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A new genus, *Leptomenes*, for the pontoniine shrimp *Periclimenes dolichosternum* Okuno & Mitsuhashi, 2003 (Crustacea: Decapoda: Palaemonidae)

Alexander J. BRUCE
Crustacea Section, Queensland Museum, P.O. Box 3300,
South Brisbane, Queensland, Australia 4101
E-mail: abruce@broad.net.au

Abstract: A new genus, *Leptomenes*, is designated for the pontoniine shrimp *Periclimenes dolichosternum* & Mitsuhashi, 2003. The single species is known only from the type material from the Ryukyu Islands, Japan.

Resumé : *Un nouveau genre,* Leptomenes*, pour le crevette pontoniinae,* Periclimenes dolichosternum *Okuno & Mitsuhashi, 2003 (Crustacea : Decapoda : Palaemonidae).* Un nouveau genre, *Leptomenes*, est proposé pour la crevette pontoniinae *Periclimenes dolichosternum* Okuno & Mitsuhashi, 2003. La seule espèce n'est connue que par le matériel type des Iles Ryukyu, Japon.

Keywords: Leptomenes gen. nov.; Crustacea; Caridea; Pontoniinae; Ryukyu Islands; Japan; taxonomy

Introduction

The pontoniine shrimp *Periclimenes dolichosternum* was described on the basis of numerous specimens from the Ryukyu Islands, Japan, by Okuno & Mitsuhashi (2003). Since that time the genus *Periclimenes* Costa has been restricted by the removal of taxa into newly established genera, including *Kemponia* Bruce and *Manipontonia* Bruce, Okuno & Li. (Bruce, 2004; Bruce et al., 2005). Further new genera are in the process of being separated from *Periclimenes* sensu lato and some old genera are likely to be reinstated. In the course of these studies, the shrimp *Periclimenes dolichosternum* has been reassessed and, in view of its several remarkable features, it is concluded that it can not be included in the more restricted genus *Periclimenes.* A new monospecific genus is now designated for this shrimp.

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Systematics

Crustacea Decapoda
Family Palaemonidae Rafinesque, 1815
Subfamily Pontoniinae Kingsley, 1878
***Leptomenes* gen. nov.**

Diagnosis of genus

Smallsized pontoniine shrimps of very slender subcylindrical body shape. Carapace smooth, glabrous, with rostrum well developed, lateral carinae obsolete, dorsally dentate, ventral teeth obsolescent; epigastric spine present, hepatic and antennal spines present, hepatic spine fixed, supraorbital spines absent, orbit poorly developed, without postorbital groove, inferior orbital angle strongly produced, without ventral flange, anterolateral angle of branchiostegite not produced. Abdomen very well developed, elongate, smooth, glabrous; third segment posterodorsally produced, non-carinate, pleura rounded; fourth and fifth not acutely produced posteriorly;sixth segment elongate, distinctly longer than postorbital carapace length. Antennule elongate, subequal to postorbital carapace length, with distolateral angle produced; stylocerite acute, statocyst normal; intermediate segment about 0.8 of proximal segment length; flagella well developed. Antennal basicerite with lateral tooth; scaphocerite well developed, with strong distolateral tooth not exceeding distal lamella. Ophthalmic somite without *bec ocellaire*. Eye well developed, subcylindrical, cornea globular, well pigmented, stalk without proximolateral articular process; epistome unarmed. Mandible without palp, molar and incisor processes normal. Maxillula with feebly bilobed palp. Maxilla with slender, tapering palp, basal endite simple, narrow, with sparse simple setae distally, coxal endite obsolete. First maxilliped with simple non-setose palp, basal and coxal endites feebly separate, broad; exopod with well developed flagellum, caridean lobe large, elongate, epipod feebly bilobed. Second maxilliped with normal endopod, exopod well developed, epipod suboval, without podobranch. Third maxilliped very slender, ischiomerus fused, basis feebly separated, exopod well developed, coxa with elongate lateral plate, without arthrobranch. Second to third thoracic sternites elongate, unarmed, fourth without slender median process; with five pleurobranchs. First pereiopods slender, chela with fingers simple, cutting edges entire. Second pereiopods feebly developed, very slender, subequal and similar; chela slender, fingers elongate, exceeding palm length, cutting edges non-dentate, finely serrate throughout length, merus without distoventral tooth, major chela without molar process and fossa. Ambulatory pereiopods slender, dactyls slender, biunguiculate, without basal process, merus and ischium distinct. Uropod with protopodite bluntly produced; exopod distolaterally dentate, with small mobile spine. Endopod of male first pleopod small, non-setose, without medial accesoory lobe; second pleopod endopod with appendix masculina woth two setulose terminal setae. Telson with two pairs of small dorsal spines, three pairs of posterior spines.

Type species

Periclimenes dolichosternum Okuno & Mitsuhashi, 2003, Proc. Biol. Soc. Washington, 11 (2): 488-495, figs 1-5, by present selection.

Systematic position

Leptomenes is most closely related to the species of *Periclimenes* Costa, 1844, that are generally referred to as the *Periclimenes aesopius* species group, presently including 12 species and presently undergoing revision. *Leptomenes* shares with these shrimps the following characters: Rostrum laterally compressed, with dorsal dentition, without lateral wings; cephalothorax relatively small, carapace with supraorbital spines absent; hepatic spine present, fixed, postorbital groove absent; inferior orbital angle well developed; abdomen very well developed, third abdominal segment posterodorsally produced, sixth greater than 1.2 times postorbital carapace length, fourth and fifth pleura not acutely produced; scaphocerite well developed; mandibular palp absent; all maxillipeds with well developed exopods; fourth thoracic sternite without finger-like median process; first pereiopod chelae with simple fingers, second pereiopod chelae similar, subequal; ambulatory dactyls without basal process, merus and ischium not fused

Leptomenes may be readily distinguished from the *Periclimenes* species of the *aesopius* group by the following features: Absence of a ventral flange on the inferior orbital angle; greatly elongated middle segment of the antennular peduncle; greatly elongated second and third thoracic sternites; feebly developed second pereiopods; non-dentate finely serrate cutting edges of the fingers of the second pereiopod chelae.

Of the three genera that have recently been resurrected or sepaated from *Periclimenes* Costa sensu stricto, *Manipontonia, Harpiliius* and *Kemponia,* the genus *Leptomenes* can be readily distinguished from the first by the by the completely dissimilar forms of the rostra, and from the latter two genera by the absence of a median sternal process on the fourth thoracic sternite.

Etymology

From *leptos* (Greek), thin, slender, and *–menes,* from *Periclimenes*, a son of Neptune, a pontoniine generic name first used by Costa, 1844. Gender masculine.

Remarks

Okuno & Mitsuhashi (2003) have provided a detailed descriptive and fully illustrated account of *Leptomenes dolichosternum,* which has not been reported since its original description. No further morphological detail is now needed. The precise ecological role of the species is not clear. It appears to be free-living and not closely associated with any particular host animal, unlike species of the *aesopius* group. Okuno also notes that the small shrimps are "semi-transparent and almost invisible in muddy water". The shrimps of the *aesopius* group are generally strikingly coloured and associated with a variety of cnidarian hosts. However the third abdominal segment in *L. dolichosternum* is posterodorsally provided with a large white patch and this region is also particularly conspicuously coloured with species-specific colour patterns in the members of the *aesopius* group.

The male specimens examined by Okuno and Mitsuhashi had CLs from 1.6-2.8, non-ovigerous females from 2.1-2.3 and ovigerous females from 2.3-4.4 mm. The larger male specimens are sufficiently large size, larger than the smaller ovigerous females, to suggest maturity and their second pereiopods were not recorded by these authors as different from those of the females.

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