Comments on cladocerans of crater lakes of the Nevado de Toluca Volcano (Central Mexico), with the description of a new species, Alona manueli sp. nov.

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Abstract

Cladoceran communities of two lakes of Nevado de Toluca Volcano, Central Mexico, were studied. A new species of Aloninae, Alona manueli sp. nov., is described. It was previously confused with Palearctic Alona intermedia Sars, 1862, but clearly differs from it in the morphology of postabdomen, head shield and head pores, and thoracic limbs. Position of Alona manueli sp. nov. within the genus is unclear, it did not belong to any species-group within Alona s. lat. Other species recorded in the studied lakes are Alona ossiani Sinev, 1998, Alonella pulchella Herrick, 1884, Chydorus belonging to sphaericus-group, Eurycercus longirostris Hann, 1982 and Pleuroxus cf. denticulatus Birge, 1879.

Key words: cladocera, crater lake, Mexico, Neovolcanic Province, endemic, taxonomy

Introduction

Cladocera of Mexico have been intensively investigated during last decades, and the fauna of the region was recently reevaluated (Elías-Gutiérrez et al. 2008). One of the intensively revised groups is the subfamily Aloninae (Anomopoda: Chydoridae). Several new species and subspecies of the group were recently described from Mexico (Ciros-Pérez & Elías-Gutiérrez 1997; Elías-Gutiérrez & Suárez-Morales 1999; Kotov et al. 2003; Dumont & Silva-Briano 2000; Elías-Gutiérrez & Valdes-Moreno 2008; Sinev & Silva-Briano 2012). But still, diversity of Mexican cladocera in general, including Aloninae, is underestimated (Sinev & Silva-Briano 2012). Some of Mexican populations of Aloninae are still presumed to be conspecific with Palearctic taxa. This contradicts to “Frey’s non-cosmopolitanism paradigm” (Frey 1982, 1987), now universally accepted by the experts in the cladoceran taxonomy (Kotov et al. 2010), and such taxa should be reevaluated. One of such Mexican doubtful taxa is Alona cf. intermedia, described by Elías-Gutiérrez et al. (1997), from Lago del Sol, State of Mexico as Biapertura intermedia. The description of this species leaves no doubt that this population is not conspecific to the European Alona intermedia Sars, 1962, as it strongly differs from it by the shape of postabdomen and head shield. This lake, together with smaller Lago de la Luna are located in the Nevado de Toluca volcano crater, at altitude 4620 m.a.s.l.

Cladocerans of both lakes were investigated by Elías-Gutiérrez et al. (1997), who reported Alona affinis (Leydig, 1860) and A. cf. setulosa Megard, 1967 from Lago de la Luna, and A. intermedia Sars, 1862 and Ilyocryptus sp. from Lago del Sol. The latter species was lately revealed to be a new species, Ilyocryptus nevadensis Cervantes-Martínez, Gutiérrez-Aguirre, M. & Elías-Gutiérrez 2000, this taxon is supposed to be a local endemic (Cervantes-Martínez et al. 2000). Dimas-Flores et al. (2008) reported three species of Cladocera, Daphnia ambigua Scourfield,1947, Alona cf. setulosa and Alonella pulchella Herrick, 1884 from the both lakes, and Eurycercus cf. pompophilogodes Frey, 1975 from Lago del Sol only. So far, it is the only record of Nearctic Alonella pulchella in Mexico, but no drawings of the species were provided. According to Bekker et al. (2012), Eurycercus population from Lago del Sol belongs to E. longirostris Hann, 1982 instead of Eurycercus pompophilogodes. Recent