A new species of Salmozoneus (Crustacea: Decapoda: Alpheidae) from Palau

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Abstract

A new species of the genus Salmozoneus (Alpheidae) is described from Palau in the Central Pacific. The specimens were sampled by yabby pump from presumed Alpheus burrows and provide a further record of commensalism in the genus, although not fully substantiated due to the lack of visual confirmation. The new species can be distinguished from all other Pacific species in the genus, by the absence of ischial spines on the fourth pereiopod, but is closely related to the Japanese S. gracilipes and related forms.

Key words: Decapoda, Alpheidae, Salmozoneus, new species, Palau.

Introduction

The alpheid genus Salmozoneus HOLTHUIS, 1955, occurs from the Mediterranean southwards through to tropical latitudes. The genus as a whole remains relatively poorly known, with many species known only from a few specimens, while some taxa are assumed to be species complexes (ANKER, 2001, 2003a).

Worldwide, the genus at present contains 22 described species (a key to which is given in ANKER, 2003a), as well as several undescribed taxa (ANKER, 2003a; ANKER, pers. comm.). These species can be informally divided into two species groups, on the basis of the relative lengths and shapes of the minor to the major cheliped (ANKER, 2003a, b). The Salmozoneus jarli (HOLTHUIS, 1951) group contains four species, characterised by the minor cheliped being longer (although more slender) than the major cheliped; occurring exclusively in the Atlantic Ocean (HOLTHUIS, 1951; FRANSEN, 1991; DWORSCHAK et al., 2000). The much larger, and morphologically more disparate, Salmozoneus serratidigitus (COUTIÈRE, 1896) group is characterised by the minor cheliped being much shorter and less robust than the major cheliped (with the exception of the recently described dimorphic S. seticoleus ANKER, 2003a). The 18 species of this group are distributed across the entire Indo-Pacific (BANNER & BANNER, 1981), as well as in the western and central Atlantic (CHACE, 1972; FELDER & MANNING, 1986; MANNING & CHACE, 1990).

Here, a further species of the genus Salmozoneus is described from Palau, central Pacific, based on material collected from burrows of Alpheus aff. mackayi BANNER, 1959. Specimens are deposited in the collections of the Oxford University Museum of Natural History (UK) and the Institut Royal des Sciences Naturelles de Belgique, Brussels (KBIN, Belgium).

Systematics

Alpheidae RAFINESQUE, 1815
Salmozoneus HOLTHUIS, 1955
Salmozoneus colinorum sp. nov.
(Figs. 1-4)

Material examined

Holotype: ovigerous female, post-orbital carapace length (pocl) 3.05 mm; Ngerbecched mangrove, sw of Malakal Harbour, Palau, 07°19.703' N, 134°28.611' E, 1-2 m seaward of
mangrove edge, on silty sand; yabby pumping of presumed alpheid burrows (see ecology section); leg. S. DE GRAVE & C. BURRAS, 2 June 2002; field no. 320; OUMNH Zoo. Coll. 2002-24-44. Paratypes: post-ovig. female, pocl 3.55 mm, KBIN IG 30230; ovig. female (partly dissected), pocl 3.00 mm, KBIN IG 30231; ovig. female (fully dissected), pocl 3.35 mm, OUMNH Zoo. Coll. 2002-24-45; two ovig. females (not dissected), pocl 3.25, 3.35, OUMNH Zoo. Coll. 2002-24-46; all paratypes same data as holotype.

**DESCRIPTION**

Carapace setose, without post-rostral tubercle (Figs. 1A-C). Rostrum long, slender, approximately 0.30 of pocl in holotype, 0.28-0.37 in paratypes, reaching to end of second article of antennular peduncle; inferior margin with small, acute, subdistal tooth (Fig. 1C), tooth reduced to tubercle in one paratype; base of rostrum approximately 0.67 of rostrum length in dorsal view (Fig. 1B). Extra-corneal teeth well-de-
Figure 2. Salmozeus colinorum sp. nov, ovig. paratype pocl 3.35 mm (OUMNH 2002-24-45). A: antennular peduncle; B: detail of lateral antennular flagellum; C: scaphocerite and antennal peduncle; D: tip of telson, E: third maxilliped; F: tip of same; G: uropod, H: lateral spine of exopod. Scale bar indicates 0.65 mm (A, E, G), 0.50 mm (B, D) or 0.20 mm (F, H).
Figure 3. *Salmoneus colinorum* sp. nov. ovigerous paratype pool 3.35 mm (OUMNH 2002-24-45). A: minor cheliped; B: same, finger tips; C: major cheliped; D: same, palm, dorsal view; E: same, palm, ventral view; F: same, finger tips. Scale bar indicates 1 mm (C, D-E), 0.5 mm (A, F) or 0.1 mm (B).
Figure 4. *Salnzoneus colinorum* sp. nov, ovigerous paratype pocl 3.35 mm (OUMH 2002-24-45). A: second pereiopod; B: same, fingers; C: third pereiopod; D: same, distal part; E: fourth pereiopod; F: fifth pereiopod; G: same, distal part. Scale bar indicates 1 mm (C, E, F), 0.4 mm (A) or 0.2 mm (B, D, G).
veloped, acute. Eyes partially visible in dorsal and lateral views. Pterygostomial angle sub-quadrate (Fig. 1C).

Mouthparts not illustrated, typical for genus. Third 
maxilliped (Fig. 2F), tip with single, small, 
sinuous, tip furnished with three spines; fingers 0.6 times as long as 
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Discussion

Morphologically, the new species exhibits most similarities to Salmoneus gracilipes MIYA, 1972, described from the Ryukyu Archipelago (Japan); especially in relation to the overall pilosity of the carapace, the length and width of the
rostrum, the form of the major cheliped, eyes partially exposed dorsally and laterally, and the gracile nature of the pereiopods. However, the presence of a ventral rostral tooth, the lack of spines on the ischium of the fourth and fifth pereiopods, the lack of a medial indentation of the distal margin of the telson, as well as the colour pattern (S. gracilipes is quoted as entirely transparent, see Miya, 1972) do separate both taxa easily. Quite problematically, Miya (1984) assigned a single specimen from Majuro Atoll (Marshall Islands) to S. gracilipes, although the specimen harboured a minute, ventral rostral tooth. No other distinguishing features are mentioned in either the text or the figures, and as this specimen is presently unavailable for study, this record is difficult to fully interpret. It seems likely that this specimen in fact belongs to S. colinorum sp. nov., as the presence or absence of a ventral rostral tooth appears diagnostic within the genus. However, the ecology of the Majuro specimen (under a coral rock buried in sand at low tide level of reef flat at ocean side, see Miya, 1984) does differ from the general ecology of the collecting site of S. colinorum sp. nov.; as such the true taxonomic status of this specimen cannot be fully ascertained and must await the collection of new material from Majuro Atoll.

The new species is more distantly related to a number of other species: S. setichelle from northern Australia, S. cavicolus Felder & Manning, 1986 from the Western Atlantic; an undescribed species from Vietnam (Anker & Marin, submitted); and two undescribed species, closely related to S. cavicolus from the Western Atlantic (Anker & Felder, in prep.). S. tafaongaensis Banner & Banner, 1966, only known from the mutilated holotype may also belong in this group (Anker, pers. comm.). This species group is characterised by an elongate, slender rostrum (with a small, sub-distal tooth in S. colinorum sp. nov., S. setichelle and S. cavicolus); dorsally partly exposed eyes; slender dactyli on the third to fifth pereiopods; and with the major chela armed along the entire or near entire length of the cutting edges (Anker & Marin, subm.). The new species can be distinguished at once from all other species in this group, by the absence of ischial spines on the fourth pereiopod. Further, it differs from S. setichelle primarily by the lack of an indentation on the posterior margin of the telson, and the absence of polymorphic chela, as well as the shape of the lateral plate on the third maxillipeds and other minor features. At present it is difficult to fully contrast the new species to the Western Atlantic S. cavicolus, as several cryptic taxa have been contrasted within this species (Anker & Felder, in prep.). The major cheliped of S. tafaongaensis is not known (Banner & Banner, 1966; Anker, 2003), S. colinorum sp. nov. differs from S. tafaongaensis in a number of characters: rostrum reaching to end of second antennular peduncular article versus reaching end of antennular peduncle in S. tafaongaensis; extra-corneal teeth much shorter (reaching midlength of first antennular peduncular article in S. tafaongaensis), carpus of third pereiopod disto-ventrally unarmed (versus armed in S. tafaongaensis), propodal brush on fifth pereiopod well developed (versus poorly developed in S. tafaongaensis), and the telson lacking a medial indentation (versus trapeziform in S. tafaongaensis).

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References


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