Zootaxa 2121: 27–34 (2009)
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

A redescription of *Blethisa multipunctata aurata* Fischer von Waldheim, 1828 (Coleoptera: Carabidae: Elaphrinae)

HENRI GOULET[1], GERMAN S. LAFER SH.[2] & SEIJI MORITA[3]

[1]*Agriculture and Agri-Food Canada, K. W. Neatby Building, 960 Carling Avenue, Ottawa, ON K1A 0C6, Canada. E-mail: henri.goulet@agr.gc.ca*
[2]*Laboratory of Entomology, Institute of Biology and Soil Sciences, Far East Branch, Russian Academy of Science; Russia, 690022, Prospect 100-letia, 159. E-mail: Lafer@ibss.dvo.ru*
[3]*Higashi-gotanda 5-19-7, Shinagawa-ku, Tokyo 141-0022, Japan. E-Mail: carab-mori@mse.biglobe.ne.jp*

Abstract

Blethisa aurata Fischer von Waldheim, 1828 is redescribed based on recently collected specimens. The taxon is kept as a subspecies of *B. multipunctata* (Linnaeus 1758). This subspecies is known from forested regions on the Pacific watershed of Russia and Hokkaido (Japan), and Alaska (United States) and subarctic regions of the Northwest Territories (Canada). *Blethisa inexspectata* Goulet and Smetana, 1983 is a new synonym of *B. multipunctata aurata*. The remaining North American specimens originally assigned under *B. multipunctata aurata* (boreal east of Yukon and the Rocky Mountains) belong to *B. hudsonica* Casey, new status.

Key words: *Blethisa aurata*, description, distribution, taxonomy, *Blethisa inexspectata, Blethisa hudsonica*

Introduction

Solutions to problems sometimes spring from fortuitous events. Such events create a team of collaborators. The discovery of *B. inexspectata* in Japan (SMC) was the catalyst behind this project.

Blethisa aurata Fischer von Waldheim, 1828 was described from “Kamchatka”. Lindroth (1954) studied five specimens of *B. aurata* from “Kamchatka”, Amurland (Khabarovsk; “Sotka Gora”) and reduced the taxon to a subspecies of the widely distributed *B. multipunctata* (Linnaeus).

Lindroth (1954) distinguished *B. multipunctata aurata* from the nominate subspecies by punctures at the base of the head, the punctures on elytral striae, the discal impressions on intervals 3 and 5, and the apex of the aedeagus. These morphological characteristics of *B. multipunctata aurata* have been accepted by other specialists of Carabidae. Unfortunately, Lindroth (1954) did not notice that the metacoxae of males of *B. multipunctat*a *aurata* from eastern Asia were densely covered by long yellowish brown setae on the medial half. Consequently, he synonymized *B. hudsonica* Casey with *B. multipunctata aurata* and related *B. multipunctata aurata* with *B. oregonensis* LeConte, a species with “glabrous” metacoxae in males.

Lafer (1989) rectified this situation in his key to the two *Blethisa* species known from eastern Asia. Unfortunately, his work written in Russian remained unnoticed by foreign authors.

Goulet and Smetana (1983), in connection with the description of a new species, *Blethisa inexspectata*, wrote a key to all known species of the genus and kept the status quo on *B. multipunctata aurata*, which remained with the species possessing glabrous metacoxae. Adults of *B. inexspectata* match perfectly those of *B. multipunctata aurata*. Thus, the name, *B. inexspectata*, becomes a junior synonym of *B. multipunctata aurata*.

Because of the general confusion about *B. multipunctata aurata*, a redescription based on specimens from western North America, Japan and the Russian Far East, is given below.

Accepted by P. Johnson: 28 Apr. 2009; published: 29 May 2009

Males of *Blethisa multipunctata* share a notch on the ventral margin at the apex of the aedeagus (as in Figs. 1C, 2C and 5) with those of *B. oregonensis*, a western North American species, and of *B. tuberculata*, a Siberian species. Adults of *B. multipunctata* share with those of *B. oregonensis* sparse or no punctures at the base of the head (Fig. 3) and equally convex and wide intervals 1 to 6 (see Habitus) but are distinguished from those of *B. oregonensis* by the elytral bead extended to the scutellar setigerous puncture (see Habitus). Adults of *B. multipunctata* share with those of *B. tuberculata* the elytral bead extended to scutellar setigerous puncture, but are distinguished from those of *B. tuberculata* by equally convex and wide intervals 1 to 6 (see Habitus) and the sparse or no punctures at the base of the head (Fig. 3).

Blethisa catenaria Brown, a Holarctic species, is the only other species of the genus found within the range of *B. multipunctata aurata*. Like adults of *B. tuberculata*, those of *B. catenaria* are similarly distinguished from those *B. multipunctata* (Goulet & Smetana 1983). However, adults of *B. catenaria* are distinguished from those of above species by the absence of a carina near the posterolateral angle of the pronotum and of a notch on the ventral margin of the apex of the aedeagus (Figs. 4A and 4B).

Materials and methods

The following measurements were recorded: HL, length of head from apex of clypeus to posterior edge of tempora; HW, maximum width of head; PA, width of pronotum at apex; PW, maximum width of pronotum; PB, width of pronotum at base; PLt, maximum length of pronotum; PLm, length of pronotum at middle; EL, length of elytron from level of basal border at shoulder to apex; EW, maximum width of elytra; Ls, length of body from the tips of mandibles to apex of elytra; Ls = HL+PLt+EL.

Specimens studied are from the following collections: CMNH, Carnegie Museum, Pittsburgh, USA; CNC, Canadian National Collection of insects, Ottawa, Canada; FESU, Far East State University, Vladivostok; IBPN, Institute of Biological Problems of the North, Magadan, Russia; IBSV, Institute of Biology and Soil Sciences, Vladivostok, Russia; SMC, Seiji Morita Collection, Tokyo, Japan; USNM, United States National Museum, Washington, USA; ZIP, Zoological Institute, Saint–Petersburg, Russia.

Abbreviations used: Distr. = District; Reg. = Region; Vil. = Village; Leg. = Collector.

Blethisa multipunctata aurata Fischer von Waldheim

(Figs. 1 and 3)

Blethisa aurata Fischer von Waldheim, 1828: 262 (orig. descr.). Type loc.: Kamchatka. Location of type series uncertain (see taxonomic notes).

Blethisa aurata Fischer von Waldheim: Chaudoir, 1844: 438 [redescr.]. Jakobson, 1906: 267 [Yakut., Kamchatka].

Blethisa curtula Motsch: Heyden, 1886: 294 [Chabarovka]. Misidentification.

Blethisa multipunctata aurata: Lindroth, 1954: 15–16 [Chabarofka, Amur. Reg., 1882. Graeser, 1 ♂, in Mus. Budapest; Chabarovsk, 1 ♂, Bodemeyer, col. Bänninger; "Sotka Gora", 1 ♀, Bodemeyer, col. Bänninger; Kamchatka, 1 ♂, Bodemeyer, col. Bänninger; "Kamchatka, Eschscholtz", 1 ♂, Univ. Mus. Helsinki.], fig. 7c; Lindroth, 1961: 106–107. Uéno, 1985: 61 [Japan: Hokkaido], Pl. 12, fig. 1. Kryzhanovskij et al., 1995: 60. Berlov and Berlov, 1996: 64 [Irkutskaya Reg.: Kharat, Chernorud, Salari; 3 ex.]. Goulet, 2003: 206 [Russian Far East and Nearctic].

Blethisa hudsonica Lindroth, 1954: 15–16; not Casey 1924: 18.

Blethisa inexspectata Goulet and Smetana, 1983: 551 (orig. descr.) Type loc.: United States, Alaska, Bonanza Creek 150°40'N 66°40'W. Holotype, seen and in CNC. **NEW SYNONYM**.

Type material. We know of five likely syntypes, three males and one female and one of undetermined sex. Two of the specimens are in the Zoological Museum of Moscow University (Moscow, Russia), one is in the Finnish Museum of Natural History (Helsinki, Finland), one in the Staatliches Museum für Tierkunde (Dresden, Germany) (Grämer, 1960) and one from the Chaudoir/Oberthür collection (Muséum d'Histoire Naturelle, Paris) (Chaudoir, 1844). They are all from Kamchatka. The labels of the specimens in Moscow are

hand written by Fischer von Waldheim, but there is no collector mentioned. The specimen from Dresden, originally from Fischer von Waldheim's private collection, is a male from Kamchatka. The specimens in Helsinki and Paris were collected by Eschscholtz, as mentioned in the original description (Fischer von Waldheim, 1828: 262). The last two specimens meet all condition stated in the original description. The original text states:

> "Blethisa aurata, Eschscholtz, Tab. 14, f. 7. Nitide aenea; elytris costatis, costis subincurvis, crassis foveolisque magnis et profundis duplici serie.
> Long. 5 lin. – lat. 2 lin.
> Distinguitur a multipunctata nitore et costis elytrorum crassis, latis et utrinque incurves. foveolae ita magnae et ita profunde impressae, ut costae, quibus insunt, tanquam puncta oblonga elevata adparent.
> Hab. In Kamtschatka. Eschscholtz."

Unfortunately, the two potential syntypes may have been collected before or after the description of *B. aurata*. Because only two distantly related species occur in the area, *B. multipunctata aurata* cannot be confused and there is no need to designate a lectotype.

Blethisa inexspectata was described from a single male collected in Alaska which matches perfectly those of *B. multipunctata aurata* from eastern Asia. Therefore, *B. inexspectata* is here listed as a new synonym of *B. multipunctata aurata* Fischer von Waldheim.The following is a description of *B. multipunctata aurata* based on specimens seen from the Russian Far East and northwestern North America.

Description. Color. Black with bronze or brassy tinge, stronger at sides of elytra and pronotum; sometimes green in punctures and brassy along striae.

Microsculpture. Dorsum of body rather shiny (sculpticells flat or meshes hardly developed), but sides of elytra dull (sculpticells scale–like). Meshes of microsculpture basically lacking on frons but often developed at base of head; hardly outlined or lacking in middle of disc of pronotum; weakly outlined and forming transverse lines or transverse in basal third of pronotum; well impressed and isodiametric and sculpticells scale–like along lateral margin of pronotum; weakly impressed and isodiametric on disc; well impressed with scale–like sculpticells along lateral margin of elytron (in female, reticulation on disc of elytra more deeply impressed).

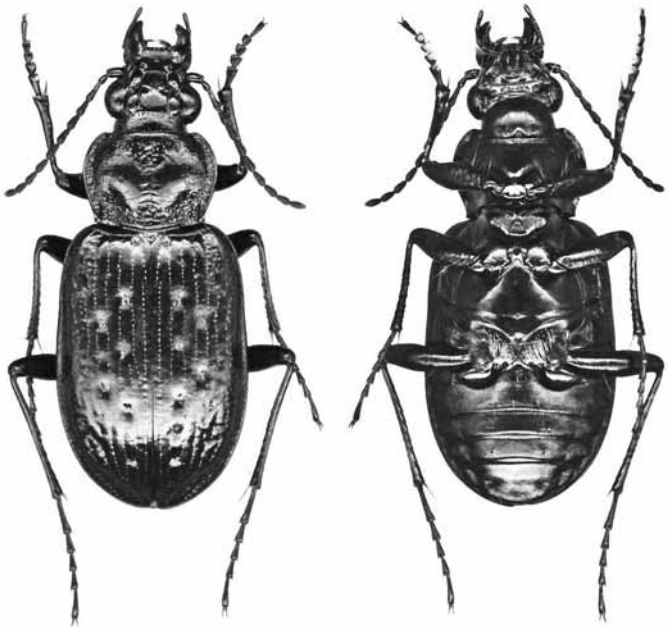
Measurements. Length of body 10.0–13.5 mm, maximum width of elytra 4.1–5.1 mm. The following table gives various measurements (in mm) for five males and three females from the following localities: Kamchatka, Klyuchi (specimens 1–3), Kamchatka, Ust`–Kamchatsck (specimen 4), and Amurskaya Region, Natal`ino (specimens 5–8).

№	Sex	HL	HW	PA	PW	PB	PLt	PLm	EW	EL	L	Ls
1	M	1.55	2.40	2.25	3.35	2.70	2.35	–	4.62	6.90	–	10.8
2	M	1.55	2.45	2.25	3.40	2.70	2.40	2.35	4.60	6.70	11.2	10.7
3	M	1.60	2.45	2.20	3.40	2.80	2.45	2.42	4.80	7.10	11.7	11.2
4	F	1.60	2.35	2.25	3.40	2.85	2.46	2.45	4.80	7.30	12.2	11.4
5	M	1.60	2.50	2.35	3.45	2.80	2.55	2.50	4.60	7.00	11.5	11.2
6	M	1.45	2.23	2.15	3.10	2.55	2.35	2.30	4.10	6.20	10.2	10.0
7	F	1.55	2.65	2.45	3.60	3.05	2.65	2.65	4.90	7.30	12.4	11.5
8	F	1.60	2.70	2.40	3.75	3.05	2.85	2.85	5.00	7.60	13.0	12.1

Structures. Head rather long with eyes prominent, smooth and shiny on dorsal surface, and with sparse punctation behind weak transverse impression at level of posterior edges of eyes. Clypeus with convergent

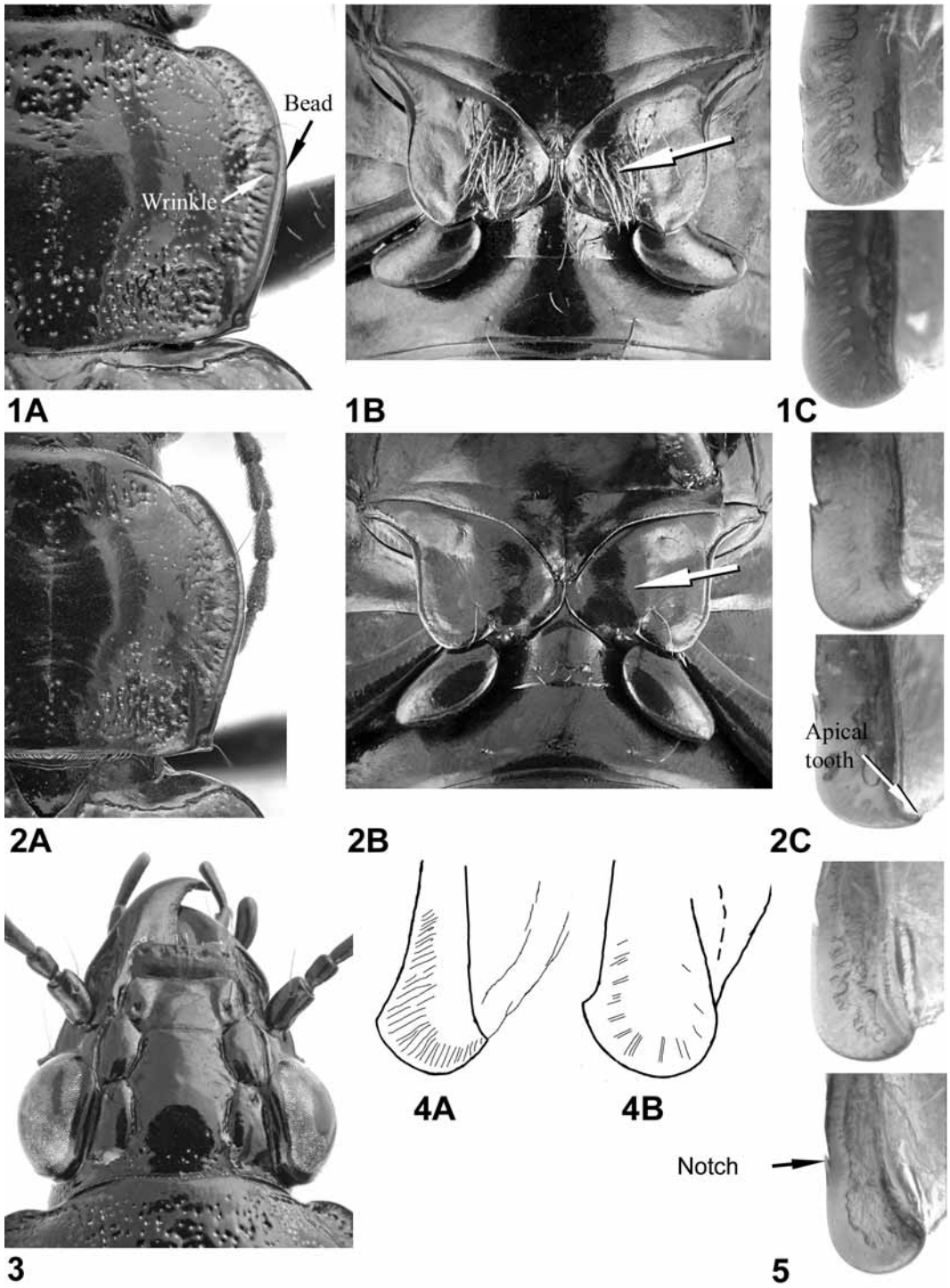
sublateral furrows connecting with transverse furrow near apical margin (furrows almost always outlined).

Pronotum (Fig. 1A) rather large, transverse and noticeably broader than head (PW/PLt 1.32–1.43, PW/PLm 1.32–1.45, PW/HW 1.36–1.45, PW/PA 1.44–1.56, PW/PB 1.18–1.26, PB/PA 1.19–1.30), widest approximately at middle. Apical edge almost straight, with widely rounded not prominent anterolateral angles. Posterior edge weakly protruding at middle, wider than anterior edge. Sides rounded throughout, less so before posterolateral angles (occasionally straight behind middle, but not sinuate). Posterolateral angles obtuse, with small tooth developed at angle. Disc strongly convex, the lateral margins widely explanate, more so behind middle, and reflexed. Lateral bead narrow, weakly dilated behind middle. Explanate margin wide but obscured by rough transverse wrinkles and punctures. Base with a large and deep impression on each side, and lateral edge of impression separated from lateral edge by weak laterobasal carina. Anterior and posterior transverse impressions outlined, the anterior one usually more impressed. Surface at middle of disc smooth and nearly polished. Punctures sparse or dense on lateral, apical and basal margins. Medial furrow sharply impressed.



Habitus. Dorsal and ventral views of a male of *Blethisa multipunctata aurata* from Kamchatka (Kamchatka River, near Kluchi Vil.). (Images by G. Lafer).

Elytra (Fig. 2A) broad and short (EL/EW 1.43–1.53, EW/PW 1.32–1.44, EL/PLt 2.64–2.97), convex, with shoulders widely rounded, and with lateral edges nearly parallel–sided and rounded towards apex. Basal bead extended to scutellar setigerous punctures and adjoining lateral bead at shoulder at very obtuse angle. Elytral striae 1 to 6 more or less regular, feebly impressed or here and there almost obliterated, finely punctate; surface beyond 6th stria with fine irregular punctures. Sutural stria adjoining (or nearly so) its inner branch in front, outer branch (scutellar striole) not outlined or sometimes barely visible at basal setigerous puncture. Elytral intervals (only 6 inner intervals obvious) in basal half flat or weakly convex, but apex of intervals 2, 4 and 5 sometimes weakly costate; inner intervals (even and uneven) nearly equal, though even ones here and there a little broader; intervals 3 and 5 interrupted by large discal impressions, otherwise intervals consisting of long to short, more or less flat tubercles; striae 2 and 3 and also striae 4 and 5 adjacent to each other only within discal impression. Discal impressions large and expanded over half of adjacent even intervals; setigerous punctures very fine and located on front slope of fovea within adjacent striae. Elytral interval 3 with 4–6 discal impressions, interval 5 with 2–3 (usually 2) discal impressions, and umbilical series along margin with 8 to 14 (usually 10 or 11) fine setigerous punctures, apex of joined intervals 3 and 5 with one setigerous puncture. Wings fully developed.



FIGURES 1–6. 1. *Blethisa multipunctata aurata*. **A** Pronotum, **B** Metacoxae, and **C** Aedeagus from two males. **2.** *B. hudsonica*. **A** Pronotum, **B** Metacoxae, and **C** Apex of aedeagus from two males. **3.** Dorsal view of head of *B. multipunctata aurata*. **4.** Apex of aedeagus of *B. catenaria* in lateral view (original images from Lindroth, 1954). **A** From Coppermine, Nunavut, Canada. **B** From Bol'shoi Anna–chag Range, Magadanskaya, Obl. **5.** Apex of aedeagus from two males of *B. multipunctata multipunctata*.

Pro- and mesepisternum densely punctate, metepisternum and sides of abdominal sternite 1 shallowly punctate. **In male**, metacoxa with medial half covered with rather long and dense golden setae; with 4–10 similar setae (sometimes more) on medial area of sternite 2 (Fig. 1B). Posteromedial surface of metasternum with 0–4 setae. **In female**, metacoxa usually glabrous, sometimes with 4–7 accessory setae; usually with 3 to 10 setae on medial area of sternite 2. Metasternum usually glabrous, sometimes with 1 seta (as in Fig. 2B).

Apex of aedeagus, in lateral view, with a small notch along ventral margin (shared with *B. oregenensis* LeConte of western North America and *B. tuberculata* Motschulsky of central Siberia) (Figs.], 2C and 5). Sclerotized portion of apex, in lateral view, expanded quite widely, dorsal and ventral edges parallel or almost so, and apical portion of dorsal edge extended or not as small tooth (Fig. 1C).

Diagnosis. Males of *B. multipunctata aurata* are easily distinguished from the other two populations of the complex by the presence of a dense patch of long yellowish brown setae on the medial surface of the metacoxa (Fig. 1B), a character state not observed by Lindroth (1954, 1961). In addition, the apex of the aedeagus in lateral view is expanded, the dorsal and ventral edges are subparallel and the apex of the dorsal margin is expanded as a small tooth or not (Fig. 1C).

Females of the three populations of the complex are more difficult to segregate, particularly those of *B. multipunctata aurata* and the main North American population. Three characters work in most specimens. In *B. multipunctata aurata*, the disc of the pronotum has moderately large punctures, the punctures are developed from the side to the middle half of disc, the lateral edge is usually rounded or, uncommonly, straight behind the middle, and the lateral explanate region is obscure due to rough transverse wrinkles and punctures (Fig. 1A); the dorsal surface of the head behind the transverse furrow has many punctures (Fig. 3); the metacoxa is usually glabrous, but sometimes with 4–7 accessory setae; the medial surface of sternite 2 usually has 3–10 setae. In the main North American population, the disc of the pronotum has fine punctures, the punctures are developed mainly near the explanate margin, rarely over the lateral half of the disc, the lateral edge is usually straight or sinuate, rarely rounded behind middle, and the lateral explanate region is rarely obscure due to some rough transverse wrinkles and punctures (Fig. 2A); the dorsal surface of the head behind the transverse furrow is without or with some punctures (rarely more punctate); the metacoxa is glabrous, or very rarely with an additional accessory seta (Fig. 2B); the medial surface of sternite 2 usually has no seta (Fig. 2B).

Females of *B. multipunctata aurata* and *B. multipunctata multipunctata* are also quite similar. In *B. multipunctata aurata*, the lateral margin of the pronotum is usually rounded, rarely straight behind middle, and the explanate margin is obscure due to the rough transverse wrinkles and punctures (Fig. 1A); the elytral striae are generally more impressed and more coarsely and regularly punctate, the elytral discal impressions in intervals 3 and 5 are smaller and expanded over about half of adjacent intervals, the lateral margins of the elytra are dark copper or bronze (at most narrowly green) (see Habitus); the sclerotized apex of aedeagus in lateral view is expanded and the dorsal and ventral edges are subparallel, and the apex of the dorsal margin is angular or even acute (Fig. 1C). In *B. multipunctata multipunctata*, the lateral edges of the pronotum are commonly straight and sinuate (as in Fig. 2A), occasionally rounded behind the middle, and the explanate margin is clear due to few, fine transverse wrinkles and shallow punctures; the elytral striae are often not impressed and more finely and irregularly punctate, the elytral discal impressions in intervals 3 and 5 are usually widely expanded over adjacent intervals, the elytra margins are commonly bright metallic green; the sclerotized apex of the aedeagus in lateral view is spatulate, the dorsal and ventral margins converge basally, and the apex of the dorsal margin is rounded (Fig. 5).

Taxonomic notes. Lindroth (1954, 1961) mentioned that adults of *B. multipunctata aurata* differ from those of *B. multipunctata multipunctata* by the presence of few punctures on the dorsal surface of the head behind the transverse furrow. However, almost all specimens seen by Lindroth were from the main North American population and belong to a population distinct from *B. m. aurata*. Contrary to the main North American population, the punctures on the upper surface of the head behind the transverse furrow are quite numerous though scattered (Fig. 3) on *B. multipunctata aurata*. Except for the few North American specimens of *B. multipunctata aurata*, the remaining North American males studied (about 150 in CNC and USNM) have glabrous metacoxae (Fig. 2B) and are distinct from *B. multipunctata* in sculpture and shape of the apex of aedeagus.

Therefore, we have three allopatric distinct populations. Except for the golden patch on male metacoxa, other character states between the populations are subtle. Should the populations be treated as subspecies or full species?

The westernmost population, *B. multipunctata multipunctata* of Lindroth (1954), extends from The Atlantic coast up to the Lake Baikal region. This region is very far (about 1,500 km with many mountain ranges) from the Pacific coast population of *B. aurata*. Geographical changes in structures could happen. More specimens are needed to confirm lack of gene flow between the two populations. Therefore, we keep *B. aurata* as a subspecies of *B. multipunctata*.

The two Nearctic populations are very close to one another (only 400 km apart) and connected by large river valleys associated with the Yukon River, and yet there is no evidence for gene flow. We feel to treat the Nearctic population found east of central Alaska as specifically distinct from *B. multipunctata aurata*. Therefore, the main Nearctic population becomes *B. hudsonica* Casey, 1924: 6 (Holotype seen in USNM). *B. hudsonica* occurs from westernmost Yukon east across boreal and cold temperate zones to Newfoundland and Maine. *Blethisa multipunctata aurata* in North America is found in Alaska and northernmost Northwest Territories.

Distribution. *Blethisa multipunctata aurata* is recorded from the forested regions of the Russian Far East, Japan, and northwestern North America. In Russia, it is recorded from Ochotsko–Kolymskoe Highland in Magadanskaya Obl., Kamchatka, Primorsky Kray and Sachalin, but not from the Kuril Islands. In Japan, it is recorded only from Hokkaido. In North America, it is known from boreal regions of Alaska and subarctic regions of the western Northwest Territories.

This subspecies has been recorded rather commonly south of Magadanskaya Obl. However, the subspecies is very rarely captured in Primorsky Kray along the Sichote–Alin Range, in Sachalin and in Hokkaido.

We studied 103 specimens from the following localities.

RUSSIA: *Magadanskaya Reg*. Magadan, 8. VIII 1969, Safjanov leg. (1 ♂; IBSV); Magadan, hilly region of Magadanka River, 8. VI 1979, Mashukova, Manshina leg. (1 ex.; IBPN); Kulu (340 km of a road), 16. VI 1976, L. Glushkova leg. (1 ♂; IBPN); Atargan (10 km E Ola), 12. VI 1979, Vedernikov leg. (13 ex.; IBPN); Yamsky Peninsula, 9. VII 1979, E. Matys leg. (1 ex.; IBPN); SE extremity of Bol`shoi Annachag Range, catchment area of Sibit–Tyellakh River, boggy area in hilly region of Oserny and Olen` Streams, 28. VIII 1980, A. M. Budarin leg. (1 ♂, 1 ♀; IBSV); Kava River (a tributary of Taui River), 17. VI 1988, Zadorina leg. (2 ♂, 2 ♀; FESU). *Kamchatka Peninsula*. a boggy bank of Kamtschatka River near Klyuchi Vil., 11. VII 1976, V. N. Kuznetsov leg. (5 ♂, 1 ♀; IBSV); bank of Kamtschatka River near Ust–Kamtschatsk, 15. VII 1976, V. N. Kuznetsov leg. (1 ♀; IBSV); Elizovsky Distr. Malki Vil., lake, 3. VIII 1976, V. N. Kuznetsov leg. (1 ♀; IBSV); Paratunka Vil., 5. VIII 1976, V. N. Kuznetsov leg. (1 ♀ [no head]; IBSV).

Amurskaya Reg. valley of Zeya River by Nataljino Vil., boggy meadow, 6. VI 1975, G. Sh. Lafer leg. (13 ♂, 12 ♀; IBSV); the same place, marsh, 9. VI 1975, G. Sh. Lafer leg. (10♂, 5 ♀; IBSV); vicinity of Blagovestschensk, 11 and 13 VI 1975, G. Sh. Lafer leg. (7 ex.; IBSV); Ekimchan Vil., 21. VI 1975, G. Sh. Lafer leg. (1 ♀; IBSV).

Chabarovsky Kray. Kharpichikan, catchment area of Evoron Lake, 13–17. IX 1957, O. N. Kabakov leg. (2 ex.; ZIP, IBSV); Komsomol`sk–na–Amure, Parashyutka Vil., 22. VI 1976, Kovalev leg. (1 ♀; IBSV); Komsomol`sky Distr., Siu–Tara River, 11. VI 1980, V. A. Mutin leg. (1 ♀; IBSV); Komsomol`sky Reservation, larch forest, VII 1991, G. Ganin leg. (1 ♂, 1♀; IBSV); Bikincky Distr. Birskoe Vil., 26. VI 1958, O. N. Kabakov, (1 ex.; IBSV).

Primorsky Kray. Kirovsky Distr. Krylovka River near Krylovka Vil., marshy bank of a lake (sedge bog), 15. VI 1978, G. Sh. Lafer & V. N. Kuznetsov leg. (1 ex.; IBSV); Khankaisky Distr. Kamen`–Rybolov, on light, 4.VIII 1967, G. Sh. Lafer (1 ♀; IBSV); Shkotovsky Distr. Anisimovka Vil., on the bank of Smol`nyi Creek, 29. VI 1968, G. Sh. Lafer (1 ♀; IBSV).

Sachalin. Kholmsky Distr. Kostromskoe Vil., 11. VIII 1978, A. Basarukin leg., (1 ex.; IBSV).

JAPAN: *Hokkaido*. Sapporo. H. Kono. 15. V 1925 (1 ♀; IBSV); Wakkanoi–shi, 30. VII 2001, A. Sato leg. (4 ♂, 1 ♀; SMC and CNC).

UNITED STATES: *Alaska.* Bonanza Creek 150°40”W 66°40’N, A. Smetana and J. M. Campbell (1 ♂ = holotype of *B. inexspectata*; CNC); Ace Lake, 6.7 km WNW Fairbanks, 206 m, 64°51’34”N 147°55’54”W (1

♂; CMNH); Denali Hwy, mi 244 S Healy 63°48’32”N 148°57’46”W (1 #m; CMNH); Anchorage (1 ♀; USNM).

CANADA: *Northwest Territories*. Aklavik 30. VI 1956 R. E. Leech (1 ♂; CNC).

Biological notes. Adults of *B. multipunctata aurata* dwell in lowlands, or in river valleys in mountain regions. They have been found in marshy meadows or boggy banks of rivers and lakes, and sometimes on rocky banks of rivers. Adults were captured from June to September. Numerous beetles were captured along the Zeya River near Natal`ino on a broad marshy meadow between the riparian forest and the slope of Amuro–Zeyskoe Plateau. In day time, the adults are in burrows, in peaty soil; they are forced out by treading the wet soggy soil under water. Teneral beetles were practically absent on this meadow at the time, but would be common in August. Only adults overwinter.

Acknowledgments

We wish to thank Prof. Nikitsky Nikolai Borisovich and Dr. Obydov for locating potential syntypes of *B. aurata* in the Zoological Museum of Moscow University (Moscow, Russia) and Dr. J. Muona of the Finnish Museum of Natural History (University of Helsinki, Helsinki, Finland). We are appreciative for the fine comments provided by J. T. Huber and Y. Bousquet from the Canadian National Collection (Ottawa, Canada).

Literature cited

Berlov, E.J. & Berlov, O.E. (1996) New and interesting finding of the ground beetles, the predaceous diving beetles and the whirling beetles (Coleoptera: Carabidae, Dytiscidae, Gyrinidae) from Irkutskaya Oblast` [in Russian]. *Vestnik Irkutskoy Gosudarstvennoy Sel'skokhozyaystvennoy Akademii*, 1, 64–67.

Casey, T. L. (1924) *Memoirs on the Coleoptera XI*. Lancaster Press Inc., Lancaster (PA), 347 pp.

Chaudoir, M. de (1844) Trois mémoires sur la famille des carabiques. II. Supplément à la faune entomologique de la Russie et des pays limitrophes. Carabiques nouveaux. *Bulletin de la Société Impériale des Naturalistes de Moscou*, 17, 433–453.

Fischer von Waldheim, G. (1828) *Entomographia imperii Rossici. Tome III*. Semen, Moscou, viii + 314 pp, 18 pls.

Goulet, H. (2003) Tribe Elaphrini. *In*: Löbl I. & Smetana A. (Eds.), *Catalogue of Palaearctic Coleoptera. Vol. 1. Archostemata, Myxophaga, Adephaga.* Apollo Books, Stenstrup, pp. 206–207.

Goulet, H. & Smetana, A. (1983) A new species of *Blethisa* Bonelli from Alaska, with proposed phylogeny, biogeography and key to known species (Coleoptera: Carabidae). *The Canadian Entomologist*, 115, 551–558.

Grämer, R. (1960) Verzeichnis der Typen des Staatl., Museums für Tierkunde in Dresden Coleoptera, Carabidae I. *Abhandlungen und Berichte aus dem Staatlichen Museum für Tierkunde in Dresden*, 25, 91–106.

Heyden, L. von. (1886) Die Coleopteren–Fauna des Suyfun–Flusses (Amur). *Deutsche Entomologische Zeitschrift*, 30, 2, 269–277.

Jacobson, G.G. (1906) *The beetles of Russia and West Europe* [in Russian]. Devrien, St. Petersburg, pp. 241–320.

Kryzhanovskij, O.L., Belousov, I.A., Kabak, I.I., Kataev, B.M., Makarov, K.V., & Shilenkov, V.G. (1995) *A checklist of the ground–beetles of Russia and adjacent lands (Insecta, Coleoptera, Carabidae)*. Sofia–Moskow: Pensoft Publ. 271 pp.

Lafer, G.S. (1989) Fam. Carabidae – Ground–beetles [in Russian]. *In*: Ler, P.A. (Ed.), *Keys to insects of the Far East of USSR. Vol. 3. Zhestkokrylye, ili Zhuki*. Pt. 1. Nauka, Leningrad, pp. 71–222.

Lindroth, C.H. (1954) A revision of *Diachila* Motsch. and *Blethisa* Bonelli with remarks on *Elaphrus* larvae (Col., Carabidae). *Kungliga Fysiografiska Sällskapets. Handlingar, N. F., Lund*, 65, 2, 1–28.

Lindroth, C.H. (1961) The ground–beetles (Carabidae, excl. Cicindelinae) of Canada and Alaska. *Opuscula entomologica. Supplementum*, 20, (pt. 2), 1–200.

Uéno, S. (1985) Carabidae (Nebriinae, Elaphrinae, Loricerinae, Scaritinae, Broscinae, Trechinae). *In*: Uéno, S., Kurosawa, Y. & Satô, M. (Eds.) *The Coleoptera of Japan in color.* Vol. II [in Japanese]. Osaka. Hoikusha Publishing Co., pp. 54–88, pls. 11–16.