

ZOOLOGY

PRELIMINARY DESCRIPTIONS OF SOME NEW SPECIES OF  
PALINURIDEA

(CRUSTACEA DECAPODA, MACRURA REPTANTIA)

BY

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During a recent study of the collections of Palinuridea of various American, Australian, and European museums, several new species were discovered. As the publication of the final reports on these collections will take some time and as some of the new species are of economic importance and will have shortly to be dealt with in other papers, preliminary diagnoses of the new species are given here.

PALINURIDAE

***Panulirus stimpsoni*** new species

This species belongs to that group of the genus *Panulirus* which contains *P. ornatus* (Fabr.) and *P. versicolor* (Latr.). In fact the present new form has been identified by previous authors with either of these two species. So STIMPSON'S (1860, p. 24) Hongkong material which he thought to be *Panulirus ornatus* and the specimens from the same locality brought by HOLTHUIS (1946, p. 142, 143) to *P. versicolor*, on re-examination proved to belong to *P. stimpsoni*.

Like in *P. ornatus* and *P. versicolor*, the abdominal somites of the new species do not show a sharply defined transverse groove, the antennal segment bears four strong dorsal spines arranged in a quadrangle, the third maxillipeds do not have exopods and the exopod of the second maxilliped has no flagellum.

Though the abdominal somites do not show sharp grooves, there is in all specimens of *P. stimpsoni* examined by me a broad transverse depressed hairy area on the second to sixth abdominal somites. This area is especially distinct in the second and third somites, where it is interrupted in the middle. These depressed hairy areas, which seem to be a constant character in the present species, are never shown by *P. ornatus*, where the abdominal somites are always smooth dorsally. In not full grown specimens of *P. versicolor* such hairy areas may be seen, but these are always less distinct than in *P. stimpsoni*.

The posterior marginal groove of the carapace of *P. stimpsoni* is very

wide, being about as wide as the distance between it and the posterior margin; like in *P. versicolor* the groove widens in the middle. In *P. ornatus* the groove is far narrower and not widened in the middle.

The pleopods of the male have the same broad shape as in *P. ornatus*, being relatively much shorter and wider than those of *P. versicolor*.

The original colour has for the larger part disappeared in my material, but enough traces are left to show that the abdominal somites are of a uniform or irregular colour without transverse bands.

Distribution. — So far the species is only known from Hongkong and Amoy, S. China.

Type. — Holotype is a female specimen (carapace length 53 mm) from Hongkong collected in February 1908 by P. BUTENDIJK; it is now preserved in the collection of the Rijksmuseum van Natuurlijke Historie (Reg. No. Crust. D. 3541). Paratypes from Hongkong and Amoy are in the collections of the U.S. National Museum, Washington, D.C., and in the Leiden Museum.

#### *Puerulus velutinus* new species

This species has been well described and beautifully figured by DE MAN (1916, p. 36, pl. 2 fig. 5, 5a, 5b), who identified it with *Puerulus angulatus* (Bate). DE MAN'S mistake is to be explained by the fact that he had no actual material of BATE'S species at his disposal for comparison. The new species differs from *P. angulatus* and also from the closely related *P. sewelli* Ramadan in the following points. (1) A strong post-orbital spine is present; this spine is lacking in the other species, (2) there are 6 post-cervical and 6 intestinal tubercles on the median carina of the carapace instead of 3 or 4 postcervical and 2 or 3 intestinal teeth as in *P. angulatus*, (3) the carapace is densely pubescent, whereby the tubercles usually are obscured, (4) behind the supraorbital horns there are two teeth only, the last of which is extremely small.

Distribution. — *Puerulus velutinus* is known from the Philippines and Indonesia, it was taken at depths between 320 and 690 m.

Types. — Holotype is the male specimen of 134 mm from Station 297 of the Siboga Expedition (between Roti and Timor, Lesser Sunda Islands, 10° 39' S 123° 40' E) described and figured by DE MAN (1916, p. 40, pl. 2 fig. 5). Paratypes are the other Siboga specimens and specimens collected by the "Albatross" Expedition in Philippine waters. The former are preserved in the Zoological Museum at Amsterdam, the latter in the U.S. National Museum, Washington, D.C.

#### Jasus Parker

The crayfishes which were usually indicated with the name *Jasus lalandii* (H. Milne Edwards) actually prove to belong to 6 different species: *Jasus lalandii* (H. Milne Edwards, 1837) from South Africa,

*Jasus paulensis* (Heller, 1863) from St. Paul and Amsterdam Islands, *Jasus novaehollandiae* new species from S.E. Australia and Tasmania, *Jasus edwardsii* (Hutton, 1875) from New Zealand, *Jasus frontalis* (H. Milne Edwards, 1837) from Juan Fernandez, Chile, and *Jasus tristani* new species from Tristan da Cunha. The two new species are characterized as follows.

### *Jasus novaehollandiae* new species

This species has been described and excellently figured by McCoy (1890, p. 189, pls. 149, 150) under the name *Palinurus lalandi*. It is very closely related to *Jasus edwardsii* from New Zealand. Both species differ from the true *Jasus lalandii* of South Africa in having the anterior half of the first abdominal somite perfectly smooth; this somite shows some squamiform sculpturation behind the transverse groove only. In *Jasus frontalis* there is no sculpturation on the first somite at all, neither before nor behind the transverse groove. In *J. paulensis* and *J. tristani* there is some sculpturation in the posterior half of the somite (the anterior half here is also perfectly smooth), but this is restricted to a very narrow band right behind the groove. In the second to sixth abdominal somites of *Jasus novaehollandiae* the sculpturation covers the entire dorsal surface, the squames being numerous and placed in 4 or 5 transverse rows; only the extreme anterior portion of the somite, which disappears under the previous somite in the fully stretched animal, is smooth. In the sculpturation of the second to sixth abdominal somites *Jasus novaehollandiae* resembles *J. lalandii* and differs from the other species. In *J. edwardsii* the squamiform sculpturation of the abdomen consists of fewer and larger squames, which on each somite are placed in 2 or 3 rows only.

The pleopods of the male in *Jasus novaehollandiae* are relatively longer and narrower than in *Jasus edwardsii*.

*Jasus lalandii*, *J. edwardsii*, and *J. novaehollandiae* resemble each other in the shape of the dorsal spines and tubercles of the carapace. These spines are narrow and elongate, being several times longer than wide. In *J. frontalis* and *J. tristani* they are about as long as wide. The small spines of the carapace in the latter two species are inconspicuous, being very much smaller than the large spines. In *J. lalandii*, *J. edwardsii*, and *J. novaehollandiae* these smaller spines are quite distinct and less different from the large spines.

Types. — Holotype is a male specimen with carapace length of 76 mm, from off the coast of New South Wales near Maroubra, Sydney (June 1955, coll. A. A. РАСЕК), it forms part of the collection of the Rijksmuseum van Natuurlijke Historie and is inserted in the collection under Reg. No. Crust. D. 10642. Paratypes are present in the U.S. National Museum, the Australian Museum, and the Leiden Museum.

**Jasus tristani** new species

Of this species a description and an excellent figure have been published by BATE (1888, p. 86, pl. 11a, pl. 12 fig. 1) under the name *Palinostus lalandii*.

Like *J. novaehollandiae* the present new species has the anterior half of the first abdominal somite perfectly smooth and without sculpturation. A narrow transverse row of small squames is placed just behind the transverse groove of the somite, but the larger part of the posterior half is smooth. The following somites have a rather wide transverse smooth area along the anterior and along the posterior margins, these smooth areas are clearly visible even in the fully stretched animals. The squamae of the abdominal somites are broad and large, they are placed in 2 or 3 transverse rows per somite.

The large spines on the carapace are similar to those of *Jasus frontalis* being as long as wide and much larger than the small spines.

*Jasus tristani* proves to be closest to *J. frontalis*, but may be immediately distinguished by the presence of the squamiform sculpturation on the posterior half of the first abdominal somite.

Types. — Holotype is a male specimen from Tristan da Cunha collected during the 1937–1938 Norwegian Scientific Expedition to Tristan da Cunha.

## SCYLLARIDAE

**Scyllarides deceptor** new species

This species was described and figured by ANDRADE RAMOS (1951, p. 125, pl. 1) under the name *Scyllarides brasiliensis* Rathbun. A comparison of an extensive material from São Paulo State, Brazil, including specimens seen by Ramos, with Rathbun's type from Bahia, showed that the South Brazilian specimens belong to a new species different from that described by RATHBUN.

That RAMOS mistook his specimens for RATHBUN's species is not surprising at all, since both show the same very characteristic colour pattern on the dorsal surface of the first abdominal somite. This somite, namely, shows in both species a distinct rounded dark red spot on either lateral part. In this colour pattern the two species differ from all other known species of the genus. *S. deceptor* differs from *S. brasiliensis* most conspicuously in the shape of the pleura of the second abdominal somite. In *S. brasiliensis*, like in *S. squamosus* (H. Milne Edwards), this margin is evenly convex, while in *S. deceptor*, like in all other species of the genus the distal part of the posterior margin of the pleura is distinctly concave. The carpus of the first pereopod in *S. brasiliensis* shows a deep longitudinal groove flanked by two distinct ridges; in *S. deceptor* this groove is very shallow, while the carinae are absent.

Distribution. — So far the species is known only from various localities in São Paulo State, S. Brazil.

Types. — Holotype is a female (carapace length 86 mm) from Ubatuba, São Paulo State, Brazil (13 March 1950, trawled, ship "Dos Irmãos", leg. КИКУЧИ); it is preserved in the Rijksmuseum van Natuurlijke Historie under Reg. No. Crustacea D. 15451.

#### *Arctides regalis* new species

This species of *Arctides*, though it inhabits Hawaiian waters, is much closer to *A. guineensis* (Spengler) from the Atlantic than to *A. antipodarum* Holthuis from Australian and New Zealand waters. In fact it so strongly resembles the Atlantic species that the two forms at first were considered to be conspecific. The differences between them are the following. (1) Behind the gastric spine of the carapace there is a longitudinal row of three single spinules in *A. regalis*; in *A. guineensis* there are two double-topped spinules there. (2) In *A. regalis* the denticles on the outer margin of the last segment of the antenna are distinctly larger than in *A. guineensis*. Furthermore there are slight differences in the size of the spines on the carapace, which in *A. regalis* are larger and more conspicuous than in *A. guineensis*; in the smooth part along the posterior margin of the carapace, which is wider in *A. regalis* than in *A. guineensis*; and in a slightly different pattern of sculpturation of the abdomen.

The new species is named *Arctides regalis* in honour of Mrs. MARY ELEANORE KING of Honolulu, Hawaii, in recognition of her many valuable contributions to the promotion of the study of marine biology.

Distribution. — So far the species is known only from Hawaiian waters.

Types. — The holotype, a male specimen with carapace length 48 mm, was taken at a reef near Coconut Island, Kaneohe Bay, Oahu, Hawaii, in April 1959 by Mr. LESTER ZUKERAN, and was donated by Dr. PAUL J. ILLG of the University of Washington, Seattle, U.S.A., to the Rijksmuseum van Natuurlijke Historie, where it now forms part of the collection under Reg. No. Crustacea D. 17700. A female paratype (carapace length 41 mm) from the Hawaiian Islands, collected by Mr. SPENCER W. TINKER, is held by the Allan Hancock Foundation, Los Angeles, California.

#### *Scyllarus dubius* new species

This new species is very close to *Scyllarus sordidus* Stimpson, resembling it in having (a) no median carina on the abdominal somites, (b) a long transverse and about 20 short longitudinal grooves on the first abdominal somite, (c) no trace of a pregastric tooth on the carapace, (d) a distinct rostral tooth and large compressed triangular gastric and cardiac teeth, and (e) the anterior margin of the sternum deeply V-shapedly incised.

*S. dubius* differs from *S. sordidus* in the following points: (1) the anterior

submedian carinae of the carapace are strong and extend forwards distinctly beyond the gastric tooth, (2) there is no transverse groove between the posterior marginal groove and the posterior margin of the carapace, (3) the distal tooth on the lateral margin of the fourth antennal segment is not larger than the proximal, (4) also the difference in size between the proximal and distal teeth on the inner margin of that segment is less strong than in *S. sordidus*, (5) the upper surface of the segment shows some distinct tubercles on the outer half, (6) the last thoracic sternite has a median tubercle.

*Scyllarus dubius* is known so far from two specimens, one of which is without an accurate locality indication, the other is labelled "Japan". The latter specimen, a female with a carapace length of 15 mm, which is preserved dry, is the holotype. Like the paratype, a male with a carapace length of 12 mm, it forms part of the collection of the Australian Museum, Sydney.

#### *Scyllarus amabilis* new species

Another species which is close to *Scyllarus sordidus*, resembling that species in the characters indicated in the above description of *S. dubius* under a, b, c, and e, and also in having a distinct additional transverse groove between the posterior marginal groove and the posterior margin of the carapace.

In *S. amabilis* the gastric tooth of the carapace is still high, pointed and single, but the cardiac tooth is very low, short and broadly two-topped, it is not much larger than the distal tooth of the posterior submedian carina. The anterior submedian carina is rather indistinct and does not reach forward beyond the gastric tooth. There are only two tubercles in the intermediate row. Like in *S. dubius*, the two teeth on the outer margin of the fourth antennal segment are of about the same size. The median figure of the arborescent markings of the second and third abdominal somites is somewhat raised.

Types. — The holotype is a female with a carapace length of 17.5 mm, from near the entrance to Roebuck Bay, near Broome, N.W. Australia (depth 5–8 fms, dredged, 26 September 1929). There is one paratype, an ovigerous female with carapace length 16 mm, from an unknown locality. Both types are in the Australian Museum, Sydney.

#### *Scyllarus aureus* new species

The present species resembles *Scyllarus cultrifer* (Ortmann) and differs from all other species of the genus by having the third pereopod subchelate by the presence of a large distoventral tooth on the propodus. In *S. aureus* also the second leg possesses a distinct distoventral tooth on the propodus, while a remnant of such a tooth is visible in the first and fourth legs. The median teeth of the carapace are much lower than

in *S. cultrifer* and *S. timidus* Holthuis. The pubescence of the dorsal surface of the carapace and the antennae has a striking golden iridescent shine, for which character the specific name aureus (golden) is now proposed for the species. The anterior half of the abdominal somites is not smooth but shows two complete transverse hairy grooves. The fourth segment of the antenna bears only a single tooth on the inner margin. The anterior margin of the sternum is strongly forwards produced beyond the antero-lateral teeth and shows a distinct sharp median incision. Median tubercles are present on the third to fifth thoracic sternites.

Types. — The holotype, and only specimen so far known of the species, is an ovigerous female with carapace length 15 mm, which was collected by the "Albatross" Expedition in the Philippines at its Station D 5371, at 13° 49' 40" N 121° 40' 15" E, at a depth of 83 fms. It forms part of the collection of the U.S. National Museum, Washington, D.C.

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