

Three new species of *Paralomis* (Crustacea, Decapoda, Anomura, Lithodidae) from the Pacific and Antarctic Oceans

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Accepted 6 February 1987

Macpherson, E. 1988. Three new species of *Paralomis* (Crustacea, Decapoda, Anomura, Lithodidae) from the Pacific and Antarctic Oceans.—*Zool. Scr.* 17: 69–75.

Three new species of the lithodid genus *Paralomis* from the Sulawesi (Celebes) Islands, *P. ochthodes* sp.n., Chilean coast, *P. tuberipes* sp.n., and Antarctic Ocean, *P. birsteini* sp.n., are described and illustrated. The first two species have features that set them well apart from other species of the genus. Characters are also given to distinguish *P. birsteini* from the closely allied *P. spectabilis* Hansen (North Atlantic).

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Introduction

During a visit to the National Museum of Natural History (Smithsonian Institution), Washington, D.C., I examined, through the courtesy of Dr R. B. Manning, several unidentified lithodid specimens from the Pacific and Antarctic Oceans collected by the *Albatross* Expedition to the Philippines, the U.S.A. Fishery Mission to Chile and the United States Antarctic Research Program (USARP).

A total of three species is dealt with here, all being new. One of the species was also collected by the Soviet vessel *Ob* during a cruise off Scott Island in 1958.

The type material is deposited in the National Museum of Natural History (Smithsonian Institution) (USNM) and the Zoological Museum of the University of Moscow (ZMUM). Measurements given refer to the length of carapace, excluding rostrum (LC), and the maximum width of carapace (MW). All measurements were taken to 1 mm using a dial caliper.

Paralomis ochthodes sp.n. (Fig. 1)

Holotype. USNM 228831, ♂; LC = 72 mm; MW = 78 mm. *Albatross*, Philippine Expedition, Sta. 5651, 17 Dec. 1909, Gulf of Boni, 04°43.5'S, 121°23.2'E, 1281 m.

Description

Carapace somewhat pentagonal in its contour, slightly broader than long. Carapace, abdominal segments, chelipeds and ambulatory legs thickly covered with spinulose tubercles, with dense stiff setae on summit. Gastric region convex, with 5 spines: 1 median, 2 laterals near hepatic margin and 2 near gastro-cardiac furrow. Each spine on a rounded protuberance.

Cardiac region separated from gastric one by deep transverse furrow. Center of this area occupied by a rounded prominence, subdivided into 4, each with 1 spine on summit. Branchial regions with 2 rounded protuber-

ances, one median, with 1 spine on summit, and second near posterior border, with 2 spines. Intestinal area with 2 spines. Pterygostomian region with 1 spine on terminal angle.

Rostrum composed of 2 lateral superior spines and 1 lower median spine. Latter weakly curved upwards, with some granules on ventral border.

Carapace margin with post-orbital spine not surpassing end of eyes. First antero-lateral spine smaller than postero-orbital. One small hepatic spine and 2 spines at level of gastro-cardiac furrow. One rounded protuberance, with 1 spine on summit, near posterior angle.

Eye stalk armed dorsally with small granules and with 1 spinule near cornea. First segment of antennal peduncle with 1 small terminal spine on outer border. Second segment with 1 strong spine and 3–4 smaller ones on outer margin, longest surpassing base of last segment of antennal peduncle and three spines on the inner side. Acicle with long median spine, surpassing end of antennal peduncle. Three long spines on outer margin, 4 smaller on inner side and 2–3 spinules on dorsal surface.

Chelipeds subequal in length, right stouter than left. Merus with long spines on terminal border. Carpus with 5 well developed spines on anterior margin. Palm with 5–6 anterior spines and several tubercles on external side. Fingers with some tufts of hairs.

Walking legs slender. Third leg almost 3 times length of carapace. First and second ambulatory legs subequal in length, longer than third. Basis with granules on terminal border. Ischium with spines on posterior margin. Merus of third leg almost 5 times as long as broad, 8 spines present on anterior border, 7 on posterior margin, one small spine on dorsal surface. Carpus 0.5 times length of merus, anteriorly furnished with a row of 5 spines, 2 on dorsal side and 3–4 on the posterior edge. Propodus 4 times as long as broad and 0.75 as long as merus. Anterior margin with a row of 10–11 spines and 11–12 spines on posterior border. Dactylus as long as propodus. Some spines on proximal margins. Two rows of tufts of hairs on anterior border.

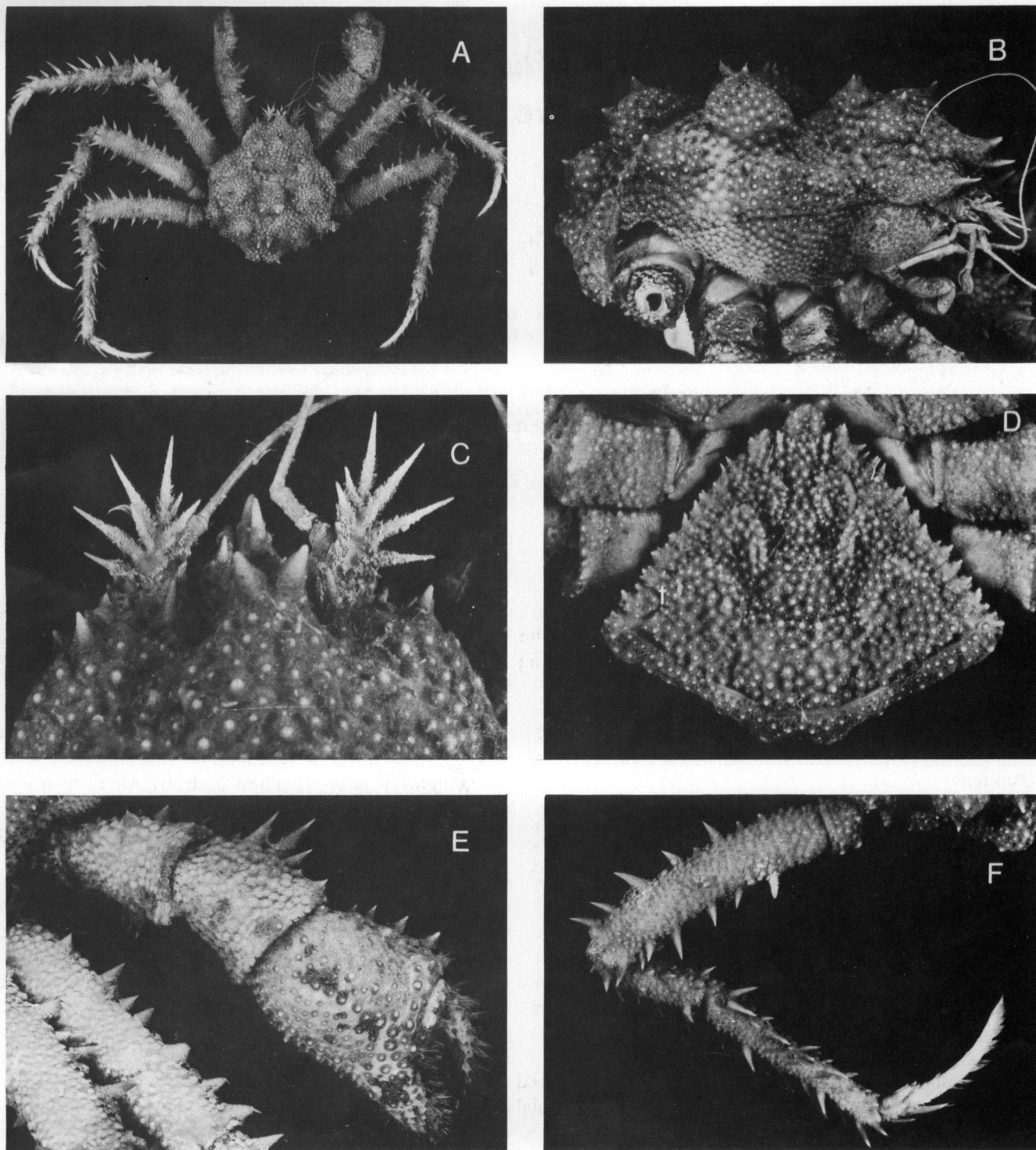


Fig. 1. *Paralomis ochthodes* sp.n., holotype, ♂.—A. Dorsal view.—B. Carapace, lateral view.—C. Acicle and anterior part of the carapace.—D. Abdomen.—E. Right cheliped.—F. Third left ambulatory leg.

Second (basal) abdominal segment fused into a single plate. Segments 3–5 with median plate entire, lateral plates distinct and paired and marginal plates subdivided and not fused with laterals.

Etymology. From the Greek “ochthos”, hilly, any elevation.

Remarks

Paralomis ochthodes is the first occurrence of the genus in Indonesian waters and has features that set it well apart from other species of the genus. No other known member

of *Paralomis* possess the peculiar armature of carapace, abdominal segments and pereiopods. Other Indo-Pacific species with a tuberculate carapace, such as *P. pacifica* Sakai, *P. medipacifica* Takeda, *P. haigae* Eldredge, *P. seagranti* Eldredge, *P. investigatoris* Alcock & Anderson, *P. indica* Alcock & Anderson and *P. dofleini* Balss are covered with large or small rounded tubercles, but without rounded protuberances on the carapace.

Only *P. japonica* Balss has some obtuse processes on the dorsal surface of the carapace. These processes are covered with clusters of tubercles of different sizes. On the other hand, ambulatory legs are armed with conical

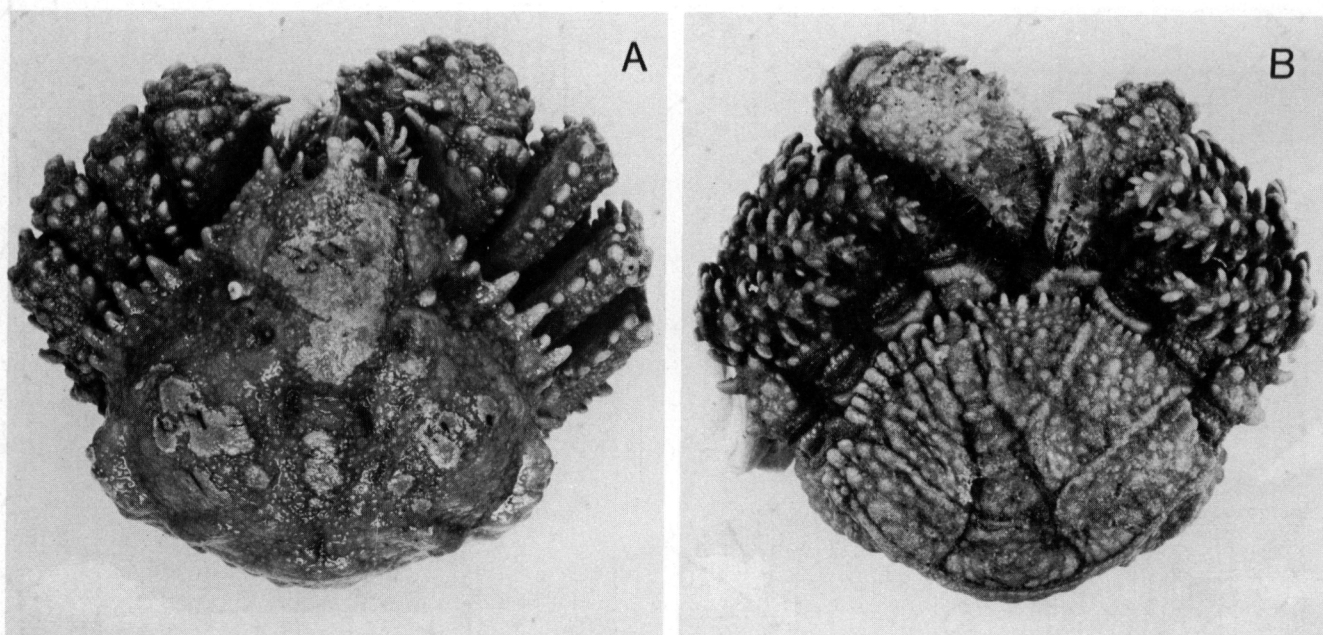


Fig. 2. *Paralomis tuberipes* sp.n., holotype, ♀ ov.—A. Dorsal view.—B. Ventral view.

processes. Among other differences, in the new species the number and size of protuberances is different and the tubercles are not clustered. Furthermore, the walking legs have rows of spines, without conical processes.

Paralomis tuberipes sp.n. (Figs. 2, 3a–c)

Holotype. USNM 228829, ♀ ov.; LC = 41 mm, MW = 47 mm. U.S.A. Fishery Mission to Chile 1944–1945, Sta. 42388, 25 Jan. 1945, Huichas Islands (Puerto Aguirre), 45°10.3'S, 73°33'W, no depth recorded.

Description

Carapace pentagonal, a little broader than long, covered with granules of different sizes without setae over summit. Gastric area moderately convex, slightly more prominent than cardiac and branchial regions. Cardiac area more or less triangular, as prominent as branchials, separated from gastric one by transverse deep furrow. Branchial regions separated from cardiac one by distinctive grooves.

Rostrum terminating in 1 median inferior and 2 lateral superior spines, latter rounded and covered with small granules. Dorsally, 1 median granule just proximal to lateral spines. Latter pair reaching end of eyes. Underside of inferior spine with small granules. Post-orbital spine not surpassing eyes and slightly shorter than first antero-lateral one. 9–10 rounded spines on antero-lateral border of carapace. Postero-lateral and posterior margins without spines, covered with granules of different sizes. A prominent crescentic rounded ridge on each postero-lateral margin.

Eye stalks with some dorsal granules and 1 small spinule near cornea. First segment of antennal peduncle with 1 small spine on outer border. Second segment with 1 long spine surpassing end of penultimate segment, and 1–2 tubercles on outer margin. Acicle with 1 terminal spine

surpassing end of antennal peduncle, 3 spines on outer margin and 2–3 on inner side.

Chelipeds subequal in length, right slightly stouter than left. Tubercles on dorsal and terminal borders of merus. Outer and dorsal margins of carpus and palm armed with granules and rounded spines, more acute on dorsal edge. Fingers with tufts of soft hairs.

Walking legs short. Third ambulatory leg as long as greatest width of carapace. First and second leg slightly longer than third. Merus of third leg more than 2 times as long as broad and 1.2 times as long as carpus. Propodus as long as carpus and 1.6 times as long as dactylus. Long rounded spines on anterior, posterior and dorsal margins of merus, carpus and propodus, being larger on the latter. Ventral margins smooth. Dactylus slightly curved, with some small rounded spines on proximal margins and tufts of hairs on terminal half.

Abdominal segments covered with small granules of variable size. Marginal plates on somite 3 fused to laterals.

Etymology. From the Latin “tuber”, tubercle, and “pes”, foot.

Remarks

The species is distinguished from all other described species of *Paralomis* by the armature of the carapace, chelipeds and walking legs, except for the long rounded spines of the legs, which are similar to those of *Phyllolithodes papillosus* Brandt. Of the species of the genus from the southeast Pacific, *P. granulosa* Jacquinet, *P. chilensis* Andrade, *P. inca* Haig and *P. papillata* (Benedict) (see Haig 1974; Andrade 1980; del Solar 1981; Takeda *et al.* 1984), the closest relative is *P. granulosa* (Figs. 3d, e). However, it differs chiefly in the following respects.

—The granulation on the carapace is very different. *P. granulosa* is covered by clustered granules, whereas in the new species the granules are simple. On the other hand, in

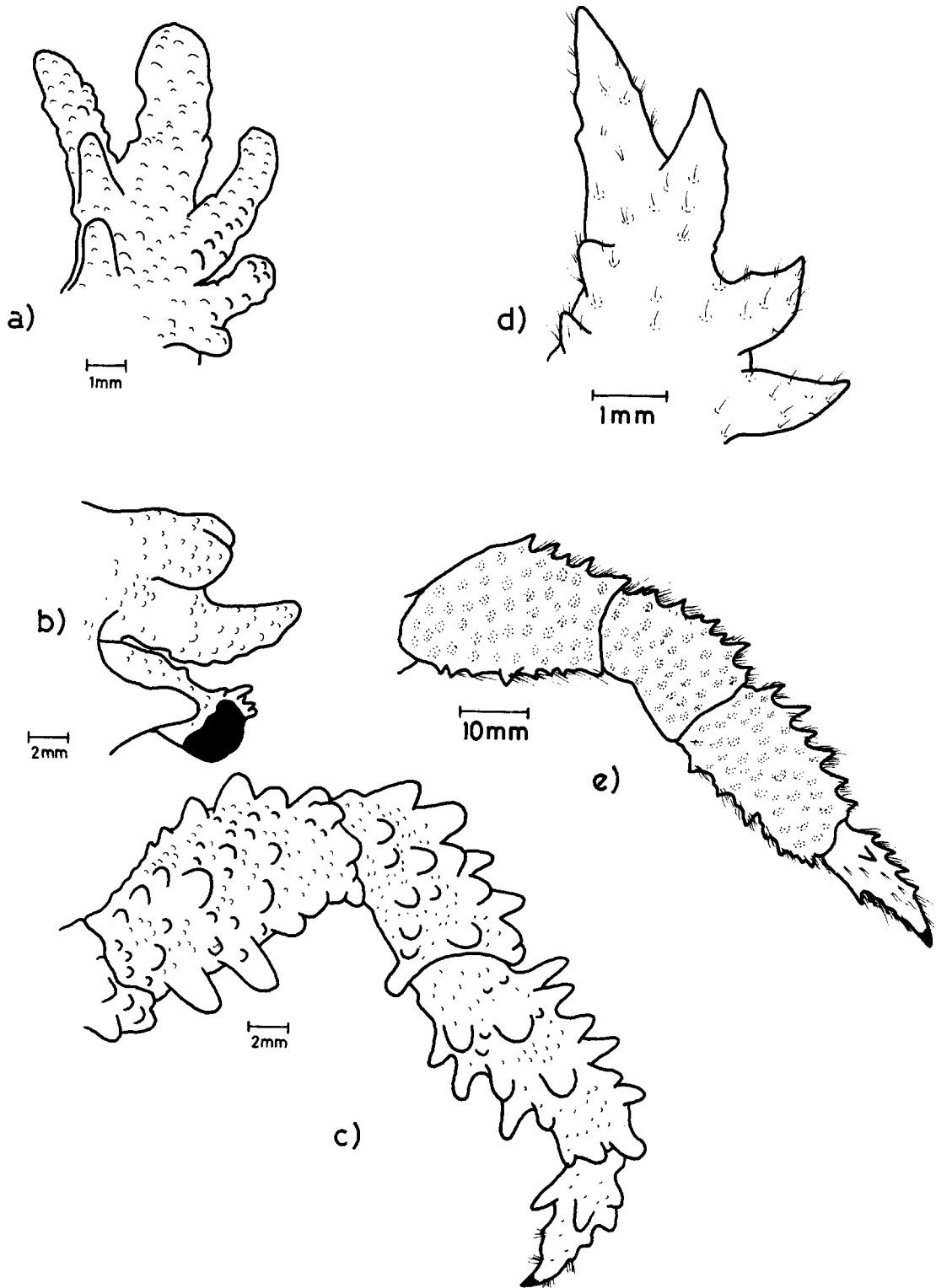


Fig. 3.—a–c. *Paralomis tuberipes* sp.n., holotype ♀ ov.—a. Right antennal acicle.—b. Rostrum, lateral view.—c. Third right ambulatory leg.—d–e. *Paralomis granulosa* (Jacquinot), ♀, Beagle Channel, LC = 76 mm, MW = 82 mm.—d. Right antennal acicle.—e. Third ambulatory leg.

P. tuberipes the granules are more prominent and numerous than in *P. granulosa*.

—The spines of the rostrum and antero-lateral border of the carapace are rounded in the new species, whereas they are more acute in *P. granulosa*.

—The chelipeds and ambulatory legs are covered with clustered granules and have acute spines in *P. granulosa*, whereas in the new species they are covered only with long rounded spines.

—The acicles are different. The spines are rounded in

the new species but acute in *P. granulosa*. On the other hand, in *P. tuberipes* the acicle has 3 long rounded spines on the inner margin, whereas that of *P. granulosa* has 2–4 small acute spines.

***Paralomis birsteini* sp.n.** (Figs. 4, 5a–e)

Paralomis spectabilis; Birstein & Vinogradov 1967, p. 390, figs. 1, 2 (not Hansen, 1908).