**ABSTRACT**

A new finding of *Megalospora porphyritis*, previously known only from North America and Japan was registered on Sakhalin and Kuriles, Far East of Russia. The taxon is considered as a good example of an American/Asian disjunction most likely related to geological events in the Tertiary. Illustrations of lichen's morphological features and a map of finding points are provided.

**KEYWORDS:** rare species, disjunction, relict, broad-leaved forest

**MATERIAL AND METHODS**

All the material was examined using standard microscopic techniques with light microscopes MBS-10 and LOMO Mikmed 3. Identifications were done with the help of keys published by Lücking (2007). Natural compounds were characterized by high performance thin-layer chromatography (HPTLC) according to the methods standardized for lichen products (Arup et al. 1993). Spot tests were made with 10% KOH (K), Ca(ClO)_4 (C) and [C_6H_5(NH_2)_2]_2 (P). Examined specimens are deposited in the Herbarium of...
RESULTS

Description: Thallus crustose, corticolous, 2–3 cm across, bluish grey, thick, smooth to uneven-rugulose. Soredia present, diffuse. Photobiont chlorococcoid. Apothecia are not numerous, scattered on the thallus, round, (0.5)–1.8(2.5) mm diam., disc plane, slightly convex, epruinose, margin distinct, slightly prominent, 0.1 mm wide, grey-black to black. Excipulum brownish, K–; epihymenium olive brownish; hypothecium brown, 100–130 µm high; hymenium 150–200 µm high, colorless, densely inspersed with small oil droplets. Ascospores single, hyaline, muriform, 77–90 × 20–33 µm (Fig. 1). Secondary chemistry: pannarin and zeorin. Spot tests: Cortex K–, C–, KC–, P+ yellow; medulla K–, C–, KC–, P+ yellow.

Specimens examined: the Russian Far East, Shikotan Island, Mt. Notoro, 43°46'40.9296"N 146°42'08.0495"E, alt. 92 m, riparian broad-leaved forest with Acer pictum Thunb., on bark of Padus sibirii (Fr. Schmidt) C.K. Schneid, 17 June 2017, leg. A.K. Ezhkin (SAK 1653, 1661). Sakhalin Island, Vavaiskoye lake surroundings, 46°36'35.9172"N, 143°18'50.8968"E, alt. 21 m, coniferous forest, on bark of Picea jezoensis (Sieb. et Juss.) Carr., 1 August 2016, leg. A.K. Ezhkin (SAK 1662). Sakhalin Island, Firsovka river valley, 47°38'42.5"N, 142°34'19.3"E, alt. 18 m, coniferous forest, on bark of Taxus cuspidata Siebold et Zucc. Ex Endl., 1 May 2017, leg. A.K. Ezhkin (SAK 1663).

DISCUSSION

A new finding of Megalospora porphyritis in the Russian Far East has become one more interesting species of the Eastern Asiatic – Western North American group with a disjunctive range that it was recently added with some remarkable species of lichens from the genus Rinodina ((Ach.) Gray) (Sheard et al. 2017, Galanina et al. 2018) and the family Pannariaceae (Ezhkin & Yørgensen 2018). In the Russian Far East M. porphyritis was occasionally found in coniferous and riparian broad-leaved forest areas in low and middle elevations not far from the coastline. North American population of M. porphyritis was found in very similar ecological conditions as Russian population – in moist coniferous and mixed hardwoods at different altitudes from 10 to 1500 m above sea level mostly near the coastline of the Atlantic Ocean (http://lichenportal.org) (Fig. 2A). Populations M. porphyritis of Sakhalin and Kuriles are relatively small and rare. The species was found only in three locations (Fig. 2B). The habitats of the lichen are limited by small forest areas with minimal human impact located on nature protected territories. Traces of old random wood harvesting with trees more than 120 years old were found on the studied territories so these forest areas could be considered as refugiums for the species. This suggests M. porphyritis to be a good example of Arcto-Tertiary relict lichen populations that were separated due to geological events in the past.

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Megalospora porphyritis, a new record for Russia

LITERATURE CITED


Lücking, R. 2007. *Megalospora imshugi* sp. nov. and *M. carabi­ca* sp. nov. from Jamaica (Ascomycota: Teloschistales: Megalosporaceae) increase the number of American *Megalospora* species to ten. *Fungal Diversity* 27:103–110.


Figure 2 Distribution of *Megalospora porphyritis* in the World (http://lichenportal.org) (A) and the Sakhalin Region (B)