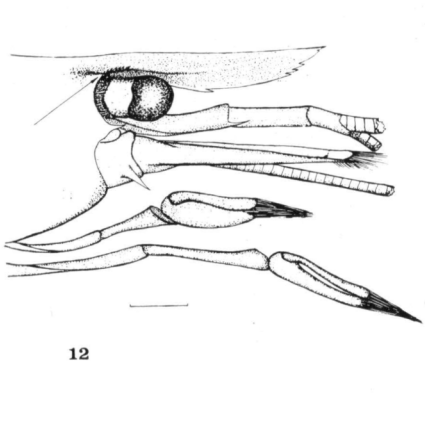

FIGURE 12.—*Lateral view of cephalic portion of* JONGA SERREI. *The arrow indicates supraorbital spines peculiar to this genus. The horizontal line equals one millimeter.*

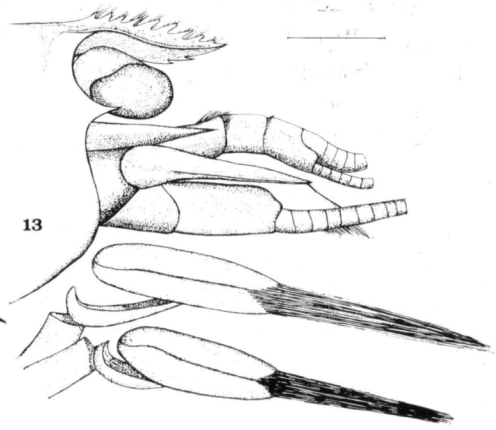

FIGURE 13.—*Lateral view of cephalic portion of* MICRATYA POEYI. *The horizontal line equals one millimeter.*

Remarks.—Live specimens of this species exhibit considerable variation in color patterns—ranging from light to dark brown. Occasionally the darker specimens have three or four transverse bands of lighter brown. Banded specimens were noted at Stations 15 and 24.

This species, which is the only species in the genus, has previously been reported only from Cuba.

Potimirim americana (Guerin-Meneville) Figs. 14, 15.

Description and synonymy.—Bouvier, 1925: 282–284, figs. 655–659.

Type locality.—Cuba. ? *Distribution.*—Cuba, Trinidad, Jamaica. Fresh water.

Occurrence in Jamaica.—**St. Mary Parish:** Station I—2 specimens (Tulane University Collection).

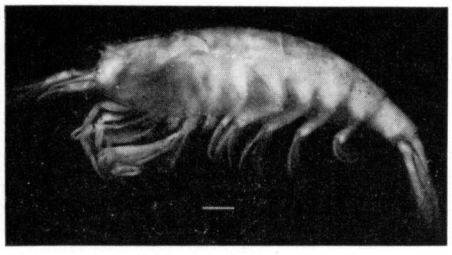

FIGURE 14.—*Lateral view of* POTIMIRIM AMERICANA. *The horizontal line equals one millimeter.*

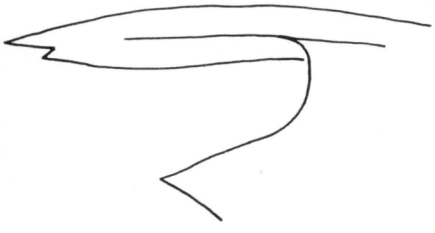

FIGURE 15.—*Lateral view of rostrum of* POTIMIRIM AMERICANA.

Remarks.—These two specimens were collected in June 1960 by Dr. Alfred Smalley of Tulane University. Dr. Smalley was kind enough to permit me to include the specimens in this paper, for which I am most grateful. This species was not represented in any of my collections.

This is the first and only record of this shrimp in Jamaica.

Potimirim mexicana (de Saussure) Figs. 16, 17.

Description.—Bouvier, 1925: 284–288, figs. 660–667.

Type locality.—Vera-Cruz, Mexico. *Distribution.*—Mexico to Brazil; Porto Rico, Cuba, Jamaica. Fresh water.

Occurrence in Jamaica.—**Clarendon Parish:** Station 6—8 specimens (RMNH). **St. Elizabeth Parish:** Station 12—12 specimens (IJ). **Westmoreland Parish:** Station 15—2 specimens (ANSP).

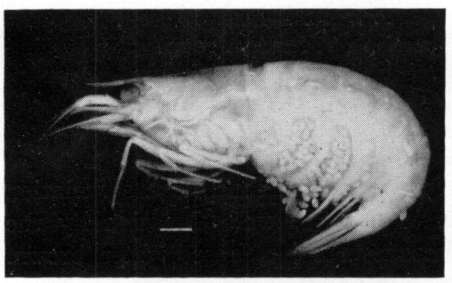

FIGURE 16.—*Lateral view of* POTIMIRIM MEXICANA. *The horizontal line equals one millimeter.*

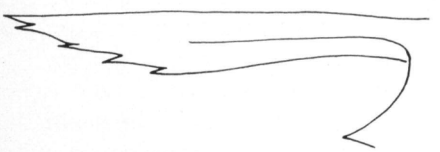

FIGURE 17.—*Lateral view of rostrum of* POTIMIRIM MEXICANA.

Remarks.—*Caridina mexicana* de Saussure [= *P. mexicana* (de Saussure)] was designated as the type species of the genus *Potimirim* by Holthuis (1954).

This is the first record of this species in Jamaica.

Xiphocaris elongata (Guerin-Meneville) Figs. 18, 19.

Description and synonymy.—Bouvier, 1925: 9–20, 48–55, figs. 1–51.

Type locality.—Havana, Cuba. *Distribution.*—West Indies. Fresh water.

Occurrence in Jamaica.—**Hanover Parish:** Station 17—3 specimens (RMNH); Station 18—3 specimens (USNM); Station 19—12 specimens (USNM); Station 20—21 specimens (ANSP). **Portland Parish:** Station 29—2 specimens (RMNH); Station 30—5 specimens (ANSP); Station 31—16 specimens (ANSP); Station 32—19 specimens (USNM). **St. Andrew Parish:** Station 40—29 specimens (RMNH); Station 41—32 specimens (ANSP); Station 42—20 specimens (ANSP). **St. Ann Parish:** Station 23—2 specimens (USNM). **St. Elizabeth Parish:** Station 11—20 specimens

(IJ); Station 12—11 specimens (ANSP). **St. Mary Parish:** Station 24—34 specimens (2 collections, USNM); Station 25—8 specimens (ANSP); Station 26—4 specimens (IJ); Station 27—36 specimens (ANSP). **St. Thomas Parish:** Station 33—7 specimens (RMNH); Station 34—18 specimens (ANSP); Station 35—4 specimens (USNM); Station 38—11 specimens (ANSP). **Trelawny Parish:** Station 21—34 specimens (RMNH). **Westmoreland Parish:** Station 14—7 specimens (ANSP); Station 15—1 specimen (USNM); Station 16—6 specimens (ANSP).

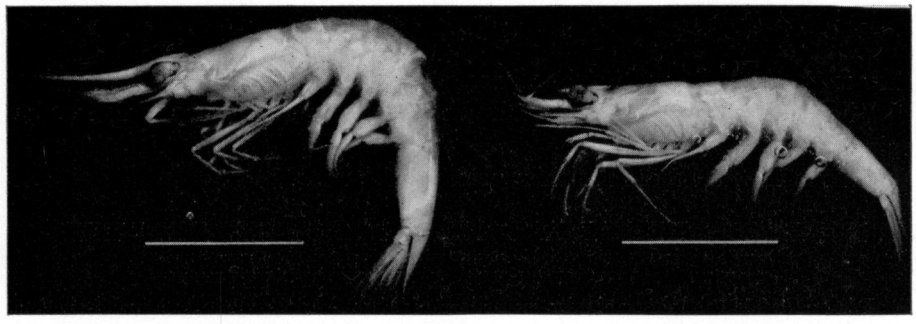

FIGURE 18.—*Lateral views of two specimens of* XIPHOCARIS ELONGATA. *The specimen on the left is a typical* X. ELONGATA; *the specimen on the right corresponds to* X. GLADIATOR *of Pocock. The horizontal lines equal one-half inch.*

Remarks.—Because of extreme variations in the rostral length of this animal, Pocock (1889) placed it in three species and one variety—basing that division on differences in rostral lengths. In 1925, Bouvier agreed with earlier work of Ortmann (1894) that only one species was involved and that Pocock's species were, if anything, only subspecies or varieties. A preliminary analysis of the Jamaican specimens (over 400) merely confirms these conclusions—and because any one collection may contain as many as three of the four varieties, I think it is more accurate to say that *X. elongata* is a species in which the length of the rostrum relative to the length of the carapace is highly variable. Figure 19 shows variations in rostral length and form encountered in this animal, together with the designations of Pocock. With the exception of the rostra, I have been unable to find any significant differences between these varieties.

X. elongata seems to prefer relatively quiet pools in well-aerated streams. Specimens may be seen moving slowly about on the bottom and sides of such pools if the water is placid, but when they are disturbed (as in an attempt to sein them), they prove to be strong swimmers and often jump considerable distances out of the water to avoid capture.

One of the most striking features of this shrimp is the color of the rostrum in some specimens—particularly in those specimens having conspicuously long rostra. The rostra are usually colorless, but in some populations

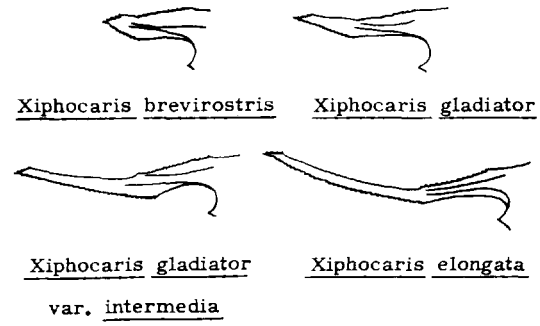

FIGURE 19.—*Variations in the rostral length and form encountered in* XIPHOCARIS ELONGATA. *The designations corresponding to the rostra are those proposed by Pocock (1889), and are used here for historical purposes only.*

they may be bright orange; in others, varying shades of yellow.

The bodies of the young are almost completely transparent; the adults only slightly less so.

This is the first record of this species in Jamaica.

NOTES ON THE EARLY LAND CONNECTIONS BETWEEN CUBA, JAMAICA, AND CENTRAL AMERICA

Rivas (1958) has concisely summarized the multitude of arguments for and against ancient land connections between Central America and the Greater Antilles—and he concludes that land connections between Central America and Cuba must have existed in order for girardinin poeciliid fishes (as well as certain other animals) to have become established in Cuba.

Similar conclusions may be drawn from distribution patterns of certain crayfishes and freshwater shrimps.

The crayfish *Cambarus cubensis* (Erichson) is found in Cuba and the Isle of Pines, its closest relative, *C. mexicanus* (Erichson), is found in Mexico, and crayfish are found on no other Antillean islands (Ortmann 1902, 1905). This is similar to the distribution of the poeciliid fishes discussed by Rivas—which are found in Central America and in Cuba, but on no other Antillean island.

The Atyid shrimps are animals of great antiquity (possibly having arisen as early as the Jurassic, according to Ortmann)—and bodies of salt water present insurmountable topographic barriers to some of the freshwater species [Ortmann, 1894, says all Atyid shrimps are freshwater animals, but more recent work shows this to be untrue (Holthuis 1951, 1953)]. Certain of the truly freshwater Atyid shrimps, however, are found in Central America, Cuba, Jamaica, and other Antillean islands—distributions which again must be accounted for by the past existence of land connections.

Two such connections are generally supposed to have existed between Central America and the Greater Antilles during the Miocene-Pliocene: (**1**) Between the Honduras–Nicaragua region and Jamaica and Hispaniola; and (**2**) Between the British Honduras–Yucatan region and western Cuba.

Rivas concludes that the poeciliid fishes came to Cuba via the second of these connections—and I assume that the ancestor of the crayfish *C. cubensis* came along the same route.

The existence of the poeciliid fishes and *C. cubensis* only in Cuba (and the Isle of Pines) and on no other Antillean islands, plus the existence of certain closely related freshwater Atyid shrimps in Cuba, Jamaica, and Central America immediately poses the question of why such a distribution.

To me, two alternatives present themselves: (**1**) That the Honduras–Nicaragua–Jamaica–Hispaniola connection must have been broken before the British Honduras–Yucatan–Cuba connection was broken, and that in the early Miocene the Atyid shrimps found their way to Jamaica and Cuba via both of these bridges—the ancestors of the poeciliid fishes and *C. cubensis* not existing in the region before the break occurred, or (**2**) That some topographic barrier existed to bar the fishes and crayfishes from the Honduras–Nicaragua–Jamaica–Hispaniola connection.

The first alternative seems to me to be the most likely, but as far as the present-day distribution of *C. mexicanus* is concerned, the second should not be entirely rejected.

The palaemonid shrimps emerged from salt into fresh water in such comparatively recent times that they are of little value in such considerations.

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