

**Article XX.**—NOTICE OF AN AMERICAN SPECIES OF THE  
GENUS HOPLOPARIA McCOY, FROM THE  
CRETACEOUS OF MONTANA.

BY R. P. WHITFIELD.

PLATE XXXVI.

So far as I can learn, there has been no species of HOPLOPARIA recognized in the American Cretaceous previous to this time. Prof. Bell in his Monograph of the Malacostracea, of the Green Sands of England, recognizes no less than six species, which he says are remarkably distinct specifically from each other; and this one from the Fort Pierre (or rather Fox Hills) strata of the Montana Cretaceous, is no less distinct from any of the others; it most nearly resembles *H. saxbyi* McCoy, but has many important differences.

The specimens of this American species were obtained during the summer of 1906, by Mr. Barnum Brown of the Museum, from concretions in limestone or shale, associated with many species of Fox Hills fossils, at a point 125 miles northwest of Miles City, Montana, about 150 feet below the basal sandstone of the Laramie beds. The caudal plate here figured was obtained by Mr. Brown in 1905, on Musselshell River, at Flat Willow Creek, 25 miles north of Musselshell crossing, Mont., also in a small concretion, and of course all are from Cretaceous rock, referable to the Fort Pierre and Fox Hills groups.

**Hoploparia browni** sp. nov.

Plate XXXVI, Figs. 1-5.

Represented by two abdomens, one of which has the carapace entirely attached, except the rostral beak; and it also retains part of the middle member of the caudal plate. There is also a caudal plate nearly entire, and a second abdomen of smaller size, retaining much of the caudal plate.

Carapace subcylindrical, twice as long as wide and fully as high as wide; broadly suboval in sections, length (on the larger specimen) about two inches (53 mm.); cervical suture very deep, extending but little more than half the depth of the carapace, situated about midway the length of the carapace on the dorsum, but curving strongly forward to the lower end, preceded by a second less strongly marked furrow at about the distance of one cm., which is more direct in its trend downward toward the basal margin of the carapace, where it unites with the cervical<sup>1</sup>

<sup>1</sup> It is possible I have reversed the terms cervical and nuchal in relation to these sutures.

suture by a short horizontal depression. Carapace ornamented by short, sharp tubercles, or pustules, node-like, in rows or curves. Five longitudinal rows exist on the back of the front half of the carapace, or in front of the cervical suture, and three longitudinal rows, behind the suture on the dorsum, the outer of which curve downwards bordering the suture, becoming smaller and less compact on the sides of the carapace. Behind the cervical suture the pustules are smaller and scattered over the sides of the entire carapace; the pustules bordering the posterior margin of the cervical furrow on the back of the carapace are somewhat detached from the two curved lines of the sides and are stronger and closer than the others, and with the central line forms a rather distinct letter T.

Abdominal segments armed by large lateral flaps of a paraboloid outline, each bearing a terminal node at the outer free end. A strong angular thickened knee or ridge exists at the bending on the sides, where the flaps become free from the segment, and along the crest of the segment there is a line of small postules, which are not always distinct.

Anterior caudal plate rather large, wider than long, hexagonal in outline; the lateral margins being doubly truncate for the insertion of the intercalated plate for the attachment of the two lateral flaps of the caudal appendage on each side, which are longitudinally elongate-ovate and of rather large size proportionally, making the caudal appendage appear large. Their large central plate is ornamented on the disc with spinose ridges and minutely pustulose. Central terminal plate of caudal appendage longer than wide, elongate paraboloid in outline, rounded posteriorly, with three obscure spines on each margin; center of plate bearing four ridges, the outer two united above in a transverse boss; each of the ridges on the crest is more or less marked by small pustules or granules. The lateral parts of the caudal plate are each composed of the usual three elements on each side, the outer plate bearing two longitudinal ridges and the inner, only one.

The left anterior claw of the larger specimen is partly preserved. The hand, or main joint, and the two joints next to it nearer the body, are preserved but forward of the hand or main joint, the imprint and only fragments remain. The fingers are excessively prolonged and slender, in fact the entire claw is very slender; the movable finger is laterally compressed and transversely ridged, or ringed, and the imprint on the stone is preserved for over three inches in length, while the fixed one has been much shorter, and the nippers quite small and insignificant, the whole member apparently granulose. In the other limbs only the first joint attached to the carapace is preserved; but parts of them are seen in the matrix; all are slender and rather short.

Of the six species recorded from the Cretaceous formation of England, by Prof. Bell, four are from the Gault and the upper and lower Greensand, but it appears that the genus is not strictly confined to the Cretaceous beds, as a form essentially the same occurs in the London Clay. In America as yet no other species than the one here described has been noticed.

Prof. Bell considers the genus as of strictly Marine origin, and as being closely allied to *Homarus*. In one feature this species differs from the common American form of *Homarus*, namely in the strong knee-like ridges which mark the angle of the abdominal segments on each side, where the lateral flaps become free from the body, which are here very marked and

angularly thickened, while in most species of *Homarus*, as well in most fluvial species of *Astacus*, this feature is very subdued. On one species of *Astacus* (*Cambarus immunis* Hagen), which occurs at Lawn Ridge and Belleville in Illinois, at Huntville, Ala., and at Beaufort, N. Car., this feature is as strongly marked as on these Cretaceous specimens.

This American species differs from *H. saxbyi* in some important features; most distinctly in the depth of the nuchal furrow, in the shorter carapace, and in being more pustulose. Also in the shorter abdominal segments, and in the form and size of the anterior plate of the caudal appendage.

The large claw of this species can hardly serve for comparison with that figured by Prof. Bell (plate viii, fig. 2, Palæontology. Soc. Pub., Malacstracous Crustacea of Great Britain), as there is some reason to think that the large claw on this specimen has been lost during life and partially reproduced; as it is evidently much too small and insignificant to properly mate with the opposite finger on the same arm, except on that supposition.

## EXPLANATION OF PLATE XXXVI.

### *Hoploparia browni* sp. nov.

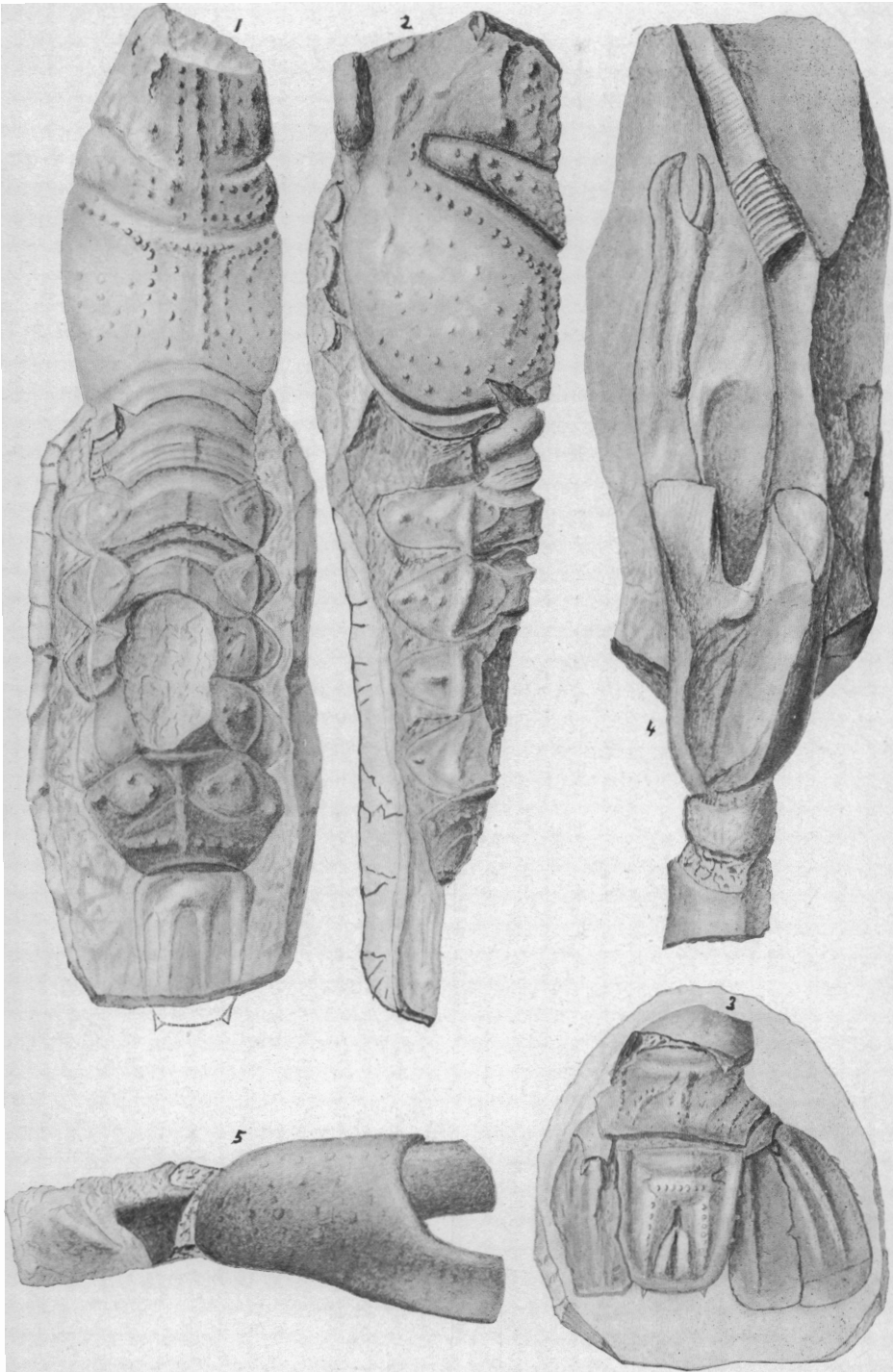
Fig. 1 and 2. Dorsal and profile views, natural size, of the larger and most perfect specimen.

Fig. 3. View of caudal plate, natural size, from Musselshell River, Flat Willow Creek, Mont.

Fig. 4. View of the claw of the specimen, figs. 1 and 2, as it lies imbedded in the stone. This was originally a part of the same slab that contained the carapace figured but was broken from it in collecting.

Fig. 5. View of the opposite side of the hand, natural size.

The caudal plate, restored in part in Fig. 1, is shown on the specimen only as a flattened surface without distinct form, and is reproduced from the corresponding plate represented in Fig. 3.



HOPLOPARIA BROWNI sp. nov.

