



A NEW SPECIES OF *CYATHURA* (ISOPODA, ANTHURIDAE) FROM  
FRESH WATER IN SHANGHAI, P.R. CHINA

BY

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ABSTRACT

Anthurid isopods collected from the river courses in Shanghai, China, are described as a new species, *Cyathura shanghaiensis*, representing the first record of the genus in fresh waters of China.

RÉSUMÉ

Des isopodes Anthuridés, collectés dans les cours d'eau à Shangai, Chine, sont décrits comme une espèce nouvelle : *Cyathura shanghaiensis* sp. n., représentant le premier signalement du genre *Cyathura* dans les eaux douces de Chine.

INTRODUCTION

The anthurid isopod genus *Cyathura* Norman & Stebbing, 1886 is cosmopolitan, except for polar regions. Most of its 30 species are coastal with several occurring in estuarine and freshwater habitats (Schotte et al., 1995 onwards, 2008 onwards; Poore, 2001). One species, *Cyathura peirates* Bamber, 2008, has been reported from the littoral of Hong Kong. While working on the systematic study of the benthic fauna of Shanghai city a new species was found in the Dazhenggang River, the first record in fresh water of China.

All material examined is deposited in the State Key Laboratory of Estuarine and Coastal Research, East China Normal University, Shanghai, China. The drawings were made with the aid of drawing tube mounted on a Zeiss V8 compound microscope (magnification: 6.3-300×).

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## SYSTEMATICS

Family ANTHURIDAE Leach, 1814

Genus *Cyathura* Norman & Stebbing, 1886***Cyathura shanghaiensis* sp. nov.**

(figs. 1-3)

Material examined.— Holotype: ♂ (total length, 12.5 mm), CWRC 20110711-1, Dazhenggang River, Shanghai (30.96°N 121.02°E), depth 4 m, bottom mud, coll. Xiaohua Chen, by Petersen Grab (1/32 m<sup>2</sup>), 11 July 2011. Paratype: ♂ (head to pereonite 4 missing), collected with holotype.

Description.— Male. Body (fig. 1A) slender, 9 times as long as wide. Integument smooth, with dense fine setae all over; shallow dorsal pits on pereonites 4-6. Head (fig. 1B) about as long as wide; rostrum almost as long as lateral lobes, truncate; without eyes. Dorsolateral margins of pereonites 4-7 produced as small lobes posterior to base of legs. Pereonites 1-7 respectively 1.6, 1.2, 1.1, 1.2, 1.0, 0.5 and 0.8 times as long as wide, pereonite 4 longest. Pleon 1.2 times as long as pereonite 7, about as long as wide; pleonites 1 to 5 fused, pleonite 6 distinct with posterior split in mid-line. Telson (fig. 1E) flat, 2.3 times as long as wide and 1.3 times as long as pleon, with 2 basal statocysts; lateral margins parallel, finely setose.

Antennule (fig. 1C) reaching midway along article 5 of antenna; article 1 with numerous fine inner setules, article 2 with outer row of 7 setae longer than article width; flagellum of 4 articles, first very short, naked, second longest (twice as long as other 3 articles together), third and fourth articles small, third naked, fourth with several distal setae and 3 aesthetascs. Antenna (fig. 1D) peduncle article 2 longest; article 3 with numerous fine inner setules; third and fourth articles subequal, fifth a quarter longer with numerous distal setae; flagellum of 4 articles, second longest, distal articles with numerous fine setae.

Mandibular molar (fig. 3A) narrow, truncate; lamina dentata with 12 saw-teeth, incisor blunt; palp 3-articled, with numerous fine setae predominantly along outer margin; article 1 about 2.4 times as long as wide, article 2 about 1.4 times as long as article 1, with 3 long inner setae; article 3 1.2 times as long as article 1 with several short inner setae and 6 terminal pectinate setae. Maxilla (fig. 3B) with strong distal and four subdistal teeth blunt. Maxilliped (fig. 3C) covered with fine hairs, basal endite obsolete; fused articles 3-4 with 2 mesial setae; fused articles 4-5 oblique, about 0.4 times length of 3-4, with 4 mesial setae.

Pereopod 1 (fig. 2A) robust, subchelate; basis swollen, 1.8 times as long as wide, extensor margin convex in middle, with dorsal row of setules and 3 setae; ischium 0.8 times as long as basis with dense row of setae on flexor margin; merus 2.4 times as wide as long, without conspicuous spinose apophysis; carpus triangular, with fine setules and row of setae along flexor margin, distally not extended; propodus

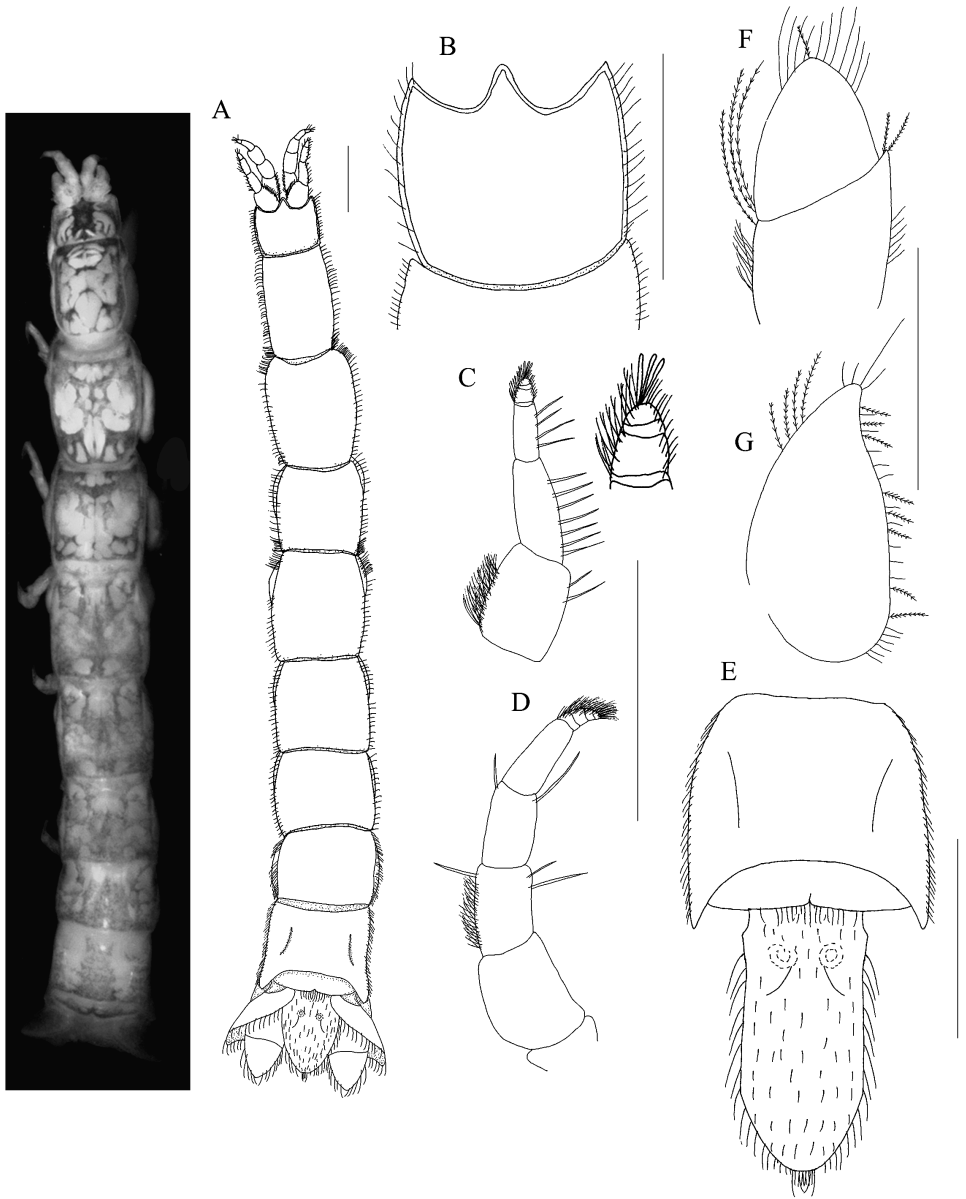


Fig. 1. *Cyathura shanghaiensis* sp. nov. Holotype male. A, male holotype, dorsal view; B, head; C, antennule and detail of tip; D, antenna; E, telson; F, uropod endopod; G, uropod exopod. Scale = 1 mm.

bulbous, 1.8 times as long as wide, extensor margin with sparse row of setae, flexor margin with numerous fine setules, palm with conical tooth at midpoint; dactylus 0.4 times as long as propodus, extensor margin with row of setules; unguis 0.2 times length of whole.

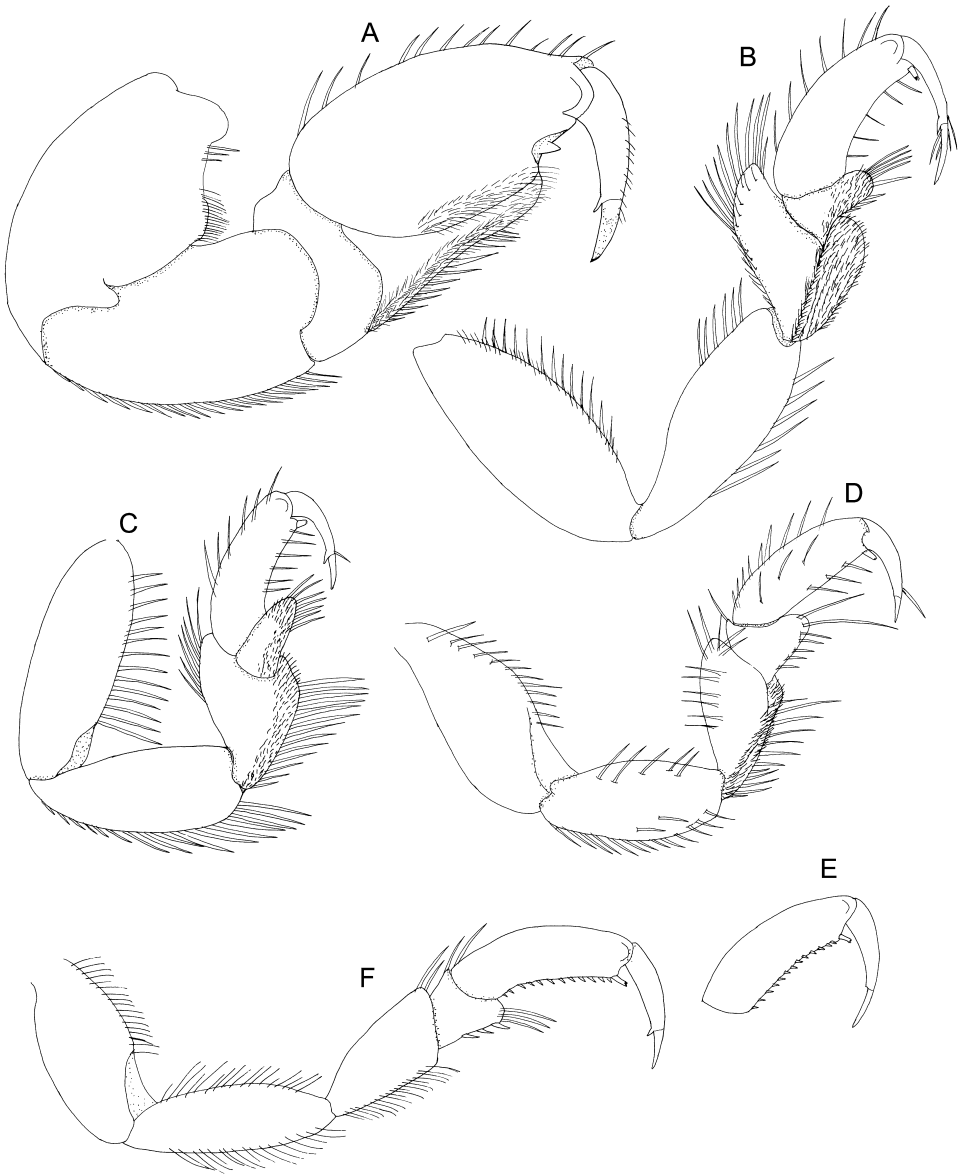


Fig. 2. *Cyathura shanghaiensis* sp. nov. Holotype male. A-F, pereopods 1-3, 5-7. Scale = 1 mm.

Pereopods 2 and 3 (fig. 2B, C) similar; basis with row of setae on extensor margin; ischium subequal to basis, with row of setae on flexor margin; merus lobed on flexor margin, with rows of long setae along both margins, and numerous fine setules on lobe; carpus distally lobed, lobe setose and setulose; propodus cylindrical, curved, with rows of setae along both margins, with stout denticulate seta on distal palm; dactylus with unguis 0.3 of whole.

Pereopods 4-6 of similar size, with stout denticulate seta distally on propodus, lacking a secondary unguis on dactylus. Pereopods 4 and 5 (fig. 2D) basis with row of long setae on extensor margin; ischium and merus with long setae along flexor margin and extensor submargin; merus with setulose flexor margin. Pereopod 6 (fig. 2E) propodus palm with row of 14 short robust setae, last one pectinate. Pereopod 7 (fig. 2F) slender, with longer propodus than more anterior limbs; basis 2.0 times as long as wide with row of fine setules along extensor margin; ischium almost as long as basis, with rows of fine setules along both margins; merus 0.7 times as long as ischium, with row of fine setules on flexor margin, 2 distal setae on flexor margin; carpus 0.3 times as long as merus, with 3 robust setae and 2 simple setae on flexor margin, 2 simple setae distally on extensor margin; propodus 3.5 times as long as wide, longer than more anterior limbs, palm with row of 12 robust setae and 1 pectinate seta.

Pleopod 1 (fig. 3D) exopod operculiform, with about 40 marginal plumose setae; endopod 0.7 times length of exopod, without setae. Pleopod 2 (fig. 3E) with similar arrangement of setae, appendix masculina shorter than endopod, slightly distally dilated.

Uropod endopod (fig. 1F) reaching beyond end of telson, 1.9 times as long as wide, widest proximally; exopod (fig. 1G) 1.9 times as long as wide, margin slightly concave distally, bearing plumose setae and few longer simple setae.

**Etymology.**— The species name is derived from the type locality, Shanghai city.

**Remarks.**— Although incomplete, the paratype cannot be distinguished from the holotype. The holotype displays typical male features besides the presence of an appendix masculina. But the simple and relatively short appendix masculina could indicate that the male may be immature. Pereopods 2 and 3 have curved propodi and the flexor margins of pereopods 1-3 are ornamented with a mat of setules. The female is unknown.

The only other species of *Cyathura* from China, *C. peirates*, is also pigmented. Other species from the northwestern Pacific margin include seven from Japan and one from Vietnam. Of these, *C. furcata* Nunomura & Hagino, 2000, *C. higoensis* Nunomura, 1977, *C. kikuchii* Nunomura, 1977, *C. muromiensis* Nunomura, 1974, *C. sagamiensis* Nunomura, 2006 and *C. shijikoensis* Nunomura, 2001, known from Japan, are illustrated with a complex apex on the appendix masculina. The new species has a simpler appendix masculina apex than any species illustrated to date. In as far as the illustrations of these species can be relied on, these species and the others from the region, *C. omorii* Nunomura, 1992, known from Japan, and *C. truncata* Dang, 1965, known from Vietnam, differ in coloration, body or limb proportions or telson shape. Most of these were reported from estuaries. Only *C. furcata* is from fresh water like the new species. The southern Australian species,

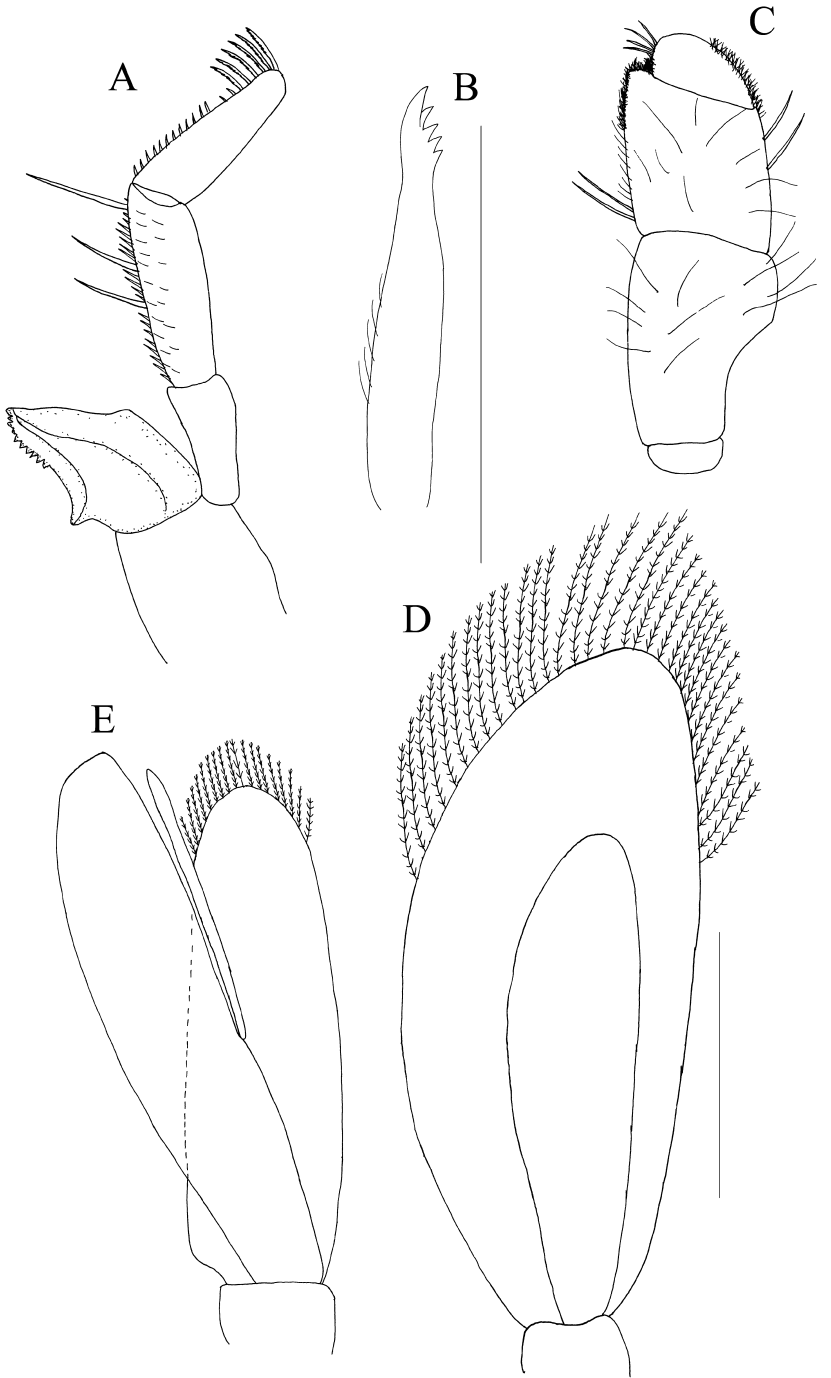


Fig. 3. *Cyathura shanghaiensis* sp. nov. Holotype male. A, mandible; B, maxilla; C, maxilliped; D-E, male pleopods 1-2 (representative setae only shown). Scale = 1 mm for A, C-E; 0.5 mm for B.

*C. hakea* Poore & Lew Ton, 1985 occurs in both estuaries and fresh water coastal lakes.

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