

## Coral-inhabiting Crabs of the Family Hapalocarcinidae from Japan

### IV. Genus *Neotroglocarcinus*

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In the Hapalocarcinidae the pleopods of female are surprisingly retrogressive. Of the remaining three pairs the third is always uniramous, but as for the first and second pairs there has been recognized three types of combination, with (1) the uniramous first and second, (2) the biramous first and the uniramous second, and (3) the biramous first and second. Most of the species of the Hapalocarcinidae are referred to the second type, but the species of *Cryptochirus* HELLER characterized by the first. FIZE & SERÈNE (1957) erected a new genus *Neotroglocarcinus* for the third type represented by *Troglocarcinus monodi* FIZE et SERÈNE, 1955, *T. dawydoffi* FIZE et SERÈNE, 1955 and *T. balssi* MONOD, 1956. *Neotroglocarcinus* is, as mentioned above, characterized fundamentally by having the biramous first and second pleopods of female, and additionally by having the depressed and sub-oval carapace and the characteristic first ambulatory leg with the stout merus protuded antero-distally.

*N. monodi* and *N. dawydoffi* are the inhabitants of the Indo-West Pacific and *N. balssi* is described from Southeast Atlantic, but they are known only by some type-specimens, without subsequent records. The specimens obtained from the galls on *Turbinaria* sp. from the Ryukyu Islands were without doubt identified with the type-species of the genus in question, *N. monodi*, which has hitherto been known only from Viet Nam and Singapore. All the specimens are preserved in the National Science Museum, Tokyo (NSMT).

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Genus *Neotroglocarcinus* FIZE et SERÈNE, 1957*Neotroglocarcinus monodi* (FIZE et SERÈNE, 1955)

[New Japanese name: Keashi-sangoyadorigani]

(Figs. 1-2)

*Troglocarcinus monodi* FIZE & SERÈNE, 1955, p. 375, fig. 1(B).*Neotroglocarcinus monodi*: FIZE & SERÈNE, 1957, p. 137, figs. 36-39(A), pls. 9(1-3, 9), 11(F), 17(F, G).

*Description.* Female. Carapace sub-oval, depressed and longer than broad. Dorsum almost flat, with faint indication of regions, and entirely and uniformly covered with sparse short setae which are longer near lateral borders; anterior half covered with granules which become smaller at anterior part; gastric region separated from the hepatic by a shallow depression which is running obliquely toward lateral border of carapace and also separating hepatic region from the branchial; gastric and cardio-intestinal regions indistinctly separated from each other, and shallowly from branchial region; hepatic margin of carapace weakly convex and branchial margin convex; branchial margin about twice as long as the hepatic, greatest breadth of carapace being at median part of branchial region; posterior border of carapace with a fringe of long thick setae.

Front concave and finely spinulated, being about half of distance between ex-

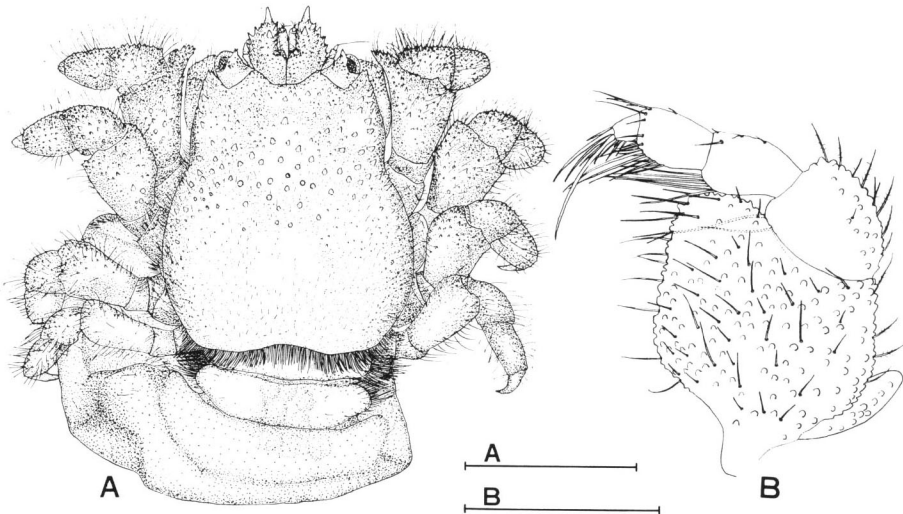
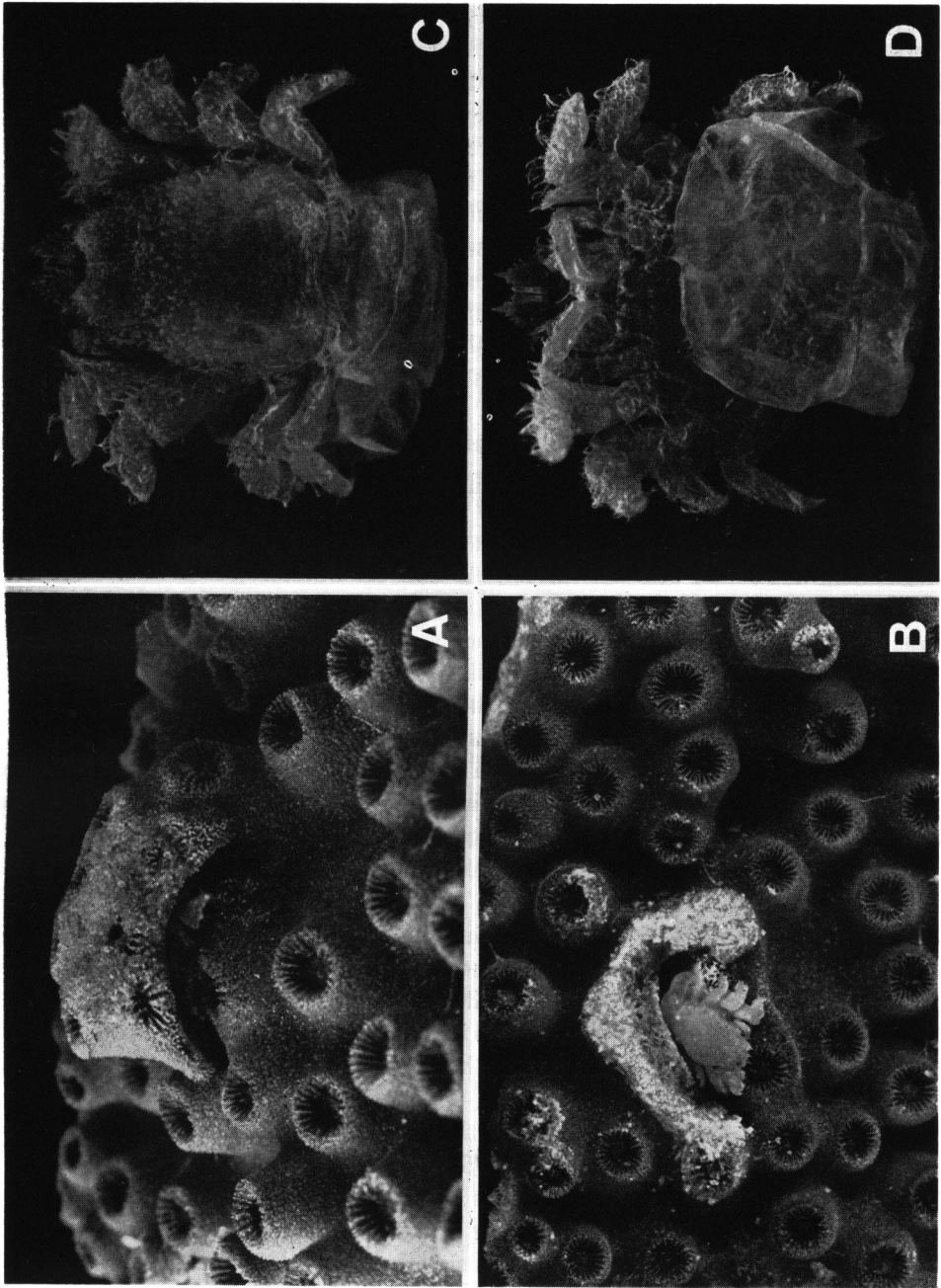


Fig. 1. *Neotroglocarcinus monodi* FIZE et SERÈNE, ovig. ♀ (NSMT-Cr. 6421-1). A, entire animal; B, left third maxilliped in abdominal view. Scale for A=2 mm, for B=0.5 mm.

Fig. 2. *Neotroglocarcinus monodi* FIZE et SERÈNE. A, a gall on *Turbinaria* sp., with female crab (NSMT-Cr. 6421-2) staying near its entrance; B, the female shown by partial removal of the dome. C, D, ovig. ♀ (NSMT-Cr. 6421-1) in dorsal and ventral view. Length of carapace, 3.4 mm.



ternal orbital angles. Internal orbital angle rather blunt, with some fine spinules; supraorbital border nearly V-shaped and also finely spinulated; external orbital angle sharper than internal one, directed forward, being armed with some spinules; front-orbital border or distance between external orbital angles of both sides a little narrower than posterior border of carapace.

Eyestalk short and stout, with some fine spinules. Basal segment of antennule well developed and protruded far beyond antenna and eyestalk, being armed with spinules especially along margin and also with a large spine at distal end. Ischium of third maxilliped subrectangular, with breadth a little larger than length of outer margin; inner margin denticulated and fringed with sparse longish setae; outer margins of ischium and merus denticulated, with short setae; inner margin of merus with two long setae; carpus, propodus and dactylus each with a bundle of long setae at inner distal end; exopod a little longer than half the outer margin of ischium.

Both chelipeds slender, equal in size and shape, being covered with minute granules and fine setae mainly on upper border of each segment; merus and carpus visible dorsally in natural position; merus slightly shorter than twice its height; upper border of palm longer than movable finger and a little shorter than twice its height; fingers entire on cutting edges, with tips scarcely crossing each other.

Ambulatory legs comparatively stout and covered with longish setae. First ambulatory leg longer and stouter than cheliped; merus a little shorter than twice its height, with surface granulated; inner distal end of merus prominently protruded inward; propodus less than twice its height; carpus and propodus also covered with granules. Second ambulatory leg nearly as long as the first; inner distal end of merus not protruded; carpus and propodus only a little stouter than those of the first. Third and fourth ambulatory legs nearly equal in length and a little shorter than the precedings.

*Material examined.* Arakawa, Ishigaki-jima I., Yaeyama Group, Ryukyu Is., about 0.5 m to 1 m deep in lagoon; Apr. 24, 1979; 2 ovig. ♀♀, 1 ♀, 2 young ♀♀ (NSMT-Cr. 6421~6423). In the following lines measurements are indicated by breadth and length of carapace, respectively. Ovigerous female: 3.0×3.6 mm (NSMT-Cr. 6422-1), 3.0×3.4 mm (NSMT-Cr. 6421-1). Female: 2.6×3.0 mm (NSMT-Cr. 6421-2). Young female: 2.0×2.4 mm (NSMT-Cr. 6423), 1.9×2.3 mm (NSMT-Cr. 6422-2). The specimens with same stem number were obtained from one coral block.

*Remarks.* As mentioned elsewhere, the genus *Neotroglocarcinus* is represented by *N. balssi* (MONOD), *N. monodi* (FIZE et SERÈNE) and *N. dawydoffi* (FIZE et SERÈNE). The first or the Atrantic representative is readily distinguished from the latters by having the carapace with different contour and the stout chelipeds. The two Indo-West Pacific species are really close to each other, but *N. dawydoffi* was originally noted as having the carapace and ambulatory legs densely and sharply spinulated, without a shallow transverse depression in front of the gastric region.

*Host.* *Turbinaria peltata* (ESPER) [Jap. name: O-suribachi-sango] and *T. nidifere*

BERNARD are recorded as host corals by FIZE & SERÈNE (1955, 1957). The specimens dealt with at present were obtained from the unidentified species of *Turbinaria*.

As seen in the accompanied photograph (fig. 2 A, B), a prominent dome is formed on the surface of *Turbinaria* by overgrown rounded outgrowth. The crab is almost imprisoned, but the low crescent entrance is left laterally, its breadth being longer than twice the carapace breadth. The depth of the gall is about twice the carapace length. The resident of the gall seem to suffer from the continuous oppression by the development of coral.

It is quite interesting that the host coral in question also houses *Pseudocryptochirus viridis* HIRO which is installed in a shallow depression for the shape of the carapace and ambulatory legs in their natural position.

*Distribution.* Hitherto known only from Nhatrang, Viet Nam (FIZE & SERÈNE, 1955, 1957) and Singapore (SERÈNE, 1966).

#### Acknowledgment

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