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The genus *Pseudohapalocarcinus* erected by FIZE and SERÈNE (1955) to accomodate a monotypical representative, *Ps. ransoni* FIZE et SERÈNE, is close to the well-established genus, *Hapalocarcinus* STIMPSON, 1859, represented also monotypically by *H. marsupialis* STIMPSON. In reality, both genera have some common features such as the soft and roundish quadrangular carapace, the biramous first pleopod of female and so others. *Pseudohapalocarcinus* is, however, differentiated in having the stout and spinulated ambulatory legs instead of the slender and smooth ones in *Hapalocarcinus*. The most surprising is the difference in the gall-formation. In *Hapalocarcinus* only the females are enclosed in the prominent galls formed on the branching corals of some species of the Pocilloporidae, and the males are quite small and apparently free-living, while both sexes of *Pseudohapalocarcinus* make galls on the flattened surface of *Pavona frondifera* of the Agariciidae.

In the following lines the detailed description of the specimens from the Ryukyu Islands and some brief notes on the galls are given. All the specimens dealt herewith are preserved in the National Science Museum, Tokyo (NSMT).

Genus ***Pseudohapalocarcinus*** FIZE et SERÈNE, 1955

Pseudohapalocarcinus ransoni FIZE et SERÈNE, 1955

(Fig. 1; Pls. 2–5)

Pseudohapalocarcinus ransoni FIZE and SERÈNE, 1955, p. 378, fig. 1 (A); 1957, p. 148, figs. 41–43, pls. 8 (8–10), 11 (C), 17 (D, E).

Description. Female. Carapace roundish quadrangular and slightly broader than long, being rather depressed dorso-ventrally. Dorsum sparsely covered with minute granules which are larger on median part and smaller on anterior and posterior parts; regions very faintly indicated; a transverse shallow furrow in front of gastric regions, running obliquely toward lateral border of carapace at each side and separating hepatic region from branchial region which is also separated from gastric and cardio-intestinal regions by a longitudinal shallow furrow. Hepatic and branchial margins of carapace weakly convex; branchial margin about twice as long as hepatic margin, greatest breadth of carapace being at median part of branchial region.

Front moderately concave and finely denticulated, bearing a small median projection. Internal orbital angle blunt, and supraorbital border finely denticulated and shallowly concave throughout its length; external orbital angle sharper than internal one; front-orbital border a little narrower than posterior border of carapace. Eyestalk very short and stout, with some minute granules.

Basal segment of antennule short, wide and armed with several spinules on and along its distal margin. Ischium of third maxilliped subtriangular and scarcely broader than long; exopod and outer margin of merus as long as five-sixths and three-fourths of outer margin of ischium, respectively; inner margin of merus provided with one seta; carpus as long as merus, but narrower, bearing no denticles on its outer margin; carpus, propodus and dactylus each with a bundle of setae at their inner distal ends.

Both chelipeds rather slender and equal to each other in size and shape, being wholly visible dorsally; upper and outer surfaces of merus, carpus and palm covered with fine granules and sparse short setae; merus compressed and slightly shorter than twice its height; upper border of palm nearly as long as movable finger; fingers entire on cutting edges, leaving a short gape at their proximal ends; tips of fingers scarcely crossing to each other.

First ambulatory leg nearly as long as cheliped, but a little stouter; upper and outer surfaces of merus, carpus and propodus covered with fine granules and sparse short setae; merus compressed and a little shorter than twice its height. Second ambulatory leg a little longer and stouter than the first. Third ambulatory leg as long as preceding one, but not so stout. Fourth ambulatory leg the shortest. In each pair all segments protruded beyond carapace. A small lobe on upper surface of each coxa from second to fourth ambulatory legs.

Abdomen composed of seven segments and broadly expanded. Abdominal appendages with three pairs; the first biramous, with a rudimentary exopod at its base, but the second and third uniramous.

Male. Smaller than female. Carapace apparently broader than long; its posterior border nearly as long as front; front-orbital border much longer than posterior border and a little shorter than length of carapace. Dorsum almost smooth and regions very indistinctly

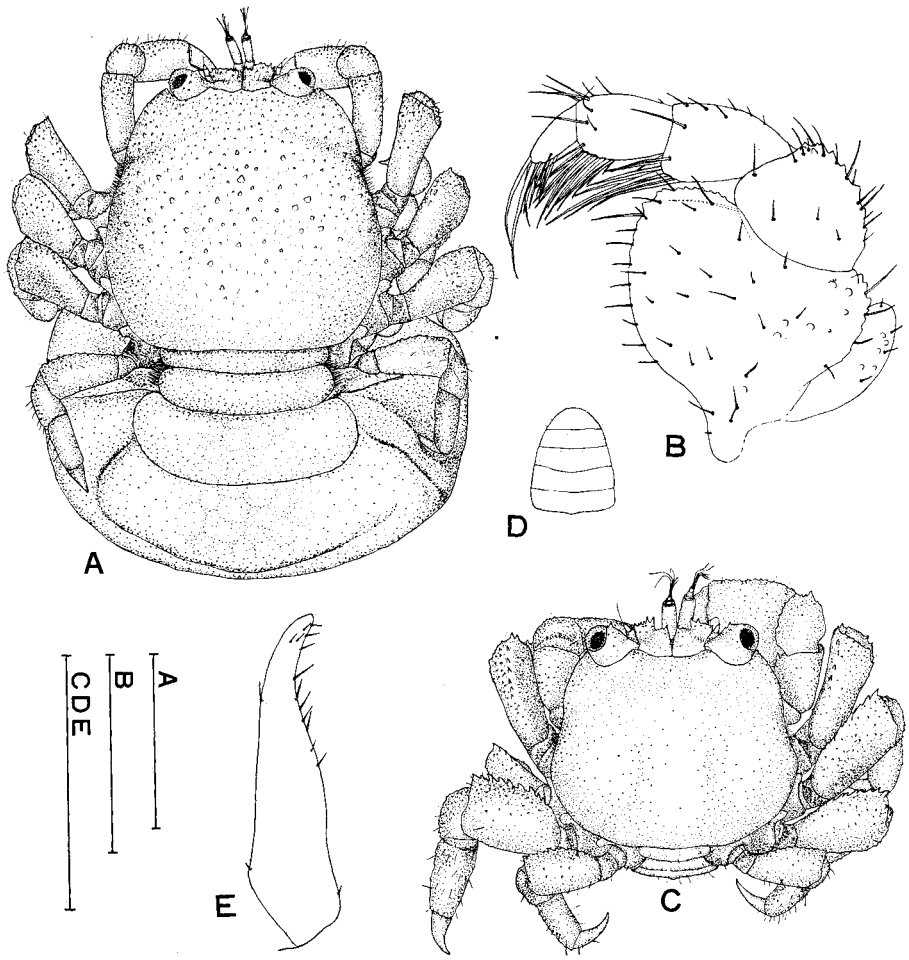

Fig. 1. *Pseudohapalocarcinus ransoni* FIZE et SERÈNE. A, B: Ovig. ♀ (NSMT-Cr. 6191-1). C-E: ♂ (NSMT-Cr. 6190-5). A, Entire animal; B, left third maxilliped in abdominal view; C, entire animal; D, distal five segments of abdomen; E, left first pleopod in abdominal view. Scales for A, C, D=2 mm, scales for B, E=0.5 mm.

demarcated.

In general, both chelipeds are symmetrical and much stouter than, or nearly equal to, those of female. Ambulatory legs stouter and shorter than those of female; upper border of each merus more prominently denticulated.

Abdomen oval and composed of seven segments, proximal three segments being visible in dorsal view. First pleopod rather wide and depressed.

Color. In general, the carapace is uniformly whitish grey, with a transverse broken line of dark pigment along the furrow anterior to the gastric and branchial regions of both sides and also with a longitudinal broken line at each side of the gastric and cardio-intestinal regions. It is noted that in a female specimen (NSMT-Cr. 6189-3) infested by bopyrid

parasites in both branchial chambers is densely covered with small dark speckles as seen in the accompanied photograph (Pl. 5 A, B).

Material examined. Arakawa, Ishigaki-jima I., Yaeyama Group, Ryukyu Is., about 0.5 m to 1 m deep in lagoon; Apr. 24, 1979; 16 ♀♀, 6 ♂♂ (NSMT-Cr. 6188~6192). Of altogether 22 specimens at hand 11 ♀♀ and 3 ♂♂ are associated with bopyrid parasites on their branchia and thus the carapaces are more or less deformed. In the following lines measurements of the normal specimens are indicated by breadth and length of carapace respectively. Female: 2.9×2.7 mm (NSMT-Cr. 6188-1), 2.6×2.4 mm (NSMT-Cr. 6189-1), 2.6×2.5 mm (NSMT-Cr. 6191-2). Ovigerous female: 3.2×3.0 mm (NSMT-Cr. 6188-2), 3.2×3.1 mm (NSMT-Cr. 6191-1). Male: 1.7×1.4 mm (NSMT-Cr. 6188-7), 1.6×1.4 mm (NSMT-Cr. 6188-8), 2.0×1.6 mm (NSMT-Cr. 6190-5).

Remarks. There is no doubt about the identification of the specimens at hand, but the males do not always agree well with the original and following descriptions. In the Japanese specimens the dorsum is apparently smoother, the indication of the regions is obscure, and the hepatic margin of the carapace is not so distinctly denticulated. These features as well as the robustness of the chelipeds seem to be considerably variable individually or according to the developmental stages.

Host. The known host of this species is *Pavona frondifera* LAMARCK and the specimens at hand were also collected from the same coral species. This coral is thin and frondiform, growing rather irregularly, but forming a massive block as a whole. The galls of this coral-inhabiting crabs are usually found near the fringe of coral block. The rather small, open galls are usually found as abnormal outgrowths at the flat surface, and the developed, closed galls are at diverging points. The galls grow irregularly in shape and direction, so that the galls are frequently hidden under the natural shape of the host coral. It is highly probable, though without sufficient reason, that the branching of the coral begins just at the gall and is caused by lodgement of the crab.

In the small galls there is only a large opening, but in the advanced ones only two or three small openings are left, and thus the mature females are permanently trapped whithin the galls. Such development of the galls is similar to the case of *Hapalocarcinus marsupialis*, in which each gall formed on the branching coral of the Pocilloporidae is divided into two parts, as studied by POTTS (1915) and HIRO (1937). On the contrary, the galls of this species are simple inside. It must be noted at present that all the male specimens were collected from the open galls similar to those occupied by the small females, and that the males are much larger than the openings of the advanced galls and thus impossible to gain access to the large females.

In one case, as already recorded by FIZE and SERÈNE (1957), a female of *Pseudocryptochirus crescentus* (EDMONDSON) was found in the pit near the gall made by a female (NSMT-Cr. 6188-1) of the present species.

Distribution. This species has hitherto been recorded from Nhatrang, Viet-Nam (FIZE

and SERÈNE, 1955, 1957), and Palawan, Philippines (SERÈNE, 1966). The range was therefore extended northward to the Ryukyu Islands, and it is highly probable that this species is widely distributed in the Indo-West Pacific waters within the distributional range of the host coral.

Acknowledgements

The host corals were identified by Dr. Kiyoshi YAMAZATO and Mr. Toshiharu ODA of the University of the Ryukyus, to whom the authors are deeply indebted. The junior author's cordial thanks are due to Dr. Ryôsuke ISHIKAWA of Tokyo Metropolitan University for giving him the opportunity to make this study.

摘　　要

沖縄県八重山諸島石垣島で採集されたヒメサンゴヤドリガニ（新称）*Pseudohapalocarcinus ransoni* の記載を行ない，その虫瘤 gall に関する若干の知見を述べた。

FIZE and SERÈNE (1955) により創設されたヒメサンゴヤドリガニ属 *Pseudohapalocarcinus* は，サンゴヤドリガニ科 Hapalocarcinidae の模式属であるサンゴヤドリガニ属 *Hapalocarcinus* と形態的にも生態的にも似ている部分が多い。両属とも1種ずつ，すなわち，よく知られたサンゴヤドリガニ *H. marsupialis* STIMPSON とここに記録したヒメサンゴヤドリガニ *Ps. ransoni* FIZE et SERÈNE からなる。ともに，石灰化の進んでいない丸みをおびた四角形の甲をもち，第1腹肢は二叉型で痕跡的な外肢を有する。しかし，サンゴヤドリガニの歩脚が細長く滑らかであるのに対し，ヒメサンゴヤドリガニのそれは鋸歯縁と顆粒を備え，短くて太い。また，サンゴヤドリガニでは雌だけがヤサイサンゴ科 Pocilloporidae のサンゴに虫瘤を作るのに対し，ヒメサンゴヤドリガニでは雌雄ともシコロサンゴ科 Agariciidae のコノハシコロサンゴ *Pavona frondifera* に虫瘤を作る。

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Postscript

By the courtesy of Dr. D. M. DEVANEY of the Bernice P. Bishop Museum, the senior author could examine the specimens from the South Pacific. The records of the specimens are as follows. Samoa, 2 ♀♀ (BPBM S7093, 7094) from *Pavona divari*, identified by R. SERÈNE; Bora Bora Lagoon, Toopua Is., 13 ovig. ♀♀, 5 ♀♀ (BPBM S8531), collected by A. FIELDING and identified by J. C. MCCAIN.

Explanation of Plates 2–5

Plate 2

Figs. A–D. Small galls of *Pseudohapalocarcinus ransoni* FIZE et SERÈNE on *Pavona frondifera*. A, B. Gall (A), and a part of coral was removed to show a female (NSMT-Cr. 6189-1) in the gall (B). C, D. Gall (C), and a male (NSMT-Cr. 6188-7) in the gall shown by a partial removal of coral (D).

Plate 3

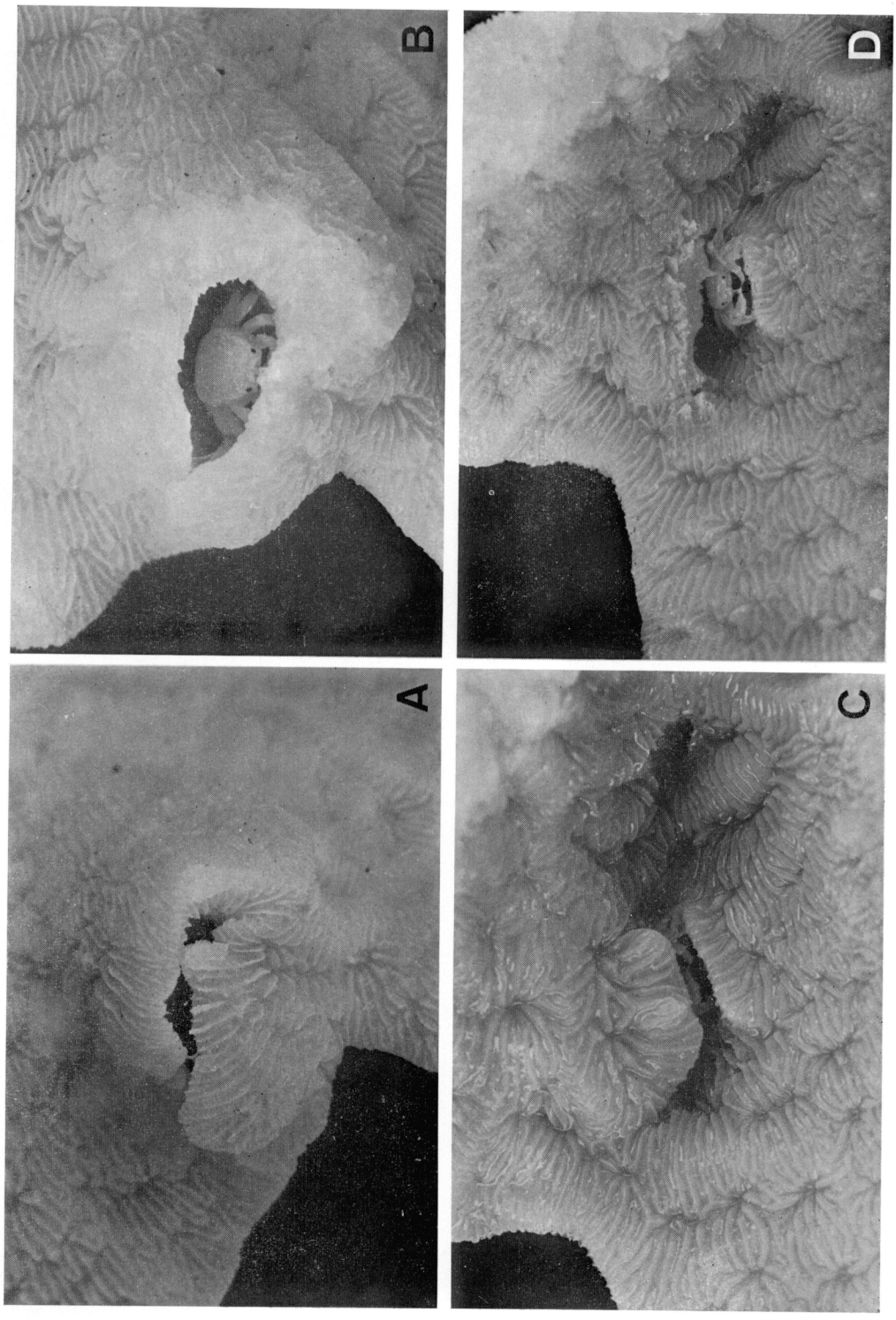
Figs. A–D. Developed galls of *Pseudohapalocarcinus ransoni* FIZE et SERÈNE on *Pavona frondifera*. A, B. Gall inhabited by a female (NSMT-Cr. 6188-3); C, D. Gall inhabited by a female (NSMT-Cr. 6189-2). Arrows indicate directions of photographs A and C, respectively.

Plate 4

Figs. A–E. *Pseudohapalocarcinus ransoni* FIZE et SERÈNE. A, B. Ovig. ♀ (NSMT-Cr. 6191-1). Length of carapace, 3.1 mm; C, D. ♂ (NSMT-Cr. 6190-5). Length of carapace, 1.6 mm; E. ♂ (NSMT-Cr. 6188-7). Length of carapace, 1.4 mm.

Plate 5

Figs. A–H. *Pseudohapalocarcinus ransoni* FIZE et SERÈNE infested by bopyrids in both branchial chambers (A–D), or in left branchial chamber (E–H). A, B. ♀ (NSMT-Cr. 6189-3). Length of carapace, 3.5 mm; C, D. ♂ (NSMT-Cr. 6190-6). Length of carapace, 2.1 mm; E, F. ♀ (NSMT-Cr. 6189-2). Length of carapace, 3.4 mm; G, H. ♂ (NSMT-Cr. 6189-4). Length of carapace, 2.2 mm.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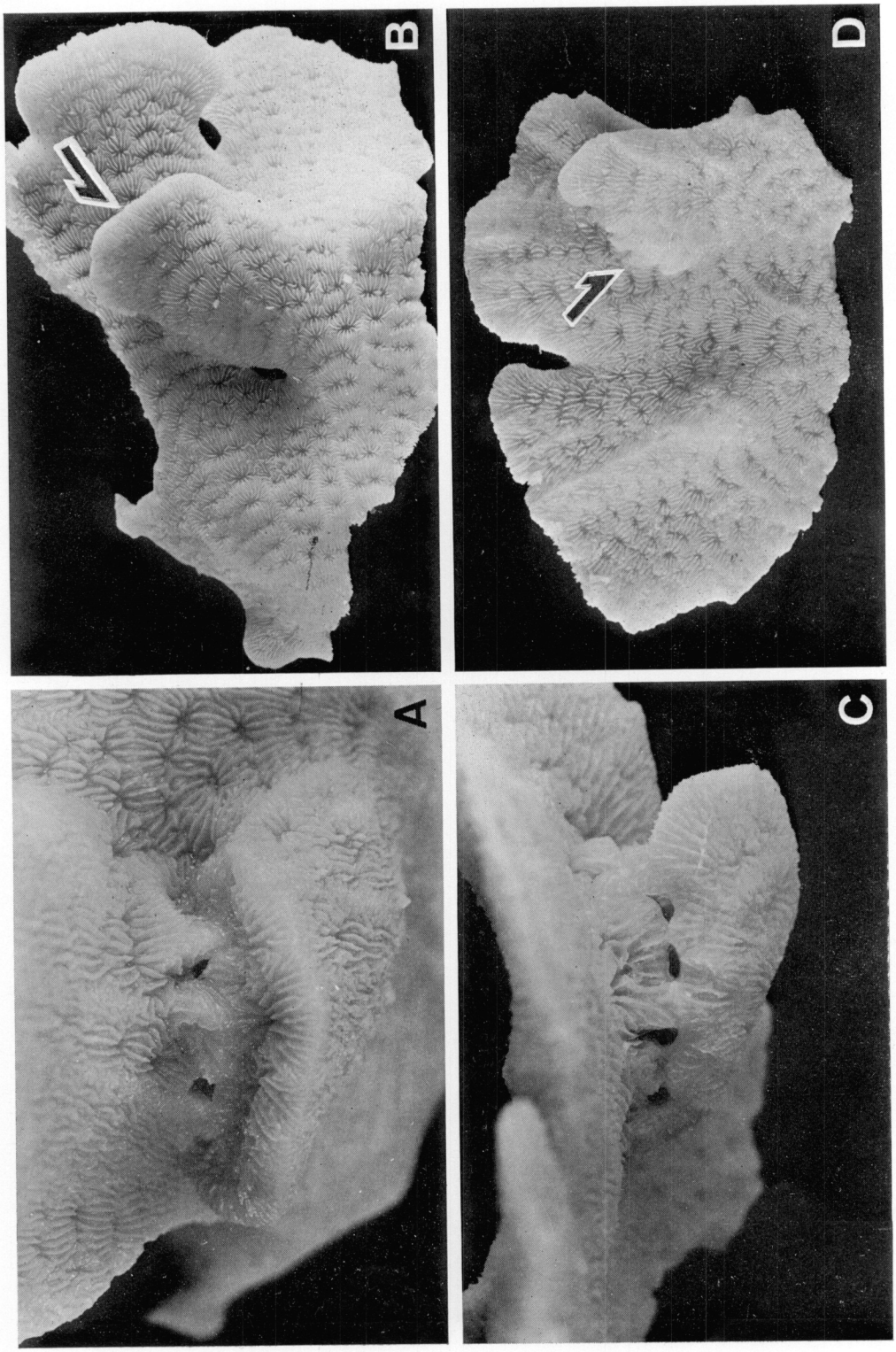
C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A
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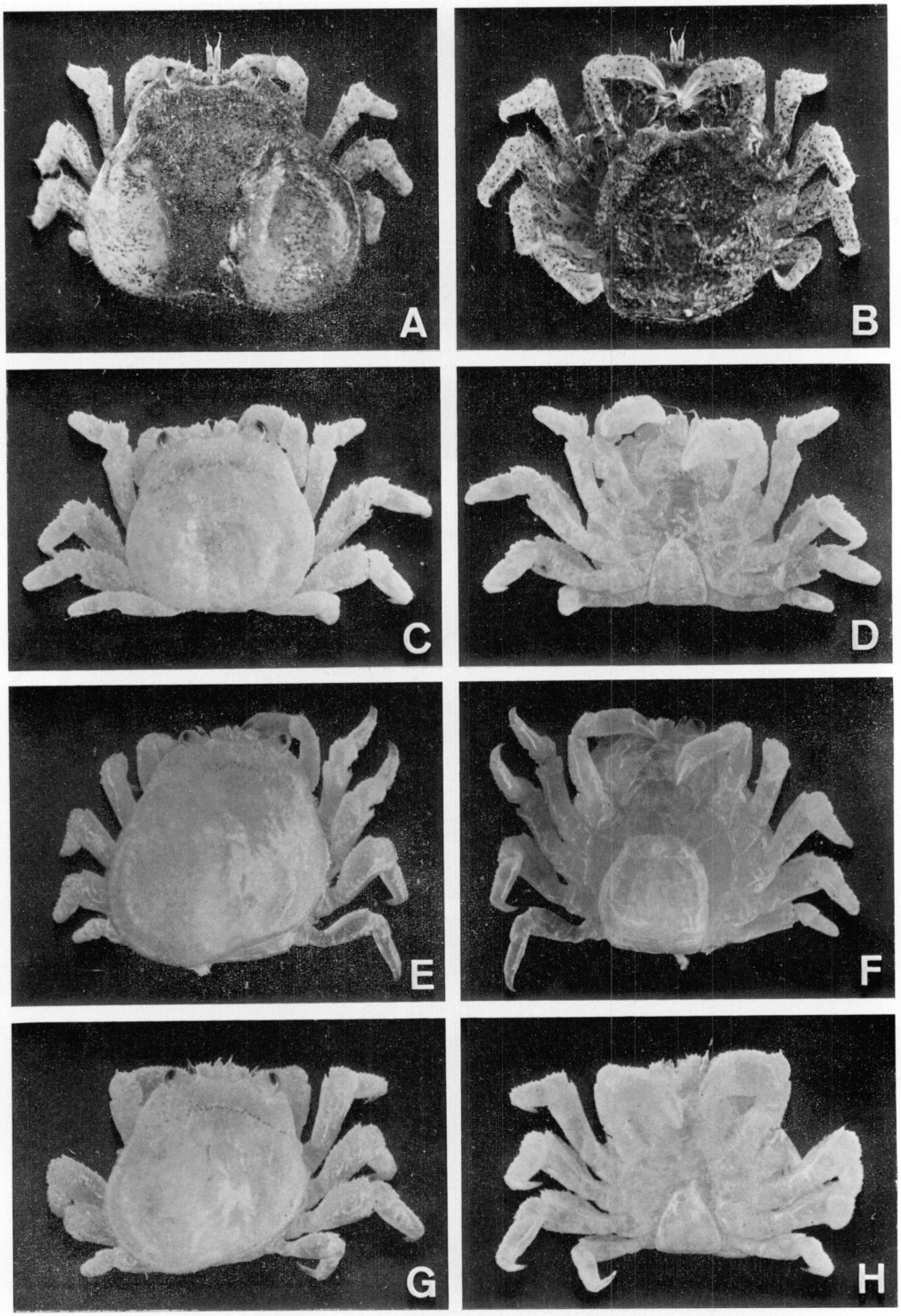
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