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A New Species of *Paralomis*, the Crab-shaped Anomura
(Crustacea, Decapoda), from the Kyushu-Palau
Submarine Ridge

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A New Species of *Paralomis*, the Crab-shaped Anomura
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Abstract A new *Paralomis* species of the family Lithodidae is established on six specimens from the Kyushu-Palau submarine ridge. The species named *P. kyushupalauensis* is closely related to *P. indica* ALCOCK et ANDERSON from India, but distinguished from it by several important features.

Some years ago, the present author reported on a small collection of crabs from the northern part of the Kyushu-Palau submarine ridge collected by the experimental trawling to exploit further fish resources under the sponsorship of the Ministry of Agriculture, Forestry and Fishery, Japan. Recently the author had a good chance to examine six specimens of the crab-shaped Anomura referable to the family Lithodidae, which belong to the same source with the crabs mentioned above. Considering some important distinguishing features, it came to a conclusion that they represent a species close to, but distinct from *Paralomis indica* ALCOCK et ANDERSON from the depths off Travancore coast, India. In the following lines they are to be described under the name of *P. kyushupalauensis*, the etymology of which is the type locality.

The author's cordial thanks are due to Drs. Osame TABETA and Ken-Ichi HAYASHI of Shimonoseki University of Fisheries and Prof. Emeritus Sadayoshi MIYAKE of Kyushu University, who kindly made the specimens available for the present study. The holotype and one of the paratypes are now preserved in the National Science Museum, Tokyo (NSMT) and the other paratypes are in Shimonoseki University of Fisheries (SUF).

Family Lithodidae

Genus *Paralomis* WHITE, 1847

Paralomis kyushupalauensis sp. nov.

(Fig. 1)

Material examined. St. KP-II-13 (26°47.0'N, 135°20.0' E—26°48.0' N, 135°21.2' E, 450-460 m deep); 4 ♂♂, paratypes (1 ♂ in NSMT, Cr 8952, and 3 ♂♂ in SUF);

Jan. 31, 1978. St. KP-II-14 (26°47.0' N, 135°19.5' E—26°48.5' N, 135°22.5' E, 340–460 m deep); 2 ♂♂ (1 ♂, holotype, in NSMT, Cr 8951, and 1 ♂, paratype, in SUF); Jan. 31, 1978.

Breadth of carapace including/and excluding lateral spines—55.5/47.0 mm in holotype, and 71.6/61.9; 58.2/47.0; 52.0/46.3; 49.5/40.0 (NSMT); 27.1/21.6 mm in paratypes. Length of carapace including/and excluding rostrum—51.5/44.4 mm in holotype, and 66.2/57.4; 52.9/44.2; 52.0/44.1; 46.5/39.0 (NSMT); 24.9/20.5 mm in paratypes.

Description. Outline of carapace rounded triangular or pentagonal rather than pyriform, without a distinct constriction between hepatic and branchial margins of each side; dorsal surface of carapace weakly convex as a whole in both directions, being densely covered with vesicular granules of various sizes; granules uniformly dis-

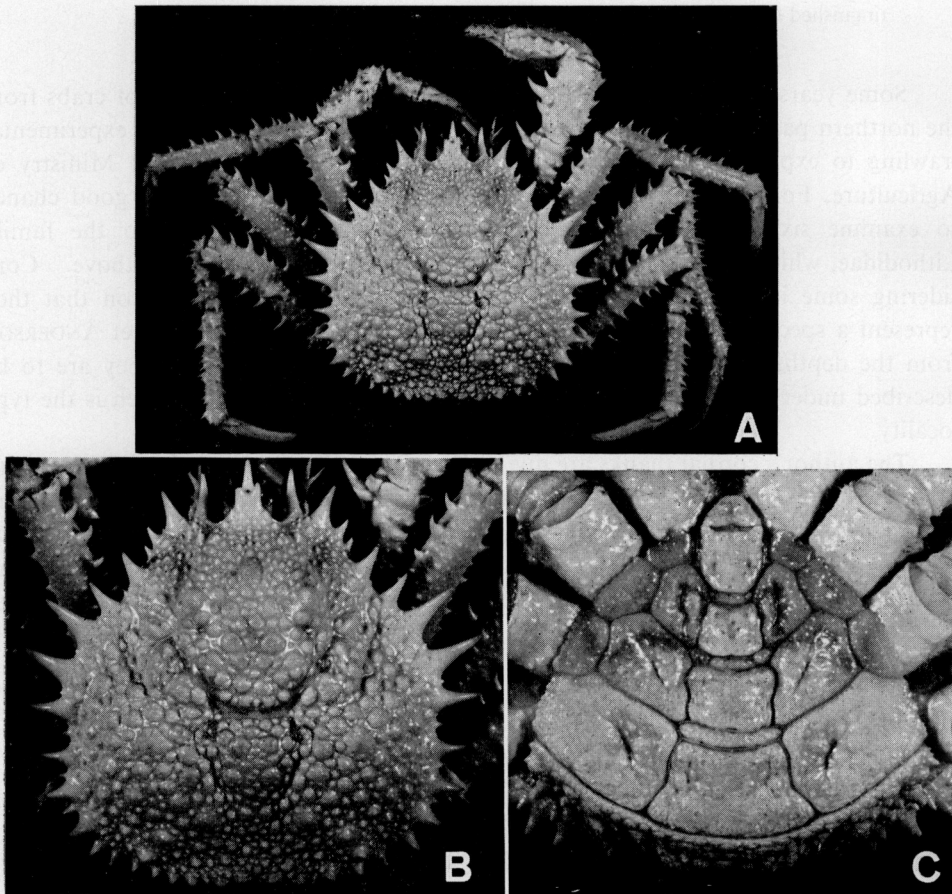


Fig. 1. *Paralomis kyushupalauensis* sp. nov. — A, B: Holotype ♂ (NSMT-Cr 8951) in dorsal view. C: Abdomen of paratype ♂ (NSMT-Cr 8952).

persed, mostly depressed on gastric region and rather conical on branchial regions; most of larger granules surrounded by minute granules at their bases; several more larger granules on gastric, cardiac and branchial regions almost symmetrically disposed; gastric region separated from cardiac region by a wide, transverse deep gastro-cardiac furrow; cardiac region as high as gastric and branchial regions, evenly convex and weakly narrowed posteriorly; a lateral longitudinal furrow separating cardiac region from each branchial region weakly curved outward or almost straight; gastro-cardiac furrow extended obliquely forward for some distance as a so-called cervical groove; lateral end of gastro-cardiac furrow also extended horizontally to median part of branchial region or short distance onto branchial region, and then obliquely forward toward anteriormost spine of branchial margin of carapace.

Front trispinose; median spine by far the longest and extended forward much more than the lateral two, being curved dorsally. External orbital spine straight and directed forward, as strong as frontal median spine, exceeding the tip of frontal lateral spine, but failing to reaching the tip of frontal median spine.

Eyestalk stout, and cornea chiefly ventral; some small tubercles on distal margin of peduncle along base of cornea, with a sharp main one on extension onto cornea. Antennal acicle ends in a sharp spine, being armed with two spines on its outer margin, a long distal one and a much shorter proximal one; its inner margin unarmed.

Of four spines on hepatic margin first and last teeth much stronger than median two; hepatic margin continuous with branchial margin without a distinct interruption. Branchial margin armed with strong spines throughout its whole length to posterior margin of carapace; second to fourth spines apparently longer than the others; spines on posterior margin of carapace rather conical or tuberculated.

Chelipeds not heavy; both chelipeds similar in shape, the right being the larger as usual; in smaller cheliped diameter of carpus about three-fourths and height of palm about three-fifths comparing with those of larger cheliped; merus, carpus and palm armed with prominent spines; a lower one of two subterminal spines of inner margin of merus and a median one of three spines on inner margin of carpus are longer than the others.

Ambulatory legs about twice as long as carapace and much slenderer than smaller cheliped; height of propodus at its middle only slightly more than half height of smaller palm and about a third the height of larger palm; both borders of merus and propodus, and anterior border of carpus armed with some strong, recurved spines.

Male abdomen symmetrical; second segment with scaly granules of variable sizes, being provided with a pit-like depression on either side of median line; marginal plates of fourth to sixth segments comparatively large and not subdivided; sixth segment elongated rather than oval.

Remarks. The genus *Paralomis* is found worldwide and has hitherto been represented by 31 species as enumerated by TAKEDA *et al.* (1984) who showed their geographical distributions on a map. Most of the species are the deep-sea inhabitants, and the distributional range of each species is generally narrow, except for four species,

viz., *P. multispina* (BENEDICT) and *P. verrilli* (BENEDICT) which range from the Bering Sea to North American and Japanese coasts, *P. granulosa* (JACQUINOT) from both coasts of southern South America, and *P. spectabilis* HANSEN originally reported from northern North Atlantic and subsequently from Subantarctic waters.

Among the known species, *P. indica* ALCOCK et ANDERSON is without doubt the nearest kin of the present new species. In *P. indica* known from off Travancore coast, India, 430 fms deep, 1) the carapace is pyriform, with a rather distinct constriction between the hepatic and branchial margins at each side, 2) the dorsal surface of the carapace is rather sparsely studded with vesiculose, pustulous, and conical tubercles of various small sizes, 3) the cardiac region is convex, but a good deal sunken, and strongly narrowed posteriorly, 4) the rostrum is evenly trifid, 5) the antennal acicle is armed with a spinule and a large spine on the outer margin and with three small spines on the inner margin, 6) the marginal plates of the third and fourth segments of the male abdomen are each divided into two, and the penultimate segment was figured to be rather rounded, and 7) the ambulatory legs are described to be rather less massive than the left cheliped, and about $1\frac{2}{3}$ times the carapace length. Contrary to these features, in the present new species, 1) the carapace is rounded triangular without a distinct constriction at each anterolateral margin, 2) the dorsal surface of the carapace is thickly covered with vesiculose and conical granules of various, but larger sizes, 3) the cardiac region is almost as high as the gastric and branchial regions, and rather bulged laterally in the middle, 4) the median rostral spine is by far the longest, 5) the antennal acicle is armed with a larger spine and a spinule on the outer margin, but unarmed on the inner margin, 6) the marginal plates of the third and fourth segments of the male abdomen are larger and entire, and the lateral borders of the penultimate segment are almost parallel to each other for their most lengths, and 7) the ambulatory legs are much slenderer than the left cheliped, and about twice the carapace length.

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