

ADDITIONS TO WEST INDIAN TERTIARY DECAPOD CRUSTACEANS.

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Among the crustaceans obtained in the Dominican Republic by Dr. T. Wayland Vaughan and party in 1919 are three forms not previously known. Two belong to *Nephrops*, a genus not before recorded in the West Indies, and the other is a *Portunus* which appears different from other fossil forms.

NEPHROPS MAOENSIS, new species.

Plate 25, figs. 2 and 2a.

Material.—Tips of two fingers, from the Rio de Mao, 3 miles above Paso Bajito, at Cercado de Mao, Dominican Republic; Cercado formation; lower Miocene; T. W. Vaughan and C. W. Cooke, collectors (8525). Cat. No. 328230, U.S.N.M.

Description.—One of these pieces, holotype, is more than twice as long as the other and resembles the tip of a major, immovable finger of *N. norvegicus* (Linnaeus)¹ in the shape, which is nearly straight until near the tip where it turns rapidly inward. The surface, except on the prehensile edge is smoothly rounded, not longitudinally furrowed as in *norvegicus*. The prehensile edge has five teeth, which are stout, blunt, and of a reddish-brown color, lighter at the tip than at the base; the tooth nearest the broken end is of medium size and slightly broader than long; separated by a narrow interval there is a much larger tooth than the first; it is longer than wide, and subparallel to the finger tip, which is slenderer and sharper; between the large tooth and the tip, but much nearer the former there are three very small teeth, the three interspaces subequal and a little wider than that between the two largest teeth; of the small teeth the two distal ones are subequal and are shorter and narrower than the more proximal one. The main part of the finger is a light tan color and is covered with microscopic granules; the long tip is dark brown, which extends as far back as the third small tooth. The

¹ *Cancer norvegicus* Linnaeus, Syst. Nat., ed. 10, vol. 1, Holmiae, 1758, p. 632.

surface is sparingly dotted with punctae, arranged partly in longitudinal rows, one row of a few distant punctae extending through the middle of the upper, and another through the middle of the lower surface.

The smaller specimen, paratype, belongs to the chela of a smaller individual than the holotype and shows very little besides the dark-colored end of the finger; five teeth are present, but are more crowded than in the larger finger; the two larger teeth are relatively much smaller and both are broader than long.

Relationship.—These fingers have little resemblance to any fossil species figured, but are akin to *N. norvegicus*, as stated above. If the correspondence in the dentation of the fingers of the two species is a dependable character, the holotype finger is a right, major, immovable finger; the other a left, major, immovable one. In both fingers the three smallest teeth are nearer the upper than the lower surface which is not true of the small teeth of *norvegicus*.

NEPHROPS AEQUUS, new species.

Plate 25, figs. 1-1c.

Material.—Portion of a right manus and base of immovable finger (holotype); and a short section of a finger discontinuous with the holotype. From second bluff on left side of Rio Mao, about 2 or 2½ miles by trail above the ford (Paso Bajito) at Cercado de Mao, Dominican Republic; Cercado formation; lower Miocene series; T. W. Vaughan and C. W. Cooke, collectors (8526). Cat. No. 328231, U.S.N.M.

Description.—Manus about 10 mm. wide at base of fingers, proximal end missing, so that length can not be estimated; much depressed, not more than 3 mm. thick at distal end and 4¼ mm. thick at proximal (fractured) end; widening rapidly toward fingers, outer margin straight, inner margin slightly arcuate; upper surface with three irregular rows of tubercles with depressed interspaces; a row of tubercles near each margin, the intermediate row much nearer the inner than the outer row; lower surface with three longitudinal rows of distant punctae, the rows equidistant from one another and from the margins. The base of the immovable finger is much depressed and bears four teeth on its prehensile edge, the third tooth, counting from the manus, being enlarged, and in profile wider at its base than it is long, from base to tip; both upper and lower surfaces show three lines of punctae and a longitudinal depression just within the outer margin.

The separate short section of finger, bearing four teeth, if it belongs to the same chela as the holotype, came from the movable finger or dactylus.

Relationship.—I have placed this form in a separate species from the preceding on account of its thin, flattened finger, the propodal finger of *maoensis* being subcylindrical, or almost circular in cross section.

PORTUNUS OBLONGUS, new species.

Plate 25, figs. 3 and 3a.

Material.—One carapace of male, with sternum and abdomen, and bases of maxilliped, of chelipeds and of first two ambulatory legs; from bluff on right bank of Rio Mao, about $1\frac{1}{2}$ to 2 miles above Paso Bajito at Cercado de Mao, Province of Santiago, Dominican Republic; Cercado formation; lower Miocene series; May 4, 1919; T. W. Vaughan and C. W. Cooke, collectors (8522; C-28-19). Fossil from 15 to 30 feet above water. Cat. No. 328229, U.S.N.M.

Description.—Anterior part of carapace missing as far back as the line at the anterior base of the fifth lateral tooth. The last four small lateral teeth are more or less completely preserved, the spines at the lateral angles are large, but are broken off near the base. The carapace is very uneven and shows granulations especially on the teeth and on the postlateral margin; it is unusually wide, 104 mm. measured in front of lateral spine, while the distance from the same point to the anterior base of the fifth tooth is only 22.1 mm. The fifth tooth has a convex posterior and a concave anterior margin.

The ischium of the right maxilliped shows a deep furrow, which is situated near the inner third and does not reach the posterior end. The cross section of the ischium of the cheliped is triangular and indicates a very stout segment.

The sternum between the chelipeds is extremely wide, giving the whole sternum a more oblong shape than usual; its margin opposite the anterior base of the cheliped bears a few granules; sternum in front of the articulating condyle of the cheliped depressed, the line between the depression and the elevation behind it being transverse, not V-shaped. The abdomen, exclusive of the first two segments, is triangular; the length of the coalesced segment (third, fourth, and fifth combined), measured on the median line, from the transverse ridge to the distal end is two-thirds of its distal width; the sixth segment is half as wide on its distal as on its proximal margin, while the length is three-fourths of the proximal width; terminal segment triangular, its width a little greater than its length.

Relationships.—This specimen compared to the male of *P. gabbi*,¹ has a wider carapace and a different shaped lateral tooth; in *gabbi* the fifth lateral tooth is convex on its posterior margin at the base only, becoming suddenly slender toward the tip; the abdomen of *gabbi*, so far as it is visible, is wider and more oblong.

¹ Rathbun, Publ. No. 291, Carnegie Inst., Washington, 1919, p. 172, pl. 3, figs. 2-7; pl. 6, figs. 1-2.

The other species of *Portunus* described from the same region, *Portunus tenuis*¹ and *Portunus*, indeterminable species,² were based on fingers only.

(*oblongus*, oblong, referring to the sternum.)

ADDITIONS TO THE BIBLIOGRAPHY OF WEST INDIAN TERTIARY DECAPODA.

- 1863-64. EDWARDS, ALPHONSE MILNE. Monographie des Crustacés Fossiles de la Famille des Cancériens. [Part 2], Ann. Sci. Nat., ser. 4, Zool., vol. 20, Paris, 1863, pp. 273-324, pls. 5-12; [Part 3], Ann. Sci. Nat., ser. 5, Zool., vol. 1, Paris, 1864, pp. 31-88, pls. 3-9.

This monograph, which appeared in four parts, is devoted to Old World species with one exception, *Lobonotus sculptus* A. Milne Edwards, from San Domingo. This is figured in vol. 20, 1863, pl. 10, figs. 1, 1a, 1b, and described in vol. 1, 1864, p. 40. It is the same as my *Archaeopilumnus caelatus* (Publ. No. 291, Carnegie Inst., Washington, 1919, p. 177, pl. 6, figs. 6 and 7; pl. 7, figs. 10-13; pl. 8, figs. 4-7). The genus *Archaeopilumnus* is, therefore, a synonym of *Lobonotus*. This genus appears to me nearer the Pilumninae than the Xanthinae where Milne Edwards placed it; the presence or absence of palatal ridges defining the efferent branchial channels is still to be determined.

1912. MAURY, CARLOTTA JOAQUINA. A contribution to the Paleontology of Trinidad. Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 15, pp. 25-112, pls. 5-13. Published in Commemoration of the One Hundredth Anniversary of the Founding of the Academy, March 21, 1912.

One crustacean is listed and figured, *Ranina porifera* Woodward (p. 106, pl. 13, fig. 23), from Farallon Rock or Johnson's Island, near San Fernando, Trinidad, in the Gulf of Paria, lower Oligocene.

EXPLANATION OF PLATE 25.

The figures are from photographs made by the United States Geological Survey.
Figs. 1-1c. *Nephrops acqueus*, $\times 2$.

1. Holotype, right manus, ventral view.

1a. Portion of a finger, ventral view.

1b. Holotype, right manus, dorsal view.

1c. Dorsal view of 1a.

2, 2a. *Nephrops maoensis*, $\times 3$.

2. Paratype, end of a left, major, immovable finger, dorsal view.

2a. Holotype, distal half of a right, major, immovable finger, dorsal view.

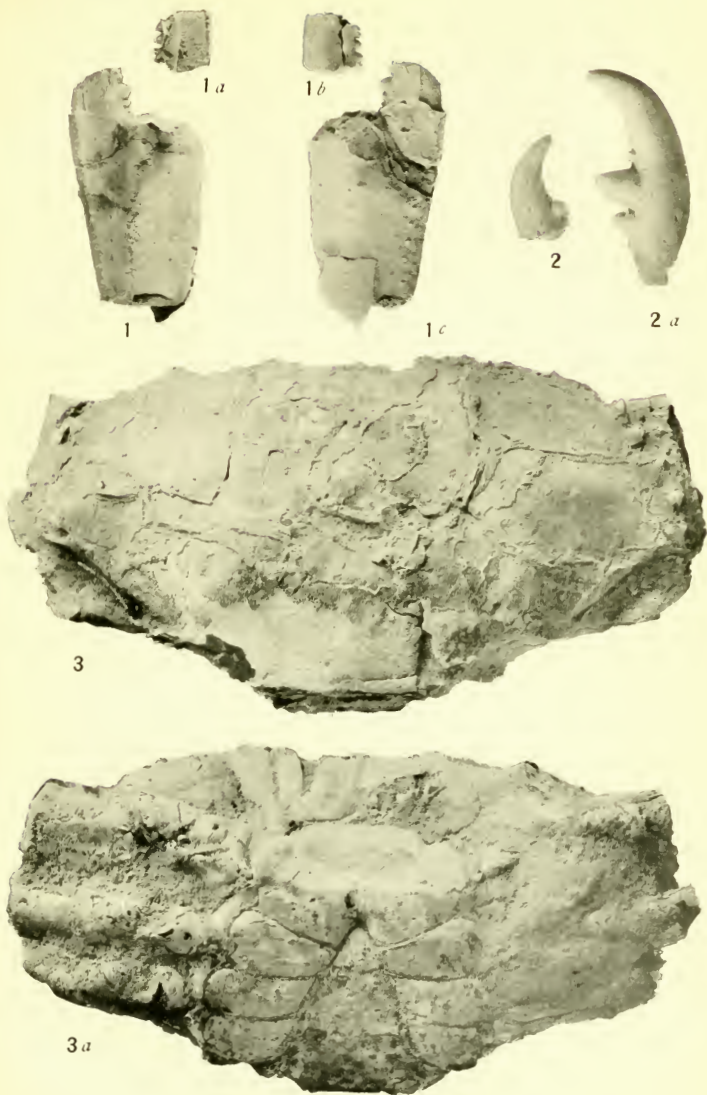
3, 3a. *Portunus oblongus*, holotype, nat. size.

3. Dorsal view.

3a. Ventral view.

¹ Rathbun, Publ. No. 291, Carnegie Inst., Washington, 1919, p. 171, pl. 7, fig. 7.

² Idem, p. 174.



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FOR DESCRIPTION OF PLATE SEE PAGE 384.

