

It appears to be nearly allied to *Hapalocarcinus marsupialis* Stimpson,* which forms curious "houses" among the branches of *Pocillopora caespitosa*. The branches of the coral, in the latter case, grow up around the crab and enclose it, leaving several small apertures for the entrance of water and food, but from which the crab cannot emerge.

In the latter, however, the front of the carapace is flat, not bent downward, and it does not serve for an operculum, which is not needed in its case.

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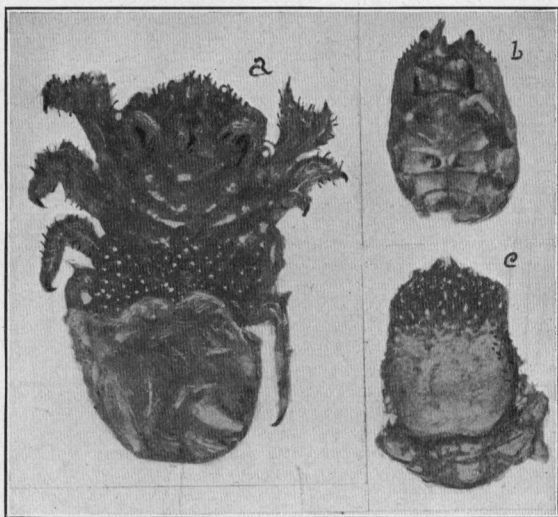


Figure 49.—*Trogllocarcinus corallicola*; a, dorsal view, \times about 4 times, of a ♀ removed from its den in a coral (*Mussa*), from Dominica I.; b, a smaller ♀ specimen, \times about 4 times, ventral view; the abdomen, legs, outer maxillipeds, and antennules are removed, except one basal antennular segment; c, the same, another ♀ example; dorsal view, \times 4. Phot. A. H. V.

It is, perhaps, more closely allied to *Cryptochirus coralliodytes* Heller,† from the Red Sea and Maldives, which lives in the same manner, in dens in *Leptoria* (= *Mæandra*).

The latter, however, has a differently formed carapace, smooth, convex in front, without marginal spines; orbits simple, without spines; and very different maxillipeds.

* Proc. Boston Soc. Nat. Hist., vol. vi, p. 412, 1859. Calman, Trans. Linn. Soc. London, ser. 2, vol. viii, p. 43, pl. iii, figs. 29-40, 1900. M. J. Rathbun, Crust. Hawaiian Is., U. S. Fish Com. Bulletin, for 1903, part iii, p. 892, 1906.

† Heller, Cam., Sitzungsb. Math.-Naturwiss. Classe. Akad. Wissenschaften, Wien, xliii, i, 1861, p. 366, pl. iv, figs. 33-39.

DROMIACEA de Haan, 1839, *Dromides*.

Dromiaceae Boas, 1880. A. M.-Edw. and Bouvier, 1899 and 1900.

Dromiaceae or *Dromides* Alcock, 1901.

Brachyura anomala Stebbing, 1900, 1903.

Anomura (pars) Dana and many other authors.

Dromidea Ortmann, 1896.

The relations of this rather anomalous group are recognized by nearly all modern writers to be rather with the *Brachyura* than with the remainder of the old group *Anomura*. It includes, according to Alcock and Stebbing, two superfamily groups: *Dromiidea* (restricted) and *Homolidea*.

Family **DROMIDÆ**. *Sponge-carrying Crabs*.

This small and curious family is represented in the Bermudas by the two more common West Indian species, but both have been discovered only recently, in rather deep water. Both were dredged on the "Challenger" and "Argus" Banks. Both species carry a living sponge over the back, for concealment and protection. They use various species of sponges for this purpose, holding the sponge in position by means of the two posterior pairs of legs, which bend upward for this purpose.

Dromia erythropus (Geo. Edw.) Rathbun.

Cancer erythropus Geo. Edwards, in Catesby, Nat. Hist. Carolina, etc., ed. of 1771, ii, p. 37, pl. xxxvii.

Dromia lator H. M.-Edw., Hist. nat. Crust., ii, p. 174, 1837.

Dromia erythropus M. J. Rathbun, Annals Inst. Jamaica, i, p. 39, 1897; Results of Branner-Agassiz Exped. to Brazil, Proc. Wash. Acad. Science, ii, p. 143, 1900. Benedict, *Anomura* Porto Rico, p. 172, 1901 (deser.).

FIGURE 50.

In life this species is densely covered with dark brown or blackish stiff hairs, only the tips of the dactylus being naked; these are light red. Beneath the hairs the surface is whitish. It grows to considerable size; the carapace is often 70 to 75^{mm} broad. It always covers its back with a concave fragment of some living sponge, but numerous species of sponges are used for this purpose. Very often it is some light silicious sponge of the family *Chalinidae*, as *Spinosella sororia*; in other cases it is a tough compact species belonging to the *Suberitidae*; in several cases it was a keratose sponge of the genus *Hircina*; one from Dominica carried a large concave mass of a silicious sponge of the genus *Agelus*, several times its own bulk.

The only Bermuda specimen known to me was obtained by the party from the Field Mus. Nat. Hist. on the Argus Bank, 30–40 fathoms, Oct. 13, 1905. It was taken from the stomach of a Hamlet Grouper, and was, consequently, badly damaged. It was a large specimen.

Its range is from Florida to Pernambuco, Brazil (Rathbun).

A number of large specimens, in the Yale Mus., were collected at Dominica, 1906, by A. H. Verrill. They were caught in fish-traps set in 50–150 fathoms.

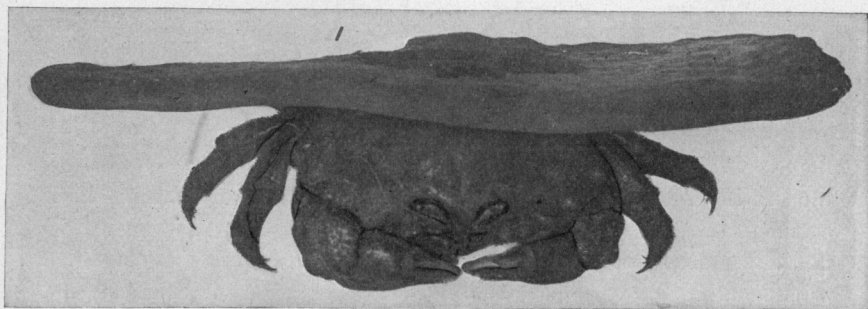


Figure 50.—*Dromia erythropus* from Dominica, with a flat Chalinid sponge held over its back, about $\frac{1}{2}$ nat. size. Phot. A. H. V.

***Dromidia antillensis* Stimpson.**

Dromidia antillensis Stimpson, Proc. Acad. Nat. Sci., Philad., for 1858, p. 225; Annals Lyc. Nat. Hist. N. York, vii, p. 71, 1859. Smith, these Trans., ii, p. 17, 1869 (meas.). Benedict, Anom. Coll. Porto Rico, p. 132, 1901.

FIGURE 51. PLATE XXVIII, FIGURES 2, 3.

The carapace, which is about as long as broad, is convex in both directions, high in the middle, and pretty evenly rounded, covered with fine, close, yellowish hairs, beneath which it is white, nearly smooth, minutely punctate. Similar hairs cover the chelipeds; those of the other legs are longer. The narrow front is abruptly bent downward at tip; it bears three small obtuse teeth standing equally spaced, forming a triangle, in a front view; the inner orbital tooth is small and acute; the superior orbital is nearly as large and acute; the inferior orbital is similar to the frontal spines in size and form. There are four small, acute lateral spines, of which the first two are stouter, and divergent, the first a little larger; the 3d and 4th are strongly hooked forward at the tip and very acute. The carpus of the chelipeds has three distal, subspiniform angles, the

upper one smaller, obtuse; the two outer ones prominent, subacute. The manus is carinate above, with 4 or 5 small granule-like denticles on the edge; the thumb and dactylus are strongly excavated at tip and bear 5 or 6 serrate teeth, on the outer edge, the distal ones largest. The last two legs are sharply subchelate at tips, the last most perfectly so.

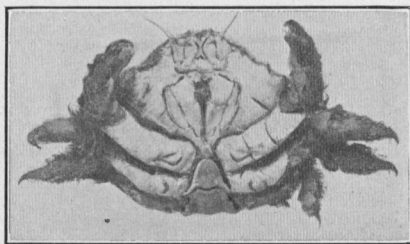


Figure 51.—*Dromidia antillensis*, under side, \times about $1\frac{1}{2}$. Phot. A. H. V.

Color, in alcohol, white under the yellowish pubescence; chelæ with light red or flesh-colored, partly naked fingers, white at the tips.

It always protects itself by means of a living sponge (sometimes a compound ascidian) held over its back by the posterior two pairs of legs. The carapace is about as long as broad.

Measurements of Carapace for variations of Ratios.

No.	Sex	Carapace		Ratios	Locality
		length	breadth		
831a	♂	15.5	15.6	1:1.01	Brazil
831b, fig.	♂	18.2	18.5	1:1.02	"
831c	♀	16.0	16.0	1:1.00	"
831d	♀	18.0	18.2	1:1.01	"
703, fig.	♂	12.5	13.5	1:1.08	Bermuda

The first four series of measurements are by Prof. S. I. Smith.

In No. 831b, the chelæ are relatively much larger than in the Bermuda example, probably owing to its maturity; length of chela, 12.5^{mm}; height, 6.5^{mm}; the manus has a row of four conspicuous denticles on upper edge, proximally; the edges of the digits are strongly and coarsely toothed. The carpus has three conspicuous distal tuberculiform teeth. The lateral teeth of the carapace are conspicuous, the two anterior ones the larger and less acute; on the left side the 2d tooth is double. The preorbital and suborbital teeth are about as large as the lateral.

A single specimen was dredged by the party from the Bermuda Biological Station on the Challenger Bank in 1903.

It agrees pretty closely with Stimpson's original description, except as to the form and relative size of the lateral spines. But it does not agree so well with Mr. Benedict's later description, in several characters. The differences may be due to age, or there may be distinct local races or varieties. More specimens are needed to determine this.

The range of the species is from Mexico and west coast of Florida to the Abrolhos, Brazil. Florida and St. Thomas (Stimpson). Santa Cruz (Yale Mus., 1018, coll. Dr. Bishop); Abrolhos Is., Brazil, No. 831 (Smith); Porto Rico (Rathbun); Bahamas (Rankin); east coast of Mexico (Yale Mus.).

HETEROMACRURA, nom. nov. = **ANOMURA** (in part).

Anomura or *Anomoura* M.-Edw. (*pars*); Dana (*pars*); Henderson (*pars*); and many other authors.

Macrura anomala Alcock, 1901; Stebbing, 1903.

This group seems to lack a suitable name. At least there is great diversity in the use of former names.

Anomura is still used, as it has been for the past fifty years or more, in very diverse senses. Therefore it will save confusion to abandon it, unless as a loosely applied general term.

"Anomala" (de Haan), being an adjective term, has been used in many diverse senses, not only in Crustacea, but in other groups also. Hence I now propose to give this group the above name.

It includes the superfamily groups: *Galatheidea*, *Hippidea*, *Paguridea*.

GALATHEIDEA Henderson.

Porcellanoidea + *Galatheoidea* Stimpson, 1860.

This group as defined by Henderson, Ortmann, Alcock, and other recent writers, includes the families *Porcellanidae*, *Galatheidae*, and some others.

Family **PORCELLANIDÆ**.

It is remarkable that only one species of this large family has hitherto been found at the Bermudas, for numerous other species occur on the reefs of the West Indies and Florida.

Petrolisthes armatus (Gibbes) Stimp.

Porcellana armata Gibbes, op. cit., p. 190, 1850.

Petrolisthes armatus Stimpson, Proc. Acad. Nat. Sci., Philad., 1858, p. 227; Ann. Lyc. Nat. Hist. N. York, vii, p. 73, 1860. Kingsley, Proc. Acad. Nat. Sci., Philad., 1879, p. 406. Ortman, Zool. Jahrb., x, p. 280, 1897. Benedict, Anomura Porto Rico, p. 133, 1901.

PLATE XXVII, FIGURE 3. PLATE XXVIII, FIGURE 4.

Color variable; carapace, in life, often yellowish green, with minute white spots, legs similar, except on the last two joints, which have white transverse bands; under surfaces pale yellow or white, except the large chelæ, which are pale blue (C. S. V.).

Some specimens are dark gray above, finely spotted with white and light gray. Others are red or reddish brown, thickly specked and spotted with white or yellowish white.

The colors are imitative of the sand, gravel, stones, algæ, etc.

The median tooth of the front is obtuse. There is a very distinct, transverse, granulated ridge across the front. The merus of the chelipeds usually has three (rarely 4) sharp teeth on the inner margin; the outer margin is finely serrulate.

The chelæ are large, flat, angular; the manus has a distinct, granulated, raised line on the outside.

One of our larger male specimens has the carapace 11.5^{mm} long; 9.5^{mm} broad; between orbits, 5^{mm}; merus of chelipeds, 10^{mm} long; larger chela, 18^{mm} long; 7.3^{mm} high. The larger chela is stouter than the other, with shorter and stouter digits, which are laterally incurved and slightly crossed at the tips.

Variety **pallidus**, nov.

Many Bermuda specimens differ from the ordinary form in having the carapace nearly smooth, with scarcely any traces of the transverse rugæ and granules, so conspicuous in the typical form, and in lacking the coarse granules on the outer surface of the chelæ. The color is usually white or pale yellow. The chelæ are the same in form and carinæ, and the merus of the chelipeds has three sharp, spaced teeth on the front edge, as in *armatus*. In most other respects there are no differences between them. Whether it has the same habits was not noted. Length of carapace, 8–10^{mm}.

This species is very common at Bermuda. It lives under stones and in the interstices and crevices of dead corals, etc. It was in the early collections of J. M. Jones, and has been taken by nearly all