</sup> stating at the time that he might be wrong, but that, having seen Mr. Grote's type, he considered our insect identical with it so far as he could trust his recollection. The specific description of *D. prolatella* certainly does agree very closely with the species we are considering, which has also the mucronate clypeus of *Diphryx*, but in order to refer our insect to *D. prolatella* we must assume that Mr. Grote erected his new genus, *Diphryx*, on a mutilated specimen which had lost its maxillary and part of its labial palpi, for the genus is founded on short labial palpi which hardly exceed the face, and the absence of maxillary palpi—characters decidedly exceptional and remarkable in the family. In order to settle the matter, therefore, we again referred, through Mr. Henry Edwards, a perfect specimen

<sup>1</sup> This department is edited by Professor C. V. RILEY, Washington, D. C., to whom communications, books for notice, etc., should be sent.

<sup>2</sup> N. Am. Moths, Bull. U. S. Geol. Survey; VI, No. 2, p. 273.

to Mr. Grote, who upon this second more careful examination decides that it is neither of the species mentioned, but an undescribed species of *Chilo*."

Accepting Mr. Grote's decision, we described the insect as *Chilo oryzæellus*, but ventured the following opinion: "As Mr. Grote's types are in London he may be mistaken even in his final opinion, and the careless manner in which he has often made other genera renders it quite possible that *Diphryx* is a myth, founded on an imperfect specimen as above indicated."

In order to get positive information on the point in doubt, we subsequently mailed specimens of our *C. oryzæellus* to Lord Walsingham, with the request that he compare them with the type of *Diphryx prolatella*. His Lordship promptly replies by date of October 1, 1882: "I had no difficulty in finding this and ascertaining that you are completely justified in your conclusion that the Crambid No. 2557 [*C. oryzæellus*] is the same species. Grote's type is a female, and has the palpi (labial) broken off, the shorter maxillary palpi alone remaining."

It is apparent, therefore, that Mr. Grote not only founded the genus *Diphryx* on what has no existence in nature, but mistook, besides, the maxillary for labial palpi.

EFFECT OF PYRETHRUM UPON THE HEART-BEAT OF *PLUSIA BRASSICÆ*.—While engaged in experimenting for Professor Riley, with different samples of Pyrethrum, upon various lepidopterous larvæ, in September of the present year, I was much interested in noting the enormous increase in the rapidity of the pulse which the poisoning occasioned with the larvæ of the cabbage *Plusia*. These larvæ are so very delicate and transparent that the course of the vital fluid can be observed with ease, and repeated countings show the normal heart-beat to range between 44 and 68 per minute, averaging about 56. In the first convulsions from the effects of Pyrethrum the pulse immediately rose, and in the course of ten minutes reached from 150 to 164, and usually subsided in the next fifteen minutes to the neighborhood of 140. As the convulsions ceased the pulse fell but slightly, but became very weak, until, finally, it could be counted no longer. The last count before the heart ceased to beat, apparently through the paralyzing of its walls, showed a rate invariably of about 130 to the minute.—*L. O. Howard*.

A BUTTERFLY LARVA INJURIOUS TO PINE TREES.—In the course of some remarks recently made by Dr. H. A. Hagen before the Entomological Society of Ontario, at its meeting in Montreal, he gave an interesting statement of the injury of *Pieris menapia* to pine forests in Washington Territory, and particularly in Colville valley, twelve miles from Spokane.

The caterpillar, found in all stages, destroys mostly the yellow