o. 4, pp. 29–44 23 April 1975

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

CAVE SHRIMPS (DECAPODA: CARIDEA) FROM THE DOMINICAN REPUBLIC

By Fenner A. Chace, Jr.
Smithsonian Institution, Washington, D.C. 20560

A small but excellently preserved collection of shrimps recently received from Renato O. Rímoli of Santo Domingo, Dominican Republic, contained three specimens of particular interest from subterranean habitats. The first is a species of the atyid genus *Typhlatya* that had been recorded previously from Isla Mona off Puerto Rico and from Barbuda in the Leeward Islands. The second is an apparently undescribed species of the palaemonid genus *Macrobrachium* that shows no obvious adaptation for troglobitic existence. The third is a second species of the recently proposed hippolytid genus *Calliasmata*, the type-species of which is known from anchialine pools (Holthuis, 1973:3) in the Sinai Peninsula, Ellice Islands, and Hawaiian Islands.

I am very grateful to Mr. Rímoli for making this material available to me and for his assistance during the preparation of the paper, as well as to my colleagues, Thomas E. Bowman, Horton H. Hobbs, Jr., Raymond B. Manning, and Austin B. Williams, for their critical review of the manuscript.

Atyidae

Typhlatya monae Chace

Typhlatya monae Chace, 1954:318, fig. 1.—Chace and Hobbs, 1969:80, fig. 16.

Typhlatya nana Vandel, 1964:178 (incorrect spelling of *monae*); 1965: 139.

Material (carapace lengths in mm in brackets): La Furnia de Los Corrales, Villas del Mar, Provincia de San Pedro de Macoris, Dominican Republic; 16 August 1973; Renato O. Rímoli: 21 ♀ [3.3–4.4].

Color: Yellow-orange in life.

Habitat: La Furnia de Los Corrales is a subterranean cavity surrounded by abundant vegetation about 400 meters from the sea. The entrance has a maximum height of 1.85 meters, with a cornice one meter thick. The distance to the innermost end of the cavity is 9.20 meters. There is sufficient phreatic water to form a pool about two feet deep, the bottom of which is covered with a large amount of sediment of organic origin. Light penetrates into the interior, providing some illumination, but the presence of the shrimps, which were quite numerous, was detected by flashlight.

Distribution: The species has been recorded previously from subterranean fresh water on Isla Mona (Puerto Rico) and Barbuda (Leeward Islands).

Remarks: Not even a vestige of an exopod can be found on the fifth pereopods of these specimens. They agree so well, however, with specimens of *T. monae* from Isla Mona and Barbuda in all other characters that there is little justification for regarding them as taxonomically distinct.

Like all previously recorded specimens of the species, none of the series from the Dominican Republic has an appendix masculina on the second pleopods, and all have consequently been presumed to be females. Inasmuch as males of most of the other species of the genus are known—even of the closely related *T. garciai* Chace, 1943, from Cuba—the failure thus far to find males of *T. monae* suggests two possible explanations: either they are unrecognizable from external characters or they are restricted to a habitat niche that has not yet been investigated.

The mysterious presence of part of the type-series of *T. monae* in a concrete water catchment basin on the high central mesa of Isla Mona (Chace, 1954:319) has finally been explained. Thomas A. Wiewandt, who has been conducting an ecological survey of Mona under the auspices of the Puerto Rico Department of Natural Resources, informs me that, during dry periods on the island, water from the wells in which the shrimp normally occurs is sometimes pumped into the catchment basins, thereby accounting for the presence of *Typhlatya* in such an apparently inimical habitat.

Palaemonidae

Macrobrachium crybelum new species

Figures 1–4

? *Macrobrachium olfersii*.—Rathbun, 1919:324.—Schmitt, 1936:372. [Not *Palaemon olfersii* Wiegmann, 1836.]

? *Macrobrachium* sp. (near *M. faustinum*) Chace and Holthuis, 1948:23.

? *Macrobrachium* aff. *faustinum* Holthuis, 1952:95.

Description: Rostrum with dorsal margin usually regularly concave (Fig. 3*a*), rarely straight (Fig. 1*a*), overreaching antennal scale, 0.7 to

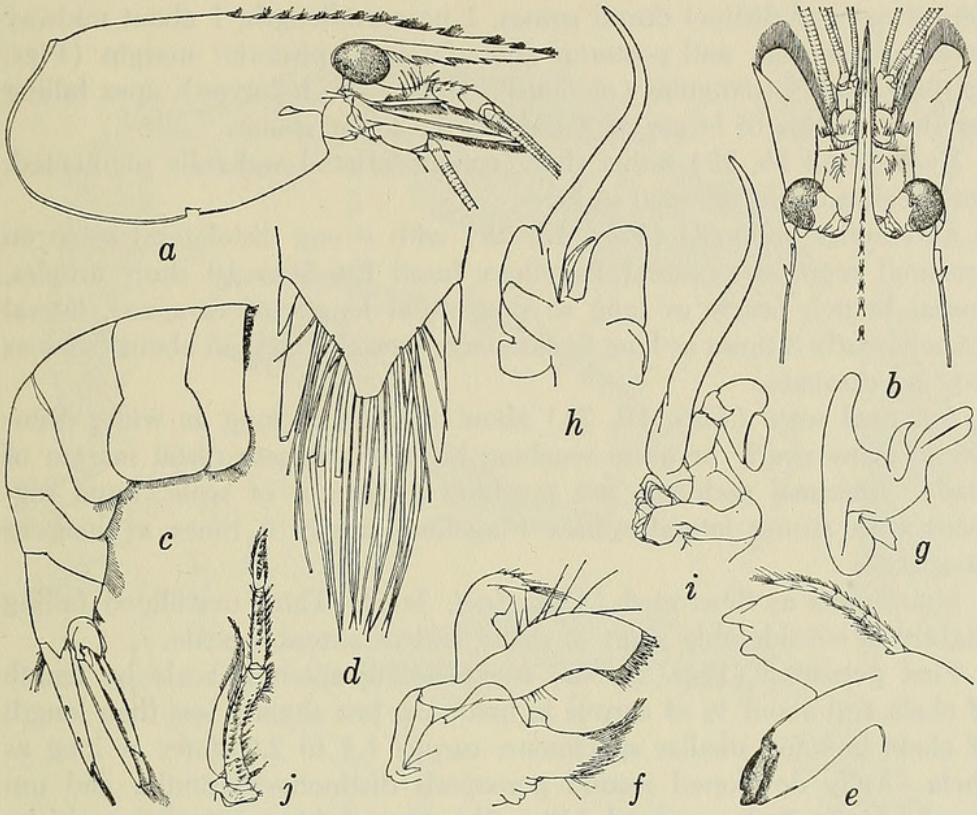

FIG. 1. *Macrobrachium crybelum*, holotype ♂. *a*, Carapace and anterior appendages in lateral aspect; *b*, Anterior region in dorsal aspect; *c*, Abdomen; *d*, Posterior end of telson; *e*, Right mandible; *f*, Right first maxilla; *g*, Right second maxilla; *h*, Right first maxilliped; *i*, Right second maxilliped; *j*, Right third maxilliped. (*a–c*, *j*, × 2; *g–i*, × 4; *e*, *f*, × 8; *d*, × 17.)

0.9 as long as carapace in larger specimens, as long as or slightly longer than carapace in juveniles; armed dorsally with 11 to 16 teeth, including 4 to 6 on carapace posterior to orbit, spaced farther apart on rostrum than on carapace, except anteriormost 2 or 3 occasionally set close together, all but those on anterior half of rostrum with indistinct basal suture; armed ventrally with 3 to 6, most frequently 4, teeth; lateral ridge sharp in posterior ⅔ of length, becoming blunt anteriorly, equidistant from dorsal and ventral margins over much of length.

Carapace smooth, antennal spine arising submarginally from suborbital lobe, somewhat longer than hepatic spine; rather distinct suture extending from base of hepatic spine to anterior margin.

Abdomen smooth, pleuron of 4th somite with posteroventral angle varying from subrectangular (Fig. 3*c*) to rounded (Fig. 1*c*); pleuron of 5th somite acute posteroventrally; 6th somite about 1.5 times as long as 5th, acute posteroventrally, posterolateral lobe drawn out to sharp tooth. Telson about 1.5 times as long as 6th somite, normally

with 2 pairs of distinct dorsal spines, 1 near midlength, 1 about midway between first pair and posterior end of telson; posterior margin (Figs. 1*d*, 3*d*) acutely triangular (obviously damaged in holotype), apex falling far short of tips of larger of 2 pairs of posterior spines.

Eyes (Figs. 1*b*, 3*b*) rather short, cornea inflated and fully pigmented, with ocellus on dorsomesial surface.

Antennular peduncle (Figs. 1*b*, 3*b*) with strong distolateral spine on proximal segment. Lateral flagellum fused for 5 to 10 short articles, mesial branch nearly as long as postorbital length of carapace, lateral branch nearly 3 times as long as carapace; mesial flagellum about twice as long as carapace.

Antennal scale (Figs. 1*b*, 3*b*) about 3 times as long as wide, distolateral spine nearly or quite reaching level of truncate distal margin of blade. Antennal peduncle not reaching midlength of scale, basal segment with strong lateral spine. Flagellum nearly 6 times as long as carapace.

Mouthparts as illustrated (Figs. 1*e–j*, 3*e–j*). Third maxilliped falling slightly to considerably short of distal end of antennal scale.

First pereopod (Figs. 2*a*, 4*a*) overreaching antennal scale by length of chela and about ½ of carpus in holotype, but slightly less than length of chela in some smaller specimens; carpus 1.5 to 2.0 times as long as chela. Fully developed second pereopods distinctly dissimilar and unequal. Major 2nd pereopod (Fig. 2*b*) overreaching antennal scale by length of chela and nearly or more than entire length of carpus; chela (Fig. 2*c*) with fingers slightly shorter than palm; opposable margins of both dactyl and fixed finger with single row of 12 to 17 rounded teeth, one larger than rest near bases of both fingers, distal ones small and indistinct; surface of palm concealed by closely spaced tufts of long fine hairs covering margin continuous with fixed finger and extending far onto both flattened surfaces; long dark setae becoming especially numerous on fingers and forming dense fringe in gape; most of surface covered with distally directed spines increasing in length on fingers and forming distinct row along margin continuous with fixed finger, those centrally located on palm shorter than those on proximal and distal portions; carpus slightly longer than palm and about 1.4 times as long as merus. Minor 2nd pereopod (Fig. 2*d*) more slender, overreaching antennal scale by ½ or nearly entire length of carpus; chela (Fig. 2*e*) with fingers as long as palm; opposable margins of both dactyl and fixed finger with large tooth near bases and 3 minute tubercles proximal thereto, remainder of margins entire and rather sharp; surface of chela with numerous long dark setae becoming crowded on fingers and forming dense fringe in gape; carpus distinctly longer than palm and longer than merus. Third pereopod (Fig. 2*f*) overreaching antennal scale by length of dactyl and about ⅓ of propodus. Fourth pereopod (Fig. 2*g*) overreaching antennal scale by length of dactyl and about ¼ of propodus. Fifth pereopod (Fig. 2*h*) overreaching antennal scale by length of dactyl and about ¼ of propodus.

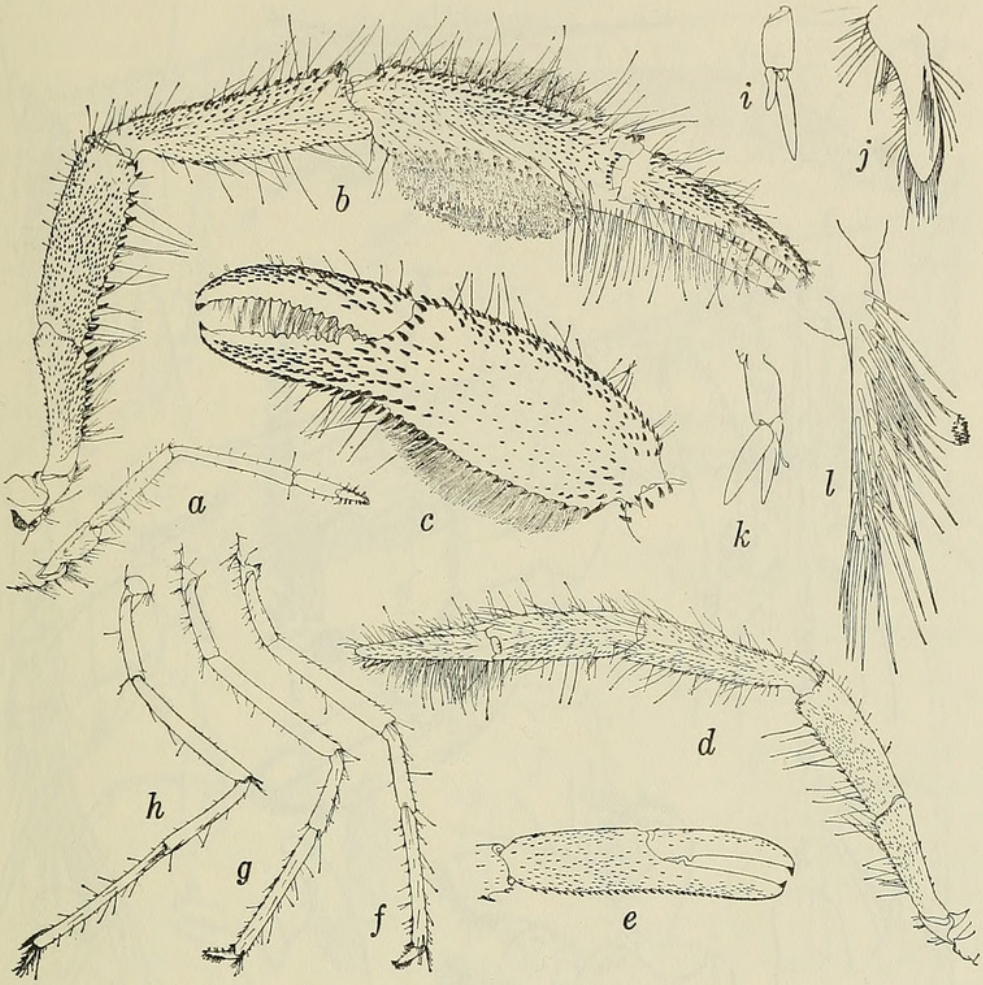

FIG. 2. *Macrobrachium crybelum*, holotype ♂. *a*, Right first pereopod; *b*, Right second pereopod; *c*, Same, extensor aspect of chela (denuded); *d*, Left second pereopod; *e*, Same, extensor aspect of chela (denuded); *f*, Right third pereopod; *g*, Right fourth pereopod; *h*, Right fifth pereopod; *i*, Right first pleopod; *j*, Same, endopod; *k*, Right second pleopod; *l*, Same, appendices interna and masculina. (*a–i*, *k*, × 2; *j*, × 4; *l*, × 17.)

Endopod of first pleopod (Figs. 2*i*, *j*), appendix masculina (Figs. 2*k*, *l*), and uropods characteristic of genus.

Variation: In the largest male in the collection—a specimen with a carapace length of 17.8 mm from Cueva de Valiente—the second pair of pereopods (Figs. 4*b*, *c*) are much less dissimilar and less unequal than they are in both the holotype and a similar male with a carapace length of 13.0 mm from the type-locality. In the Cueva de Valiente male, the major cheliped is almost identical with those in two females with carapace lengths of 18.4 and 19.2 mm from La Caleta. The chela is less swollen and less densely furred than in the holotype and the

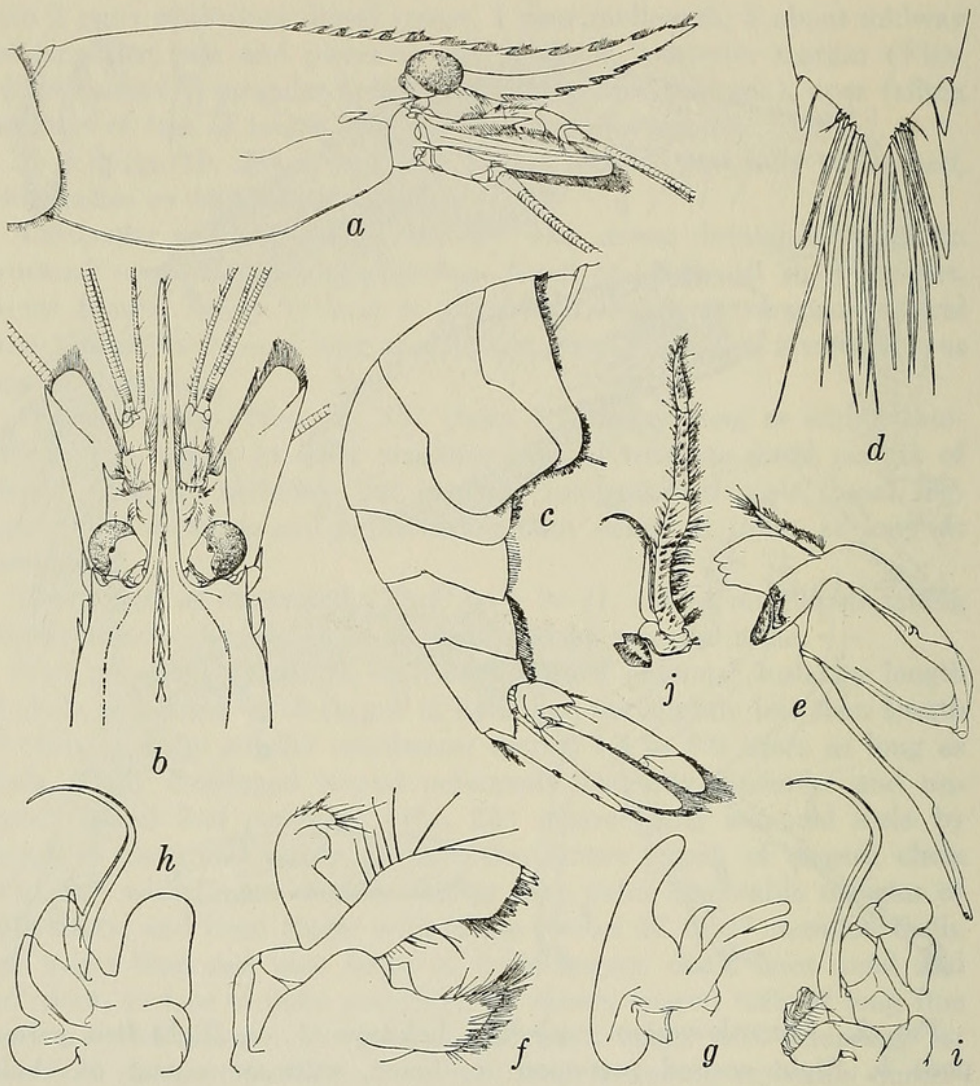

FIG. 3. *Macrobrachium crybelum*, gynecomorphous paratype ♂, carapace length 17.8 mm, from Cueva de Valiente (except *d*). *a*, Carapace and anterior appendages in lateral aspect; *b*, Anterior region in dorsal aspect; *c*, Abdomen; *d*, Posterior end of telson of paratype ♂, carapace length 14.3 mm, from Cueva de Valiente; *e*, Right mandible; *f*, Right first maxilla; *g*, Right second maxilla; *h*, Right first maxilliped; *i*, Right second maxilliped; *j*, Right third maxilliped. (*a–c*, *j*, × 2; *e*, *g–i*, × 4; *f*, × 8; *d*, × 17.)

fingers are proportionately longer and less gaping, with the opposable margins (Fig. 4*e*) armed as in the minor cheliped, lacking teeth on the distal two-thirds of their lengths. Also, the rows of spines on the merus and ischium are much less prominent than the comparable series in the holotype. In all of the specimens except these five (two males from Ciudad del Caribe, one male from Cueva de Valiente, and two females from La Caleta), the second pereopods are more slender, not very dis-

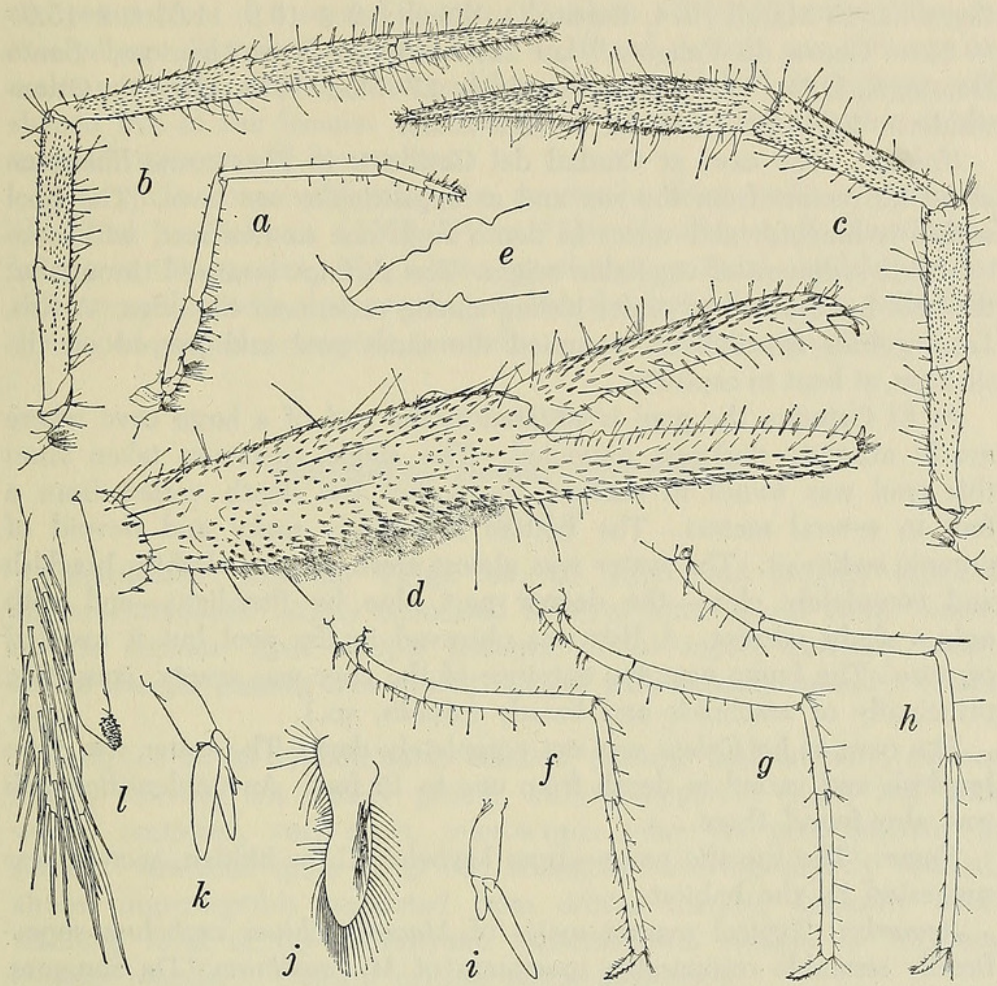

FIG. 4. *Macrobrachium crybelum*, gynecomorphous paratype ♂, carapace length 17.8 mm, from Cueva de Valiente. *a*, Right first pereopod; *b*, Right second pereopod; *c*, Left second pereopod; *d*, Same, chela; *e*, Same, basal teeth of fingers; *f*, Right third pereopod; *g*, Right fourth pereopod; *h*, Right fifth pereopod; *i*, Right first pleopod; *j*, Same, endopod; *k*, Right second pleopod; *l*, Same, appendices interna and masculina. (*a–c*, *f–i*, *k*, × 2; *d*, × 4; *e*, *j*, × 8; *l*, × 17.)

similar, equal or only slightly unequal, and the major chelae are not noticeably furred.

Size: Carapace length of holotype male, 14.9 mm; of paratype males, 5.9 to 17.8 mm; of paratype females, 5.6 to 19.2 mm.

Type-locality: Cave at Ciudad del Caribe (18°58′N, 70°23′W), Santo Domingo, D.N., Dominican Republic.

Material (carapace lengths in mm in brackets): Cave at Ciudad del Caribe, Santo Domingo, D.N., Dominican Republic; 14 July 1973; Renato O. Rímoli: 10 ♂ [7.8–14.9] (largest is holotype, USNM 151199) 5 ♀ [9.6–11.7].—El Caimito (Cave No. 2), Dominican Republic; 17 February 1974; Renato O. Rímoli: 1 ♀ [14.2].—La Caleta, Dominican

Republic; 15 March 1974; Renato O. Rímoli: 2 ♂ [5.9, 11.3] 6 ♀ [5.6–19.2].—"Cueva de Valiente," km 21, Autopista "Las Americas," Santo Domingo, D.N., Dominican Republic; 27 May 1974; Alberto Ottenwalder: 4 ♂ [9.0–17.8] 14 ♀ [8.2–15.5].

Habitat: The cave at Ciudad del Caribe is in Pleistocene limestone about 50 meters from the sea and at approximate sea level. The pool within is brackish and varies in depth from one to five feet, with considerable sediment of vegetable origin. The shrimps occurred throughout the pool but seemed to prefer hiding among rocks near the edge. A fish, *Lophogobius cyprinoides*, occupied the same pool and preyed on the shrimps, at least in captivity.

At El Caimito, the pool is situated at the end of a large cave where nearly absolute darkness prevailed. The single specimen taken from this pool was found in shallow water, but the depth varied from a foot to several meters. The bottom is entirely rocky and devoid of organic sediment. The water was almost fresh or very slightly brackish and completely clear—the deeper part blue by flashlight—and with only a slight current. A fish was observed in the pool but it avoided capture. The fauna near the entrance of the cave was scanty, consisting principally of arachnids and lizards (*Anolis*, sp.).

The cave at La Caleta was not completely dark. The water was little brackish and varied in depth from one to 15 feet. An unidentified fish was also found there.

Name: The specific name—from krybelos, G., = hidden, secret—was suggested by the habitat.

Remarks: Typical mature males of *Macrobrachium crybelum* superficially resemble comparable specimens of *M. faustinum* (De Saussure, 1857), which occurs in exposed freshwater habitats throughout the West Indian islands, but they may be readily distinguished by the following characters. The rostrum is longer, overreaching the antennal scales rather than reaching no farther than the end of the antennular peduncle. The spines on the major second pereopod are more numerous and less erect, especially those on the margins corresponding to that of the fixed finger of the chela. The fixed finger of the minor second pereopod is less bowed, so that the fingers gape less noticeably. The three posterior pairs of pereopods are longer, considerably overreaching the antennal scale, rather than reaching at most only to the distal end of the scale. Specimens of both sexes of *M. crybelum* differ from all other American species of the genus known thus far in the combination of a long rostrum, overreaching the antennal scales, and more than three teeth of the dorsal rostral series situated on the carapace posterior to the orbit.

There is a possibility that the large male from Cueva de Valiente (Figs. 3, 4) and the two large females from La Caleta represent a distinct species, because of the very different form of the major second pereopod. It seems more likely, however, that the females display the normal development of the chelipeds at this size and that the male is gynecomorphous. There are no other distinguishing characters to support

the recognition of a second species. Holthuis (1952:12) noted that in this genus: "Sometimes males may be found, which are as large as males with fully developed second legs, but in which these legs are still shaped like in the females and juveniles." Perhaps regeneration is the cause of this apparent dimorphism.

It is quite conceivable that the specimens from wells on Bonaire, identified by Holthuis (1952:95) as "*Macrobrachium* aff. *faustinum*," belong to this species. The specimens of that material available to me are compatible with that conclusion, but the lack of a male with fully developed second pereopods precludes a positive determination.

HIPPOLYTIDAE

Calliasmata rimolii, new species

Figures 5–7

Description: Rostrum (Figs. 6*b*, *c*) short and simple, directed anteroventrad and largely concealed by eyes from lateral view; ventral margin sinuous; apex sharply pointed; dorsal aspect narrowly acute, lateral margin passing into orbital margin with broadly rounded obtuse angle.

Carapace (Fig. 5) noticeably inflated dorsally and laterally; surface largely smooth, not closely pitted, without apparent scales but with widely scattered, very short, microscopic setae set perpendicular to surface. Antennal spine (Fig. 6*b*) triangular, curving slightly ventrad, almost imperceptibly separated from orbital margin, distinctly overreaching level of tip of rostrum. Anteroventral margin of carapace broadly rounded. Without cardiac notch posteriorly.

Abdomen (Fig. 5) broadly rounded dorsally; surface largely smooth as on carapace. Pleura of 4 anterior somites broadly rounded, of 5th somite acutely produced posteroventrally. Sixth somite nearly ⅓ again as long as 5th, posteroventral angle bluntly triangular, posterolateral lobe drawn out into narrowly acute, dorsally straight spine (Fig. 6*d*). Telson (Fig. 6*e*) about ½ again as long as 6th somite, slightly less than 2½ times as long as wide, tapering rather regularly to broadly triangular posterior margin armed with distinct median spine; dorsal surface bearing 2 pairs of rather inconspicuous spines, anterior pair placed slightly anterior to midlength, posterior pair about midway between anterior pair and posterior margin; posterior margin (Fig. 6*f*) armed with 3 pairs of movable spines, intermediate pair much the longest and lateral pair much the shortest.

Eyes (Fig. 6*g*) apparently immovably fused together basally, variably divergent or approximate distally, usually slightly overreaching level of tips of antennal spines; somewhat variable in shape, depending on degree of development of subtruncate anteromesial projection; anterolateral margin consisting of rather sharp, broadly rounded flange; rudimentary cornea lateral to base of anteromesial projection; persistent black pig-

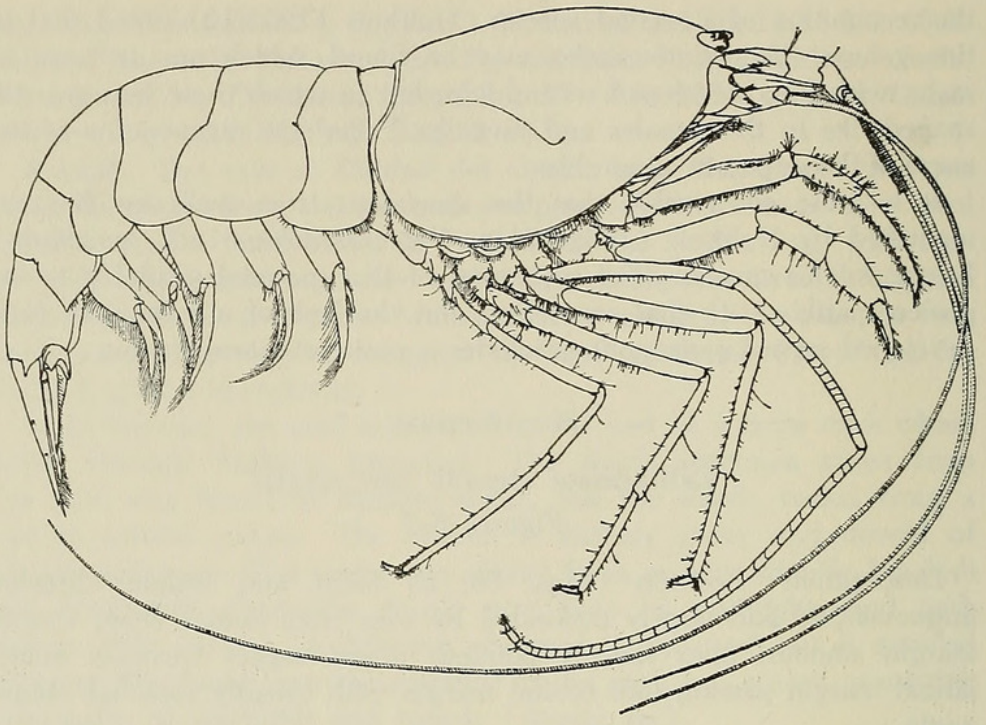

FIG. 5. *Calliasmata rimolii*, holotype ♀. × 2.8.

ment variably situated elsewhere beneath both dorsal and ventral surfaces of eyestalk.

Antennular peduncle (Figs. 6*a*, *c*) with 1st segment subequal in length to combined lengths of 2 distal segments. Stylocerite suboval or subtriangular in lateral view, distal end blunt, with or without minute denticle, falling far short of distal margin of first segment. Second segment longer than 3rd. Dorsolateral flagellum nearly 3 times as long as carapace, setiferous (fused) portion consisting of 19–21 articles, free part of shorter branch reduced to single short article (Fig. 6*h*). Ventromesial flagellum slightly shorter than dorsolateral.

Antennal scale (Fig. 6*c*) about twice as long as wide, barely overreaching 2nd segment of antennular peduncle, lateral margin nearly straight, terminating in strong distal tooth reaching nearly as far as distal margin of blade. Antennal peduncle reaching little beyond midlength of scale, basal segment with stout lateral tooth below base of scale and bluntly triangular lobe dorsally that appears toothlike in lateral view. Flagellum at least 4¾ times as long as carapace, about ⅔ again as long as entire animal.

Mandibles (Fig. 6*i*) without palp or incisor process; opposable surface of molar process dissimilar on right and left mandibles. First maxilla (Fig. 6*j*) with palp bilobed. Second maxilla (Fig. 6*k*) with proximal endite much reduced, distal endite rather deeply divided into broadly rounded distal portion and bluntly triangular proximal lobe. All maxillipeds with well-developed exopods. First maxilliped (Fig. 6*l*) with two

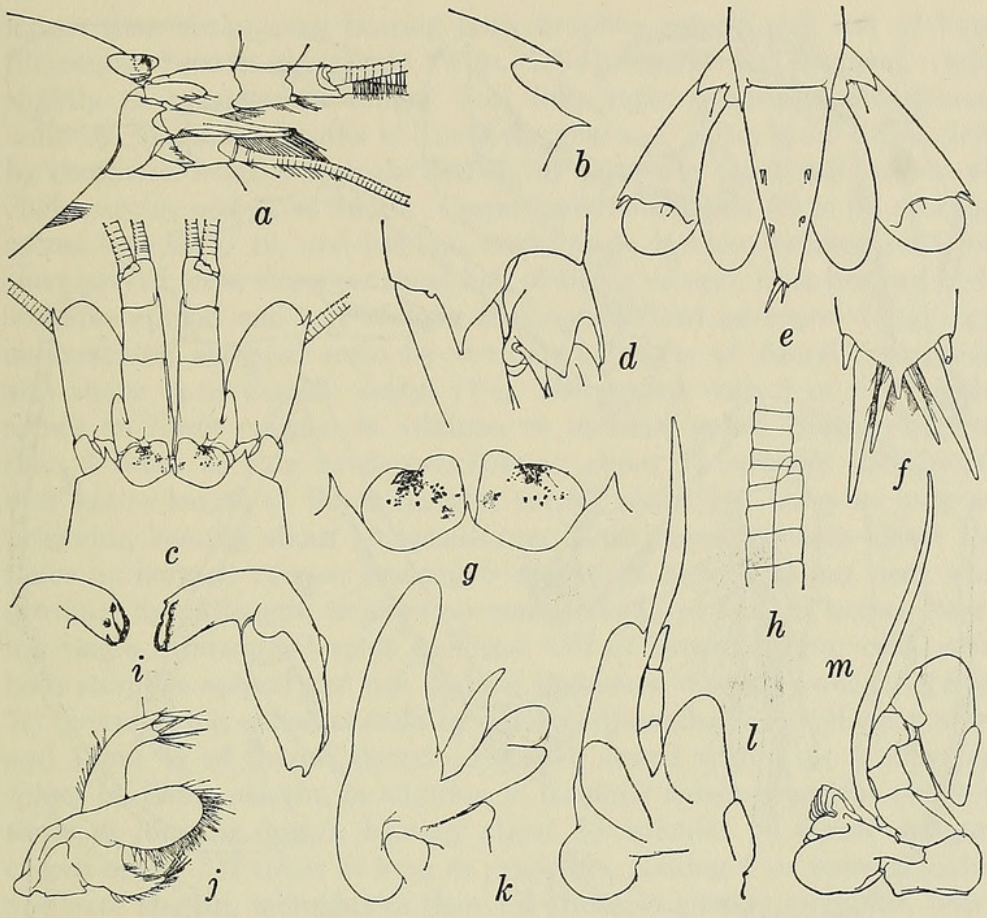

FIG. 6. *Calliasmata rimolii*, holotype ♀ (except *f*). *a*, Anterior region in lateral aspect; *b*, Rostrum and orbit in lateral aspect; *c*, Anterior region in dorsal aspect; *d*, Base of telson and uropod; *e*, Telson and uropods; *f*, Posterior end of telson of paratype ♀, carapace length 10.8 mm; *g*, Eyes in dorsal aspect; *h*, Distal end of setiferous portion of dorsolateral flagellum; *i*, Left and right mandibles in dorsal (oral) aspect; *j*, Right first maxilla; *k*, Right second maxilla; *l*, Right first maxilliped; *m*, Right second maxilliped. (*a*, *c*, *e*, × 4; *b*, *d*, *g*, *i–m*, × 8; *f*, *h*, × 17.)

endites separated by shallow notch, palp well-developed and 3-segmented, exopod with lash and narrow caridean lobe, epipod prominent. Second maxilliped (Fig. 6*m*) with terminal segment attached lengthwise to penultimate; exopod, epipod, and podobranch well-developed. Third maxilliped (Fig. 7*a*) overreaching antennal scale by length of distal and nearly ½ of penultimate segment, distal segment considerably less than twice as long as penultimate, terminating in 2 small curved spines and armed with about 6 movable spines on distal half or less of extensor margin; exopod reaching beyond midlength of antepenultimate segment; epipod and arthrobranch present.

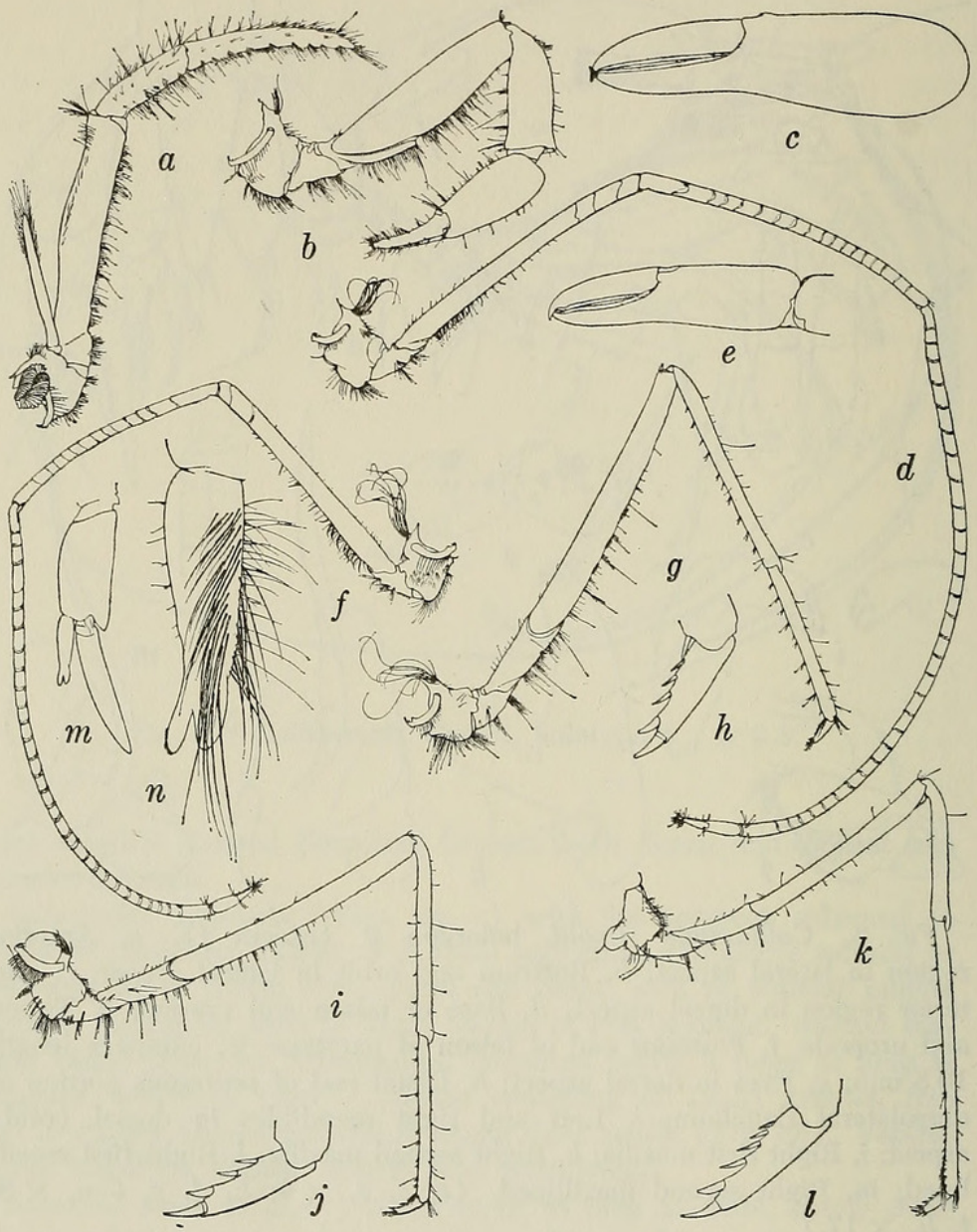

FIG. 7. *Calliasmata rimolii*, holotype ♀. *a*, Right third maxilliped; *b*, Right first pereopod; *c*, Same, chela; *d*, Right second pereopod; *e*, Same, chela; *f*, Left second pereopod; *g*, Right third pereopod; *h*, Same, dactyl; *i*, Right fourth pereopod; *j*, Same, dactyl; *k*, Right fifth pereopod; *l*, Same, dactyl; *m*, Right first pleopod; *n*, Same, endopod. (*a*, *b*, *d*, *f*, *g*, *i*, *k*, *m*, × 4; *c*, × 8; *e*, *h*, *j*, *l*, *n*, × 17.)

First pereopod (Fig. 7*b*) overreaching antennal scale by more than length of chela; chela (Fig. 7*c*) with fingers fully ⅔ as long as palm, dactyl terminating in 2 unequal, dark-colored spines embracing single dark tip of fixed finger; carpus about ⅔ as long as chela; merus distinctly

longer than chela; coxa bearing both straplike epipod and tuft of long filaments. Second pereopods (Figs. 7*d–f*) similar but unequal, right slightly to considerably longer than left; right overreaching antennal scale by combined lengths of chela, carpus, and ⅓ to ½ of merus, left by combined lengths of chela and 9/10 of carpus to combined lengths of chela carpus, and ¼ of merus. Carpus subdivided into 29 to 32 articles, merus into 12 to 19, and ischium into 3 to 5; ischium bearing series of stout curved setae along proximal half of flexor margin; coxa bearing both straplike epipod and tuft of long filaments. Third pereopod (Fig. 7*g*) overreaching antennal scale by combined lengths of dactyl, propodus, and about ½ of carpus; dactyl (Fig. 7*h*) armed with 3 or 4 movable spines on flexor margin, in addition to terminal spine; propodus more than 4 times as long as dactyl, bearing about 11 spinules distributed over entire length of flexor margin; carpus about 1½ times as long as propodus, bearing about 10 spinules on flexor margin; merus about 1⅗ times as long as carpus, bearing 3 appressed curved spines near and proximal to midlength; ischium no more than ⅓ as long as merus, bearing single submarginal spine in distal half of flexor margin; coxa with both straplike epipod and tuft of long filaments. Fourth pereopod (Fig. 7*i*) overreaching antennal scale by combined lengths of dactyl, propodus, and about ⅓ of merus; dactyl (Fig. 7*j*) armed with 3 or 4 movable spines on flexor margin, in addition to terminal spine; propodus about 4 times as long as dactyl, bearing about 12 spinules on flexor margin; carpus nearly 1⅓ times as long as propodus, bearing 6 or more spinules on flexor margin; merus more than 1¼ times as long as propodus, bearing single appressed spine near proximal end of flexor margin; ischium less than ⅓ as long as merus, bearing single submarginal spine near midlength of flexor margin; coxa with both straplike epipod and tuft of long filaments. Fifth pereopod (Fig. 7*k*) overreaching antennal scale by length of dactyl and about ½ of propodus; dactyl (Fig. 7*l*) armed with 5 movable spines on flexor margin, in addition to terminal spine; propodus about 6 times as long as dactyl, bearing nearly 20 spinules on flexor margin, those near distal end closer together and partially concealed by tufts of long setae; carpus slightly more than ½ as long as propodus, unarmed; merus nearly twice as long as carpus, unarmed; ischium about ⅖ as long as merus, unarmed; coxa with tuft of long filaments but no straplike epipod.

Endopod of 1st pleopod of female (Figs. 7*m*, *n*) divided into 2 lobes distally, mesial lobe bearing retinacular hooks. Uropods (Fig. 6*e*) usually slightly overreaching telson; lateral branch with prominent movable spine mesial to strong tooth at distal end of lateral margin and with nearly complete diaeresis.

Color: Pale red in life.

Size: Carapace length of female holotype, 11.1 mm; of female paratypes, 10.0 to 12.0 mm.

Type-locality: Cave 4 km from town of Estero Hondo (19°51'N, 71°11'W), Provincia de Puerto Plata, northern Dominican Republic.

Material: Five females (holotype, USNM 151205) collected at the type-locality, April 20, 1973, by Renato O. Rímoli.

Habitat: The cave in which *C. rimolii* was found is situated in a Pleistocene escarpment about one kilometer long and about 500 meters from the sea. The cave, the entrance to which was shaded by dense vegetation, was completely full of water, forming an underground pool with a maximum depth of two meters. Light penetrated to the bottom of the pool and there was little organic sediment. The water was clear and barely brackish with a temperature of 25°C, compared with an outside air temperature of 26°C at the time of collection. *Calliasmata rimolii* was numerous and was the only animal found in the cave.

Probably this cave qualifies as an anchialine habitat, as defined by Holthuis (1973:3), even though the water in the lake was "barely brackish" and no tidal influence was apparent.

Name: The species is named for the collector, Renato O. Rímoli.

Remarks: This species is very similar in general appearance to the previously unique type-species, *C. pholidota* Holthuis, 1973, from comparable habitats in the Sinai Peninsula, Ellice Islands, and Hawaiian Islands. Comparison of the five females from the Dominican Republic with part of the original series of *C. pholidota* (one female from the Sinai Peninsula and one male, two females from the Ellice Islands) deposited in the Smithsonian Institution reveals, however, that *C. rimolii* differs from the Indo-Pacific species in several characters, some of which might be considered to be of supraspecific importance. The integument of *C. rimolii* is much less firm and seems to be devoid of the scales and corresponding pits that are characteristic of *C. pholidota*. The carapace is more strongly inflated and the rostrum is consequently directed anteroventrad so that it is largely concealed by the eyes from lateral view; in dorsal view, the rostrum is more slender subapically, but there is considerable variation in this regard. Perhaps the most obvious differences between the two species are the rounded, rather than rectangular posteroventral margin of the first abdominal pleuron, the absence of a ventral spine on each of the third, fourth, and fifth abdominal pleura, and the acute, rather than rounded, posteroventral angle of the fifth pleuron in *C. rimolii*. The eyes are variable in shape in both species, but the anteromesial angle is usually more strongly produced into a subtruncate projection in *C. rimolii*. The stylocerite tends to be less produced anteriorly and to be blunter apically in *C. rimolii*, but it, too, is variable in both species. A final striking difference lies in the form of the endopod of the first pleopod of the female; in *C. pholidota*, it tapers to a simple blunt tip with terminal retinacular hooks, whereas in *C. rimolii* it is split distally into two divergent lobes, only the mesial one of which bears retinacular hooks.

Three other differences suggested by comparing the descriptions of the two species may not be significant. The dorsal lobe of the basal segment of the antennal peduncle is blunt or rounded in dorsal aspect in the specimens of *C. pholidota* examined, little more acute than it is in

C. rimolii; in lateral aspect, this lobe appears toothlike in both species. The third maxilliped may be a little longer and the spines on the distal segment less numerous in *C. rimolii*, but there is probably sufficient variation to minimize the importance of these differences when longer series of both species are compared. Only two of the available specimens of *C. pholidota* have both second pereopods; in each specimen, the right member of the pair is slightly or distinctly longer than the left, as in *C. rimolii*, but this character may prove to be of little importance in both species when additional material is examined.

Two of the characters mentioned above—the integumental scales and the spines on the abdominal pleura—were considered by Holthuis (1973:37) to be of generic significance, and a third—the form of the endopod of the first pleopod—might have been so treated if *C. rimolii* had been discovered first. Even the relatively few specimens thus far known of each species, however, suggests a variability that may be reflected in genetic instability at the generic level; there would therefore seem to be little justification for treating these two species as other than congeneric at the present time.

Literature Cited

Chace, Fenner A., Jr. 1943. Two new blind prawns from Cuba with a synopsis of the subterranean Caridea of America. Proc. New England Zool. Club 22:25–40, 3 pls.

———. 1954. Two new subterranean shrimps (Decapoda: Caridea) from Florida and the West Indies, with a revised key to the American species. Journ. Washington Acad. Sci. 44(10):318–324, 2 figs.

———, and Horton H. Hobbs, Jr. 1969. The freshwater and terrestrial decapod crustaceans of the West Indies with special reference to Dominica. U.S. Nat. Mus. Bull. 292:i–vi, 1–258 pp., 76 figs., 5 pls.

———, and Lipke B. Holthuis. 1948. Land and fresh water decapod Crustacea from the Leeward Group and northern South America. *In* Hummelinck, Studies on the fauna of Curaçao, Aruba, Bonaire and the Venezuelan islands 3:21–28.

Holthuis, Lipke B. 1952. The subfamily Palaemoninae. Part II *in* A general revision of the Palaemonidae (Crustacea Decapoda Natantia) of the Americas. Allan Hancock Found. Occ. Pap. 12:396 pp., 55 pls.

———. 1973. Caridean shrimps found in land-locked saltwater pools at four Indo-West Pacific localities (Sinai Peninsula, Funafuti Atoll, Maui and Hawaii Islands), with the description of one new genus and four new species. Zool. Verh. Leiden 128:1–48, 13 figs., 7 pls.

Rathbun, Mary J. 1919. Stalk-eyed crustaceans of the Dutch West Indies. *In* Boeke, Rapport betreffende een voorloopig onderzoek

naar den toestand van de Visscherij en de Industrie van Zeeproducten in de Kolonie Curaçao ingevolge het Ministerieel Besluit van 22 November 1904 2:317–348, 5 figs.

DE SAUSSURE, H. 1857. Diagnoses de quelques crustacés nouveaux de l'Amérique tropicale. Rev. Mag. Zool. (2)9:501–505.

SCHMITT, WALDO L. 1936. Macruran and anomuran Crustacea from Bonaire, Curaçao and Aruba. No. 16 *in* Zoologische Ergebnisse einer Reise nach Bonaire, Curaçao und Aruba im Jahre 1930. Zool. Jahrb., Syst. 67:363–378, 3 pls.

VANDEL, A. 1964. Biospéologie. La biologie des animaux cavernicoles. Paris xviii + 619 pp.

———. 1965. Biospeleology. The biology of cavernicolous animals. New York (Pergamon Press) xxiv + 524 pp., 80 figs.