A GIANT LATREILLOPSIS FROM HAWAII

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Species of two closely related genera of marine crabs, *Latreillia* Roux, and *Latreillopsis* Henderson, because of their elongated walking legs, bear superficial resemblance to spider crabs (Maiidae). A critical examination, however, shows their affinity to be with the tribe Homolidea of the primitive Brachyura.

In the genus *Latreillia* the carapace, which has a narrow and extended anterior border, is triangular in outline. The antennae are short, and in the female the fourth, fifth, and sixth abdominal segments are fused.

Representatives of the genus *Latreillopsis* have a subquadrangular carapace, the front of which is broader than in *Latreillia*. The antennae are long and the abdominal segments are distinct in both sexes. A line (*linea anomurica*) extends from the orbit along each lateral border to the posterior margin of the carapace. In *Latreillia* the *linea anomurica* is wanting.

In species of both genera the carapace is longer than broad, and is relatively deep with vertical side walls. The rostrum terminates in a sharp spine; on each side is a long supraocular spine. At least the first three pairs of walking legs are very long. The fourth pair is placed more dorsally than the others and is subchelate. Known species of the genera inhabit moderate depths ranging from about 30 to 800 fathoms.

Five species of the genus *Latreillia* are known. One, *Latreillia elegans* Roux, is recorded from the Mediterranean Sea and from widely separated regions of the Atlantic Ocean. Two species, *Latreillia phalangium* de Haan and *Latreillia valida* de Haan, were described from Japanese waters. The latter species has also been taken off Zebu, Philippine Islands. Another species, *Latreillia australiensis* Henderson, is known from the waters of New South Wales; *Latreillia pennifera* Alcock was taken in the East Indian region near the Kei Islands.

Although few specimens of any of the five species of *Latreillia* have been observed, all which have been recorded are of small size.

None reach 1 inch in length of carapace. No member of the genus has been reported from Hawaiian waters and none is known from the Central Pacific area.

Up to this time four species of *Latreillopsis* have been described. The type species, *Latreillopsis bispinosa* Henderson,[1] a female with a carapace 14 mm. long, was taken by the Challenger Expedition off Zebu, Philippine Islands, at a depth of 95 fathoms. In this form the hepatic areas stand out like little wings, and each is capped by a sharp spine as long as that of the rostrum. The posterior legs are longer than the chelipeds. Alcock records this species from off the Andaman Islands. One of his individuals was an ovigerous female 8 mm. long. The species has also been reported from the coasts of Japan. All specimens so far observed are of small size.

The Siboga Expedition obtained a species, *Latreillopsis multispinosa* Ihle,[2] from near the Kei Islands at a depth of 200 meters. The specimen, an ovigerous female, has a carapace 23 mm. long, without the rostrum. It is characterized by long sharp spines (39 in number) borne on the dorsal, lateral, and ventral surfaces. The supraocular spines are slightly longer than the carapace, and all of the walking legs are longer than the chelipeds.

In 1904 Grant [3] described a small form, a male 6.55 mm. long, from off Port Jackson, Australia, depth 250 to 300 fathoms, under the name *Latreillopsis petterdi.* McCullock [4] reported a male of the same species with a carapace 79 mm. long from a depth of 800 fathoms 39 miles due east of Sydney, Australia. This form has the carapace well covered with granules and spiniform tubercles. The hands of the chelipeds are swollen and covered with small round granules. The first three pairs of walking legs are much longer and the fourth pair slightly longer than the chelipeds.

Stebbing [5] described *Latreillopsis alcocki* from Algoa Bay, South Africa, taken at a depth of 40 fathoms. It is a female with a carapace 45 mm. long and bears numerous short heavy spines on the

[1] Henderson, J. R., Report on the Anomura collected by H. M. S. Challenger during the years 1873-1876: Challenger Reports, vol. 27, pp. 22, 23, pl. 2, fig. 3, 1888.

[2] Ihle, J. E. W., Die Decapoda Braychyura der Sigoga-Expedition I., Dromiacea, Monograph 39b, pp. 78-81, pl. 4, figs. 19-21, 1913.

[3] Grant, F. E., Crustacea dredged off Port Jackson in deep water: Linn. Soc. New South Wales, Proc., vol. 30, p. 317, pl. 10, fig. 2, 1904.

[4] McCullock, A. R., Fishes and crustaceans from 800 fathoms, the results of deep-sea investigation in Tasman Sea II., The expedition of the Woy Woy: Australian Mus. Records, vol. 6, pp. 353-355, pl. 65, 1905.

[5] Stebbing, T. R. R., South African Crustacea, pt. 10: South African Mus., Ann., vol. 17, p. 255, pl. 24, 1920.

dorsal and lateral surfaces. All of the walking legs are longer than the chelipeds.

On June 20, 1932, Ubaldo Costales, a fisherman, caught by hook and line at a depth of 30 fathoms, off Watertown, Oahu, a strange form of crab, which through the courtesy of the Territorial Board of Agriculture and Forestry was presented to Bernice P. Bishop Museum. It proved to be a new species of *Latreillopsis*.

Latreillopsis hawaiiensis, new species (pl. 1, fig. 1).

Type, male: length of carapace, without rostral spine, 125 mm.; greatest width, 110 mm.

Carapace subquadrangular in outline, broadest behind the middle; upper surface slightly convex in both directions and marked by undulations and irregular depressions which to some degree outline the areas. Greatest depth of carapace about one-half that of its length. Surface covered with conical tubercles which are small on the posterior half but strong and spiniform anteriorly and on the vertical sides. Short, stiff, yellow hairs are scattered over the carapace and densely clothe some of the appendages.

Rostral spine (fig. 1, *e*) 17 mm. long, depressed but curved upward distally, supraocular spines stout, 20 mm. long, directed forward and upward; the left one (fig. 1, *e*) bearing two teeth on its postero-lateral border, one below the middle and one above, both directed upward; the right supraocular spine bearing but one tooth and that above the middle.

Orbit broad, shallow, and incomplete, the lateral border bearing a strong spine which also stands just above the base of the antenna. Eye-stalks (fig. 1, *c*) stout, cylindrical, slightly thicker at the basal end. Eyes quadrangular, somewhat thicker basally; ocular portion black.

Protogastric area of carapace bearing several sharp spines, the largest of which is 10 mm. long, situated 18 mm. postero-lateral of the supraocular spine. The median gastric elevation is capped by a stout conical tubercle with 16 small spiniform tubercles lateral and posterior to it. Cardiac elevation nearly smooth, the tubercles of the posterior area of the carapace becoming small and blunt. A distinct *linea anomurica* may be traced from the orbit to the posterior margin of the carapace. The line is smooth anteriorly, but becomes groove-like posteriorly.

Lateral to the *linea anomurica* at the angle of the carapace the tubercles increase in size and become spine-like, the larger ones being anterior. Sharp spines cover the vertical side walls of the carapace, those situated dorsally and anteriorly being long and stout. Hepatic area slightly inflated, bearing two sharp spines above, the anterior one the larger, and several smaller ones below.

Length of antenna (fig. 1, *a*) two-thirds that of the carapace, its basal segment prolonged forward and downward as a blunt tooth-like lobe which rests against the epistome. Second segment of antenna stout, three-fifths the length of the third segment and bearing a small tooth about the middle of its lower border, and two stouter ones at the distal end; third segment slender, cylindrical, more than twice the length of the fourth segment; both third and fourth segments are smooth. Lateral to the base of the antenna is a sharp spine

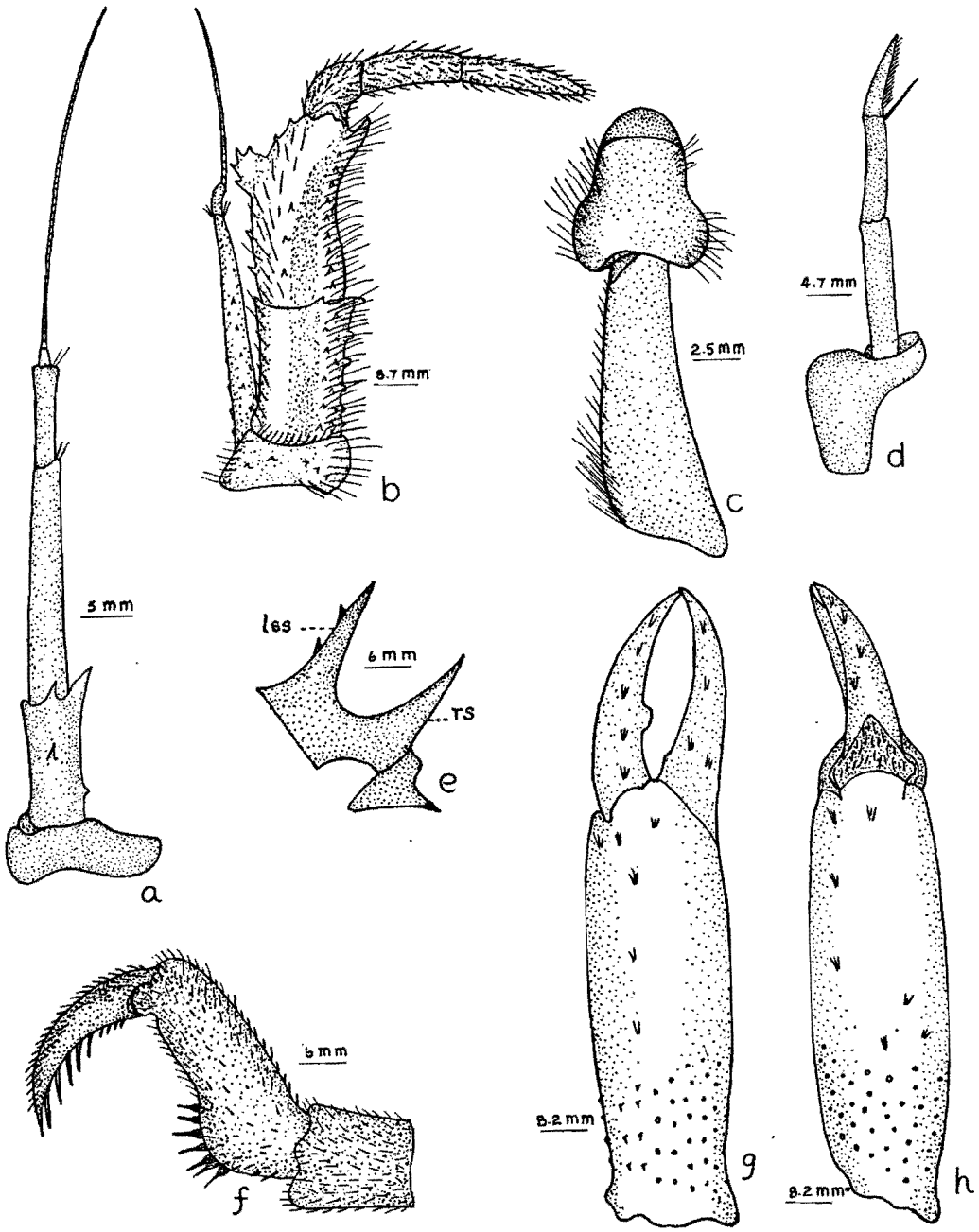


FIGURE 1. Structural features of *Latreillopsis hawaiiensis*, new species: *a*, antenna from right side; *b*, outer maxilliped, right side; *c*, eye-stalk and eye, right side; *d*, antennule from right side; *e*, rostral spine (*rs*) and left supraocular spine (*lss*); *f*, extremity of last walking leg, left side; *g*, *h*, outer surface and upper border, respectively, of hand of right cheliped.

directed downward; a stouter one stands above the base of the antenna on the lateral border of the orbit.

Antennule (fig. 1, *d*) about one-half the length of antenna; basal segment stout, irregular in shape; second and third segments subequal in length; terminal segment spine-like, two-thirds the length of the third segment; a small spine-like process articulates with the lower distal extremity of the third segment.

Outer maxilliped (fig. 1, *b*) long, foot-like; ischium slightly shorter and stouter than merus, a row of stout, blunt teeth on its median margin and smaller ones scattered over the outer surface. A shallow, longitudinal groove traverses the outer surface of the ischium and continues the entire length of the merus. Merus strongly curved, a longitudinal row of small spines near its median border and a shorter row about the middle of its exposed surface. The lateral margin bears a few spines and a toothed lobe. Carpus about one-half the length of the propodus, which in turn is slightly shorter than the dactylus. The stout peduncle of the exopodite of the outer maxilliped extends to the middle of the merus and is followed by a short segment and a flattened, jointed flagellum. Yellow bristle-like hairs form a long dense fringe on the median margin of the outer maxillipeds.

Chelipeds subcylindrical, length three and three-fifths times that of the carapace; merus covered with sharp tubercles, an irregular row along the postero-dorsal border being longer and more spiniform; carpus slightly more than one-half the length of the merus, increasing in diameter toward the distal extremity and covered by short conical tubercles. Length of hand (fig. 1, *g, h*), including fingers, slightly less than merus and carpus combined; palm subcylindrical, a little higher than wide. Basal one-third of palm bearing small tubercles which extend slightly farther forward on the outer than on the inner surface; remainder of palm smooth except for a few worn and scattered tufts of yellow bristles. Fingers slightly more than one-half the length of the palm, stout, curved inward, the cutting edges not in contact, except at the tips when fingers are closed. There is a blunt, rounded tooth on the cutting edge of the dactylus posterior to the middle, and a smaller sharper one at the base of the immovable finger. Yellow bristles clothe a V-shaped depression in the upper surface of the dactylus at its base, and tufts of bristles are scattered over the surfaces of both fingers.

First, second, and third walking legs subequal, the second slightly longer, the tip of its dactylus reaching to the middle of the palm of the cheliped. The upper, posterior, and ventral surfaces of the merus of each walking leg bear spiniform tubercles with a row of spines of unequal size along the dorsal border. A short curved spine with a thick base terminates the upper distal end of the merus. Front surface of merus unarmed except for a few small tubercles at the basal extremity. The cylindrical carpus and compressed propodus are free from tubercles, but densely coated with short bristles directed distally. These become stronger toward the lower distal border of the propodus, where they terminate in several horny spinelets. The compressed dactylus is covered with short bristles on both flattened surfaces and armed on the lower edge with a row of sharp spinelets increasing in length toward the horny tip.

The fourth walking leg is more slender and much shorter than either of the preceding ones. Its length is approximately one-half that of the cheliped.

The merus and carpus are similar to corresponding segments of the other legs except being smaller in size. The propodus (fig. 1, *f*), which is compressed, has an enlarged basal lobe bearing seven sharp, horny spines with thick, conical bases. The dactylus folds back against the propodus, its horny tip closing among the spines of the basal lobe.

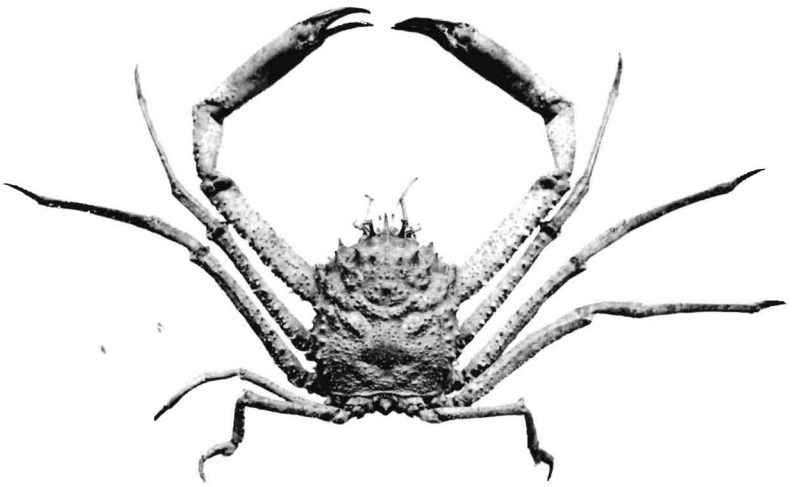
The abdomen of the type specimen completely covers the space between the basal segments of the legs. It is broader in the middle, the fifth segment being 62 mm. wide. The first segment, somewhat rectangular in outline, 20 mm. wide, bears a spine on its median, posterior margin. Segments 2 to 6 are marked by a median longitudinal ridge which bears tubercles, those of the second and third segments being sharp. Groups of small sharp tubercles are carried near the lateral borders of these segments. The seventh segment (telson) is much narrower than the sixth and longer than broad. Its lateral margins are elevated and the distal half of the surface is marked by a median, longitudinal groove.

Type locality, off Watertown, Oahu, depth 30 fathoms, Bernice P. Bishop Museum no. 3640.

The Hawaiian species more closely resembles *Latreillopsis petterdi* than any of other previously described members of the genus. It differs from the Australian species, however, in the greater length and smoother surface of the chelipeds and also in the relatively shorter length of the fourth pair of walking legs.

In the Hawaiian specimen the third walking leg on the left side, though perfect in form, is less than one-half the size of the corresponding leg of the opposite side. The undersized appendage is probably a result of regeneration. On the outer surface of the carpus of the right cheliped are two round punctures where the skeleton has been crushed through. The punctures are about the size of the blunt tooth of the dactylus of the cheliped and doubtless are the result of physical combat between individuals. There is a similar puncture in the outer surface of the carpus of the right cheliped and one through the basal portion of the dactylus of the same appendage. The vertical wall of the carapace on the right side shows an old puncture probably of a similar origin.

The discovery of this giant specimen, together with the record of the large Australian form, is suggestive that the type specimens of some of the described species of the genus may represent immature individuals.



A

B

PLATE 1. *Latreillopsis hawaiiensis*, new species: *A*, dorsal surface; *B*, ventral surface; × 1/6.