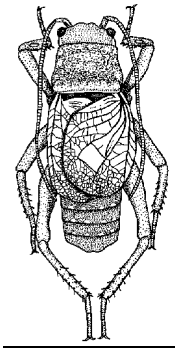

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NEW AND LITTLE KNOWN PALAEARCTIC SPECIES OF THE FAMILY SCATHOPHAGIDAE (DIPTERA)

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Two species of Scathophagidae are described: *Gimnomera montana* Ozerov et Krivosheina, **sp. n.** from Armenia, Georgia, Russia and *Microprosopa paveli* Ozerov et Krivosheina, **sp. n.** from Chukotka (Russia). Lectotype is designated for *Gimnomera mellina* (Becker, 1900).

KEY WORDS: Diptera, Scathophagidae, *Microprosopa*, *Gimnomera*, new species, Russia, Armenia, lectotype designation.

А. Л. Озеров[1)], М. Г. Кривошеина[2)]. Новые и малоизвестные палеарктические виды двукрылых семейства Scathophagidae (Diptera) // Дальневосточный энтомолог. 2013. N 270. С. 1-6.

Описаны два новых вида двукрылых семейства Scathophagidae: *Gimnomera montana* Ozerov et Krivosheina, **sp. n.** по материалам из России, Армении и Грузии и *Microprosopa paveli* Ozerov et Krivosheina, **sp. n.** по самцу и самке с Чукотки (Россия). Обозначен лектотип для *Gimnomera mellina* (Becker, 1900).

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INTRODUCTION

During the repeated revision of the species of the genus *Gimnomera* Rondani in the collection of the Zoological Museum, Moscow State University initiated by the examination of syntype of *Gymnomera mellina* Becker, 1900 and new materials collected in Chukotka we discovered 2 new species. Their descriptions are given below. Besides lectotype is designated for *Gymnomera mellina* Becker and diagnosis for this species is presented.

The following abbreviations are used for depositories of the studied specimens: BMNH – The Natural History Museum [formerly British Museum (Natural History)], London, United Kingdom; MZH – Finnish Museum of Natural History, Helsinki, Finland; ZMUM – Zoological Museum, Moscow State University, Moscow, Russia.

Terminology follows McAlpine (1981), Cumming *et al*. (2009), and Stuckenberg (1999). The following abbreviations for leg chaetotaxy are used: *a* – anterior; *d* – dorsal; *p* – posterior; *v* – ventral; and combinations of these latter four, all used. Other abbreviation: ALO – A.L. Ozerov.

DESCRIPTIONS OF NEW SPECIES AND LECTOTYPE DESIGNATION

***Gimnomera montana* Ozerov et Krivosheina, sp. n.**
Figs 1–5

MATERIAL. Holotype – ♂, **Russia**: North Ossetia, 10 km SE of Alagir, range Bakhty Laparyrag (42.938333°N, 44.287222°E), 1770м, 30.V 1983, leg. A.L. Ozerov (in ZMUM). The holotype is glued to write trapeziform card and in excellent condition. Paratypes: ♂, with same place as holotype (abdomen dissected and stored in glycerol in microvial pinned with the specimen), 26.VI 1990, leg. A. Shatalkin (in ZMUM); ♀, **Georgia**: environs of Kazbegi (now Stepantsminda, 42.6645°N, 44.6295°E), 13.VII 1988, leg. A.L. Ozerov (in ZMUM); ♂, **Armenia**: Lori, River Chichkhan near Geghasar, 1600m, 40°51'N, 44°12'E, 22.V 2012, leg. A.C.Pont (in BMNH).

DESCRIPTION. MALE, FEMALE. Yellow in ground colour; ocellar tubercle black; scutum yellow completely or brownish in central part, or with black stripe between dorsocental setae; female abdominal tergites narrowly black near posterior margin. Head and thorax, also male abdomen matt, female abdomen shining.

Head with 2 orbital, 2 frontal, 1 ocellar, 1 postocellar (short and thin, divergent), 1 inner vertical, 1 outer vertical setae; 1 pair of vibrissae. Postpedicel rounded apically, approximately 2.0 times as long as wide. Arista black, very short haired on whole length. Palpus filiform, without apical seta.

Figs 1–10. *Gimnomera montana* sp. n., male paratype (1–5), *Microprosopa paveli* sp. n., male holotype (6–9) and *Microprosopa zlobini* Ozerov, male (10). 1, 6 – 4th abdominal sternite; 2, 7, 10 – 5th abdominal sternite; 3, 8 – epandrium, cerci and surstyli, dorsal view; 4, 9 – epandrium, cerci and surstyli, lateral view; 5 – epandrium, cerci and surstyli, dorsolateral view. (Fig. 10 after Ozerov, 2009).

Thorax. Scutum with 1 postpronotal, 2 notopleurals, 1+2 intra-alars, 2 postalars, 2+2 dorsocentrals (anterior margin of scutum also with 2 erect black setae); postpronotal lobe anteriorly with erect spines; 1 proepisternal, 1 proepimeral, 1–2 anepisternal (near posterior margin) and 1 long katepisternal (in upper posterior corner) setae present. Proepisternum with pale hairs. Anepisternum with hairs along dorsal margin and in posterior part only. Anepimeron without hairs. Postmetacoxal bridge absent. Scutellum with 2 pairs of strong setae.

Legs. Fore femur with 4–6 *pd*. Fore tibia with 1 *p*, 1 *d* at middle, 1 *pd*, 1 preapical *d* and apical *p*. Mid femur with rows of *ad* and *pv*, with 1 preapical *p*. Mid tibia with 1 *pd*, 1 *p*, 1 *ad* in centre, 1 preapical *d* and ring of apical setae. Hind femur with row of *ad* and 2 preapical *av*. Hind tibia with 1 *pd*, 2 *ad*, 1 preapical *d*, and apical *av* and *ad*.

Wing clear, with brownish veins. R_1 bare or with 1–4 setulae on apical half of dorsal surface. Calypters and their margins yellow. Haltere yellow.

Male sternites 4 and 5 as in Figs 1, 2; epandrium and surstyli as in Figs 3–5, cerci as wide as long. Female ovipositor typical for species of genus Gimnomera: short, compressed laterally, with proctiger shifted dorsally.

MEASUREMENTS. Length of body 4.8–6.1 mm. Length of wing 4.6–5.2 mm.

COMPARISON. The new species is more similar to *Gimnomera kirgizica* Ozerov, 2009 by structure of male cerci and surstyli. Nevertheless *G. kirgizica* has shining scutum and only 1 strong pair of postsutural dorsocentral setae, while *G. montana* has matt scutum and 2 strong pairs of postsutural dorsocentral setae.

DISTRIBUTION. Russia, Armenia, Georgia.

***Gimnomera mellina* (Becker, 1900)**

Gymnomera mellina Becker, 1900: 57. (Type-locality: Russia, Dudinka).

NOTES. *Gymnomera mellina* was described by Becker from two females taken from "Dudinka"[Krasnoyarskiy kray, RUSSIA]. One syntype of them (from MZH) labelled 1) "Dudinka", 2) "J. Sahlb."[= Sahlberg, collector], 3) "687" 4) "Spec.typ." 5) "*Gimnomera mellina* Beck", 6) "Mus. Zool. H:fors Spec. typ. No 4064. *Gymnomera mellina* Beck.", 7) "*Gymnomera mellina* Becker Lectotype Desinated by J.R. Vockeroth 19" was examined by ALO. Designation by J.R. Vockeroth was not published. ALO has labeled it and designated it herewith as lectotype of *Gymnomera mellina* Becker. Type-locality: Dudinka (ca. 69.3998°N, 86.1836°E, Krasnoyarskiy kray, Russia). Lectotype is pinned. Condition is very good, only mid left leg missing.

DIAGNOSIS. This species is distinguished from congeners by the following combination of characters: scutellum with apical pair of setae (basal scutellar pair absent), postpronotal lobe without strong seta(e), R_1 bare, tarsi yellow.

CURRENT NAME. *Gimnomera mellina* (Becker, 1900).

***Microprosopa paveli* Ozerov et Krivosheina, sp. n.**
Figs 6–9

MATERIAL. Holotype – ♂, **Russia**: Chukotka, Meynipyl'gino (62.5385°N, 177.0519°E), 5.VII 2013, leg. P.S. Tomkovich (in ZMUM). The holotype is pinned, abdomen dissected and stored in glycerol in microvial pinned with the specimen. Paratype – ♀, with same label as holotype (in ZMUM).

DESCRIPTION. MALE. FEMALE. Head. Frons black in upper half and reddish-yellow in lower half, matt. Fronto-orbital plate and ocellar triangle black, with whitish

microtrichia. Parafacial, gena and face reddish-yellow. Postcranium black, with whitish microtrichia. Setae: 3 orbitals, 2–3 frontals, 1 ocellar, 1 postocellar (short, divergent), 1 inner vertical, 1 outer vertical; 1 pair of vibrissae and 1–2 pairs of short subvibrissae present. Antenna black. Postpedicel rounded apically, approximately 1.5–2.0 times as long as wide. Arista black, bare. Clypeus and proboscis black. Palpus broadened towards apex, yellow.

Thorax and scutellum black, covered with whitish microtrichia. Scutum with following setae: 2 postpronotals, 2 notopleurals, 1+2 supra-alars, 1+2 intra-alars, 2 postalars, (3–5)+(3–4) dorsocentrals (including erect black seta on anterior margin of scutum), acrostical hairs in two rows; 1 proepisternal (pale), 1 proepimeral (pale), 2–3 anepisternal (black, near posterior margin) and 1 katepisternal (black, in upper posterior corner) setae present. Proepisternum with hairs in anterior half. Anepisternum with pale hairs in posterior half. Katepisternum with pale hairs, which are absent in upper anterior part. Anepimeron without hairs. Scutellum with 2 strong basal and 2 strong apical setae.

Legs. Fore coxa black, but yellow inside; mid and hind coxae black. Femora yellow in ground color, fore femur darkened posteriorly, mid femur with dark spot posteroventrally in basal half, tibiae and tarsi of all legs yellow. All femora with numerous yellow hairs ventrally. Fore tibia with irregular rows of short black spines ventrally on whole length, with 1 *d* near middle, with preapical *d* and *p*. Mid femur with row of short *ad* and with 2 preapical *p*. Mid tibia with 1 *ad* near middle and ring of apicals. Hind femur with row of *ad*. Hind tibia with 2 *ad*, 1 *pd*, preapical 1 *d* and 0–1 *p*, and apical *ad* and *av*.

Wing clear; veins black. R_1 bare. Haltere, calypters and their margins yellowish.

Abdomen black, with whitish microtrichia, covered with black hairs; tergites 5–7 in male and 3–6 in female along posterior margin with a row of thin black setae; female tergites 7–8 brownish. Male sternites 4 and 5 as in Fig. 6, 7. Epandrium and surstyli as in Figs 8, 9.

MEASUREMENTS. Length of body 4.6–4.9 mm. Length of wing 4.1–4.5 mm.

COMPARISON. The new species is similar to *Microprosopa zlobini* Ozerov. These species differ from each other clearly in the structure of the male abdominal sternite 5 (Figs 7, 10). Besides this frons of *M. zlobini* is yellow completely, while in *M. paveli* is darkened in upper part.

ETYMOLOGY. The new species is named after the collector, Pavel S. Tomkovich.

DISTRIBUTION. Russia (Chukotka).

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We are grateful to Dr. Pekka Vilkamaa (Finnish Museum of Natural History, Helsinki) for loans of type material of *Gymnomera mellina* Becker.

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SHORT COMMUNICATION

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A. Ebrahimi[1*)], H. Mohammadian[2)], S. M. Madjdzadeh[1)]. THE DRAGONFLIES OF FAMILY LIBELLULIDAE (ODONATA: ANISOPTERA) OF THE KHABR NATIONAL PARK (KERMAN PROVINCE, SOUTH-EAST IRAN). – Far Eastern Entomologist. 2013. N 270: 7-11.

Summary. The list of 12 species in five genera of family Libellulidae firstly collected in the Khabr National park in spring and summer is given. The majority of these species are common in Iran and other parts of Kerman province.

Key words: Odonata, Libellulidae, fauna, new records, Khabr National park, Iran.

А. Эбрахими[1*)], Х. Мохаммадян[2)], С. М. Мадиджадех[1)]. Стрекозы семейства Libellulidae (Odonata: Anisoptera) национального парка Хабр (провинция Керман, Юго-Восточный Иран) // Дальневосточный энтомолог. 2013. N 270. С. 7-11.

Резюме. Приведен список 12 видов из 5 родов стрекоз семейства Libellulidae, впервые обнаруженных в весенне-летний период в национальном парке Хабр. Большинство из этих видов обычны как в Иране, так и в провинции Керман.

INTRODUCTION

Odonata is one of the most common insect groups flying over forests, fields, meadows, ponds and rivers. About 6000 extant species are distributed all over the world (Subramanian, 2005; Kalkman *et al*., 2008). Family Libellulidae, one of the eleven families of suborder Anisoptera, is diverse, numerous and commonly observed in all over the world. This family has worldwide distribution and is represented by 1139 species (Subramanian, 2005). With respect to 95 recorded species of Odonata from Iran (Heidari & Dumont 2002), 35 species of them belongs to Libellulidae. On the basis of limited researches on the Odonata fauna of Iran (Schmidt, 1954; Blom, 1982; Lohmann, 1990, 1992; Heidari & Dumont 2002; Ghahari *et al*., 2009), Libellulidae is the most common group of Odonata in all over the country.

THE INVESTIGATED AREA

Covering a relatively vast extent of high and low lands, Khabr National Park (28º56´N, 56º0.2´E) is an area located in west of Kerman province. Its space is 149982 he and also Ruchoon wild life refuge with 5000 he space is adjacent the Park. In fact, existence of three kinds of climates: tropical, cold and temperate cause to form different habitats and ecologic systems in the region. Both Khabr small and big mountain have been situated in north-western of the Park separately. The other mountains of this region have extended from north-eastern to south-western as a chain. Snow and tree/shrub have covered mount Khabr and tropical plains in the park respectively. The altitude range of 1040-3860 m and mean annual precipitation and temperature of 200-300 mm and 9-21ºC respectively, have resulted in arid and cold semi-arid climates. The existence of rocky mountains with permanent snow cover, interlinked peaks, frequent springs, adjacency of tropical and cold sites, beautiful forests, rich wild life

and proper access roads encouraged scientific and research activities in the park. Though there was no information on Odonata fauna in this protected region. The importance of having complete biodiversity knowledge requires a survey on this subject. Herein the first data on the family Libellulidae from Khabr National Park are given.

MATERIALS AND METHODS

In spring and summer 2008 the second author collected the Odonata in Khabr National park during several field trips. The specimens were collected by net and transferred to the biological collection of Shahid Bahonar University of Kerman, Iran. They were dried and prepared for study. Each species was identified mainly based on wing venation and male genitalia.

Collecting sites: **site 1** – upper the Guard station, 28º48.7′N, 56º20.5′E, 2119 m a.s.l., stream; **site 2** – Khabr River in front of Guard station, 28º48.8′N, 56º20.7′E, 2101 m a.s.l., river; **site 3** – Khabr River lower than big pond, 28º49.3′N, 56º21′E, 2114 m, river; **site 4** – region between Khabr village and Deikhoieh village, 28º49.6′N, 56º17.5′E, 1973 m, river; **site 5** – river in the valley between Deikhoieh and Ghalatoieh, 28º48.8′N, 56º13.5′E, 1753 m, river; **site 6** – river between Deikhoieh and Ghalatoieh, 28º48.6′N, 56º12.3′E, 1723 m, river; **site 7** – Kaht, 28º43.4′N, 56º19.7′E, 1960 m, stream; **site 8** – Ruchoon, 28º39.8′N, 56º19.8′E, 1761 m, river; **site 9** – Qanat (a spring) Shekarabe Orzuiyeh Vakilabad, 28º31.9′N, 56º02.1′E, 1208 m, spring.

LIST OF SPECIES

Genus *Orthetrum* Newman, 1833

Orthetrum taeniolatum Schneider, 1845

LOCATIONS. **Site 5** – 10.VII 2008; 16.VIII 2008.

DISTRIBUTION. Middle East, Northern India, Nepal, Afghanistan, Pakistan, Northern Africa southwards to Nigeria and Ethiopia.

Orthetrum brunneum Fonsclombe, 1837

LOCATIONS. **Site 8** – 10.VII 2008; 13.VII 2008; 21.VIII 2008.

DISTRIBUTION. This species is most common in the Mediterranean region, local in Central Europe and absent in British Isles and Scandinavia. It also occurs in North Africa, the Middle East and in Asia eastwards to Kashmir, Gobi and Mongolia.

Orthetrum coerulescens anceps Schneider, 1845

LOCATIONS. **Site 3** – 14.VII 2008; **site 5** – 15.VII 2008; **site 7** – 2.VII 2008; **site 8** – 2.VII 2008, 6.VII 2008; **site 9 –** 13.VII 2008.

DISTRIBUTION. North Africa, Corsica, Sardinia, Sicily, Malta and Eastern Mediterranean from Hungary, Yugoslavia and Greece to the Middle East, Black Sea and Caucasus through to Northern India.

Orthetrum chrysostigma Burmeister, 1839

LOCATIONS. **Site 3** – 6.VII 2008; **site 5** – 16.VIII 2008; **site 7** – 2.VII 2008; **site 8** – 2.VII 2008.

DISTRIBUTION. It is one of the most widespread Anisoptera and occurs in most of Africa and extends through the Arabian Peninsula and the Levant to Iran, Anatolia, Iraq, and Afghanistan (Dumont, 1991).

***Orthetrum ransoneti* Brauer, 1865**

LOCATIONS. **Site 1** – 31.V 2008 (only one female is found in the studied area).

DISTRIBUTION. This is a species typical of the deserts and semidesert areas, found in Egypt, Sudan and Libyan Desert. In Asia it extends from Sinai, probably through Saudi Arabia and eastern Jordan, to eastern Anatolia, Iran and Afghanistan (Dumont, 1991).

Genus *Trithemis* Brauer, 1868

***Trithemis kirbyi* Selys, 1891**

LOCATIONS. **Site 6** – 10.VII 2008; **site 9** – 13.VII 2008.

DISTRIBUTION. Afrotropical and Oriental regions. This species is found in countries like Saudi Arabia, Oman and generally is found in dry lands from Africa to India.

***Trithemis festiva* Rambur, 1842**

LOCATIONS. **Site 1** – 31.V 2008; **site 6** – 10.VII 2008; **site 7** – 2.VII 2008; **site 8** – 9.VII 2008; **site 9** – 13.VII 2008.

DISTRIBUTION. This species has been reported from Iraq, Rhodes and Cyprus, eastwards to Turkmenistan, Afghanistan and Himalayas, southwards to New Guinea.

***Trithemis annulata* Palisot de Beauvois, 1807**

LOCATIONS. **Site 8** – 9.VII 2008.

DISTRIBUTION. This species is very common all over Africa, and also found in the Middle East, Arabia, Western Asia and the extreme south of Europe.

***Trithemis arteriosa* Burmeister, 1839**

LOCATIONS. **Site 7** – 2.VII 2008; **site 8** – 2.VII 2008; **site 9** – 13.VII 2008.

DISTRIBUTION. This is one of the most numerous African dragonflies, also known from Saudi Arabia, Iran and Iraq (Dumont, 1991).

Genus *Crocothemis* Brauer, 1868

***Crocothemis erythraea* Brullé, 1832**

LOCATIONS. **Site 8** – 9.VII 2008.

DISTRIBUTION. It is a widespread species in tropical regions, common in the South Europe, North Africa, Middle East, Saudi Arabia, Yemen, Oman, Assam, Tadzhikistan, Pakistan, Afghanistan.

Genus *Pantala* Hagen, 1861

***Pantala flavescens* Fabricius, 1798**

LOCATIONS. **Site 2** – 15.VII 2008; **site 4** – 3.VII 2008; **site 5** – 16.VII 2008.

DISTRIBUTION. This global tropical migrant, occurring in America, Africa, Asia and Australia, has been reported in Iran from south-eastern part of the country, even though the first author has collected it from southern slope of Elburz Mountain (northern parts of Iran) several times at the end of summer.

Genus *Zygonyx* Hagen, 1867

***Zygonyx torridus* Kirby, 1889**

LOCATIONS. **Site 5** – 15.VII 2008; **site 7** – 2.VII 2008; **site 8** – 9.VII 2008.

DISTRIBUTION. It is widespread in Africa, the Middle East, Arabia, eastwards to India (Dijkstra & Lewington, 2006), it has also been recorded from south of Spain (Askew, 1988).

DISCUSSION

Our studied area is located in arid climate but it is mountain refugia with temperate valleys. This kind of refugia can accommodate variety of Odonata as a genetic reservoir. Despite of the narrow space of Khabr National Park in respect to whole country, about 35% species of Libellulidae of Iran was found here. On the other hand this region involves some scarce species of Iran such as *T. artriosa* and *Z. torridus.* The latter species is very rare and had been reported only from Bandar Abbas in southern Iran (Heidari & Dumont, 2002).

The fauna of Libellulidae in the region is mainly composed of common Afrotropical and/or Palaearctic species that many of them have important characters to live in dry climate. Apart from scarcity of forest and aquatic habitats in the region, diversity of Libellulidae is remarkable. It seems that the existence of mountains is the main factor for this biodiversity. As a result this protected area is a natural reservoir for critically endangered species in the heart of the desert.

As stated before, this region doesn't have a lot of freshwater habitats and woodlands that they are important for breeding, maturing and feeding of Odonata. Also it has low annual precipitation and a long duration of hot and dry seasons. Consecutive droughts with low precipitation cause reduction of running and shallow waters. On the other hand, the region's people, cattle and wilds provide their needs from its underground waters. As a result of these, some of its animals and plants encounter to extinction. This threat is also visible for dragonflies because of their dependence on freshwaters. For instance *Z. torridus*, which is reported as a vulnerable taxon in European red list (Kalkman *et al*., 2010), is a very rare species in the country and the park and also is critically endangered in Iran. The easternmost record of Z. torridus within the Palaearctic region from Iran indicates Iran is a bridge to population on the Indian subcontinent (Kunz *et al*., 2006).

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INSTRUCTIONS FOR AUTHORS

Far Eastern Entomologist is journal publishing original papers on entomology, including taxonomy, systematic, morphology, phylogeny, as well biology, ecology and biogeography. Reviews, comprehensive or revisionary studies of the insects thought other East Asia are especially welcome and will be given first priority for publication. Faunistic papers based on materials from the Russian Far East may be submitted also. Submission of a manuscript to Far Eastern Entomologist implies that the report is original, unpublished and is not being considered for publication elsewhere. Papers in languages other than English are not accepted.

Articles should be concise and the number of tables and figures limited to what is strictly necessary. Manuscripts should not exceed 16 pages (including figures and tables); additional printed pages are at the expense of the author(s).

Manuscripts should be prepared in accordance with the style and format of recent issues. (Current issues of Far Eastern Entomologist should be checked for style and format). An abstract should be followed by Key Words (2-7) and include no more than 100 words totally. Cite the author and year of publication of genera and species on first mention. The names of genera and species should be *Italic*. New description must confirm with the current edition of the Code of Zoological Nomenclature (1999). If a new taxon is described, the institution or museum where the type material is deposited must be indicated. The description of new taxa on types deposited in personal collection will not be accepted.

Special symbols (e.g. male or female sign) should be avoided. You can code them as m# and f#, which can be replaced during page setting.

References in the text, as follows: “Bey-Bienko (1932) states...” or “Bey-Bienko (1932: 25) states...” when the author wishes to refer to a specific page, or “(Bey-Bienko, 1932)” as the author of a statement. Joint authors must be connected by “&” in both the text and the references. When there is more then two authors use “et al.,” (Bey-Bienko et al., 1932) in the text. If journal names are not spelled out completely they should follow a consistent and accepted format.

Size of figures (including plates) as published should be less than 115 x 165mm. Illustration should be numbered in a single series throughout in Arabic numerals. Legends of illustrations should be listed after the list of references. Tables, if any, should be given at the end of the manuscript.

The following transliterations of Russian alphabet should be used:

А - a	Е - e	К - k	П - p	Ф - f	Щ - shch
Б - b	Ж - zh	Л - l	Р - r	Х - kh	Ы - y
В - v	З - z	М - m	С - s	Ц - ts	Э - e
Г - g	И - i	Н - n	Т - t	Ч - ch	Ю - yu
Д - d	Й - i	О - o	У - u	Ш - sh	Я - ya

Manuscripts submitted are subject to review and editing by two anonymous reviewers.

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We recommend the electric submission of a complete manuscript to Editor-in-Chief (storozhenko@ibss.dvo.ru) or to our office (entomol@ibss.dvo.ru).

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