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-