Cornumutila quadrivittata (GEBLER, 1830) and C. lineata (LETZNER, 1844), stat. rest. (Coleoptera, Cerambycidae) from Western Europe and Russia

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Abstract Cornumutila quadrivittata (GEBLER, 1830) was originally described as Leptura from Siberia (Altaj and Transbaicalia). Later the species was described once more as Cornumutila semenovi PLAVILSTSHIKOV, 1936, so became a junior synonym of C. quadrivittata. The species is distributed all over Siberia as far east as the Pacific Ocean and now firstly discovered also in Europe (Moscow region). The name "Cornumutila quadrivittata" was up to now incorrectly used for another species Cornumutila lineata (LETZNER, 1844), stat. rest., that is widely distributed in Europe and North Asia, but absent in East Siberia. Cornumutila lineata is characterized by abnormally short 3rd and 4th antennal segments. It is distributed throughout Central and South Europe, north-eastern part of European Russia, West and North Siberia.

Key words: Coleoptera, Cerambycidae, *Cornumutila*, taxonomy, zoogeography, new synonymy, Russia, western Europe.

Introduction

Leptura quadrivittata Gebler, 1830 was originally described based on two specimens: one from Altaj mountains, another from the vicinity of Baikal Lake ("Specimen unicum in montibus altaicis legit D. Ledebour, alterum ad. l. Baikal captum"). A similar species was soon thereafter described from Central Europe as Leptura lineata Letzner, 1844 "des Altvatergebirges" or "Gesenke"; presently Hrubý Jeseník, North Moravia, Czech Republic. This new species was in same article placed by K. Letzner in a newly erected genus: Cornumutila Letzner, 1844.

Ch. Aurivillius (1912) was the first who correctly placed these two different species: *C. lineata* (Letzner, 1844) and *C. quadrivittata* (Gebler, 1830) into the same genus *Cornumutila*. But already L. Heyden (1891) supposed both names to be synonymous. This incorrect synonymy was formally established by A. P. Semenov-Tian-Shanskij (1915). His opinion is generally accepted up to now (Winkler, 1929; Plavilstshikov, 1932, 1936; Panin & Savulescu, 1961; Heyrovský, 1955; Allenspach, 1973; Villiers, 1978; Tsherepanov, 1979; Lobanov *et al.*, 1981; Bense, 1995; Sláma, 1998, 2006; Sama, 2002; Bartenev, 2004; Adlbauer, 2006).

Cornumutila lineata (Letzner, 1844), stat. rest. has a peculiar ratio of the lengths of several basal antennal segments: segments 3 and 4 are very short, 4th is shorter than 3rd in males and in females (Figs. 1–2). Siberian specimens of Cornumutila were not known for the European community, as they are very rare and up to now absent in most European collections. That is why incorrect synonymy of the European C. lineata and Siberian C. quadrivittata was generally accepted. Proportions of antennal joints of C. quadrivittata were not described in the original description (Gebler, 1830).

Respecting the generally accepted synonymy, N. N. PLAVILSTSHIKOV (1936) described Siberian *Cornumutila* species with normal antennal segments (4th segment much longer than 3rd, about as long as 5th) once more as *C. semenovi* PLAVILSTSHIKOV, 1936 based on the specimens from North-East Siberia: Yakutia (Viluj river), Magadan region (estuary of Yana river), Chukotka Peninsula (Anadyr liman), Shantar Islands.

A. I. TSHEREPANOV (1979) was the first to observe a considerable variability of the relative length of 4th and 5th antennal segments in a large series of *Cornumutila* specimens from Altaj region – type area of *C. quadrivittata* (and he never saw European species with short 3rd and 4th antennal segments). Based on that variability he proposed to divide all *Cornumutila* populations into two subspecies: western – *C. quadrivittata quadrivittata* (GEBLER) (from Altaj mountain range to western Europe) and eastern – *C. quadrivittata semenovi* PLAVILSTSHIKOV 1936 (east from Altaj mountain range).

Later (LOBANOV et al., 1981), TSHEREPANOV's position was published in form: C. quadrivittata = C. semenovi; and here the name "C. quadrivittata" was used for the European population. This synonymy was also accepted by A. I. MIROSHNIKOV (1989).

I have received several photos of *Cornumutila* specimens from Altaj originating from TSHEREPANOV's collection and identified by TSHEREPANOV as *C. q. quadrivittata* and *C. q. semenovi*. All of them belong to the same species – Siberian *C. quadrivittata* that has its 3rd and 4th antennal segments of normal proportions. All *Cornumutila* specimens from Altaj, South Siberia, Transbaicalia, North-East Siberia and Russian Far East have long 3rd and 4th antennal segments; these very specimens were described by F. A. Gebler (Gebler, 1830) as *Leptura quadrivittata*, inasmuch no other species are known from Altaj and South Siberia. Thus, *Leptura quadrivittata* Gebler, 1830= *Cornumutila semenovi* Plavilstshikov, 1936. European species with short 3rd and 4th segments should be named *C. lineata* (Letzner, 1844), stat. rest.

Abbreviations. Abbreviations used in the text are as follows:

DK - collection of D. G. KASATKIN (Rostov-na-Donu, Russia).

MD - collection of M. L. DANILEVSKY (Moscow, Russia).

MK - collection of M. Yu. KALASHIAN (Yerevan, Armenia).

MPSU - Moscow State Pedagogical University (Moscow, Russia).

SK - collection of S. I. KHVYLIA (Moscow, Russia).

SM - collection of S. V. Murzin (Moscow, Russia).

SZM - Siberian Zoological Museum, Institute of Systematic and Ecology of Animals,

Russian Academy of Sciences, Siberian Branch (Novosibirsk, Russia).

ZIN-Zoological Institute of the Russian Academy of Sciences (SaintPetersburg, Russia).

ZMM - Zoological Museum of Moscow University (Moscow, Russia).

Results

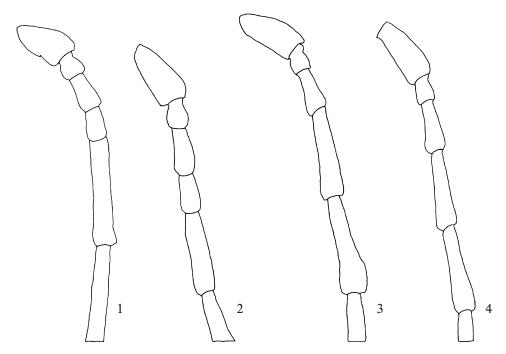
Genus Cornumutila LETZNER, 1844

Cornumutila Letzner, 1844: 173 (type species: Leptura lineata Letzner, 1844; by monotypy); Aurivillius, 1912: 202; Plavilstshikov, 1932: 189; 1936: 310, 548.

Letzneria Kraatz, 1879: 63 (type species: Leptura lineata Letzner, 1844; monotypy); Ganglbauer, 1882: 695; Reitter, 1912: 12.

Diagnosis. Head strongly transverse; gena of moderate length, about as long as half of transverse diameter of eye; 3rd antennal segment shorter than 1st; prothorax slightly tapering anteriorly; posterior pronotal angles rounded; elytra brown or black, each usually with two narrow longitudinal yellow lines (sometimes totally black or yellow).

Remarks. Genus name Cornumutila was established (LETZNER, 1844) for Leptura



Figs. 1–4. Basal antennal segments of *Cornumutila* species. — 1, *C. lineata*, male; 2, ditto, female; 3, *C. quadrivittata*, male; 4, ditto, female.

lineata Letzner, 1844 in the same page as original description of the species. The proposal of another name for this genus by G. Kraats (1879) is hardly understandable.

1. *Cornumutila lineata* (LETZNER, 1844), stat. rest. (Figs. 1–2)

Leptura lineata Letzner, 1844: 173 ("des Altvatergebirges" or "Gesenke", actually Hrubý Jeseník, North Moravia, Czech Republic).

Cornumutila lineata: Letzner, 1844: 173; Aurivillius, 1912: 202 ("Schlesien, Karpaten, Russland, Tirol"). Letzneria lineata Kraatz, 1879: 63; Ganglbauer, 1882: 696; Reitter, 1912: 13.

Cornumutila quadrivittata: Semenov-Tian-Shanskij, 1915: 17, part.; Winkler, 1929: 1155, part.; Vachon, 1934: 87, part.; Plavilstshikov, 1936: 311, 549, part.; Allenspach, 1973: 55, part.; Villiers, 1978: 143, part.; Burakowski et al., 1990: 60, part.; Demelt, 1966: 43, part.; Lobanov et al., 1981: 787, 799, part.; Miroshnikov, 1989: 744, part.; Švácha & Danilevsky, 1989: 186, part.; Pesarini & Sabbadini, 1994: 18, part.; Tsherepanov, 1996: 80, part.; Sláma, 1998: 227, part.; 2006: 12, part.; Sama, 2002: 38, part.; Adlbauer, 2006: 75, part.; Tatarinova et al., 2007: 96, part.

Cornumutila quadrivittata quadrivittata: TSHEREPANOV, 1979: 249, part.

Diagnosis. Antenna with segments 3rd and 4th short; 4th segment a little shorter than 3rd and two times or more shorter than 5th (Figs. 1–2); prothorax narrow, with dense punctation. Body length of males: 8.0–11.0 mm; females: 11.0–14.0 mm.

Distribution. See Fig. 5. Localities of this species are scattered all over South and Central Europe. It is known from Southeast France, North Italy, Switzerland, Austria, Czech Republic, Slovakia, Poland, Romania (Bense, 1995, as "C. quadrivittata"). Cornumutila lineata is also known from Carpathian Mountains of West Ukraine (Bartenev, 2004, as "C. quadrivittata"). According to N. N. Plavilstshikov (1936, "C. quadrivittata") these species is distributed in the north-eastern part of European Russia (Yst-Tzilma in Pechora river valley) and in western Siberia (Verkhoturye, Sosva river; Tobolsk environs, Sureyi). It has recently been discovered in the north of Krasnoyarsk region: Dynkengda mountains in the west of Putorana plateau near Yt-Kyuel Lake. In the Komi Republic of Russia it was recorded from three localities (Tatariova et al., 2007, also as "C. quadrivittata") from Syktyvkar environs, near Yakshi (Troitzko-Pechorsk district) and in Severnye Maldy ridge (Polar Urals).

Biology. Only coniferous trees are known as host plants of *C. lineata*. Usually *Picea* and *Larix* were mentioned (Sekera, 1946; Villiers, 1978), sometimes also *Pinus* (Sama, 1988). A. L. Lobanov (1976, according to Tatarinova *et al.*, 2007) mentioned in his manuscript on dendrophagous insects of the Komi Republic, *Abies* and *Larix* as host plant of *C. lineata* (as *C. quadrivittata*). Adults have diurnal activity and emerge from May to August and can be observed in the lowlands and mountains alike (specially in western Europe), up to 1,000–1,400 m above the sea level. Biology of this species in western Europe was described in details by C. Demelt (1966): populations occur on the northern slopes of the mountains; larvae develop in dead wood in the shaded side of the tree trunk at about 3–4 m above the ground level; development under the bark has never been observed; development of larva takes at least three years; adults

never visit flowers and were observed on the shaded side of standing trees without bark; beetles are generally very rare in nature.

Ecological data for *C. lineata* published by G. SAMA (2002, as *C. quadrivittata*) were taken from the publication by P. ŠVÁCHA and M. L. DANILEVSKY (1989), but these two authors themselves used the information published by A. I. TSHEREPANOV (1979), and thus concern *C. quadrivittata* and not *C. lineata*.

Materials. Male, Russia, West Siberia, Tobolsk environs, Sureyi, 11–VII–1926, B. Chalikov leg. – ZMM; female, Russia, Krasnoyarsk reg., west of Putorana plateau, Dynkengda mountains, north bank of Yt-Kyuel Lake, 3–VIII–1997, A. Babenko leg. – MPSU; female, Slovakia, V. Tatry, Lekeš leg. – ZMM; 2 males and 2 females with the same label – ZIN; females, V. Tatry, 15–VII–1955, Lekeš leg. – ZIN; male, "ČSSR, Pohoři Praděd, VII–1970, Ing. Sekera leg." – ZIN; male and female, "Slov., Vys. Tatry, VIII–1980 and VII–1979, Odvárka leg." – SM.

Remarks. N. N. Plavilstshikov (1936) recorded several localities for *C. lineata* (as "*C. quadrivittata*") from East Siberia based on the information that he received from his colleagues, but these data cannot presently be verified. Several of these records were allegedly based on his own materials. These specimens were hitherto not found in his collection. One of such localities of "*C. quadrivittata*" is the valley of Batobiy river in Yakutia (type locality of *C. semenovi*). Presently there is only one specimen of *Cornumutila* in Plavilstshikov's collection originating from that locality (designated bellow as the lectotype of *C. semenovi*). No specimens of *C. lineata* from East (or South) Siberia are known.

In the monograph of Cerambycidae of the Komi Republic (TATARINOVA et al., 2007), the distributional data for «C. quadrivittata» stand for C. lineata, and the peculiar morphology of the antennal segments of the European species is adequately described, but the illustrations used in the text are taken from TSHEREPANOV (1996) and actually represent Siberian C. quadrivittata, which absent in Komi.

2. Cornumutila quadrivittata (Gebler, 1830)

(Figs. 3-4)

Leptura quadrivittata GEBLER, 1830: 193 ("montibus altaicis" and "ad. l. Baikal", actually Altaj mountain range and vicinity of the Lake Baikal).

Cornumutila semenovi Plavilstshikov, 1936: 313, 549. ("Sibirien: Jakutien, Distr. Viljujsk", "Jana-Mündung, Ochotisches Meer", "Ins. Gross. Schantar", "Anadyr, Markovo"), part.

Cornumutila quadrivittata semenovi: TSHEREPANOV, 1979: 253, part.

Cornumutila quadrivittata: Semenov-Tian-Shanskij, 1915: 17, part.; Winkler, 1929: 1155, part.; Vachon, 1934: 87, part.; Plavilstshikov, 1936: 311; Allenspach, 1973: 55, part.; Villiers, 1978: 143, part.; Demelt, 1966: 43, part.; Lobanov et al., 1981: 787, 799, part.; Lee, 1982: 17; Miroshnikov, 1989: 744, part.; Švácha & Danilevsky, 1989: 186, part.; Burakowski et al., 1990: 60, part.; Pesarini & Sabbadini, 1994: 18, part.; Tsherepanov, 1996: 80, part.; Sláma, 1998: 227, part.; 2006: 12, part.; Sama, 2002: 38, part.; Adlbauer, 2006: 75, part.; Tatarinova et al., 2007: 96, part.

Diagnosis. Antennae with antennal segments usual for Cerambycidae: 3rd and 4th

antennal segments relatively long; 4th segment about 2 times longer than 3rd and about as long as 5th (Figs 1–2); prothorax relatively wide, with sparse punctation. Body length of males: 8.7–10.5 mm; females: 11.3–11.7 mm.

Distribution. See Fig. 5. Cornumutila quadrivittata is distributed in Siberia from Altaj to Pacific Ocean, but was also discovered in Moscow region; absent from western Europe. N. N. Plavilstshikov (1936) recorded it (as "C. semenovi") from Yakutia, Okhotskoe shore, Big Shantar Islands and Chukotka Peninsula; A. I. Tsherepanov (1979, as "C. quadrivittatasemenovi") mentioned Tuva Republic and Altaj (Teletzkoe Lake, Kolyushtu). A. I. Miroshnikov (1989) recorded the species (as "C. quadrivittata") from Kozyrevsk in Kamchatka Peninsula. Cornumutila quadrivittata is also known from South Korea (Lee, 1982 – "Mt. Du-Ryu-San"). I have identified several specimens originating from Altaj (Uymen river; Aktash; Teletzkoe Lake, Kolyushtu; Kuray; Iogach near Artybach – left bank of Biya river), from Tuva (20 km northwestwards Hol-Oozhu), from south of Krasnoyarsk region (Us river valley), from Transbaikalia (Chokusy, Barguzin ridge and Kodar ridge in the north-east of Chita region), from Yakutia (232 km from Khandyga; Inyali river, Porozhniy ridge), from Kamchatka Peninsula (Palan), Chukotka Peninsula (upper level of Anadyr river) and one male from Moscow region (Zvenigorod environs).

This species is most probably also spread in Mongolia, although it has not been discovered there yet.

Biology. Adults are active from June to August; often in high elevations, up to 2,500 m above the sea level. Many important ecological data were published by A. I. TSHEREPANOV (1979): females lay eggs in slots of dead of trees that were stripped off bark. Host plants are Pinus sibirica Du Tour, 1803, Picea obovata LEDEBOUR, 1833, Larix sibirica LEDEBOUR, 1833, Abies sibirica LEDEBOUR, 1833. Young larvae emerge from eggs from the mid- August to September. Developmental cycle is about three years. Pupation takes place deep in the wood in June after the 3rd hibernation. Pupal stage lasts about four weeks. Adults do not seek food, they copulate as they emerge from wood and lay eggs.

Several specimens were collected in the areas where *Pinus pumila* REGEL, 1858, is widely distributed.

Materials. Male, lectotype of Cornumutilla semenovi Plavilstshikov, 1936 (present designation) with three labels: (1) "Type" [red]; (2) "Sibir, Jakutia, vall. fl. Batobiy, dist. Viluj, 14.VI.1916 [originally published as «24. 6. 1916»], ex coll. Podgorb."; (3) "Cornumutila semenovi m. N. Plavilstshikov det. II. 35" – ZMM; female, paralectotype (present designation) with three labels: (1) "Type" [red]; (2) [0.5 v from mouth of Yana river, Okhotskoe shore, 8. VII. 930, Semenov T. Sh.] [in Russian]; (3) "Cornumutila semenovi m. N. Plavilstshikov det. II. 35" – ZIN; male, paralectotype (present designation) with three labels: (1) "Type" [red]; (2) [B. Shantar Is., Okhotskoe see, 8. VII. 25 DILKEYT leg.] [in Russian]"; (3) "Cornumutila semenovi m. ab. tianshanskyi m. N. Plavilstshikov det. II. 35" – ZIN; male, Altaj, Uymen river valley, 27–VII–1960, A. Rasnitzyn leg. – ZIN; male (identified by A. I. Tsherepanov

as C. quadrivittata), Russia, Altaj region, Kuray, Argatur area, Larix forest, 17-VI-1960, RYZHOVA leg. - SZM; male, (identified by A. I. TSHEREPANOV as C. quadrivittata), Russia, Altaj, Iogach, A. Kononenko leg. - SZM; male, (identified by A. I. TSHEREPANOV as C. quadrivittata), Russia, Tuva Republic, from Larix stump, 10-VII-1976 - SZM; male (identified by A. I. TSHEREPANOV as C. quadrivittata), Russia, Altaj, Teletzkoe Lake, Koliushtu, VII-1971 - SZM; 3 females (identified by A. I. TSHEREPANOV as C. quadrivittata), Russia, Altaj, Teletzkoe Lake, Koliushtu, 26-VII-1975 - SZM; male (identified by A. I. TSHEREPANOV as C. semenovi), Russia, Tuva Republic, 20 km NW Hol-Oozhu, 8~9-VII-1989, D. LOGUNOV leg. - SZM; female, (identified by A. I. TSHEREPANOV as C. semenovi), Russia, Yakutia, 232 km from Khandyga along the road, 3-VII-1985, A. BARCELó leg. - SZM; male, (identified by A. I. TSHEREPANOV as C. semenovi), Russia, Yakutia, Inyali river valley, Porozhniy ridge, 9-VII-1990, V. ZINCHENKO leg. - SZM; male, Russia, Transbaikalia, Barguzin ridge, 18~26-VIII-1933, NIKIPELOV leg. - SM; male, Russia, Moscow region, Zvenigorod biological station, 13-VII-1949 - SM; male, Russia, Altaj, Aktash, 23-VI-1981, V. PRASOLOV leg. - MD; male, same locality, 3-VII-1988, SAZONOV leg. - MD; male, Russia, Kamtchanka Peninsula, Palan, 27-VII-1978, IVLIEV leg. - MD; male, Russia, Chukotka Peninsula, Shchuchiy ridge, upper level of Anadyr river, 7-VII-1992, D. SHITIKOV leg. - MD; female, Russia, Transbaikalia, Chokusy, 22-VII-1989, P. KHVOYNA leg. - MD; male, Russia, Krasnoyarsk region, Us river valley, Idzhir ridge, 15 km NW mine "Krasnaya Zvezda", 9-VII-2004, A. BRINE leg. - DK; male, Russia, Krasnoyarsk region, Us river valley, between mouth of Teplaya river and mouth of Zolotaya river, 9~11-VII-2004, A. Brinev leg. - MK; female, Buritija, Malyj Khamar-Daban, Taezhnyi, F. I. Madagaev - SK; female, Jakutia, Suntar-Khayata ridge, Khandygayty river, 1-VII-1990, S. SAZONOV - SK; male, Chita region, Kodar ridge, 10-VII-1997, A. Petrov - SK; female, Russia, NE of Chita region, Kodar ridge, B. Liprindo Lake, 5~15-VII-2001, A. Brine leg. − DK.

Remarks. N. N. PLAVILSTSHIKOV (1936) identified two Cornumutila specimens from Siberia, Yakutia, vall. fl. Batobiy, dist. Viluy with different collecting dates as different species "C. quadrivittata" and "C. semenovi", but the former is absent in his collection.

The type series of *C. semenovi* Plavilstshikov, 1936 consists of 3 specimens. A male with three labels has been designated as lectotype: (1) "Type"; (2) "Sibir, Jakutia, vall. fl. Batobiy, dist. Viluy, 14. VI. 1916 [published as «24. 6. 1916»], ex coll. Podgorb; (3) "Cornumutila semenovi m. N. Plavilstshikov det. II. 35" – ZMM. Two other specimens are designated as paralectotypes: female with three labels: (1) "Type" [red]; (2) [0.5 v from mouth of Yana river, Okhotskoe shore, 8. VII. 930, Semenov T. Sh.] [in Russian]; (3) "Cornumutila semenovi m. N. Plavilstshikov det. II. 35" – ZIN; male with three labels: (1) "Type" [red]; (2) [B. Shantar Is., Okhotsk See, 8. VII. 25 DICKEY leg.] [in Russian]"; (3) "Cornumutila semenovi m. ab. tianshanskyi m. N. Plavilstshikov det. II. 35" – ZIN.

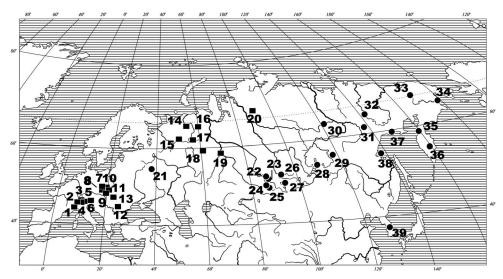


Fig. 5. Map of the distribution of the Cornumutila species: C. lineata (1-20), C. quadrivittata (21-39). — 1, France, Hautes-Alpes de Provance; 2, Switzerland, Vale; 3, Switzerland, Graubunden; 4, Austria, Foralberg; 5, Austria, Salzburg; 6, Italy, Alto-Adige; 7, Czech Republic, Hrubý Jeseník – type locality; 8, Slovakia, East Tatry; 9, Slovakia, West Tatry; 10, Poland, West Beskids; 11, Poland, Tatry; 12, Romania, Feregash mountains; 13, Ukraine, Carpathian Mountains; 14, Ust-Tzilma, Komi Republic; 15, Syktyvkar environs, Komi Republic; 16, North Maldy mountains, Komi Republic; 17, Yaksha, Komi Republic; 18, Sosva river; 19, Tobolsk; 20, Yt-Kyuel Lake, Krasnoyarsk region; 21, Zvenigorod, Moscow region; 22, Iogach, Altaj; 23, Teletzkoe Lake, Altaj; 24, Aktash, Altaj; 25, Kuray, Altaj; 26, Us river valley, Krasnoyarsk region; 27, Hol-Oozhu, Tuva Republic; 28, Barguzin Ridge; 29, B. Liprindo Lake, Chita region; 30, Vilyusk, Yakutia; 31, 232 km from Khandyga, Yakutia; 32, Inyali river, Yakutia; 33, upper level of Anadyr river, Chukotka; 34, Markovo, Chukotka; 35, Palan, Kamchatka; 36, Kozyrevsk, Kamchatka; 37, mouth of Yana river, Magadan region; 38, Bolshoy Shantar Island; 39, South Korea.

Acknowledgements

I am very grateful to all colleagues who provided me with the materials for study: A. A. Gusakov and A. L. Ozerov (Zoological Museum of Moscow University, Moscow, Russia), M. L. Danilevsky (A. N. Severtzov Institute, Moscow, Russia), A. L. Lobanov, G. S. Medevedev and V. N. Prasolov (Zoological Institute, Saint-Petesburg, Russia), M. Yu. Kalashian (Erevan, Armenia), D. G. Kasatkin (Rostov-na-Donu, Russia), S. I. Khvylia (Moscow, Russia), K. V. Makarov (Moscow State Pedagogical University, Moscow, Russia), S. V. Murzin (Moscow, Russia), S. E. Tshernyshev (Siberian Zoological Museum of the Institute of Systematics and Ecology of Animals of Siberian Branch Russian Academy of Sciences, Novosibirsk, Russia). My special thanks to all persons who helped me to obtain old publications: Denis

KASATKIN (Rostov-na Donu, Russia), Holger Framke and Lothar Zerche (Deutsches Entomologisches Institut, Müncheberg, Germany) and Szczepan Ziarko (Poturzyn, Poland). I received a lot of important information and various help from M. L. Danilevsky (Moscow, Russia) during my study. M. L. Danilevsky and K. V. Makarov were engaged in the final arrangement of the article.

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