

Remarks and additions to the key to longicorn beetles (Coleoptera, Cerambycidae) from "Key to the insects of Russian Far East"

Замечания и дополнения к определительной таблице жуков-усачей (Coleoptera, Cerambycidae) из "Определителя насекомых Дальнего Востока России"

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ABSTRACT: About 50 notes concerning the Key for longicorn beetles [Tsherepanov, 1996] are provided. For 6 genera and 25 species, missing in the Key, distinguishing characters and distributional data are presented, as well as 18 omitted names of subspecies; for many species the valid names are given instead of invalid, used in the Key; several incorrect or doubtful taxonomical decisions are discussed.

РЕЗЮМЕ: Приведено около 50 замечаний к тексту определительной таблицы. Для пропущенных в определителе 6 родов и 25 видов приведены отличительные признаки и данные о распространении. Указаны 18 опущенных названий подвигов для видов представленных в регионе несколькими подвидами или не поминативными подвидами. Для многих видов, названных в определителе не валидными именами, указаны валидные названия. Обсуждается ряд ошибочных или сомнительных таксономических решений.

The Key to Cerambycidae [Tsherepanov, 1996] was prepared by Dr. G.O. Krivolutzkaia on the base of A.I. Tsherepanov's manuscript, made specially for the edition cited in 1985. In the early stages of the editing of Tsherepanov's text, G.O. Krivolutzkaia received several remarks from Dr. A.I. Lobanov. So the final version of the Key is considerably updated and differs greatly from the keys, published earlier by Tsherepanov. Many Tsherepanov's taxa are considered as synonyms. Several taxa, described from the region after Tsherepanov's death (1986), and many new taxonomic results were taken into account.

Still, because of lacking some rare species in the collection of the Institute for Biology and Soil Science in Vladivostok and deficiency of special

information, 6 cerambycid genera and 25 species known from Russian Far East were omitted in the Key, 5 names of valid species were regarded as synonyms, 3 species being absent from the region were erroneously included in the Key, for many species non-valid names were used. The ranges of some species presented in the Key are in fact larger, several taxonomic decisions seem to be wrong or rather doubtful.

In the present communication, I intend to show the positions in the Key for all missing species, to correct some mistakes and discuss most of doubtful points.

1. *Tragosoma deparium* (L.) was mentioned in the Key only for West and East Siberia without the Maritime (Primorye) Province, but it was recorded for that area by Samoilov [1936] on the basis of V. Shabliovskii's data.

2. *Stenocorus lepturoides* Reitter, 1913 — missing in the Key, was described from the Amur valley. I have studied the type (a single male) in the Natural History Museum (Budapest, Hungary) which is a good species, differing from *S. amurensis* (Kraatz, 1879) by the characters listed in Plavilstshikov's monograph [1936]: pale-yellow elytrae with black humeral stripe (absent in *S. amurensis*) are sufficient for distinguishing between them.

3. *Brachyta sachalinensis* Matsumura, 1911, missing in the Key as a taxon requiring further investigations, is a valid species distributed on Sakhalin, known from the Khabarovsk Province and also from Japan (Hokkaido), and characterised by a small size, a poorly developed black elytral pattern (only spots); tibiae and basal antennal portions are always yellow.

4. *Brachyta amurensis* (Kraatz, 1879) missing in the Key due to the same reasons as for the previous taxon, is also a "good" species, known up to now only from the Amur Area. It is characterised by a small size and relatively wide elytrae, wider than in the sympatric populations of *B. interrogationis* (L., 1758).

5. *Brachyta breiti* (Tippmann, 1946) and *B. eurinensis* (Tsherepanov, 1978) are not synonyms and belong to different species. My previous synonymizing them [Danilevsky, 1988b] appears to be wrong. Recently I have studied the paratype male of *B. eurinensis* (from the Tuva Republic) in the former Biological Institute (Novosibirsk) and compared it with new materials obtained from the type locality of *B. breiti*, (5 ♂♂ and 3 ♀♀, Saian Mts., Mondy, 20.6.1988, A. Gorodinsky and M. Shestopalov leg.). The male of *B. eurinensis* belongs to one of the forms of *B. variabilis* (Gebler, 1817), but the holotype female (collected very far from the male in Transbaikalia) seems to be lost. Thus I can not be quite certain in determining the status of this name, but most probably: *B. variabilis* = *B. eurinensis*.

B. breiti is a separate species known up to now from only two closely situated localities at high altitude of the Saian Mts. (Tunkin Ridge): Mondy, Irkutsk District, Russia and Hanh, the northern bank of Hubsugul Lake in Mongolia. The species differs from *B. variabilis* first of all by a very special pattern of elytral punctuation: it is rather small and vague so often indiscernible, whilst in *B. variabilis* it is always deep and very distinct; each elytron with two slightly raised longitudinal lines (the principal distinguishing character of *B. eurinensis*, being, however, not rare in some populations of *B. variabilis*); "body black, elytrae totally black or totally brown with black blotches on humeri above epipleurae; very rare elytrae yellow with several irregular black longitudinal stripes" (such special kind of elytral design is also known in several populations of *B. variabilis*). Ecologically *B. breiti* is most close to *B. rosti* (Pic, 1900) from the Caucasus. The beetles appear in alpine meadows very early in spring (before green grass or any flowers) very actively crawling between snow fields, nearly without any attempts to fly.

6. The name *Carilia virginea thalassina* (Schrank, 1781) can not be used for Siberian subspecies of *C. virginea* (L., 1758) because it has been described from Austria(!), being in fact an aberrant form of European *C. virginea* with a red prothorax (not abdomen as in the Key). Siberian subspecies nearly always has a red prothorax and differs from European forms by the pattern of elytral punctuation. The valid name for this taxon is *C. virginea aemula* (Mannerheim, 1852). The abdomen in *C. v. aemula* is always red, but if it is black (in populations from the Maritime Province), then it is *C. v. kozhevnikovi*

(Plavilstshikov, 1915), which was considered in the Key as a separate species. The anterior margin of prothorax in *C. v. aemula* is also black, though usually narrower than in *C. v. kozhevnikovi*.

7. *Pidonia malthinoides* (Kraatz, 1879) = *P. quercus* Tsherepanov, 1975 [Danilevsky, 1992b].

8. *Judolidia znojkoii* Plavilstshikov, 1936 and *J. bangi* (Pic, 1901) are not synonyms, but different species [Kusakabe, Ohbayashi, 1992]. *J. bangi* is known only from Japan (Honshu) and was not found on Sakhalin or Kunashir, thus being absent in Russian fauna. Contrary, *J. znojkoii* is widely distributed on the continent (Maritime Province, Korean Peninsula, North-East China), but is not found on the islands. The difference between two species, according to Kusakabe and Ohbayashi is:

"2. Elytral apices completely rounded and without any angle *J. znojkoii*
 — Elytral apices bluntly angulate at external angles, apex of median lobe weakly pointed *J. bangi*"

9. *Strangalia takeuchii* Matsushita et Tamanuki, 1935, missing in the Key, seems to be not rare on Kunashir Island. I examined 4 specimens: ♂ and ♀ from Mendeleev Mt. (near Rosinka, 13.8.1985, N.Orlov leg.), ♂ and ♀ from near Tretiakovo (31.8.1992, A.Napolov leg.). It differs from *S. attenuata* (L., 1758), which is very common on Kunashir, by black hind tibiae — in *S. attenuata* all tibiae are always reddish-yellow. Other colour patterns of *S. takeuchii* are rather variable: "pronotum from totally black to yellow with two narrow black longitudinal stripes, transverse elytral black bands wide or narrow". The species is widely distributed on Hokkaido and Honshu.

10. *Strangalia connecta* Nishio, 1950, described from Sakhalin, was mentioned in the footnote of the Key but not included in it because of lacking of the material. According to the original description, it seems to be a synonym of *Pachytodes cometes* (Bates, 1884).

11. *Anoplodera rufihumeralis* (Tamanuki, 1938) was missed in the Key. The species was recorded for Russian fauna [Danilevsky, 1993] after a pair of specimens collected in the Maritime Province and deposited now in the private collection of Jaroslav Dolihod (Kladno, Czechia). *A. rufihumeralis* was described from Korea and is known now from several localities of the Korean Peninsula. It can be easily distinguished from other *Anoplodera* species of the Far East of Russia by a totally black colour of the body and the elytrae, sometimes with large humeral red spots. Specimens with such spots look in a first glance like *Anastrangalia scotodes* (Bates, 1873) with similarly coloured elytrae.

12. *Anoplodera rufiventris* (Gebler, 1830) has to be better include in the Key as it is known from the Transbaikalia, and many species, which are not known further to the east as the West Transbaikalia, are included (*Brachyta eurinensis* Tsher., *Pseudogaurotina splendens* Jak., *Stenurella bifasciata* Mull. and others). The distinguishing characters are listed by Plavilstshikov [1936], but the combination of yellow spotted elytrae (totally black forms are very rare) and a haired pronotum is sufficient for the species identification among other *Anoplodera*.
13. *Corymbia dichroa* (Blanchard, 1871) = *Corymbia succedanea* (Lewis, 1979) [Gressitt, 1951].
14. The status of *Grammoptera elegantula* Kraatz, 1879 was clarified after examining the type material [Danilevsky, 1993a]. It is the same species as later described *Leptura misella* Bates, 1884 and *Pseudallosterna orientalis* Plavilstshikov, 1934; therefore, a valid name for the taxon is *Pseudallosterna elegantula* (Kraatz, 1879). In the Key it was named "*Pseudallosterna misella* Bat.", while "*elegantula* Kr." was put in the synonyms of *Alosterna tabacicolor bivittis* (Motschulsky, 1860).
15. *Necydalis gigantea* Kano, 1933, missing in the key, was recorded for the Kuril Islands [Hayashi, 1980] being widely distributed on Hokkaido, Honshu, Kyushu and Shikoku. It has elongated the 1st abdominal sternite like in *N. major* L., 1758, but the elytrae are usually black.
16. *Necydalis solida* Bates, 1884, missing in the Key, was recorded for Sakhalin [Tamanuki, 1933]; it is widely distributed on Honshu, Kyushu and Shikoku. It comes close to *N. pennata* Lewis, 1879 and *N. morio* Kraatz, 1879 — the species with the short 1st abdominal segment, but without apical elytral swellings like in *N. sachalinensis* Matsumura et Tamanuki, 1927. It differs from these two species by a very special small sculpture of elytral apices, lacking distinct punctuation and looking dull; in *N. pennata* and *N. morio* the elytrae have a distinct, though small and dense, punctuation to the apices.
17. In general, I suspect that both names *Necydalis pennata* Lewis, 1879 and *N. morio* Kraatz, 1879 belong to one species. The distinguishing characters mentioned in the Key could be only used for separation of two sexes! I examined 12 ♂♂ and 7 ♀♀ both from the continental and insular populations, but all males are not longer than 13.5 mm, so all are out of the size limits for *N. pennata*: "17.0-26.0" given by the Key. All females are not shorter than 19.0 mm, thus being out of the size limits for *N. morio*: "11.0-18.0"! So, under the name "*N. morio*" one comes in the Key to the males whilst under the name "*N. pennata*" — the females of the same species key out. The difficulties with distinguishing of the two "species" were reflected in the Key by the fact that one name "*N. pacifica* Plav." was contemporary used as a synonym of both (?!). Japanese authors record only one species — *N. pennata* in Japan (size limits: 11.5-24.0 mm). *N. morio* was recorded for Japan after a single male from Hokkaido [Kusama, 1973; according to Kusama, Takakuwa, 1984], but this record was ignored in later publications on Japanese Cerambycidae.
18. The separation of Spondyliini in a subfamily Spondylinae is not more than a taxonomical error [Svacha, Danilevsky, 1987]. The separation of the genus *Spondylus* F., 1775 in the tribe Spondyliini is also not equivocal and is only due to some morphological peculiarity of imago.
19. The synonymy: *Atimia maculipuncta* (Semenov et Plavilstshikov, 1937) = *A. nadezhdae* Tsherepanov, 1973 by Lobanov et al. [1981] taken into account in the Key, was too hasty. In fact, the beetles from the Maritime Province and from Inner Mongolia differs by the pattern of punctuation and pubescence. Therefore, until new investigations, the name *A. nadezhdae* Tsherepanov, 1973 must be restored as a valid name.
20. *Purpuricenus lituratus* Ganglbauer, 1886 = *P. petasifer* Fairmaire, 1888. The synonymy is now generally accepted.
21. *Purpuricenus sideriger* Fairmaire, 1888, missing in the Key, was recorded for Russia [Danilevsky, 1993b] after a single specimen, collected in 1991 in the Maritime Province near Arseniev Town. The species is distributed in the Korean Peninsula and in Eastern China and characterised by a large black round solid blotch on the apical elytral half and a pair of smaller round blotches near the base.
22. *Amarysius duplicatus* Tsherepanov, 1980, missing in the Key, is distributed not only in the Altai and Saian Mountains but also in the Amur Area (♂, Zeia Reserve, 15.7.1978, S. Kurbatov leg.), and the Maritime Province (♂, Khasan District, Riazanovka, 16.6.1990, B. Zhuravlev leg.) — both specimens are deposited in my collection. It differs from *A. altajensis* (Laxmann, 1770) by longer elytrae and the emarginate last abdominal male sternite.
23. *Aphrodisium faldermanni* (Saunders, 1850), missing in the Key, was recorded for East Siberia [Reitter, 1906; according to Plavilstshikov 1940]. The occurrence of this widespread species in Russia seems to be not impossible, in spite of the absence of new data. It is known from the Korean Peninsula, Mongolia and from Northern to Southern China.

The species differs from all other Callichromini of Russia by orange-yellow tarsi.

24. *Obrium obscuripenne* Pic, 1904 (according to Villiers 1978) = *O. graciliforme* Lipp, 1939 = *O. gracile* Plavilstshikov, 1933; non *O. gracile* Krynicki, 1832.

25. *Molorchus kobotokensis* Ohbayashi, 1963, missing in the Key, was collected in the Maritime Province near Kaimanovka (15.6.1979). Several specimens are deposited in C. Holzschuh's collection (Vienna, Austria). I studied these specimens, and they were indistinguishable from the typical Japanese *M. kobotokensis*. The species is known from Southern Hokkaido, several regions of Honshu and from the Korean Peninsula. It is close to *M. ishiharai* Ohbayashi, 1936 (which up to now was not found on the continent); it differs by a very dense abdominal appressed pubescens, which totally covers at least the anterior portions of each sternite so that a cuticle is not visible.

26. *Pronocera sibirica* (Gebler, 1848) is the valid name for *P. brevicollis* (Gebler, 1833) described as *Callidium* (non *C. brevicollis* Dalman, 1817).

27. *Chlorophorus tohokensis* Hayashi, 1968, missing in the Key because of lacking the material. The species was recorded for the Maritime Province [Lobanov et al., 1981]. Previously it was known only from Japan (Hokkaido and Northern Honshu). It is not close to *Ch. gracilipes* (Faldermann, 1835), but goes to this point in the Key because of the following diagnostics: "dark elytrae with narrow pale bands, prothorax without erected setae, 1st joint of hind tarsi longer than others; but middle transverse elytral band is wide, with diffused margins, not so dense as white basal band, so looks grey as apical band, whilst in *Ch. gracilipes* it is narrow with distinct margins and as dense as basal and apical bands, so all look white".

28. *Chlorophorus obliteratedus* Ganglbauer, 1889 = *Ch. ubanurensis* Tsherepanov, 1971 [Danilevsky, 1993b].

29. *Xylotrechus chinensis* (Chevrolat, 1852) was placed in the Key without sufficient reasons. It was never recorded for Russia.

30. The taxonomy of *Clytus* species from the Far East of Russia is not clear now, but at least not all names of the Key are valid. The study of type material allows me to conclude: *C. arietoides* Reitter, 1899 = *C. venustus* Plavilstshikov, 1940; *C. raddensis* Pic, 1904 = *C. hypocrita* Plavilstshikov, 1940. The type of *C. nigrifulus* Kraatz, 1879 in the Eberswalde Museum (Germany) is simply small *C. arietoides*, but the type of this taxon from the Musée National d'Histoire Naturelle (Paris) is conspecific with *C.*

fulvohirsutus. The problem arose because in some European museums it was accepted as a routine practice to mark as types the old specimens which only could belong to types series.

31. *Apriona germari* (Hope, 1831) (= *rugicollis* Chevrolat, 1852) missing in the Key, was recorded for East Siberia [Breuning, 1962]. Like in the case of *Aphrodisium faldermanni* (Saund.), this finding seems not impossible, because the species is widely distributed from India to Indochina, China and the Korean Peninsula. The species can be easily recognised by a large body (26-51 mm) covered with uniform olive pubescens with a number of big shining granules near the elytral base.

32. *Acalolepta degenera* (Bates, 1873) must be better included in a separate genus *Astynoscelis* Pic, 1905, not only for morphological reasons, but also because of its bionomy — the larval development in *Artemisia* stems.

33. The presence of *Acalolepta cervina* (Hope, 1831), which has been described from India, in the Russian fauna is very doubtful. It was only once recorded for the Maritime Province [Samoilov, 1936]; all specimens of *A. cervina* in Russian or the known to me foreign collections originated from the Oriental region. Furthermore, among abundant Cerambycidae material Samoilov [1936] mentioned only one *Acalolepta* species. Such representative of the genus as *A. ussurica* (Plavilstshikov, 1951) is not rare in the region, but it has been described later. Therefore, Samoilov's record was most probably based on misidentification. Both of the two following species were often identified by different authors as *A. cervina*.

34. *Acalolepta fraudatrix* (Bates, 1873) missing in the Key, was recorded for Kunashir Is. [Kusama, Takakuwa, 1984]. The species is distributed in Japan (Hokkaido, Honshu, Kyushu and many small islands), it was recorded from the Korean Peninsula and China. It is closely related to *A. sejuncta* (Bates, 1873), and differs by a strongly swollen apical part of the 1st antennal joint and regularly arranged elytral pubescence, whilst in *A. sejuncta* the pattern of elytral pubescence is rather different in the posterior elytral portion.

35. *Acalolepta sejuncta* (Bates, 1873) recorded in the Key for Sakhalin and Kuril Islands and distributed also in Japan and the Korean Peninsula, appears to occur in continental Russia. According to the personal communication of A. Kaziuchitz (Minsk), it was once collected in the Maritime Province.

36. One specimen of *Apomecyna histrio* (F., 1792) from the Transbaikalia (Selenginsk) is deposited in my collection. The species is widely distrib-

uted in the Oriental region: known from India, China, Laos, Japan and many other Pacific islands; it was reported from the Korean Peninsula. It can be easily recognised by a small elongated brown body (6.6-9.0 mm); elytrae with four oblique rows of small but bright white spots.

37. *Ussurella napolovi* (Danilevsky, 1995) missing in the Key, was described from the Maritime Province (near Anisimovka) as *Ussuria napolovi*. The taxon looks very similar to *Anaesthetis* Dejean, 1835, and differs by the presense of lateral prothoracic spines. The name *Ussuria* Danilevsky, 1995, is a junior homonym of *Ussuria* Nikolsky, 1903 (Pisces) and was replaced in *Ussurella* Danilevsky, 1997.

38. *Sophronica obrioides* (Bates, 1873) was included in the Key most probably due to the misidentification of *Ussurella napolovi* (Danilevsky, 1995). The species was recorded for Russia only twice [Plavilstshikov, 1932; Samoilov, 1936], because in Tsherepanov's monograph [1984], it was *U. napolovi* figured and described under the name "*S. obrioides*". I could not find in Russian collections any specimens of *S. obrioides* collected in Russia. No other records of the species from the continent exist. It is distributed only in Japan (Honshu, Kyushu and several small islands).

39. *Anaesthetomorphus apicalis* (Pic, 1929) missed in the Key because of lacking the material. The taxon was described from near Vladivostok. The type of *A. apicalis* remains unknown to me (it is absent in the collection of the National Museum, Prague), but according to the description [Breuning, 1975], the species is close to *Anaesthetis*; but "antennae a little longer than body, 3d antennal segment longer than scape and longer than 4th segment, prothorax elongate with lateral tubercles, elytrae obliquely subtruncate apically, each elytron with lateral and apical yellow markings and antennal segments with white basal hair rings; body black, covered with grey pubescence, length 7 mm."

40. *Askoldatimura askoldensis* (Heyden, 1884), being mentioned in the footnote to the Key, was missed because of lacking the material, but it is not more than a synonym of *Cylindilla grisescens* Bates, 1884 [Danilevsky, 1993a].

41. *Pogonocherus costatus* Motschulsky, 1859 is neither a separate species nor a subspecies of *P. fasciculatus* (Degeer, 1775). It is simply a dark form, not rare in all parts of the distribution range of *P. fasciculatus* extending from Europe to the Far East. The synonymy: *P. fasciculatus* = *P. costatus* is now generally accepted.

42. I can not see any differences between *Pogonocherus seminiveus* Bates, 1873 from islands

and from the continent. The characters being used by Tsherepanov [1984] and then repeated in the Key are not valid, so traditional synonymy is correct: *P. seminiveus* = *P. dimidiatus* Blessig, 1873.

43. *Leiopus ganglbaueri* Csiki, 1901 missing in the Key, has to be better regarded as a species of uncertain origin, but possibly occurring in the region, as it has been described from Siberia ("Ubej"). Nobody could help me to know where it is. According to the description [Breuning, 1978], the species is similar to *L. nebulosus* (L., 1758), but "pronotum stronger punctured, its lateral spines not curved backwards; elytrae covered by dark-brown pubescence with two transvers grey bands: central and apical, joined medially; with several small round grey spots; all femora and basal portions of tibiae red".

44. *Ostedes kadleci* Danilevsky, 1992 missing in the Key, was described from near Sokolchi (Sikhotealin Mountain Ridge); the holotype is deposited now in my collection. A unique known female (9.7 mm) looks similar to *Eryssamena shabliovskiyi* Tsherepanov, 1982 (it is described in the Key, but its size is usually greater — up to 12 mm, and most of other given characters have no value), but much wider with strong elytral humeral tubercles, though not so long like in the male of *E. saperdina* Bates, 1884.

45. *Saperda subobliterata* Pic, 1910 (= *mandschukuoensis* Breuning, 1943; = *harbinensis* Chou, Chao et Chiang, 1983) was regarded in the Key as a synonym of *Saperda octomaculata* Blessig, 1873, but it is a valid, well known species, widely distributed and common from the Amur Area to the Maritime Province, occurring also in the Korean Peninsula and Northeastern China. The problem is that distinguishing characters usually used in the literature are not valid: the colour of elytral pubescence is not very important, though *S. subobliterata* can never be bright-green, glabrous black spots on the sides of abdominal sternites are absent in both species! The most useful is the character of dorsal appressed pubescence: in *S. octomaculata* the setae are short and wide, looking like scales, specially on the pronotum; in *S. subobliterata* these setae look like hairs; lateral sides of the prothorax in *S. octomaculata* do not have black spots or have small spots; in *S. subobliterata* the lateral black pronotal spots are about only two times smaller than the dorsal ones. It is *S. subobliterata* which has been figured in the Key under the name *S. octomaculata* because its lateral prothoracic spots are well visible.

46. *Oberea japonica* (Thunberg, 1787) was included in the Key as a probable member of the regional fauna, but it was in fact recorded for the Maritime Province [Plavilstshikov, 1932]. In the Key Tsherepanov's picture of *O. japonica* is misplaced under the name of *O. inclusa*.

47. *Oberea atropunctata* Pic 1916 missing in the Key, was recently collected near Ussuriysk [Danilevsky, 1993a]. The species is widely distributed in China, known from the Korean Peninsula. The species can be easily recognized by the combination of two characters: an entirely red head and a red abdomen with black markings on the 2nd and the 3d or the 2nd to the 5th sternites.

48. *Oberea scutellaroides* Breuning, 1947 (= *scutellaris* Fairmaire, 1888; = *chinensis* Tsherepanov, 1985) was omitted in the Key as a poorly known species, requiring further investigation. It is a good species rather common in the Maritime Province and widely distributed in Northeastern China. The species comes very close to *O. morio* Kraatz, 1879 by having a black scutellum and a black abdomen; but the prothorax is usually partly or totally red and the elytrae are yellow along the central part of each; the darkest forms with nearly entirely black elytrae and a similarly coloured prothorax usually have narrow reddish anterior and posterior margins of the pronotum; while in *O. morio* the prothorax and the elytrae are usually black, but even the palest forms with slightly yellowish elytrae have an entirely black pronotum. It is still possible that in different parts of the very large distributional range of *O. morio*, a different species is recorded under this name.

49. *Oberea inclusa* Pascoe, 1858 described from Northern China is not a synonym of *O. vittata* Blessig, 1873 [Kusakabe, 1892]; up to now it is known only after the holotype being absent in Russian fauna [Danilevsky, 1993b].

50. *Agapanthia leucaspis* (Steven, 1817) missing in the Key, must be better to be included in it, as it is known as far to the east as in the Transbaikalia; for distinguishing characters and distribution see Plavilstshikov [1968].

51. *Agapanthia alternans* Fischer, 1842 is not a synonym of *A. dahli* (Richter, 1821) and easily differs by many characters [Plavilstshikov, 1968].

52. *Agapanthia daurica* Ganglbauer, 1884 is not a synonym of *A. villosoviridescens* (Degeer, 1775). It differs first of all by long eyes and relatively short genae. To my experience, in at least one locality in the Altai Mountains both species are sympatric.

53. The usage of a subspecies taxonomical rank is not consistent in the Key. Sometimes a subspecific name was mentioned in the main text, sometimes in footnotes, sometimes totally omitted. Below I list all omitted not nominative subspecies names or each omitted pair of a nominative and not nominative subspecies if both occur in the region:

Rhagium inquisitor ssp. *rugipenne* Reitter, 1898;
Pidonia amentata ssp. *kurosawai* Ohbayashi et

Hayashi, 1960;

Lepturalia nigripes ssp. *rufipennis* (Blessig, 1873);

Judolia sexmaculata ssp. *parallelopipeda* (Motschulsky, 1860);

Anastrangalia scotodes ssp. *scotodes* (Bates, 1873) — insular form;

Anastrangalia scotodes ssp. *continentalis* (Plavilstshikov, 1936) — continental form;

Aromia moschata ssp. *orientalis* Plavilstshikov, 1932;

Phymatodes maacki ssp. *maacki* Kraatz, 1879 — continental form;

Phymatodes maacki ssp. *viarius* Danilevsky, 1988 — insular form;

Chlorophorus diadema ssp. *diadema* (Motschulsky, 1853) — continental form;

Chlorophorus diadema ssp. *inhirsutus* Matsushita, 1933 — insular form;

Mesosa hirsuta ssp. *continentalis* Hayashi, 1964;

Monochamus galloprovincialis ssp. *sibiricus* Pic, 1908;

Monochamus sutor ssp. *pellio* (Germar, 1818);

Eodorcadion carinatum ssp. *involvens* (Fischer, 1823);

Palimma liturata ssp. *continentalis* (Semenov, 1914);

Acanthocinus griseus ssp. *griseus* (F., 1792) — continental form;

Acanthocinus griseus ssp. *orientalis* Ohbayashi, 1939 — insular form.

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