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The first record of the genus *Amerizus* Chaudoir, 1868 (Coleoptera, Carabidae, Bembidiini) from Russia. *Amerizus teles* n. sp., a high altitude species from the Altai Mountains

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Abstract: *Amerizus teles* n. sp. is described from the vicinity of the Teletskoye Lake (Altai Mountains). Surprisingly, the first known member of the genus recorded from the territory of Russia turned out to belong to the North American subgenus *Amerizus* Chaudoir, 1868 and not to the Himalayan-Tibetan subgenus *Tiruka* Andrewes, 1935. For the time being, the Altai Mountains are well-known as a refuge where some relict insect species persist. Various biogeographical hypotheses are tested to explain the distributional patterns observed in some relict groups of insects occurring in South Siberia.

Zusammenfassung: Erstnachweis der Gattung *Amerizus* Chaudoir, 1868 (Coleoptera, Carabidae, Bembidiini) aus Russland. *Amerizus teles* n. sp., eine Hochgebirgsart aus dem Altai. – *Amerizus teles* n. sp. wird aus der Umgebung des Teletskoye-Sees im Altai Gebirge beschrieben. Interessanterweise gehört diese erste aus Russland bekannt gewordene Art in die nordamerikanische Untergattung *Amerizus* Chaudoir, 1868 und nicht in die Himalayanisch-Tibetische Untergattung *Tiruka* Andrewes, 1935. Das Altai- Gebirge ist bekannt geworden als Refugium für einige reliktäre Insektenarten. Verschiedene biogeographische Hypothesen werden diskutiert, um die Verbreitungsverhältnisse reliktärer Insektengruppen in Südsibirien zu erklären.

Key words: Carabidae, Bembidiini, *Amerizus*, *Tiruka*, new species, biogeography, relict endemism, North America, Russia, Siberia.

Introduction

In recent years, many new insect species have been described from so far poorly explored areas of Siberia. Most of these new taxa belong to the well-known and species-rich genera which are widespread in the region and in the Palearctic. Such findings help to reconstruct the recent speciation events in the region but, for the most part, are of secondary importance for understanding evolutionary events dated back to more remote geological epochs. Only a few exceptions are worth noting in this respect: finding new species of the family Grylloblattidae (Grylloblattida) in the Sayan and Altai mountains, an *Epaphiopsis* Uéno, 1953 species (Coleoptera, Carabidae) in the Altai Mountains, and an *Ipelates* Reitter, 1885 species (Coleoptera, Agyrtidae) in the central Altai.

The discovery of a new member of the genus *Amerizus* Chaudoir, 1868 in the Altai Mountains, doubtless, is on par with the above findings. Up to now this genus has been thought to inhabit the Himalaya and the Sino-Tibetan Mountains in Asia, on the one side, and the Appalachian and Rocky Mountains in North America, on the other. Interestingly, the new *Amerizus* species is petrophilous in habitat and appearance and, thus, is very similar in this respect to the above mentioned taxa.

Material and Methods

Measurements used in the present study were as in previous works (e.g. BELOUSOV & KABAK 2003). In the text, only the most important measurements are given; all other ratios, to improve readability, are arranged in a separate table. The length of the elytra was measured from the level of the humeral tooth to the elytral apex, the total length from the anterior margin of the labrum (i.e. without mandibles) to the elytral apex. The length of antennal segment III was measured from the narrowest part at its base to the apex, that of segment II from the emargination on its anterior surface to the apex. The hind tibia was measured along its maximum length, the hind tarsus from the midpoint of the tibia sole. To characterize the chaetotaxy of the elytra, we used the umbilicate and discal formulae in which the location of the umbilicate and discal setiferous pores is described in percent of the elytral length. In much the same way, the position of the anterior lateral seta of the pronotum was estimated relative to the length of the latter. Under the 'type material' section the number of specimens studied is followed by the number of genitalic preparations given in parentheses.

Abbreviations:

SZMN – Siberian Zoological Museum, Institute of Systematics and Ecology of Animals SB RAS, Novosibirsk, Russia.
ZISP – Zoological Institute of the Russian Academy of Sciences, Saint-Petersburg, Russia.
cBK – collection of I. BELOUSOV and I. KABAK, Saint-Petersburg, Russia.

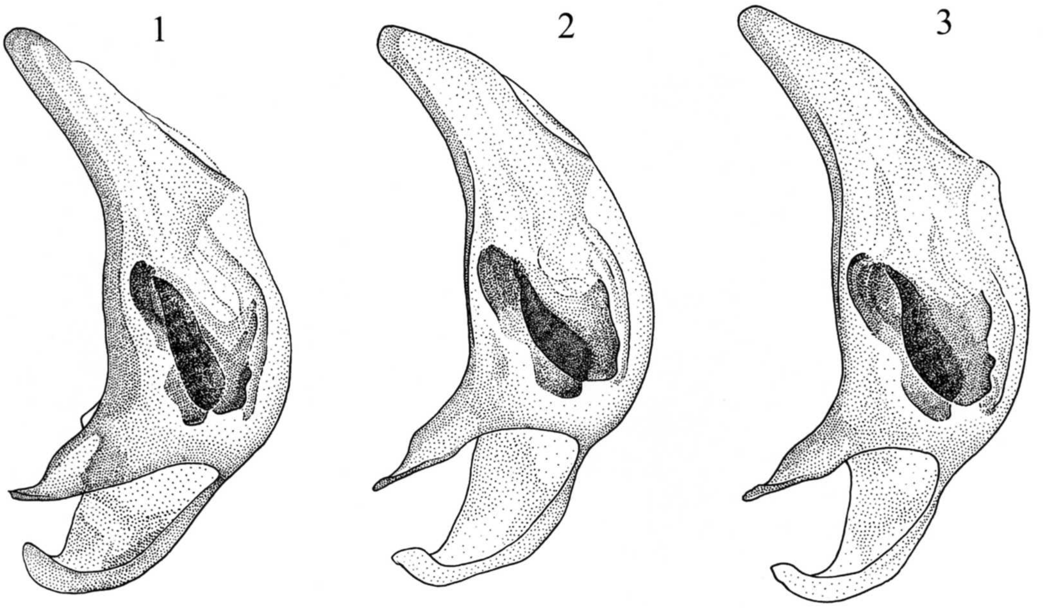
***Amerizus* (*Amerizus*) *teles* n. sp.** (Fig. 4)

Type material. Holotype: 1 (1) male (SZMN), NE Altai, 35-40 km SSE of Artybash Village, vic. of Mt. Evretshala, 1850-2050 m, tundra, 51° 28' N, 87° 26' E, 2-3.06.2004 (R. DUDKO & I. LYUBECHANSKII).

Paratypes: 5 (4) males, 6 females (SZMN, ZISP, cBK), collected with holotype; 1 (1) male, 3 females (SZMN, cBK), NE Altai, 35-40 km SSE of Artybash Village, vic. of Mt. Evretshala, 1850-2100 m, tundra, 51° 28' N, 87° 26' E, 20-22.05.2003 (R. DUDKO & I. LYUBECHANSKII); 1 (1) female (SZMN), NE Altai, vic. of Artybash Village, Tevenek River, in stones, 450-500 m, 16.07.2004 (R. DUDKO); 1 (1) male (SZMN), NE Altai, vic. of Artybash Village, Tevenek River, in stones, 400-550 m, 29.05.2004 (R. DUDKO & I. LYUBECHANSKII); 1 (1) male (SZMN), NE Altai, 30 km S of Artybash Village, vic. of cordon Obogo, 51° 31' N, 87° 18' E, 20.06-6.07.2003 (S.B. IVANOV). Original labels in Russian.

Etymology. The species is named after an ethnic group of the southern Altai tribes, Teles, populating mostly the territory nearby the southern part of the Teletskoye Lake (the name of the lake also originates from this tribe) and the basin of the Tshulyshman River.

Description. Rather large-sized species, body length 5.15-5.80 mm. Habitus oblong-ovate, moderately depressed. Appendages of medium length, rather strong. Color uniformly amber testaceous, legs and antennae a little paler.



Figs. 1-3: Median lobe of aedeagus in *Amerizus teles* n. sp. **1** – Paratype, Mt. Evretshala, 1850-2050 m. **2** – Paratype, Tevenek River, 400-550 m. **3** – Paratype, Mt. Evretshala, 1850-2100 m.

Head. Relatively large, subtriangle in shape, widest across temporae, slightly convex. Eyes not large, less prominent than temporae which are somewhat conically salient viewed from above. Frontal grooves deeper anteriorly, shallower posteriorly, angularly curved at level of anterior supraorbital seta. Mandibles slender, nearly straight, curved only in distal quarter. Right mandible with bidentate tooth located at base of mandible. Two supraorbital setae on each side of head located on imaginary lines distinctly divergent posteriorly, the posterior one markedly behind posterior margin of eye. Both anterior and posterior supraorbital setiferous pores relatively weakly foveolate. One clypeal seta on each side of head. Anterior margin of labrum very weakly concave, nearly straight, bearing six ordinary setae. Submentum with six submental setae of which the sublateral ones are the longest and median ones are the shortest. Labial tooth relatively large, wide, linearly truncated or widely rounded anteriorly, without clear emargination. Two setiferous pores on disk of mentum.

Pronotum. Subcordiform, discoid, rather flat. Hind angles large subrectangular. Sides of pronotum nearly linearly convergent anteriorly, somewhat angularly curved in widest part of pronotum, gradually sinuate posteriorly; just before hind angles with a weak convexity similar to that in some blind Trechini beetles. Anterior angles distinctly salient though rounded, anterior margin weakly concave. Basal margin of pronotum slightly convex medially, barely emarginate laterally. Lateral groove average to narrow, widest at mid-length of pronotum, margins mostly very slightly deflexed. Basal foveae of medium size, relatively deep, each with very fine but distinct carina separated it from lateral groove. Discal foveae variable, shallow or deep. Prebasal transverse impression deep, but not sharply outlined, strongly curved in basal foveae. Median line moderately impressed, clearly deeper toward

Fig. 4: *Amerizus teles* n. sp., habitus, paratype, Mt. Evretshala, 1850-2100 m.

base, not reaching anterior margin of pronotum. Basal surface of pronotum behind transverse prebasal impression strongly longitudinally rugulose.

Metathoracic flight wings. Vestigial, reduced to very short appendages.

Elytra. Ovate, their sides widely rounded, with maximum width behind middle, each elytron narrowly rounded apically. Lateral border of elytra reaching level approximately between basal terminations of fifth and sixth striae; basal border lacking. Anterior termination of lateral border narrowly rounded and humeral margin of elytra distinctly dentate here. Basal margin of elytra arch-like curved. Normally two discal setiferous pores on third interspace, located usually closer to the third stria than to the second stria, anterior discal setiferous pore located a little before mid-length of elytra and stronger shifted toward the third stria, the posterior one in their apical quarter. In one specimen of the type series, only one discal pore on left elytron, instead of, in one other, three pores on both elytra. In the latter case, the additional pore is located in anterior quarter of elytra. Apical triangle incomplete, preapical pore lacking. All discal striae rather deeply and regularly impressed, becoming only slightly shallower towards apex. Fourth and fifth striae not reaching basal margin of elytra. Sixth and seventh striae joining each other posteriorly and not reaching lateral margin anteriorly. Eighth stria continuous and well-impressed. All striae distinctly and rather deeply punctured. Scutellar striole usually present, occasionally lacking. Apical (= recurrent) striole, though not so developed as in Trechini and not reaching angulo-apical pore posteriorly, present and joining fifth or eighth striae anteriorly, occasionally without distinct connection there. Striation on apical declivity of elytra shallow, junctions of striae often either indistinct or

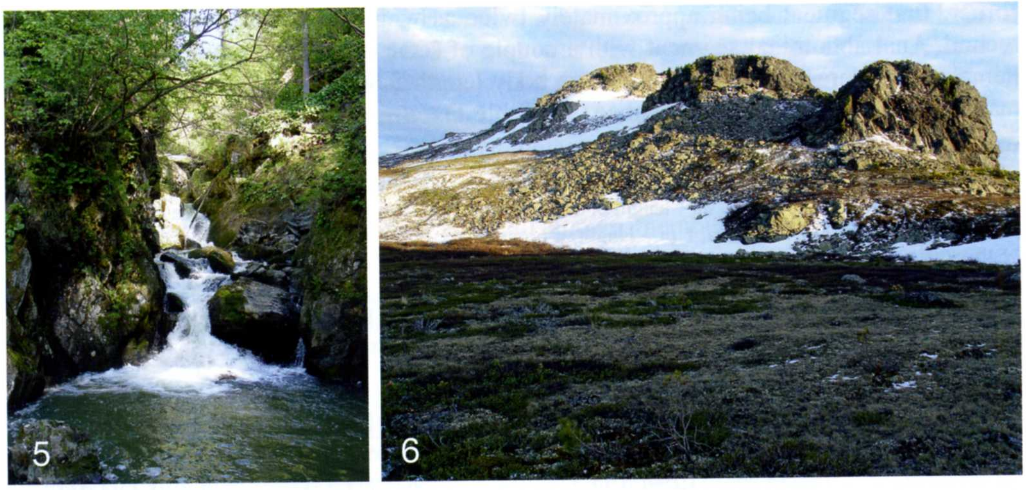


Fig. 5: Low-altitude biotope of *Amerizus teles* n. sp., valley of the Tevenek River at an elevation of 500 m a.s.l. (photo by I. LYUBECHANSKII). Fig. 6: High-altitude biotope of *Amerizus teles* n. sp., Evertshala Mount at an elevation of approximately 2000 m a.s.l. (photo by I. LYUBECHANSKII).

irregular, some striae reduced to series of isolated punctures. Sixth stria joining seventh stria nearly as often as fifth stria posteriorly; in the former case the junction located at level a little behind the sixth umbilicate pore, in the latter case markedly behind this level; third and fouth striae usually joining each other approximately at level of exterior pore of "apical triangle", more often a little before this level. Disposition and junction of seventh and eighth striae especially variable, their junction, if present, leveled at between the sixth and seventh umbilicate pores. Second stria mostly not reaching angulo-apical pore. Interspaces subconvex. In apical third, second interspace more than twice as wide as first interspace, and a bit narrower elsewhere; eighth interspace markedly wider than seventh interspace. Apical carina not developed.

Microsculpture of dorsum. Well-developed, rendering surface distinctly dull, consisting of nearly isodiametric roughly engraved meshes on head, shallower slightly transverse meshes on pronotal disk and clearly transverse meshes on elytra.

Ventral side. Metepisternite one and a half times as long as wide, its surface smooth, not punctured. Abdominal segments with a couple of median setae.

Legs. Front tibiae in apical half not grooved on exterior surface, with 3-5 long and sparsely located hairs mostly arranged in two transverse couples. All tibiae, especially posterior ones grooved in basal third.

Aedeagus (Figs. 1-3). Rather large, with swollen median part and distinctly attenuated distal portion. Apex varying, more or less elongate. Endophallus armature well-developed and heavily sclerotized, located in the widest part of median lobe of aedeagus; brush sclerite large, broadest in median part; ventral setal patch well-defined. Scaly patch in distal part of median lobe lacking. Right paramere elongate, left one triangle-shaped, each usually with one short and 3-4 rather long apical setae.

Sexual dimorphism. Female protarsi simple. Male protarsi with two basal segments dilated and provided with adhesive appendages beneath and a well-developed tooth in inner anterior corner; first segment being approximately twice as wide and three times as long as the second. Anal abdominal segment with a couple of setae in male and two pairs in female. Females a bit larger than males (average body length 5.60 mm in females versus 5.45 in males), with shorter legs and antennae (see Table 1).

Table 1: Morphometric characters of *Amerizus teles* n. sp. Abbreviations: w_tm – width of head across temporae; w_in – shortest distance between eyes; eye – length of eye in dorsal view; tmpr – length of tempora in dorsal view; l_3a – length of antennomere 3; l_2a – length of antennomere 2; w_3a – width of antennomere 2; S_pr – location of anterior lateral seta of pronotum; l_pr – length of pronotum; l_el – length of elytra; height – maximum height of elytra; h_ti – length of hind tibia; h_ta – length of hind tarsus; w_pr – width of pronotum; w_hd – maximum width of head; l_el – length of elytron; ante – length of antenna; b_pr – width of pronotal base; a_pr – width of pronotum between anterior angles; w_el – maximum width of elytra; d_1p – location of anterior discal setiferous pore on elytron; d_2p – location of posterior discal setiferous pore; um_x – location of umbilicate pore x on elytron.

Length and Ratios	**Both sexes [n=15]**	**Males [n=8]**	**Females [n=7]**
Body length [mm]	5.17-5.79(**5.50**)	5.17-5.69(**5.43**)	5.30-5.79(**5.59**)
w_tm/w_in	1.29-1.38(**1.32**)	1.29-1.38(**1.33**)	1.29-1.33(**1.32**)
eye/tmpr	1.42-1.79(**1.60**)	1.42-1.79(**1.63**)	1.50-1.70(**1.56**)
l_3a/l_2a	1.25-1.50(**1.38**)	1.25-1.50(**1.38**)	1.29-1.49(**1.38**)
l_3a/w_3a	2.22-2.63(**2.47**)	2.22-2.63(**2.46**)	2.31-2.60(**2.48**)
l_3a/eye	0.96-1.18(**1.10**)	0.96-1.18(**1.11**)	1.00-1.14(**1.09**)
S_pr/l_pr*100 [%]	31.1-36.2(**34.2**)	31.1-35.0(**33.4**)	34.1-36.2(**35.0**)
l_el/height	2.54-3.02(**2.66**)	2.56-3.02(**2.68**)	2.54-2.75(**2.64**)
l_el/h_ti	2.15-2.34(**2.24**)	2.15-2.34(**2.22**)	2.20-2.34(**2.26**)
h_ti/h_ta	1.08-1.17(**1.13**)	1.09-1.17(**1.13**)	1.08-1.15(**1.12**)
w_pr/w_hd	1.33-1.38(**1.35**)	1.33-1.38(**1.35**)	1.33-1.37(**1.34**)
l_el/ante	1.08-1.17(**1.13**)	1.08-1.15(**1.11**)	1.14-1.17(**1.15**)
w_pr/l_pr	1.25-1.31(**1.28**)	1.25-1.30(**1.27**)	1.26-1.31(**1.28**)
w_pr/b_pr	1.40-1.46(**1.43**)	1.40-1.46(**1.43**)	1.40-1.44(**1.42**)
a_pr/b_pr	1.04-1.10(**1.08**)	1.04-1.10(**1.08**)	1.05-1.10(**1.08**)
l_el/w_el	1.43-1.49(**1.46**)	1.44-1.49(**1.47**)	1.43-1.49(**1.46**)
w_el/w_hd	2.03-2.12(**2.06**)	2.03-2.12(**2.07**)	2.03-2.11(**2.05**)
w_el/w_pr	1.50-1.58(**1.53**)	1.50-1.55(**1.53**)	1.51-1.58(**1.53**)
d_1p/l_el*100 [%]	28.5-41.7(**36.4**)	28.5-39.4(**35.5**)	32.6-41.7(**37.3**)
d_2p/l_el*100 [%]	65.6-79.0(**70.5**)	66.0-79.0(**70.5**)	65.6-76.9(**70.6**)
um_1/l_el*100 [%]	7.20-8.33(**7.74**)	7.30-8.33(**7.83**)	7.20-8.18(**7.63**)
um_2/l_el*100 [%]	12.7-15.0(**14.1**)	13.5-15.0(**14.2**)	12.7-14.9(**14.0**)
um_3/l_el*100 [%]	17.4-22.0(**20.3**)	17.4-21.1(**20.1**)	18.2-22.0(**20.6**)
um_4/l_el*100 [%]	23.5-28.6(**25.7**)	23.6-28.3(**25.4**)	23.5-28.6(**26.1**)
um_5/l_el*100 [%]	62.6-68.9(**65.9**)	62.6-68.9(**66.0**)	64.4-67.5(**65.7**)
um_6/l_el*100 [%]	68.4-74.0(**70.7**)	68.4-74.0(**71.0**)	68.6-72.6(**70.3**)
um_7/l_el*100 [%]	75.9-84.3(**81.9**)	76.4-84.3(**82.3**)	75.9-83.2(**81.5**)
um_8/l_el*100 [%]	82.4-91.5(**89.0**)	82.4-91.5(**89.2**)	82.6-91.0(**88.6**)

Recognition. The genus *Amerizus* CHAUDOIR, 1868 is diagnosed by the fusiform and poorly sclerotized female spermatheca, the elongate and feebly curved mandibles and the derived structure of the galea, two segments of which are completely fused in one lobe (PERRAULT, 1985). The latter character allows the *Amerizus* members can be easily distinguished from most other Bembidiini including the Hawaiian subgenus *Gnatholymnaeum* SHARP, 1903 of the genus *Bembidion* LATREILLE, 1802, which was earlier regarded as closely related to *Amerizus* (for details, see LIEBHERR 2008). The genus *Amerizus* includes two subgenera: *Amerizus* with four species in North America and *Tiruka* ANDREWES, 1935 with dozens of species in the Himalaya and Sino-Tibetan Mountains (PERRAULT 1985, SCIAKY & TOLEDANO 2007).

The new species is strongly isolated from all known members of the genus from both geographical and morphological data (a combination of the large body size with depigmented coloration, rather short appendages and large head). A major problem is rather to reveal its true affinities than to separate it from congeners. At first sight, the species is most similar to high altitude Chinese congeners centered about *A. songpanensis* Deuve, 1998 (SCIAKY & TOLEDANO 2007). In fact, *Amerizus teles* n. sp. shares with the above group the following characters: relatively pale brownish color, ovate and somewhat depressed body, rather flat pronotum with distinct anterior angles, and dull, shagreened surface of dorsum, caused by strongly developed microsculpture. But it is quite clear that all these resemblances may well result from adaptation to similar modes of life and thus not necessarily be indicative of a close relationship.

A thorough examination of all available material has shown that *A. teles* n. sp. differs readily from all hitherto known Asiatic members of the genus by the presence of the postangular carina on the pronotum. This character was indicated as a diagnostic feature for separation of the North American subgenus *Amerizus,* from the Asiatic subgenus *Tiruka* (PERRAULT 1985). Even though the two other morphological diagnostic characters indicated by PERRAULT (1985) are not supported by our material, *A. teles* n. sp. is doubtless more closely related to the North American subgenus *Amerizus* than to the Himalayan-Tibetan subgenus *Tiruka.* This point of view is proved especially by the male genital structure: in *A. teles* and in members of the subgenus *Amerizus* both the brush sclerite and the ventral setal patch are well-defined and are easily homologized with those of other *Bembidion.* In all known *Tiruka,* the brush sclerite is more or less strongly folded in the median part, with a peculiar pairwise structure distally (kernel sclerite, according to SCIAKY & TOLEDANO 2007); its homologation is much less evident and outside the scope of the present work. In many species, the above pairwise structure becomes strongly elongate and nearly fused apically. This transformation is usually coupled with enormous development of the brush sclerite plica. Under any interpretation, the male genitalia of *A. teles* may be easily deduced from that of the North American *Amerizus* (e.g. *A. wingatei* BLAND, 1864) and not from that of Asian *Tiruka.* Both the above mentioned characters (the male genitalic structure and the pronotal carina) are of great importance and allow us to assign the new species to the subgenus *Amerizus.*

Distribution. For the time being, the species is known from three closely located sites restricted to the northeastern part of the Altai Mountains, in the western and northern vicinity of the Teletskoye Lake.

Collecting circumstances. The species was found in three different localities of the East Altai. On figures 5-6, two extreme habitats are shown where *Amerizus teles* n. sp. was found, at low and high altitudes correspondingly. The new species was collected in a wide belt of altitudes from 400 to 1900 m, corresponding to the forest and low alpine zones. In the alpine zone, the species seemed to be confined to old moss-grown screes partly covered with soil, usually not far from melting snow (Fig. 6). At lower elevations, the species was found in the riparian zone, on banks of the river running in a narrow gorge with shady mossy rocks (Fig. 5). Such a wide range of altitudes agrees well with the petrophilous facies of the species and with the general concept of intrazonal biotopes.

Biogeographical considerations

Apart from the above described species of the genus *Amerizus*, there are some other paleoendemic insect taxa known to date from the territory of the Altai Mountains. Their close relatives (members of the same or allied genera) are disseminated in the East and Southeast Asia, North America and Balkan Peninsula. For the first time, such a pattern of distribution was found in members of the family Grylloblattidae, when *Galloisiana pravdini* STOROZHENKO & OLIGER, 1994 was described from the northeastern Altai. Other congeners are distributed in East Asia (southern part of the Russian Far East, Japan, Korea, and northeastern China) (STOROZHENKO 1998). Later, one more species of the family closely related to *G. pravdini,* was described from the West Sayan, and a new genus, *Grylloblattella* STOROZHENKO, 1996 was established to accommodate both Siberian species: *G. pravdini* and *G. sayanensis* STOROZHENKO, 1996. Other taxa of the family are known from the western part of North America.

The carabid beetle species *Epaphiopsis* (*Epaphiama*) *jacobsoni* SOKOLOV & SHILENKOV, 1987 was described from the western Altai. Its congeners are known to be widespread over the Far East, Japan, Taiwan, Sino-Tibetan Mountains and Himalaya.

Ipelates altaicus NIKOLAJEV, 2002, a small beetle from the family Agyrtidae, was described from the Central Altai. Recent species of the genus *Ipelates* REITTER, 1885 are recorded from Japan, Himalaya, southern China, northern Vietnam, and Balkan Peninsula, one more species is known from the West of North America. In addition, one Eocene species was described from the Baltic amber.

Interestingly all the above taxa are confined to regions with humid and temperate climate. Moreover, they are strictly associated with stony habitats and occur mostly not far from melting snow or mountain streams.

Centers of biodiversity of *Epaphiopsis* UÉNO, 1953, *Amerizus* CHAUDOIR, 1868 and *Ipelates* REITTER, 1885 are located in mountains of South-East Asia. The faunas of the Altai and East-Asian regions could interact through two different ways: southern path (across Dzhungarian Alatau, Tien-Shan, Pamir, Himalayan-Tibetan Mountains) and eastern path (across mountains of South Siberia). Under favorable climatic conditions, the ancestors of the Altai species of the genera *Epaphiopsis*, *Amerizus* and *Ipelates* could reach the Altai through one of the above paths. Based on available data, the first way seems to be unlikely for two major reasons. Firstly, in this case, the ancestors might pass through southern territories of Central Asia which presumably were arid and semi-arid from the very outset of their formation (see KRYZHANOVSKIJ 1965). Complete lack or extreme scarcity of many mesophilous groups in the extant fauna of these regions seem to count in favor of the above viewpoint. Secondly, along this way, no allied relict species has been so far found. These considerations become all the more evident if we take into account the distribution of extant members of the genus *Epaphiopsis,* especially those from the territory of China. The common distributional range of numerous known species of this genus is restricted to the southern and east-southern counties of Sichuan and eastern counties of Yunnan provinces. Further in the north and north-west, members of the genus are replaced by ecologically similar species of the genus *Trechus*. Thus, the members of the genus are not yet recorded even from the northern areas of Sichuan Province, neither from Gansu nor Qinghai, not to mention mountain areas of North West China. The available data on ecological differentiation of members of the genus strengthen still more the overall picture. Indeed, most *Epaphiopsis* from mainland China are non-specialized muscicolous species. Contrastingly, the known Japanese species may be divided into two ecological groups, one of which is characterized by evident hypogean features and embraces species very similar to those from the Far East and Altai. Considering relationships among *Epaphiopsis* species, UÉNO & YU (1997) noted a great resemblance of *E. lamellata* UÉNO & YU, 1997, described from Hubei Province with the species from Altai is what inclined these authors to favor the southern path of migration for the genus. The above similarity, though, does not exceed that between species from the Far East and Altai. In addition, *E. lamellata* and some related species populate areas situated much closer to the eastern path (see BELOUSOV & KABAK 2003). To summarize, all available data on the genus *Epaphiopsis* argue for the eastern path of colonization in members of the genus.

The eastern origin of the genus *Grylloblattella*, most closely related to *Galloisiana*, is also very likely, since the latter genus is distributed in East Asia and is not known south of the Korean Peninsula.

At last, the close relationship between *Amerizus teles* n. sp. and its American congeners further emphasizes a higher probability of the eastern path compared with the southern one. This pattern of distribution suggests that differentiation between Asian *Tiruka*, on one hand, and the Altai species and its North American relatives on the other, took place prior to differentiation between the latter two lineages within the subgenus *Amerizus*. It is assumed that the main exchanges between the Asian and the American faunas took place through the Beringia landbridge at the end of Miocene – Pliocene. It seems likely that the ancestors of *A. teles* n. sp. penetrated to the Altai at that time. Their settling appeared to occur under rather long-lasting favorable conditions that allowed them to thrive in and pass through lowland biotopes. As the climate became worse, these species had to adapt themselves for more cryptophilous stony biotopes which were less influenced by the climate changes. Since the Quaternary was characterized by numerous and drastic oscillations of climate, it seems unlikely that *A. teles* n. sp. and similar insect taxa might arise at that time. Rather they should be considered as older relicts that comply well with strong isolation of most Altai refugees. Climatic oscillations of the Quaternary appeared more likely to form the contemporary species ranges than to contribute to the species differentiation.

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