ARTICLE XI.—*Notice of a very large species of Homalonotus from the Oriskany sandstone formation.* By R. P. WHITFIELD.

Family CALYMENIDÆ.

Genus HOMALONOTUS, *Koenig.*

Homalonotus Major, n. sp.

PLATE 22.

Two imperfect specimens of a species of *Homalonotus* were brought to the Museum some years ago, from near Kingston, New York, which were said to have been obtained from some shaly layers in the upper part of the Oriskany sandstone near that place. Mr. Louis Bevier, of Kingston, who brought them, presented one to the Museum; the other was to be deposited in the name of the discoverer in a local Museum at Kingston, New York. The specimen in the possession of the Museum, which is the smaller of the two, measures six and three quarter inches in length, and preserves the pygidial plate, imperfect at the posterior extremity, and the five posterior thoracic segments only. Calculating the length of the eight missing segments from that of the five preserved, and allowing for the cephalic plate a length equal to the pygidial plate, which is about the proportion they possess in other species, this specimen would have measured, when perfect, about fifteen and a half inches in length, with a breadth across the thorax at the fifth segment from the pygidium, of five and one-half inches; while the entire length of the one retained at Kingston must have been much greater. This, I think, is greater than the dimensions of any described species or specimen of the genus. Mr. Salter mentions a specimen of *H. rudis*, which, he says, must have been "a foot long when perfect."* These specimens are both flattened, in which condition they may be a little wider than natural; but the sides are bent down vertically, or slightly bent under for nearly an inch, which more than compensates for the flattening of the surface, so that the width is probably no greater, if not less, than in the natural condition.

The general features of the species are perhaps more nearly like those of *H. delphinocephalus* than of any other one known,

*Palæontographical Soc. Pub., Vol. xvii., p. 109.

unless possibly *H. Vanuxemi*, Hall, from the Lower Helderberg group, but we know so little of this last that no comparison can be instituted. As compared with the former species, both axis and lateral lobes of the pygidium are more strongly lobed, and the annulations more strongly marked, while the axial rings are arched forward, presenting an angulation in the center which I have never observed in that one, they being usually directed nearly straight across, or very slightly but regularly arched. The extremity of the pygidial shield has apparently been somewhat pointed, but whether as distinctly so as in that one cannot be determined. The thoracic segments cannot be said to differ materially from those of *H. delphinocephalus*, nor do these parts differ very materially among different species of the same type, under the genus. The form of the body, however, widens more rapidly from the pygidial plate forward than in that one, and the crust has been proportionally thinner. Especially is this latter the case between this and *H. DeKayi*, Green, from the Hamilton group, as is readily seen by the difference in the strength of the furrows left when the crust at the junction of any two segments has been removed; it being much greater in the *DeKayi* than in this species. The microscopical structure of the crust, although generally somewhat changed by the action of the weather, has been very similar to that of *H. delphinocephalus*, but in proportion to the size of the specimen there has been more punctures to a given space, and the intermediate surface is more strongly granulose.

In regard to the geological position of these specimens I can say but little beyond that given me by Mr. Louis Bevier, that they are from the upper part of the Oriskany formation. There are several fragments of Brachiopods on the back of the figured specimen, which is the only one I have in hand at the present time, but they are too obscure to be positively identified. One I think, however, is the young of *Strophodonta magnifica*, Hall, an Oriskany fossil. There is also a fragment of a trilobite tail which may have been a Dalmania like *D. pleuroptyx*, from the Lower Helderberg group. But it must be remembered, that along the range of these rocks from near Kingston to Port Jervis and southward, the Oriskany often takes on the shaly character of the Lower Helderberg to some extent, and also carries many of its fossils, so that

the shaly character of the matrix, or a Lower Helderberg fossil will hardly invalidate the finders claim to its being an Oriskany fossil. The locality, as given with the specimen, is "Upper Oriskany, Cranberry Dam, 5th, Binnewater, Ulster County, N. Y., Louis Bevier." The "5th Binnewater" I suppose to refer to a dam of the Delaware and Hudson Canal Company's privilege on the Binnewater Creek.

EXPLANATION OF PLATES.

PLATE XIX.

PROSCORPIUS OSBORNI.

These figures are from photographs of the specimen, natural size and enlarged.

PLATE XX.

Fig. 1. View of the specimen, enlarged four diameters. In this figure the line across the base of the head was made too distinct, and the eye tubercle too long behind, in tracing the figure. The line separating the fingers of the palpus extends too far down, and the spot representing the stigma-like mark on the fifth ventral segment is too distinct.

Fig. 2 *a*. The mandible further enlarged; *b* and *c* show it as seen in different lights.

Fig. 3. Outline sketch of the specimen, two diameters; 1, mandible; 2, palpus; 3, first walking limb; 4, 5 and 6, parts of the other limbs; *a*, the spot which may represent a spiracle; *b*, the additional ventral plate; *c*, one of the depressions in the integument which looks like a perforation.

Fig. 4. Outline representing Mr. S. H. Scudder's idea of the first walking limb.

PLATE XXI.

LITUITES BICKMOREANUS.

Fig. 1. Shows the form of the undulations on the dorsal surface.

Fig. 2. Lateral view of the specimen, showing the form of the aperture.

Fig. 3. Shows one of the septa.

PLATE XXII.

HOMALONOTUS MAJOR.

View of the specimen on which the species is founded.

ırtotype. E. Bierstadt, N. Y.