

| Collector             | Locality              | Date         | Depth<br>m      | Bottom<br>tem-<br>perature<br>°C | Nature | Material                |
|-----------------------|-----------------------|--------------|-----------------|----------------------------------|--------|-------------------------|
| »                     | »                     | 30.III.1946  | —               | —                                | —      | 1 ovig. ♀               |
| »                     | »                     | VIII.1946    | —               | —                                | —      | 2 ♂                     |
| F. PARAÍSO            | »                     | 24.V.1948    | —               | —                                | —      | 1 young ♂,<br>1 young ♀ |
| »                     | »                     | 22.V.1949    | —               | —                                | —      | 1 ♂, 1 juv.             |
| J. CADENAT            | »                     | 14.XII.1949  | —               | —                                | —      | 1 ♂                     |
| »                     | »                     | 22.VIII.1950 | Lobster trap    |                                  |        | 1 ♂, 2 ♀                |
| F. PARAÍSO            | »                     | 5.IX.1950    |                 | »                                |        | 2 ♂                     |
| M. KEITA              | »                     | 6.X.1950     |                 | »                                |        | 2 ♂, 3 ♀                |
| J. FOREST             | »                     | 25.II.1953   | 10-11           | —                                | —      | 1 ovig. ♀               |
| IFAN-Gorée            | »                     | 21.VII.1953  | Piles of bridge |                                  |        | 1 ♀                     |
| I. MARCHE-<br>MARCHAD | »                     | —            | —               | —                                | —      | 1 ♀                     |
| IFAN-Gorée            | Off Gorée, Senegal    | 9.IV.1953    | 10              | —                                | —      | 1 ovig. ♀               |
| J. CADENAT            | NE. Gorée, Senegal    | 19.VIII.1950 | 4-5             | —                                | —      | 2 ♂, 2 ♀                |
| IFAN-Gorée            | Off Thiaroye, Senegal | 22.VII.1953  | 7               | —                                | —      | 73 ♂, 69 ♀, 5 juv.      |
| « MERCATOR »          | Off Rufisque, Senegal | 14.XI.1935   | —               | —                                | —      | 1 ♂, 1 ♀                |
| G. BERRIT             | Off Mbour, Senegal    | X.1950       | On buoy         |                                  |        | 1 ♂                     |
| CHAPES                | Senegal               | 1895 ?       | —               | —                                | —      | 3 ♂, 1 ♀                |

**Types.** — The holotype and a few paratypes are deposited in the Muséum National d'Histoire Naturelle at Paris. Most of the paratypes are in the Institut Français d'Afrique Noire at Dakar. Those collected by the « Mercator » are in the Institut royal des Sciences naturelles de Belgique at Brussels. A few are in the U.S. National Museum at Washington.

**Diagnosis.** — Carapace longer than wide, more or less covered with tufts of short, stout setae, and with several groups of longer setae arranged symmetrically. A few short, blunt spines or tubercles on margins of hepatic and anterior branchial regions. Frontal lobes covered with rather long, stout, distally curved setae, except for a bare median area extending nearly to tip of median lobe. Median lobe rounded triangular; lateral lobes bent downward and inward, nearly straight along median margin, convex laterally. Lateral wall of carapace entire, armed with a few denticles on dorsal margin beneath antennal peduncle, and covered with long, fine, plumose hairs which arise from long, prominent longitudinal rugae. Basal segment of antenna extending forward beyond cornea as a distally sharp scale.

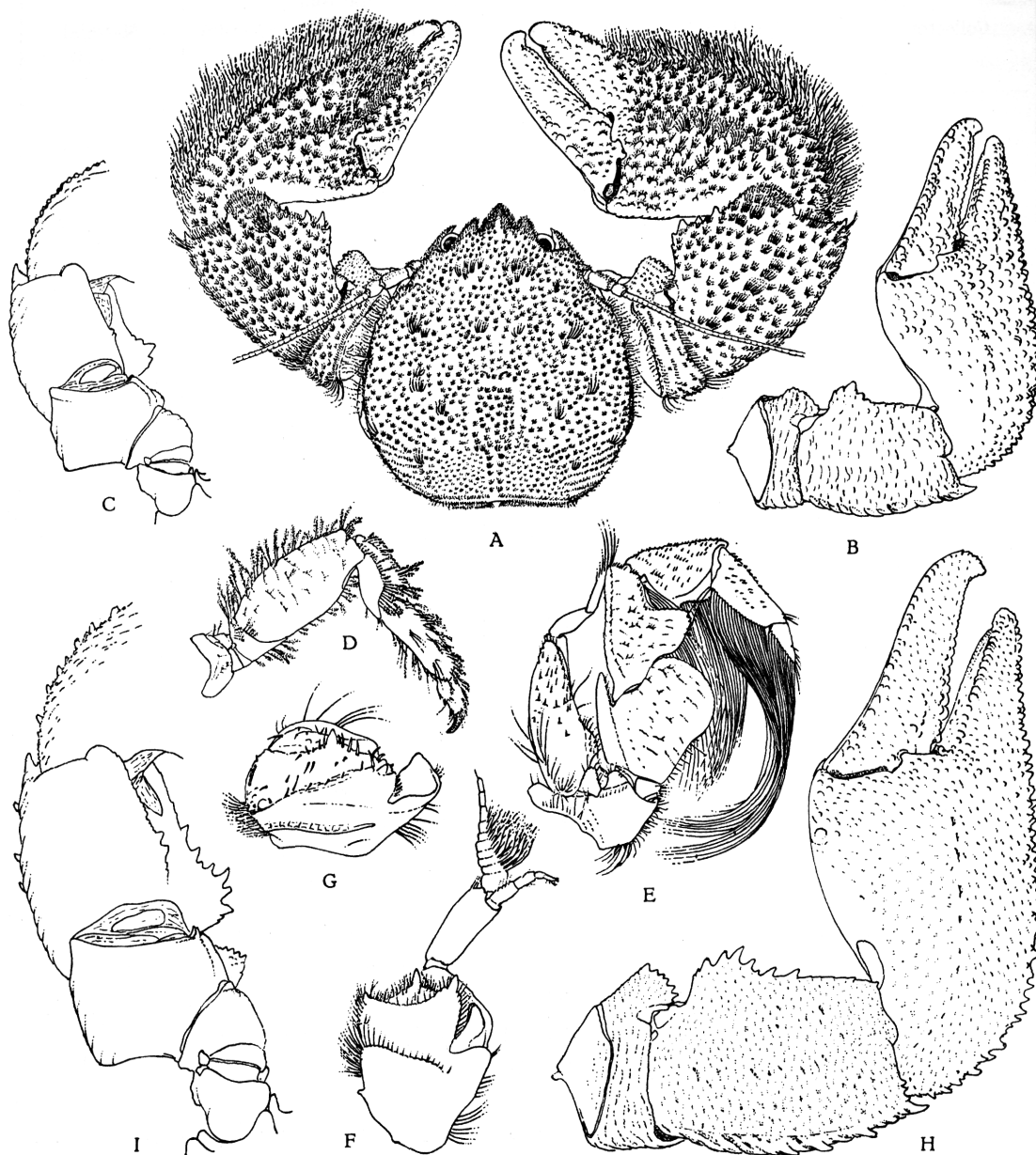


FIG. 7. — *Porcellana platycheles africanus* subsp. nov.

and *Porcellana platycheles platycheles* (PENNANT, 1777).

A, carapace and chelipeds of male paratype of *P. p. africanus* from Bahia de Caballo, Rio de Oro. — B, major cheliped (denuded) of male holotype from Gorée, Senegal. C, ventral surface of same. — D, right first walking leg of holotype. — E, right third maxilliped of same. — F, right antennule of same in ventral view. — G, same in anterior view. — H, major cheliped (denuded) of male specimen of *P. p. platycheles* from the Channel Islands. — I, ventral surface of same.

Scale: A,  $\times 4.9$ ; B,  $\times 6$ ; C, D,  $\times 6.3$ ; E,  $\times 13.8$ ; F,  $\times 21.6$ ; G,  $\times 30$ ; H, I,  $\times 6.1$ .

Chelipeds somewhat unequal and dissimilar. Merus rugose dorsally, with rows of very short spines arising from the rugae; inner lobe denticulate; lower distal angle unarmed or at most with a pair of acute tubercles. Carpus rugose and clothed with clusters of stout setae, those on median and inner distal areas longest and most prominent; inner margin with dentate proximal lobe and a few teeth or acute tubercles distally; outer margin strongly rugose but unarmed except for a stout distal spine. Hand more or less covered dorsally with clusters of setae arising from tubercles of various sizes, the setae in a median band running from carpal articulation to gape of fingers being longest and most prominent; outer margin with dense growth of plumose hairs arising from several marginal rows of bluntly angular tubercles.

Eyestalks largely hidden from dorsal view, only the cornea being plainly visible. Outer maxillipeds sparsely covered with very short setae. Walking legs robust; dactyls armed with two or three movable spinules on ventral margin.

The carapace of the male holotype from Gorée measures 6.1 mm. long and 5.5 mm. wide. The largest male paratype has the carapace 11.1 mm. long and 10.2 mm. wide, and the smallest male yields comparable measurements of 2.3 and 2.1 mm. The carapaces of females range in size from 2.7 mm. long and 2.4 mm. wide to 9.9 mm. long and 9.5 mm. wide. Ovigerous specimens vary in carapace length and width from 4.8 and 4.5 mm. to 8.6 and 8.6 mm. In males, the proportions of the carapace remain fairly constant during growth; they range from an average length-width ratio of about 1.09 in the smallest males to about 1.08 in the largest. In females, however, the carapace appears to become wider with age. The average length-width ratio of non-ovigerous females ranges from about 1.10 in the smallest to about 1.02 in the largest. Ovigerous specimens seem to have still wider carapaces, the ratio in those specimens varying from about 1.02 in the smallest to 0.99 in the largest.

Remarks. — This proposed subspecies differs from the limited number of available specimens of the typical form from Dunbar, Scotland; the Channel Islands; Naples, Italy; and the Canary Islands in its smaller size, more noticeably tuberculate upper surface of the chelae, the absence of one to three strong spines on the outer edge of the carpus of the major cheliped in addition to the distal spine, and the reduction in adults of the spine or spines at the lower distal angle of the merus of the major cheliped to at most one or two tubercles. The West African subspecies is generally less spinose and more tuberculate and rugose beneath the hairy covering than is the typical form. The spines on the antero-lateral margin of the carapace are often reduced to tubercles or short, blunt spines; the meral lobe of the major cheliped is usually less spinose; and the rows of spines or teeth along the outer margin of the chela are usually less sharp or reduced to tubercles. The median lobe on the merus of the outer mixillipeds, as well as the peduncle of the exopod of that appendage, are frequently wider

than in the typical form. Most of these characters are somewhat variable, but the presence or absence of spines on the outer margin of the carpus of the major cheliped is constant in the material examined and seems to afford a reliable means of distinguishing the northern and southern subspecies.

The carapaces of very young specimens resemble those of *P. longicornis*, but the two species can always be separated by the form and relative hairiness of the chelipeds and legs.

**Ecology.** — Like the typical form, *P. p. africana* seems to be fairly common in the intertidal zone. It has also been taken in depths of at least 22 meters. Ovigerous specimens were taken in every month for which adequate samples are available: February, March, April, May, June, July, and November.

**Geographical distribution.** — This subspecies seems to have a comparatively limited range, from Rio de Oro to Senegal. It may or may not be significant that no specimens were found in the collections examined from French Guinea and the Gold Coast.

***Porcellana caparti* sp. nov.**

(Fig. 8, A-E.)

**Source and material.**

| Collector                             | Locality  | Date        | Depth<br>m | Bottom<br>tem-<br>perature<br>°C | Nature                 | Material                                  |
|---------------------------------------|---|-------------|------------|----------------------------------|------------------------|---|
| Expéd.<br>Océanogr. Belge<br>A.S. 23  | 4°55'S-11°35'E<br>(16 M. WSW.<br>Pointe-Noire,<br>Middle Congo) | 3.IX.1948   | 115        | 15                               | brown<br>mud,<br>rocks | 3 ♂, 2 ♀<br>(1 ♂ is holotype-<br>figured) |
| Expéd.<br>Océanogr. Belge<br>A.S. 122 | 8°30'S-13°E<br>(20 M. W.<br>Pointa do Dandé,<br>Angola)         | 6-7.II.1949 | 150        | —                                | sand,<br>mud,<br>rocks | 1 ♀                                       |

**Types.** — The holotype and all but one of the paratypes have been deposited in the Institut royal des Sciences naturelles de Belgique at Brussels. One of the male paratypes has been retained for the collections of the U.S. National Museum at Washington.

**Diagnosis.** — Carapace slightly longer than wide, sparsely covered with plumose hairs of varying lengths. Surface with a few transverse rugae, the pair across the protogastric region being the most prominent. Cervical groove well marked. Two spines near middle of upper orbital margin; outer orbital angle sharp and outstanding; a prominent marginal spine above base of antenna;



four or five distinct spines on lateral margin of branchial region, with a series of crowded denticles anterior to these curving inward onto carapace; and several spines on dorsal surface mediad to denticulate marginal ridge. Frontal lobes indistinctly separated so that front appears broadly triangular in dorsal view. Lateral lobes short, broad, oblique, and armed with four or five large, subequal, curved spines. Median lobe narrower, depressed, deeply furrowed medially, and extending beyond lateral lobes; it is armed with short spines and denticles. Lateral wall of carapace entire and provided with a few sinuous longitudinal rugae, the dorsal one forming a short, prominent, dentate crest below antenna, and the next below it a long, denticulate keel partially visible in dorsal view. Basal segment of antenna extending forward as far as middle of cornea as a broad, distally spinose scale.

Chelipeds more or less similar but unequal. Merus armed with a few dorsal spines, a spinose internal lobe, and three or four sharp spines at lower, inner, distal margin. Carpus very rugose and spinose, the prominences arranged roughly in longitudinal rows, the two inner rows being separated by a comparatively smooth longitudinal interspace from the outer four or five rows. Inner margin armed with about six curved spines or teeth between which are groups of denticles. Outer margin with about five curved spines. A very few plumose hairs near outer margin. Hand bare except for a few plumose hairs near proximal end of outer margin, and grossly tuberculate, the tubercles on inner half more or less flattened and compound, those on outer half simple and often subacute. Outer margin armed with acute tubercles or short spines.

Eyestalks with a prominent inner distal spine extending well beyond cornea. Four distal segments of outer maxillipeds elongate and bearing very long setae. Dactyls of walking legs elongate and armed ventrally with five or six movable spines.

The carapace of the male holotype measures 4.4 mm. long and 4.1 mm wide. A slightly larger male has the carapace 4.4 mm. long and 4.2 mm. wide. The third male is 3.7 mm. long and 3.5 mm. wide. The largest female is 4.1 mm. long and 3.6 mm. wide and the smallest, 3.5 mm. long and wide.

Remarks. — The largest male paratype differs from the holotype in having the major cheliped on the left side, the carpus of the cheliped less sharply spinose, and in having only two dorsal spines on each epibranchial region. The smallest female lacks the left cheliped, but the right one is armed with very sharp spines. The female from station 122 differs from the other five specimens in having five rather than four spines on the lateral frontal lobes.

The spinose and obscurely lobed front in combination with the distal spines on the eyestalks and the form and ornamentation of the chelipeds seem to separate this species from those known previously. It superficially resembles *Porcellana spinuligera* DANA from the Philippine Islands, but that species apparently has only three rather than four or five spines on each lateral lobe of the front; the appendages of *P. spinuligera* are thus far unknown.

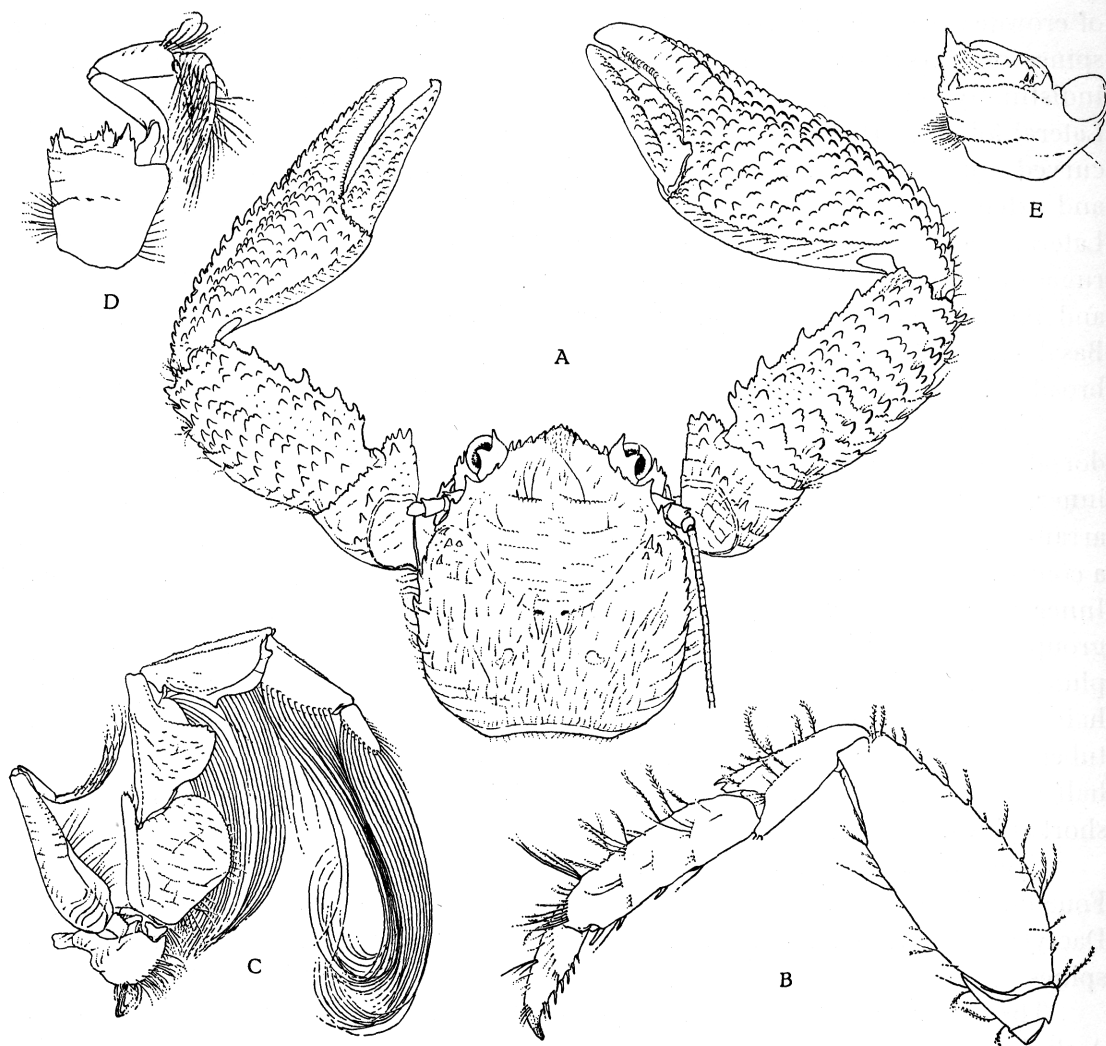


FIG. 8 — *Porcellana caparti* sp. nov.

A, carapace and chelipeds. — B, left first walking leg. — C, right third maxilliped.  
 D, right antennule in ventral view. — E, same in anterior view.  
 Male holotype; A.S. 23; scale : A,  $\times 9$ ; B, C,  $\times 13,8$ ; D,  $\times 21,6$ ; E,  $\times 28,8$ .

It is a pleasure to name this species for Dr. ANDRÉ CAPART, leader of the Expédition Océanographique Belge, who has contributed greatly to our knowledge of the marine fauna of West Africa.

Ecology. — *P. caparti* was found in depths of 115 and 150 meters on bottoms of brown mud and rocks and of sand, mud, and rocks.

Geographical distribution. — Off Middle Congo and northern Angola.

*Porcellana elegans* sp. nov.

(Fig. 9, A-E.)

## Source and material.

| Collector             | Locality  | Date        | Depth<br>m | Bottom<br>tem-<br>perature<br>°C | Nature | Material                  |
|-----------------------|---|-------------|------------|----------------------------------|--------|---------------------------|
| « TALISMAN<br>St. 105 | Between Branco<br>and Razo,<br>Cape Verde Islands | 27.VII.1883 | 85         | —                                | —      | 1 ♂ holotype<br>(figured) |

Type. — The unique specimen is in the collections of the Muséum National d'Histoire Naturelle at Paris.

Diagnosis. — Carapace slightly longer than wide. Surface bare, except for a very few symmetrically placed setae, and everywhere rugose, markedly so on branchial regions. Cervical groove broad and deep. Protogastric elevations distinct; posterior to them on gastric area, and forming a circle with them, are two pairs of smaller prominences, each surmounted by a seta. A pair of high, rugose, lateral prominences immediately behind cervical groove, and a lower pair near middle of branchial regions. Orbital margin nearly entire, outer orbital angle subrectangular. Lateral margin projecting, upturned, and bluntly denticulate; a suture at end of cervical groove separates hepatic and branchial margins; anterior half of branchial margin bimarginate. Frontal lobes indistinctly separated so that front appears truncate on either side of depressed median lobe; margin denticulate, obscurely bimarginate medially. Lateral wall of carapace entire and provided with a few sinuous, longitudinal ridges, the dorsal one forming a short minutely denticulate crest below antennal peduncle, and the next one below it extending for nearly entire length of plate as a high, sharp carina. Basal segment of antenna reaching to middle of cornea as an acute or subtruncate scale.

Chelipeds nearly similar and only slightly unequal. Merus rugose, with a convex, denticulate inner lobe, with three or four short spines or acute tubercles on upper distal margin, and with three or four blunt spines on lower, inner, distal margin. Carpus strongly rugose but unarmed along outer margin and in dorsal midline, with a few scattered tubercles near inner margin. Inner margin with low dentate lobe at proximal end, followed by series of close-set denticles, two or three of which are enlarged. Chelae flared outward and upward in distal half and bare, except for a few long, straight, scattered hairs, mostly near outer margin; surface finely rugose or tuberculate, the tubercles becoming larger and more acute along outer margin and forming oblique rugae along margin of movable finger. Fixed finger of major chela with blunt tooth

proximal to middle of cutting edge, and movable finger with two similar teeth, one basal and one near middle of length; cutting edges of fingers of minor chela minutely and regularly denticulate.

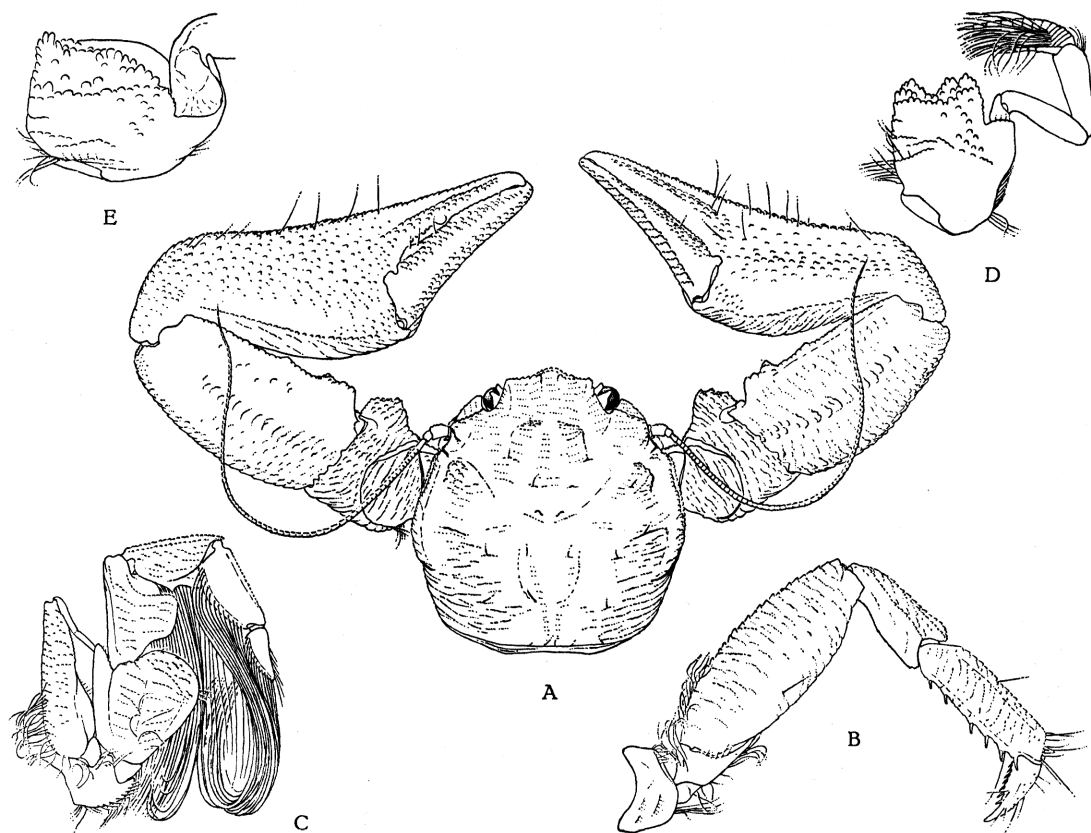


FIG. 9. — *Porcellana elegans* sp. nov.

A, carapace and chelipeds. — B, right first walking leg. — C, right third maxilliped.

D, right antennule in ventral view. — E, same in anterior view.

Male holotype; « Talisman » Sta. 105; scale: A,  $\times 4.3$ ; B,  $\times 6.6$ ; C, D,  $\times 13.2$ ; E,  $\times 21$ .

Eyestalks with two short distal spines or acute tubercles, one dorsal, one anterior or median. Outer maxillipeds large, visible in dorsal view when flexed, and provided with unusually long setae. Dactyls of first pair of walking legs with seven ventral movable spines behind terminal one; dactyls of second and third pairs with six such spines.

The carapace of the unique specimen is 8.7 mm. long and 8.5 mm. wide.

Remarks. — The unarmed carapace and obscurely lobed front, together with the shape of the chelipeds, separate this striking species from all other members of the genus. It seems to have no close relatives among the described species of *Porcellana*.