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## A contribution to the aphid fauna (Hemiptera: Aphididae) of Wrangel Island

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### Abstract

Five aphid species collected on Wrangel Island (Russia) are presented. One species, *Aphis polaris* sp. nov., feeding on *Astragalus alpinus* L. and *Oxytropis* sp., is described, and the fundatrix morph of two others, *Pterocomma groenlandicum* Hille Ris Lambers, 1952 and *Metopolophium sabihae* Prior, 1976., is described for the first time.

**Key words:** Arctic, *Aphis polaris* sp. n., *Pterocomma groenlandicum* Hille Ris Lambers, 1952, *Metopolophium sabihae* Prior, 1976

### Introduction

At present, a total of 407 aphid species are known from the arctic and subarctic regions, although the composition and diversity of species vary among regions. In the more intensively explored areas, northern Fennoscandia and the Kola Peninsula, 133 and 154 aphid species are recorded, respectively. In the poorly explored northwestern Siberia and the Magadan region, only 64 and 45 aphid species were found, and the aphid fauna of Chukotka and other areas of eastern Siberia is almost completely unknown (Stekolshchikov & Buga, 2009). During twelve summer seasons (1983–1986, 1988–1994 and 2006), the terrestrial invertebrate fauna of the Wrangel Island Reserve (Russia, Chukotka Autonomous Okrug) was studied by O.A. Khruleva. Only two aphid species were recorded in the period from 1983 to 1994, but in 2006 four aphid species were collected. This material allowed us to draw some conclusions about the aphid fauna of this island and to describe one species as new.

Wrangel Island is located at the boundary between the East-Siberian and Chukchi Seas (Fig. 1). The island is ~150 km long and ~75 km wide; the highest point being Mt. Sovetskaya at 1096 m a.s.l. Due to the mountainous relief of this island, there is a sharp gradient of mesoclimatic conditions with average July temperature varying from 1°C on the northern coast to 7–8° C in the centre (Svatkov, 1970; Alfimov, 2007). The climate differs greatly between parts of the island, a feature clearly visible in their characteristic plant communities. In the eastern part of Wrangel Island, vegetation is dominated by impoverished moss and lichen or grass and moss, whereas in the western part the proportion of grasses, small shrubs and forbs increases, while the mosses and lichens diminish. The interior and the southwestern parts of the island are a mosaic of dry tundra and tundra-steppe with low willow thickets in the valleys. Wrangel Island lies in the arctic tundra subzone (including its northern and southern variants). In the warmest central area, the vegetation is represented by the northern variant of typical tundra; the cool and foggy northeastern and southwestern sea coasts exhibit southern variants of the polar desert zone (Kholod, 2013).

The environmental diversity of Wrangel Island, and specific landscape history (i.e., the absence of complete glaciation and periodical isolation from the continent) are responsible for the peculiarity of the flora and fauna. The biota of this island is characterized by unusually high species diversity relative to other arctic environments; it is rich in endemic, rare, and relict species (Yurtsev, 1986, 1987; Stishov, 2004, etc.). The flora of Wrangel Island includes more than 400 species and subspecies of vascular plants (Yurtsev et al., 2010) and has no known equal in the Arctic for its richness and level of endemism. The insect fauna of Wrangel Island has similar features (Khruleva, 2001, 2007).

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