

The genus *Sphenophorus* Schoenherr, 1838 (Coleoptera, Curculionidae) of Siberia, Russia

Род *Sphenophorus* Schoenherr, 1838 (Coleoptera, Curculionidae) Сибири

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Ключевые слова: Curculionoidea, Dryophthorinae, Sphenophorini, распространение, новая находка, определительная таблица.

Abstract. Three species of the genus *Sphenophorus* Schoenherr, 1838 are recorded from the West Siberia, Russia. A species *S. piceus* (Pallas, 1776) is registered for the Omskaya Oblast for the first time. Distribution of *S. abbreviatus* (Fabricius, 1787), *S. piceus* (Pallas) and *S. striatopunctatus* (Goeze, 1777) is discussed, and an illustrated key to species is provided.

Резюме. Три вида рода *Sphenophorus* Schoenherr, 1838 найдены в Западной Сибири. Приведена первая находка *S. piceus* (Pallas, 1776) для Омской области. Уточнено распространение *S. abbreviatus* (Fabricius, 1787), *S. piceus* (Pallas) и *S. striatopunctatus* (Goeze, 1777) и составлен иллюстрированный определитель для этих видов.

Introduction

The subfamily Dryophthorinae is a diverse, mostly tropical group. Eleven species of four tribes, Orthognathini, Dryophthorini, Litosomini and Sphenophorini, have been recorded from Russia [Legalov, 2020; Alonso-Zarazaga et al., 2023]. The *Sphenophorus* Schoenherr, 1838 is almost cosmopolitan genus [Alonso-Zarazaga, Lyal, 1999]. The centre of diversity is located in the New World within 90 known species [Vaurie, 1951, 1967, 1978]. Seven *Sphenophorus* Schoenherr species are found in the Palaearctic [Alonso-Zarazaga et al., 2023]. Three species, *S. abbreviatus* (Fabricius, 1787), *S. piceus* (Pallas, 1776) and *S. striatopunctatus* (Goeze, 1777) were known from European Russia [Arnoldi et al., 1965; Arzanov, 2015] and Siberia [Heyden, 1880–1881; Legalov, Opanassenko, 2000; Legalov et al., 2015; Legalov, 2020]. Systematic position of *S. kuznetzovi* (Egorov, 1979) described from Primorskiy Krai [Egorov, 1979] needs clarification.

S. striatopunctatus (Goeze) is quite easily distinguished due to the width of the elytral intervals, the shape of the antennal club and the small size of the body. *S. abbreviatus* (Fabricius) and *S. piceus* (Pallas) are more difficult to determine [Arnoldi et al., 1965; Smreczyński,

1972; Freude et al., 1983]. The aedeagi of these species are almost identical (Figs 17, 18, 21, 22, 23, 26).

This work clarifies the distribution of the *Sphenophorus* Schoenherr species in West Siberia and Central Asia and provides an illustrated key. Distribution of the species in the «Cooperative catalogue of Palaearctic Coleoptera» [Alonso-Zarazaga et al., 2023] is not characterised comprehensively, and the presented study provides necessary data.

Materials and methods

Studied specimens are deposited in the Institute of Systematics and Ecology of Animals (Russia: Novosibirsk).

The present work is registered in ZooBank (www.zoobank.org) under LSID urn:lsid:zoobank.org:pub:D04D7810-D478-4A60-ABB5-4DB-B92E3E4B8.

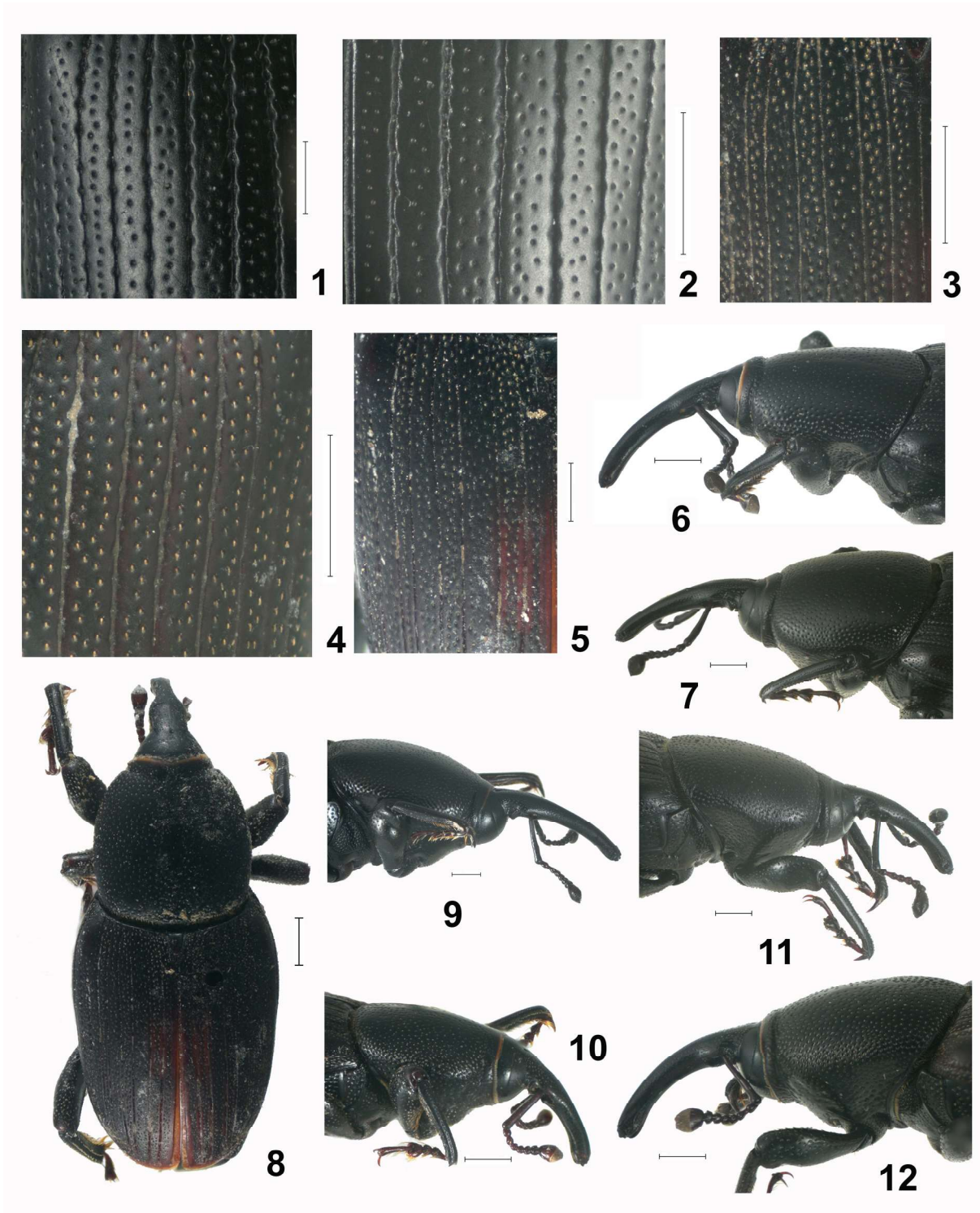
Results

Curculionoidea, **Curculionidae**, Dryophthorinae,
Sphenophorini: Sphenophorina
Sphenophorus Schoenherr, 1838

Type species: *Curculio abbreviatus* Fabricius, 1787 by original designation.

KEY TO THE *SPHENOPHORUS* SCHOENHERR, 1838 SPECIES OCCUR IN NORTHERN AND CENTRAL ASIA

1. Punctuation on elytral interstriae with very small setae or lacking them (Figs 1–2). Rostrum long (Figs 6, 7, 9)
..... *S. piceus* (Pallas)
- Punctuation on elytral interstriae with distinct small setae (Figs 3–5). Rostrum short (Figs 10–12)2
2. Body large (10–15.0 mm). Elytral interstriae almost the same width (Fig. 4). Sides of the first club antennomere more or less parallel (Figs 13, 14). Antennomere 3 elongate (Figs 13, 14) *S. abbreviatus* (Fabricius)



Figs 1–12. Details of *Sphenophorus* Schoenherr species morphology: *S. piceus* (Pallas) from Omskaya Oblast (1, 6), Almaty Region of Kazakhstan (2, 7) and Karakalpakstan in the Republic of Uzbekistan (9), *S. striatopunctatus* (Goeze) from Rostovskaya Oblast (3, 10) and Altai Republic (5, 8), and *S. abbreviatus* (Fabricius) from Krasnodarskii Krai (4, 12) and Jetisu Region of Kazakhstan (11). 1–5 — elytral punctation; 6–7, 9–12 — forebody, lateral view; 8 — habitus, dorsal view. 1–3, 5–8, 10–11 — male, 4, 9 — female. Scale bars 1.0 mm for the Figs 1–4, 6–12; 0.5 mm for the Fig. 5.

Рис. 1–12. Детали строения видов рода *Sphenophorus* Schoenherr: *S. piceus* (Pallas) из Омской области (1, 6), Алматинской области Казахстана (2, 7) и Каракалпакстана в Узбекистане (9), *S. striatopunctatus* (Goeze) из Ростовской области (3, 10) и Республики Алтай (5, 8), и *S. abbreviatus* (Fabricius) из Краснодарского края (4, 12) и Жетысуской области Казахстана (11). 1–5 — пунктировка надкрылий; 6–7, 9–12 — передняя часть тела, вид сбоку; 8 — общий вид, дорсально. 1–3, 5–8, 10–11 — самец, 4, 9 — самка. Масштаб: 1,0 мм для рис. 1–4, 6–12; 0,5 мм для рис. 5.

— Body small (6.5–9.1 mm). Even interstriae narrower than odd ones (Figs 3, 5). Sides of the first club antennomere more or less rounded (Figs 15, 16). Antennomere 3 short (Figs 15, 16)*S. striatopunctatus* (Goeze)

Sphenophorus abbreviatus (Fabricius, 1787)

Figs 4, 11, 14, 22–25, 27.

Material. **Russia, Omskaya Oblast:** 2♂♂ — Cherlaksy District, 4 km NE of Irtysh vill., shore of salt lake, 54.531° N, 74.426° E, 30.VII.2015, R. et E. Dudko leg; **Novosibirskaya Oblast:** 2♂♂ — Karasuksy District, env. Troitskoe, 22–24.VI.1967, G. Zolotareno leg; 2♂♂ — idem, 19.VII.1969, F. Opanassenko leg; 1♂ — idem, Kuzgan Lake, 15.V.2001, G. Azarkina leg; 1♂ — idem, V.2014, A. Kostyunin leg; **Altaiiskii Krai:** 1♀ — Volchikhinsky District, 4 km SSE of Ust-Volchikha, Zolotoe Lake, 51.854° N, 80.29° E, 14.VI.2021, R. Dudko leg; **Astrakbanskaya Oblast:** 1♂ — 50 km NNW of Astrakhan, V.V. Dubatolov, I. Ljubechansky leg; **Krasnodarskii Krai:** 1♂, 1♀ — Taman Peninsula, Karabetova Mt., 45.205° N, 36.790° E, 7.V.2021, R. Dudko; 1♀ — Taman Peninsula, Solenoe Lake, 45.119° N, 36.854° E, 8.V.2021, R. Dudko; **Kazakhstan, Ulytau Region:** 1♀ — Zhanaarka District, 40 km S of Zhana-arka (=Atasu), shore of salt lake, 28.VI.1958; **Jetisu Region:** 1♂ — 20 km NW of Karatal, sands Bozaigyrkumy, 14.VI.1997, R. Dudko, V. Zinchenko leg; **East Kazakhstan Region:** 1♀ — Chernyi Irtysh, River, 17–18.IX.2001, I. Ljubechansky leg.

Remarks. This species was recorded by Heyden [1880–1881] from the environs of Lokot (Loktevsky District, Altaiiskii Krai), Kolyvan (Kuryinsky District, Altaiiskii Krai) and Karkaraly (Karkaraly District, Karaganda Region, Kazakhstan).

Distribution. South and East Europe: Georgia, Cyprus, Caucasus, Turkey; Kazakhstan, Turkmenistan [Alonso-Zarazaga et al., 2023; Gültekin, 2013], Uzbekistan, Kyrgyzstan, Tajikistan [Bajtenov, 1974], Iran [Legalov et al., 2010], West Siberia (Omskaya Oblast, Novosibirskaya Oblast, Altaiiskii Krai).

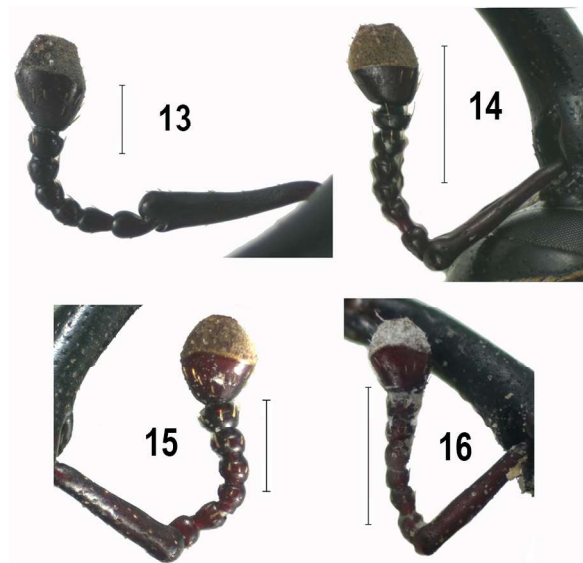
Sphenophorus piceus (Pallas, 1776)

Figs 1, 2, 6, 7, 9, 13, 17–20, 27.

Material. **Russia, Omskaya Oblast:** 1♂ — Cherlaksy District, 4 km NE of Irtysh vill., shore of salt lake, 51.531° N, 74.426° E, 30.VII.2015, R. et E. Dudko leg; **Kazakhstan, Ulytau Region:** 1♀ — Zhanaarka District, 40 km S of Zhana-arka, shore of salt lake, 28.VI.1958, coll. — ?; **East Kazakhstan Region:** 1♀ — Urzhar District, 38 km ESE Artogai, 46°53'25" N, 80°11'11" E, h - 350 m a.s.l., 16.VI.2018, D. Devyatkov leg; 1♂ — Tarbagatay District, Tai-Zhuzgen, 25.VIII.1993, Yu. Zinchenko leg; **Almaty Region:** 1♀ — Enbekshikazakh District, W of Karaturuk, A. Gromov leg; 4♂♂, 3♀♀ — Balkhash District, lower reaches of Ili River, 11 km SSE of Topar, Kosshar, sandy lake shore, h - 360 m a.s.l., 44°56.7' N, 75°04.9' E, 23–24.IV.2016, R. Dudko leg; **Uzbekistan, Republic of Karakalpakstan:** 2♂♂, 1♀ — right bank of Amudarya Riv., 5 km below of Tallyk villge, 41.977° N, 60.403° E, 10.V.2023, R. Dudko leg; **Bukhara Region:** 1♀ — 33 km NE of Gazli vill., near irrigation canals, 40.263° N, 63.823° E, 13.V.2023, R. Dudko leg; **Turkmenistan:** 1♀ — «Turkmeniya», 16.VII.1933, Coll. — ?; **Iran, Kermanshab Prov.:** 1♀ — Ravansar city, VIII.2003, H. Ghahari leg.

Remarks. This species was recorded from environs of Lokot (Loktevsky District, Altaiiskii Krai) [Heyden, 1880–1881]. This is first record of *S. piceus* for the Omskaya Oblast.

Distribution. Algeria, South Europe: Cyprus, Turkey [Alonso-Zarazaga et al. 2023; Gültekin, 2013], Ukraine [Yunakov et al., 2018], Armenia [Ter-Minassian, 1940], Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan [Bajtenov, 1974], Iran [Legalov et al., 2010], Iraq (the website (<https://www.inaturalist.org/observations/176190025>) presents this



Figs. 13–16. Antennae of *Sphenophorus* Schoenherr species: *S. piceus* (Pallas) from Almaty Region (13), *S. striatopunctatus* (Goeze) from Rostovskaya Oblast (15) and Altai Republic (16) and *S. abbreviatus* (Fabricius) from Krasnodarskii Krai (14). 13, 15–16 — male; 14 — female. Scale bar 1.0 mm for Figs 14, 16; 0.5 mm for Figs 13, 15.

Рис. 13–16. Усики видов рода *Sphenophorus* Schoenherr: *S. piceus* (Pallas) из Алматинской области (13), *S. striatopunctatus* (Goeze) из Ростовской области (15) и Республики Алтай (16), и *S. abbreviatus* (Fabricius) из Краснодарского края (14). 13, 15–16 — самец; 14 — самка. Масштаб: 1,0 мм для рис. 14, 16; 0,5 мм для рис. 13, 15.

species from Basra misidentified as *S. abbreviatus*), Western Siberia (Omskaya Oblast, Altaiiskii Krai).

Sphenophorus striatopunctatus (Goeze, 1777)

Figs 3, 5, 8, 10, 15, 16, 21, 26, 27.

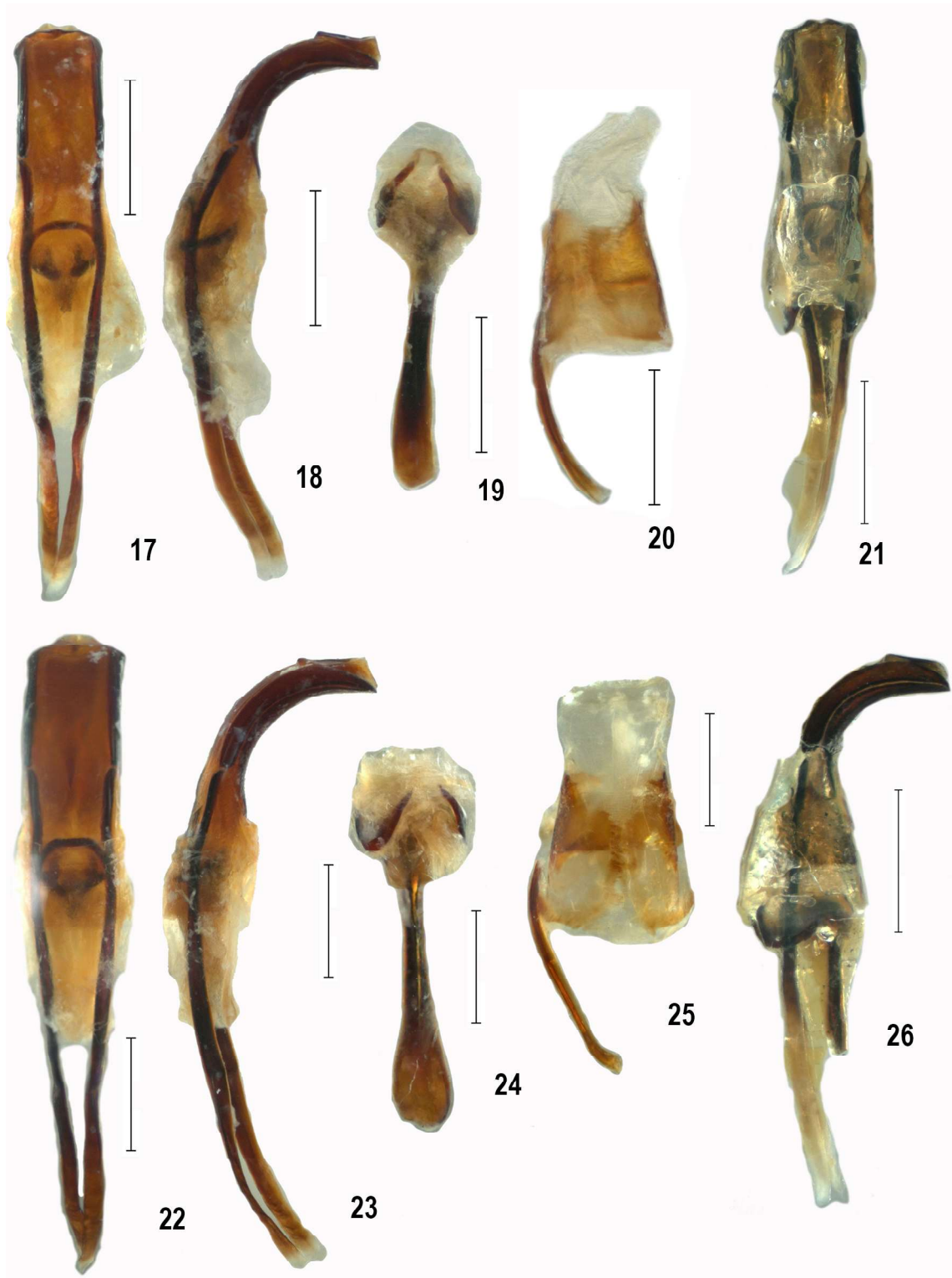
Material. **Russia, Altai Republic:** 1♂ — Mayminsky District, 5 km NW of Kyzyl-Ozyok, Maima River; **Rostovskaya Oblast:** 1♂, 1♀ — Tarasovsky District, Mityakinskaya, 29.V.1997, Ivliev leg.

Remarks. The finding of this species in Siberia is quite unexpected. The specimen found is weakly differs from the European specimens in the slightly rounded sides of the antennal club (Fig. 16), the even interstriae narrower than odd ones (Fig. 5) and weakly elongate antennomere 3 (Fig. 6). These characters confirm determination as *S. striatopunctatus*. *S. piceus* and *S. abbreviatus* are usually being found on the shores of mainly salt lakes where they develop in roots of *Scirpus* (Cyperaceae) and *Phragmites* and *Arundo* (Poaceae) [Arnoldi et al., 1965, 1974; Smreczyński, 1972]. *S. striatopunctatus* lives in grasslands, agricultural and ruderal habitats [Yunakov et al., 2018] and develops in *Elytrigia*, *Elymus*, *Phleum* (Poaceae) and *Schoenoplectus* (Cyperaceae) [Arnoldi et al., 1965; Smreczyński, 1972; Yunakov et al., 2018]. Large lakes absent in the locality of this specimen.

Distribution. Europe: Cyprus [Zarazaga et al., 2023], Ukraine [Yunakov et al., 2018], «South of Middle Asia» [Bajtenov, 1974], West Siberia (Altai Republic).

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Figs. 17–26. Male genitalia of *Sphenophorus* Schoenherr species: *S. piceus* (Pallas) from Almaty Region (17–20), *S. striatopunctatus* (Goeze) from Altai Republic (21, 26) and *S. abbreviatus* (Fabricius) from Krasnodarskii Krai (22–25). 18, 23 — penis, dorsal view; 19, 24 — tegmen, dorsal view; 20, 25 — spiculum gastrale, dorsal view; 21 — aedeagus, dorsal view; 22 — penis, dorsal view; 23 — penis, lateral view; 26 — aedeagus, lateral view. Scale bar 1.0 mm for Figs 17–20, 22–25; 0.5 mm for Figs 21, 26.

Рис. 17–26. Гениталии самцов видов рода *Sphenophorus* Schoenherr: *S. piceus* (Pallas) из Алматинской области (17–20), *S. striatopunctatus* (Goeze) из Республики Алтай (21, 26) и *S. abbreviatus* (Fabricius) из Краснодарского края (22–25). 18, 23 — пенис, вид сверху; 19, 24 — тегмен, вид сверху; 20, 25 — гастральная спикула, вид сверху; 21 — эдеагус, вид сверху; 22 — пенис, вид сверху; 23 — пенис, вид сбоку; 26 — эдеагус, вид сбоку. Масштаб: 1,0 мм для рис. 17–20, 22–25; 0,5 мм для рис. 21, 26.

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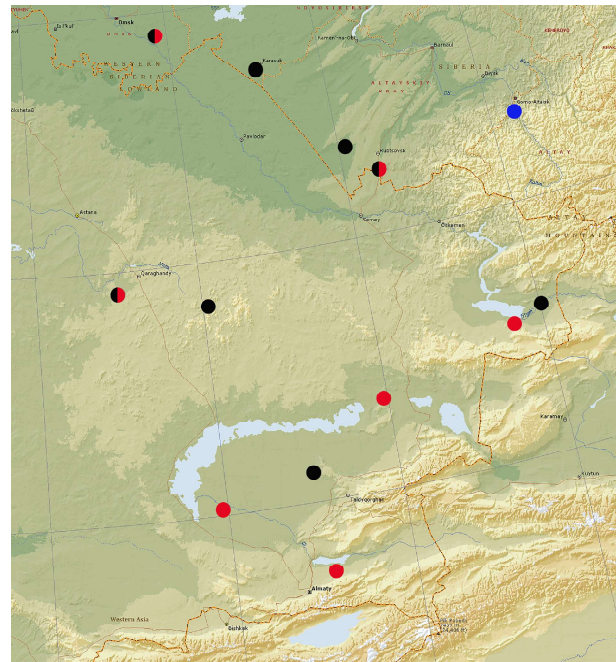


Fig. 27. Distribution map of *Sphenophorus* Schoenherr species in Siberia and Kazakhstan. Blue circle — *S. striatopunctatus* (Goeze); black circles — *S. abbreviatus* (Fabricius); red circles — *S. piceus* (Pallas); half black and red circles — *S. abbreviatus* (Fabricius) and *S. piceus* (Pallas) at the same locality.

Рис. 27. Карта распространения видов рода *Sphenophorus* Schoenherr в Сибири и Казахстане. Синий кружок — *S. striatopunctatus* (Goeze); чёрные кружки — *S. abbreviatus* (Fabricius); красные кружки — *S. piceus* (Pallas); наполовину чёрные и красные кружки — совместные находки *S. abbreviatus* (Fabricius) и *S. piceus* (Pallas).

Plemiona Dryophthorini, Cossonini, Bagoiini, Tanysphyrini, Notarini, Smicronychini, Ellescini, Acalyptini, Tychiini, Anthonomini, Curculionini, Pissodini, Magdalini, Trachodini, Rhynchophorini, Cryptorhynchini. Warszawa: Państwowe Wydawnictwo Naukowe. 195 p.

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