To the Knowledge of the Fauna of Microlepidoptera of the “Kurshskaya Kosa” National Park: I

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Abstract—A list of 212 Microlepidoptera species found in the territory of the Curonian Spit (both in its Russian and Lithuanian parts) is given: Micropterigidae (1), Eriocraniidae (1), Nepticulidae (16), Opostegidae (1), Heliozelidae (1), Adelidae (3), Prodoxidae (2), Incurvariidae (2), Tineidae (8), Psychidae (1), Douglasiidae (2), Bucculatrictidae (3), Gracillariidae (26), Yponomeutidae (12), Acrolepiidae (2), Glyphipterigidae (3), Lyonetiidae (1), Ethmiidae (1), Depressariidae (12), Elachistidae (20), Chimabachidae (1), Oecophoridae (9), Stathomopedidae (1), Batrachedridae (2), Coleophoridae (25), Momphidae (3), Blastobasidae (2), Cosmopterigidae (3), Choreutidae (1), Schreckensteiniiidae (1), Epermeniidae (1), Alucitidae (1), Pterophoridae (7) and Pyralidae (35 species). 113 species of 24 families have been collected in the territory of the “Kurshskaya Kosa” National Park, including 45 species new to the Curonian Spit and 32 species new to Kaliningrad Province.

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The first data on the Lepidoptera of the Curonian Spit were provided in the more-than-century-old publication by P. Speiser examining the territories of West and East Prussia (Speiser, 1903); however, due to the complicated history of this region, further studies practically were stopped. Only in the last quarter of XX century, research of lepidopterans of the Curonian Spit was resumed owing to efforts of the Lithuanian and (in recent years) Russian lepidopterists; nevertheless, the knowledge of the lepidopteran fauna of this unique territory remains insufficient. Special faunal studies have been presented only for the higher lepidopterans (Macrolepidoptera) (Shapoval et al., 2005; Shapoval and Shapoval, 2005, 2006, 2007, 2008).

Microlepidopterans were first recorded on the Curonian Spit in the aforementioned publication by Speiser (1903), with 3 species collected near Rybachii Village (the German name Rossitten) in the Russian part of the spit and 2 species in the place Yuodkrante (the German name Schwarzort) in the Lithuanian part of the spit. In addition, 54 species are known to occur in the environs of Zelenogradsk (the German name Cranz) situated at the south-western border of the Curonian Spit. Information on the micromoths from the Russian part of the spit has been still confined to these data. Various faunal reports on the representatives of different groups of Microlepidoptera in the Lithuanian part of the spit are contained in rather numerous publications by P. Ivinskis and several other authors (Ivinskis, 1976a, 1976b, 1978, 1982a, 1982b, 1983, 1984, 1988a, 1988b, 1990; Ivinskis and Piskunov, 1976, 1981; Ivinskis and Kozlov, 1982; Ivinskis and Pakalniškis, 1983; Ivinskis et al., 1985; Ivinskis, 1991, 1992, 1993, 2004; Ivinskis and Švitra, 1992; Puplesis and Diškus, 2003; Sruoga and Ivinskis, 2005; Ivinskis and Rimšaitė, 2006; Paulavičiūtė, 2007, 2008). Altogether, by the beginning of the present study in the Russian part of the Curonian Spit, 3 Microlepidoptera species were found to occur in the Russian part of the Curonian Spit and 273 species, in the Lithuanian part. It should be mentioned for comparison that Kaliningrad Province is now known to contain 778 species of Microlepidoptera (Sinev, 2008) and 1436 species are recorded in Lithuania (Ivinskis, 2004).

Thus, a knowledge of the fauna remains extremely low on the Curonian Spit, especially in its Russian part, which acted as an impulse for conducting the present work.

MATERIAL AND METHODS

The material was collected by A.P. Shapoval from April 6 to October 27, 2012, in the territory of the field station “Fringilla” of the Biological Station of the Zoological Institute, Russian Academy of Sciences,
located within the “Kurshskaya Kosa” National Park, 12 km southwards of Rybachi Village (55°09'91''N, 20°74'55''E). Rather small additional material was collected in 1999, which is particularly indicated in the text. A light-trap of the construction by Histand was placed in a small meadow of nearly 50 m² located in the planted pine forest of medium age (40 to 50 years, polewood) with a herbaceous cover of sally bloom and various cereals as well as with the birch undergrowth. The examined ectonic biotope is distanced 80 m from the complex of sand North-Lattenwald dunes near the shore of Curonian Gulf.

A source of light was a lamp “Leuci MLF” (160 W) suspended from a pole, nearly 2 m above the ground; no screen was used for enlarging the illuminated space. Each episode of collecting lasted from 2 to 6 hours: 2–3 hours in spring and in summer and 3–5 hours in autumn. The lamp was switched in the gloaming, from 6 to 11 p.m., local time, depending on the season. Altogether, 168 episodes of collecting took place; meanwhile, the total time of employing the light trap constituted 483 hours. Insects were killed with tetrachloroethane or with chloroform.

The collected moths (more than 3000 specimens overall) were placed mainly on cotton layers and, partly (in spring and autumn) into the paper envelopes. All the material was mounted and identified by the first author with the use of recent atlases and determination keys (A Key ..., 1978, 1981, 1986; Johansson et al., 1990; Razowskii, 2002, 2003; Goater et al., 2005; Sruoga and Ivinskis, 2005; Slamka, 2006, 2008, etc.), as well as using the basic collection of the Zoological Institute, Russian Academy of Sciences. In complicated cases genital preparations were made using the traditional technique of maceration of the insect abdomens in 10% KOH. The study also involved species not found by us but recorded in the Lithuanian part of the spit as well as in the adjoining territory of Kaliningrad Province (the environs of Zelenogradsk).

The first part of the communication comprises representatives of the majority of families, with the exception of Gelechiidae, Tortricidae, and Crambidae, which will be placed into the second part. Classification of lepidopterans and all the names of taxa follow those in the Catalogue of Lepidoptera of Russia (Sinev, 2008). Each species is provided with the information on the examined material (dates of collecting and the total number of specimens), references to publications containing the data on the fauna of the Curonian Spit, and brief reports on the food substrates of larvae. The symbolic notations in the text are as follows: *the species is recorded for the first time on the Curonian Spit; **the species is recorded for the first time in Kaliningrad Province (Region 1 in Catalogue); ***the species is recorded for the first time in Russia. The whole material is deposited in the collection of the Zoological Institute, Russian Academy of Sciences, St. Petersburg (ZIN).

A LIST OF MICROLEPIDOPTERA SPECIES OF THE CURONIAN SPIT

Family MICROPTERIGIDAE

Micropterix aureatella (Scopoli, 1763).

Family ERIOCRANIIDAE

Dyseriocrania subpurpurella (Haworth, 1828).
Recorded in the Lithuanian part of the spit (Ivinskis, 2004). Quercus.

Family NEPTICULIDAE

Stigmella alnetella (Stainton, 1856).
Recorded in the Lithuanian part of the spit (Ivinskis, 2004). Alnus.

Stigmella betulicola (Stainton, 1856).
Recorded in the Lithuanian part of the spit (Puplesis and Diškus, 2003; Ivinskis, 2004). Betula.

Stigmella carpinella (Heinemann, 1862).
Recorded in the Lithuanian part of the spit (Ivinskis, 2004). Carpinus.

Stigmella glutinosae (Stainton, 1858).
Recorded in the Lithuanian part of the spit (Puplesis and Diškus, 2003; Ivinskis, 2004). Alnus.

Stigmella luteella (Stainton, 1857).