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NEW DATA ON GEOMETRIDAE (LEPIDOPTERA) FROM SAKHALIN ISLAND

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Fifty six species of Geometridae were collected in Sakhalin Island in 2000. *Parectropis similaria japonica* Sato, 1980 and *Protoboarmia faustinata* (Warren, 1897) are firstly recorded for Russia. *Biston betularius* (Linnaeus, 1758), *Garaeus mirandus* (Butler, 1881), *Lomographa bimaculata* (Fabricius, 1775), *Scopula virgulata* ([Denis & Schiffermьller], 1775), *Scionomia parasinuosa* Inoue, 1982) are recorded from Sakhalin for the first time.

KEY WORDS: Geometridae, fauna, Sakhalin Island.

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На острове Сахалин в 2000 г. собрано 56 видов пядениц (Geometridae). *Parectropis similaria japonica* Sato, 1980 и *Protoboarmia faustinata* (Warren, 1897) впервые отмечены для России. *Biston betularius* (Linnaeus, 1758), *Garaeus mirandus* (Butler, 1881), *Lomographa bimaculata* (Fabricius, 1775), *Scopula virgulata* ([Denis & Schiffermüller], 1775), *Scionomia parasinuosa* Inoue, 1982) впервые указаны для Сахалина.

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INTRODUCTION

Up to present 211 species of geometrid moths were recorded from Sakhalin Island (Matsumura, 1925; 1929; Djakonov, 1955; Viidalepp & Remm, 1982; Vasilenko, 1992; Beljaev, 1996; Viidalepp, 1996). This paper is treated Geometridae collected on the Sakhalin Island in 2000 during the field survey of Zoological Museum, Far Eastern State University (Vladivostok) supported by Sakhalin Energy Investment Company LTD. All specimens of Geometridae were collected by A.V. Propletkin and deposited in Institute of Biology and Soil Science (Vladivostok).

DISCUSSION

238 specimens belonging to 56 species of Geometridae have been collected in 15 localities (Fig. 1). The list of the species with collecting sites and number of specimens is given in Table 1. The species are arranged according to their capturing from south to north. Two species (double asterisked) were recorded for Russia for the first time and 5 species (single asterisked) were firstly mentioned for Sakhalin (Table 1). Among them *Biston betularius* and *Lomographa bimaculata* are very common through the Palaearctic region. This newness emphasises an insufficiency of investigation of the geometrid moths on the Sakhalin Island. *Parectropis similaria japonica* is given in the current treatment, but very likely it is a well-separated species. Additional material is needed for solving of this problem.

The boreal species of Geometridae are dominated in most collecting sites. The species with East Asian nemoral range are presented in the localities from 1 to 5 (approximately up to 49°N), about one-third of them are associated with *Picea-Abies* forests and connected trophically with coniferous trees (*Garaeus mirandus, Protoboarmia faustinata, Semiothisa fuscaria*, *Myrteta unio*, *Nipponogelasma lucia*). Only one East Asian species, *Alcis medialbifera*, was recorded from central and northern parts of the Island (localities 10, 12, 13), probably because of more later flying of imago. This species is nocturnal and trophically connected with coniferous trees but in the localities 10 and 13 has been collected in the daytime (8 and 14 specimens respectively). Almost widely distributed boreal transpalaearctic species were collected in the central part of Sakhalin (localities 6-11, approximately up to 50°N). Only arctic-boreal geometrid moths were found in the more northern localities (13, 14, 15).

The study show a changing of the geometrid species composition on Sakhalin from south to north. The number of transpalaearctic boreal and arctic-boreal species increased northwards. Transpalaearctic boreal species predominate in Sakhalin geometrid fauna.

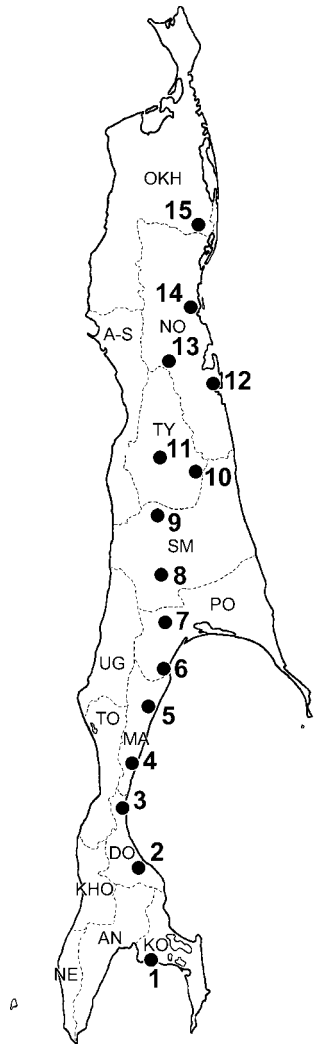

Fig. 1. The collecting sites: (1) 10 km E of Korsakov, near Prigorodnoe, 29.VI-8.VII 2000, in the daytime, in *Picea-Abies* forest with meadows; (2) 14 km N of Dolinsk, Sennaya river, near Sovetskoe, 11.VII 2000, on light, on river valleys with *Salix-Alnus* forests and meadows; (3) 60 km N of Dolinsk, near Vzmor'e, 17,18.VII 2000, in the daytime, in planting of *Pinus silvestris* with *Betula* and meadows; (4) 46 km S of Makarov, near Pugachevo, 23.VII 2000, on light, in planting of *Pinus silvestris* with meadows; (5) 6 km NW of Makarov, foothills of Makarova mountain, 25.VII 2000, on light, in planting of *Pinus silvestris* with meadows, at a distance - *Picea-Abies* forests; (6) 30 km SW of Poronaisk, Vostok, 31.VII 2000, in the daytime, in *Larix* forests with *Vaccinium*; (7) 22 km NW of Poronaisk, near Zabaykalets and Vozvrashchenie, 3,4.VIII 2000, in the daytime, in sparse growth of *Larix* with *Ledum hypoleucum*; (8) 8 km N of Smirnykh, near Pobedino, 7.VIII 2000, on light, in *Picea-Abies* forests; (9) 60 km S of Tymovskoe, near Severnaya Khandasa river, 8 - 11.VIII 2000, in the daytime, in sparse growth of *Larix* with *Ledum hypoleucum*; (10) 43 km SE of Tymovskoe, upper of Tym' river, middle of Skalistaya river, 12.VIII 2000, in the daytime, on river valley with *Salix-Alnus* forests and meadows; (11) 3 km S of Tymovskoe, near Krasnaya Tym', Malaya Tym' river, 12.VIII 2000, in the daytime, in *Picea-Abies* forests; (12) 50 km S of Nogliki, near Lunskii Bay, 24.VIII 2000, in the daytime, in *Pinus pumila* bushwood with *Cladina* and *Larix* forest; (13) 38 km SW of Nogliki, near Nysh, Vazi river, 16,18.VIII 2000, in the daytime, in *Picea-Abies* and *Larix* with *Ledum hypoleucum* forests; (14) 18 km N of Nogliki, Bauri river, 5.IX 2000, in the daytime, in meadows after fire with *Chamaerion angustifolium*; (15) 40 km S of Neftegorsk, near Nutovo mountain, 30.VIII 2000, in the daytime, on marsh with *Ledum hypoleucum* and *Carex*. Abbreviations: OKH – Okhinskii district; NO – Noglinskii district; A-S – Aleksandrovsk-Sakhalinskii district; TY – Tymovskii district; SM – Smirnykhovskii district; UG – Uglegorskii district; PO – Poronayskii district; MA – Makarovskii district; DO – Dolinskii district; KHO – Kholmskii district; AN – Anivskii district; KO – Korsakovskii district; NE – Nevel'skii district.

Table 1

List of the Geometridae collected in Sakhalin Island

Species	Collecting sites (see Fig. 1) and number of collected specimens														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. *Ematurga atomaria* (Linnaeus, 1758)	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2. **Garaeus mirandus* (Butler, 1881)	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3. *Hydriomena impluviata* (Denis & Schiffermüller, 1775)	1	-	-	-	-	-	-	--	-	-	-	-	-	-	-
4. *Aethalura ignobilis* (Butler, 1878)	1	6	-	-	-	-	-	-	-	-	-	-	-	-	-
5. *Rheumaptera hastata* (Linnaeus, 1758)	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6. *Scopula nemoraria* (Hübner, 1798)	5	-	1	5	-	-	-	-	-	-	-	-	-	-	-
7. **Lomographa bimaculata* (Fabricius, 1775)	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
8. ***Parectropis similaria japonica* Sato, 1980	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
9. ***Protoboarmia faustinata* (Warren, 1897)	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
10. *Eupithecia lariciata* (Freyer, 1842)	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
11. *Idaea denudaria* (Prout, 1913)	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
12. *Lampropteryx otregiata* Metcalfe, 1917	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
13. *Lomaspilis marginata amurensis* (Hedemann, 1881)	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-
14. *Cabera purus* (Butler, 1878)	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-
15. *Angerona prunaria* (Linnaeus, 1758)	-	2	1	2	15	-	-	-	-	-	-	-	-	-	-
16. **Biston betularius* (Linnaeus, 1758)	-	1	-	-	3	-	-	-	-	-	-	-	-	-	-
17. *Cabera pusaria* (Linnaeus, 1758)	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-
18. *Lomaspilis opis* (Butler, 1878)	-	6	-	-	2	-	-	-	-	-	-	-	-	-	-
19. *Semiothisa fuscaria* (Leech, 1891)	-	2	-	-	2	-	-	-	-	-	-	-	-	-	-
20. *Spilopera debilis* (Butler, 1878)	-	2	-	-	-	1	-	-	-	-	-	-	-	-	-
21. *Rheumaptera hecate* (Butler, 1878)	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
22. *Scopula ichinosawana* (Matsumura, 1925)	-	-	3	-	2	-	-	-	-	-	-	-	-	-	-
23. *Trichobaptria exsecuta* (Felder &Rogenhofer, 1875)	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-
24. *Eupithecia kurilensis* Bryk, 1942	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
25. *Hemithea aestivaria* (Hübner, 1799)	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
26. *Myrteta unio* (Oberthür, 1880)	-	-	-	2	10	-	-	-	-	-	-	-	-	-	-
27. *Alcis extinctaria* (Eversmann, 1851)	-	-	-	1	1	-	10	-	-	-	-	-	-	-	-
28. **Scopula virgulata* (Denis & Schiffermьller, 1775)	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-
29. *Geometra papilionaria* Linnaeus, 1758	-	-	-	1	1	-	2	-	1	-	-	-	-	-	-
30. *Deileptenia ribeata* (Clerck, 1759)	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
31. *Eupithecia absinthiata* (Clerck, 1759)	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
32. *Eupithecia ussuriensis* Dietze, 1910	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
33. *Hydrelia flammeolaria* (Hufnagel, 1767)	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
34. *Lomographa temerata* (Denis & Schiffermüller, 1775).	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-
35. *Nipponogelasma lucia* (Thierry-Meig, 1917)	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
36. *Ochyria quadrifasiata ignobilis* (Butler, 1880)	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
37. *Pennithera taigana* (Djakonov, 1926)	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
38. *Perizoma saxeum* (Wileman, 1911)	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
39. **Scionomia parasinuosa* Inoue, 1982	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
40. *Scopula immutata contramutata* (Prout, 1913)	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-

Table 1 (continued)

Species	Collecting sites (see Fig. 1) and number of collected specimens														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
41. *Solitanea defricata* (Püngeler, 1903)	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
42. *Venusia cambrica* Curtis, 1839	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-
43. *Dysstroma latefasciata* (Staudinger, 1889)	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-
44. *Idaea straminata* (Borkhausen, 1794)	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-
45. *Arichanna melanaria* (Linnaeus, 1758)	-	-	-	-	5	-	-	2	2	-	-	-	-	-	-
46. *Cyclophora albipunctata* (Hufnagel, 1767)	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
47. *Idaea biselata* (Hufnagel, 1767)	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
48. *Scotopteryx chenopodiata* (Linnaeus, 1758)	-	-	-	-	-	-	3	2	-	-	-	-	-	-	-
49. *Carsia sororiata* (Hübner, 1808)	-	-	-	-	-	-	1	-	3	-	-	-	4	-	12
50. *Alcis medialbifera* Inoue, 1972	-	-	-	-	-	-	-	-	-	8	-	1	14	-	-
51. *Spargania luctuata* (Denis & Schiffermüller, 1775)	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
52. *Hydriomena furcata* (Thunberg, 1784)	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
53. *Eulithis populata* (Linnaeus, 1758)	-	-	-	-	-	-	-	-	-	-	-	-	3	1	-
54. *Eulithis testata* (Linnaeus, 1761)	-	-	-	-	-	-	-	-	-	-	-	-	5	-	5
55. *Entephria caesiata* (Denis & Schiffermüller, 1775)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

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