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Recent Ostracods of the Superfamilies Cytheroidea and Darwinuloidea (Crustacea) from Lake Biwa, a Japanese Ancient Lake

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Seven species of the ostracod superfamily Cytheroidea and four species of the superfamily Darwinuloidea were recovered from Lake Biwa in west-central Japan. Four of the cytheroidean species are newly described herein, all belonging to the genus *Limnocythere*: *L. kamiyai* sp. nov., *L. fude* sp. nov., *L. levigatus* sp. nov., and *L. cyphoma* sp. nov. Two others are new records for Lake Biwa, namely *Limnocythere stationis* Vávra, 1891 and *Metacypris digitiformis* Smith and Hiruta, 2004. The four newly described *Limnocythere* species may be an example of a small endemic species flock. Of the Darwinuloidea recovered, two species, *Darwinula stevensoni* (Brady and Robertson, 1870) and *Vestalenula* sp., have been previously recorded from the lake. *Vestalenula* sp. is herein identified as *V. cylindrica* (Straub, 1952), which was previously known only as a fossil from Europe and the Middle East: this is the first report of a living population. The two other darwinulid species, also belonging to the genus *Vestalenula*, are new records for Japan, namely *Vestalenula lundi* (Neale and Victor, 1978) and *V. molopoensis* (Martens and Rossetti, 1997). Their discovery in Lake Biwa dramatically extends the known distribution of all three *Vestalenula* species by thousands of kilometers and increases the number of darwinulids known in Japan from three to five.

Key Words: Crustacea, Ostracoda, Darwinuloidea, Cytheroidea, Lake Biwa, *Limnocythere*, *Vestalenula*, ancient lake.

Introduction

Lake Biwa is an ancient lake located in Shiga Prefecture, west-central Japan (Fig. 1), with a continuous history of lacustrine habitats stretching back one million years. Additionally, a series of four palaeo-lakes existed to the southeast of the present lake from about 4 million to 1.8 million years ago (Meyers *et al.* 1993; Nakajima and Nakai 1994). Like other ancient lakes of the world, it has a number of endemic species, representing approximately 9% of the reported fauna (Mori and Miura 1990; Nishino and Watanabe 2000). For detailed overviews of Lake Biwa, see Nakajima and Nakai (1994) and Rossiter (2000).

Recently, 18 species of ostracods of the family Candonidae (superfamily Cypri-