



First records of interstitial leptocytherids (Crustacea, Ostracoda): two new species and a redescription of *Callistocythere ventricostata* Ruan & Hao, 1988 collected from the Okinawa Islands, southern Japan

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Abstract

Two new and one known species belonging to the genus *Callistocythere* of the family Leptocytheridae from interstitial environments of the Okinawa Islands are fully described. *Callistocythere intermedia* **sp. nov.** is regarded as belonging to the *C. japonica* group, and *Callistocythere ryukyuensis* **sp. nov.** belongs to the *C. minor* group (these groups were established by Hanai 1957 based on carapace morphology). The redescribed *Callistocythere ventricostata* Ruan & Hao, 1988 clearly differs from known leptocytherid species in the morphologies of the carapace and the male copulatory organ. The habitats of *C. intermedia* **sp. nov.** and *C. ryukyuensis* **sp. nov.** are found along the shoreline zone and the mid to high tide levels of the littoral zone, respectively, and *C. ventricostata* is found from the shoreline to the sub-tidal zone. These species are the first global records of interstitial leptocytherids.

Key words: Ostracoda, Leptocytheridae, taxonomy, interstitial, new species, sandy beach, Okinawa Islands

Introduction

Callistocythere Ruggieri, 1953 was first proposed as a new genus separate from *Leptocythere* Sars, 1925. The *Callistocythere* species from Japan were described with the following characteristics: a thick and less elongated carapace than *Leptocythere* that is relatively small and heavily sculpted by irregularly arranged ridges with reticulation or undulation; the presence of a snap-knob and snap-pit structure on the ventral margin; and some particular structural details (Hanai 1957). Species of this genus are predominantly surface dwellers on sandy mud, sand or algae from the littoral to eulittoral zones (Hanai 1957; Okubo 1975, 1979), primarily in warm water regions (Ruggieri 1953). A rare cold water fossil species, *Callistocythere setanensis* Hanai, 1957, has also been reported (Hanai 1957).

To date, 37 species of *Callistocythere* have been identified from Japan, and there are approximately 80 species of *Callistocythere* worldwide (Hanai *et al.* 1980; Kempf 1986; Horne *et al.* 2001; Ikeya *et al.* 2003). However, there is only one report of a *Leptocythere* species (*L. polymorpha* Schornikov, 1974) from East Asia.

Hanai's (1957) study of the leptocytherid species from Japan is particularly remarkable. He divided the Recent and fossil species of the genus *Callistocythere* into three groups based on carapace ornamentation and hinge structure. (i) The *Callistocythere littoralis* group possesses a thick and heavily sculptured carapace and has two or more enlarged anterior terminal teeth on the intermediate elements of the modified entomodont hinge in the left valve that interlock with two large sockets in the right valve. (ii) The *C. japonica* group has a somewhat thin, weakly sculptured to smooth carapace and one anterior terminal tooth or socket on the modified entomodont hinge. (iii) The *C. minor* group exhibits a compressed anterior margin and a posteroventral projection and a merodont hinge with containant (a groove of the left valve, which contains or accommodates the dorsal edge of the opposite valve) and distinct anterior and posterior teeth and sockets on the intermediate elements, but the median element is