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SYSTEMATIC POSITION OF THE GENUS *NIKANORIA* (HYMENOPTERA, EURYTOMIDAE), WITH DESCRIPTION OF TWO NEW SPECIES

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Systematic Position of the Genus *Nikanoria* (Hymenoptera, Eurytomidae), with Description of Two New Species. Zerova M. D., Seryogina L. Ya. — The genus name *Nikanoria* is resurrected from synonymy and considered to be separate from *Bruchophagus* based on analysis of morphological characters and trophic associations. *Nikanoria pygmaea* Zerova, sp. n. and *N. deserta* Zerova, sp. n. are described.

Key words: Hymenoptera, Eurytomidae, *Nikanoria*, new species.

О систематическом положении рода *Nikanoria* (Hymenoptera, Eurytomidae) с описанием двух новых видов. Зерова М. Д., Серьогина Л. Я. — На основании анализа морфологических и экологических особенностей видов рода *Nikanoria* отстаивается мнение о самостоятельности этого рода. Приводится описание двух новых видов — *N. pygmaea* Zerova, sp. n. и *N. deserta* Zerova, sp. n.

Ключевые слова: Hymenoptera, Eurytomidae, *Nikanoria*, новые виды.

Introduction

Since the time of the description of the genus *Nikanoria* Nikolskaja, 1955 its independence was evident and decisive. *Nikanoria* and *Biro-lajosia* Erdős, 1956 (originally as *Biro-Lajosia*) were described almost simultaneously, and soon Z. Bouček (1958) synonymized the latter name. M. N. Nikolskaya characterized morphological peculiarities of the genus, confirmed in the publications of the following authors (Zerova, 1971, 1974, 1978, 1982, 1995; Zerova, Seryogina, 2006, 2008; Zerova et al., 2003, 2006 2008, 2012; Steffan, 1961; Szélny, 1971). According to the data of these authors, species of the genus *Nikanoria* differ from the Eurytominae by the integument sculpture (smooth, lustrous), color (mainly green, seldom black with metallic shine), venation of forewings with light, highly widened and convex stigma, very bright coloration of the antennae of both sexes with non-extended segments of 4-segmented flagellum in males and often shortened 2nd segment of flagellum in females.

The results of phylogenetic analysis provided by Lotfalizadeh et al. (2007) based on morphological characters alone suggest that *Nikanoria* is an in-group in the genus *Bruchophagus* Ashmead, 1888 s. l. This led to synonymization of two names now accepted in the Chalcidoidea Database (Noyes, 2011). However, the evidences given by Lotfalizadeh et al. (2007) need additional analysis; even at the first sight they do not look sound.

First, the “*Bruchophagus alicante+Nikanoria*” lineage has very low bootstrap analysis index (< 50), which hardly makes this result reliable. Second, distribution and condition of the characters used as synapomorphies of this clade, are not thoroughly analyzed in all the examined species, which makes this synonymy dubious.

1. “ITS [the interantennal projection (= space)] raised above the surface of the antennal scrobes, ending dorsally in a sharp or blunt tooth”. — Lacking in some species of both *Nikanoria* and *Bruchophagus* was considered reversals, but this distribution might mean this is a highly homoplastic character. Not found in *Nikanoria*.

2. “PGG [postgenal groove] with inner edge step-like. — Not found in *Nikanoria* and not a synapomorphy of the two genera, anyway.

3. “Propodeum with a brush of hairs on each side of petiolar cavity... (hairs sometimes reduced)”. We find this feature in genera: *Eurytoma*, *Bruchophagus*, *Nikanoria*.

4. "Metacoxa dorsally hairy at base." — To our knowledge, characters 3 and 4 also occur in most *Eurytoma* and is highly subject either to both homoplasy or/and reversals.

5. "First gastral tergite with sublateral lines of hairs on each side of submedian pits." — Not found in *Nikanoria*.

Thus, none of the morphological characters give any sound support for the sister-group relationship in the "Bruchophagus alicante+Nikanoria" lineage.

Bruchophagus (*gibbus* group and *alicante* group of Lotfalidzadeh et al., 2007) is a group with larvae specialized for phytophagy in the seeds of Fabaceae, the feeding mode that is derived compared to the parasitic mode, whereas larvae of *Nikanoria* are parasites. *Bruchophagus gibbus+alicante* group cannot be a parent group for the highly derived *Nikanoria* with more primitive feeding mode. Neither the latter genus, which contains highly specialized parasites or inquilines of gall-inducing Cecidomyiidae (but not Cynipidae, as Lotfalidzadeh et al. (2007) suggested) in the plants growing in salty desert areas, can be the group from which *Bruchophagus* raised. Even if the *atra* and *squamea* groups are included in *Bruchophagus*, they show no good evidences that *Nikanoria* can be considered as a derived group of such a paraphyletic *Bruchophagus*.

We therefore do not accept the synonymy of the names *Bruchophagus* and *Nikanoria* proposed by Lotfalidzadeh et al. (2007) and continue using of the latter one as a valid generic name.

In this paper, we describe two new species of the genus *Nikanoria*. Types of described species are deposited in the collection of the I. I. Schmalhausen Institute of Zoology, NAS of Ukraine (Kyiv) (SIZK).

Nikanoria deserta Zerova, sp. n.

Material. Holotype, Israel, Ha Nagev, Har Ha-Meshar, 14.07.2003 (Simutnik).

Paratype, Israel, Haifa near University, 11.07.2003 (Simutnik).

Description. Female (fig. 1, 1–3, 5). Body length 1.2 mm. Body black with bright metallic reflection, dorsal side of thorax smooth, polished, almost bare, coxae black, all femora black, middle and hind tibia black, fore tibia yellow, tarsi yellow; scape black, pedicel brown, flagellum yellow, but club some darker-dark yellow; wings hyaline, venation yellow, almost pale, stigma enlarged, light yellow, almost white; the tip of ovipositor black.

Head from above a little wider than pronotum, wider than long in ratio 35 : 15; POL longer than OOL in ratio 11 : 3. Head in frontal view wider than high in ratio 35 : 25, round, eyes bare not prominent, gena rounding; malar space longer than eye length in ratio 16 : 14; external clypeus margin straight; lower face with very thin striae, sculpture of face and occiput very thin without visible pubescence. Antennae inserted at middle of face, scape not reaching median ocellus; pedicel long, some longer as the first flagellar segment; first segment of flagellum distinct longer than wide, the second shorter than all other segments, 3–5 flagellar segments distinct longer than wide, club long and stout, almost long as three preceding segments combined.

Mesosoma somewhat bulging; pronotum (from above) twice wider than long; thorax surface with bright metallic reflection, without distinct sculpture, only with some thin wrinkles. Mesopleura with episternal part with thin sculpture, the mesepimeron bare, polished. Propodeum at middle with thin punctuation. Fore wing with marginal, postmarginal and radial veins in proportions 13 : 20 : 20, stigma enlarged (length to height 8 : 9), bare. Basal 1/3 of forewing discus almost bare, remaining part with very short, white pubescence. All coxae without distinct sculpture.

Metasoma with abdomen a little longer than mesosoma (26 : 23), petiolus very short, not visible from above, abdominal tergites without distinct sculpture, polished. The third and fourth tergites equal in length; the 6th tergite with sparse pubescence.

Male (fig. 1, 4). Length of body 1.1 mm. Colour as in female. Scape (as in female) black, flagellum yellow. Abdominal petiolus as long as hind coxa.

Comments. *Nikanoria deserta* sp. n. belongs to the *nigra* group of species. The new species resembles *N. lindemani* Zerova, but differs by shorter and rounded abdomen, shorter 7th abdominal tergite, which is much shorter than the 6th (by *N. lindemani* the 7th abdominal tergite is longer than the 6th), by longer antennal segments and black scape (by *N. lindemani* scape and flagellar segments are yellow).

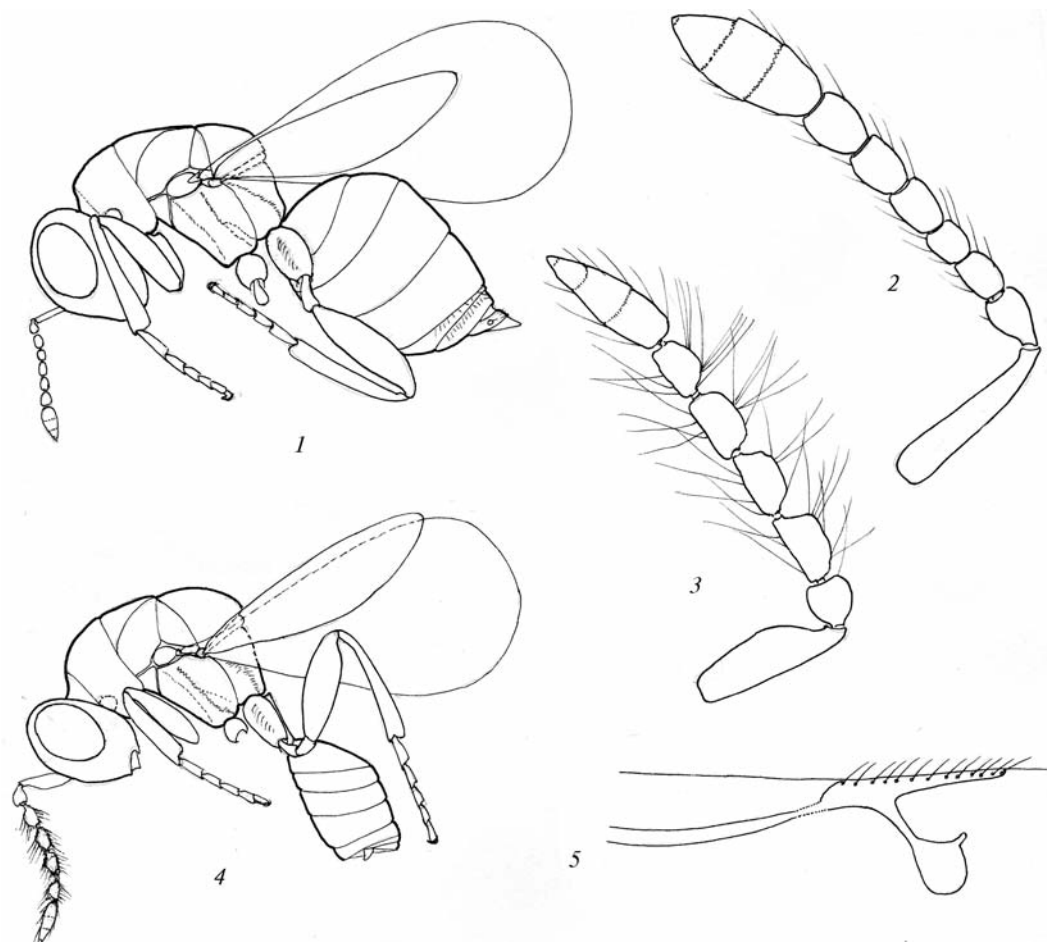


Fig. 1. *Nikanoria deserta*: 1 — female, lateral view; 2 — female antenna; 3 — male, antenna; 4 — male, lateral view; 5 — fore wing venation.

Рис. 1. *Nikanoria deserta*: 1 — самка, вид сбоку; 2 — усик самки; 3 — усик самца; 4 — самец, вид сбоку; 5 — жилкование передних крыльев.

Nikanoria pygmaea Zerova, sp. n.

Material. Holotype: «Киргизия, пойма реки Талас, из галлов *Halodiplosis mutabilis* (Cecidomyiidae) на *Anabasis aphylla* L. (Chenopodiaceae), 15–18.08.1983 Федотова. Паратипы: 1 ♀, 2 ♂ с этикеткой как у голотипа.» [Kyrgyzstan [Kirgizia], the flood plain of the River Talas, reared from galls of *Halodiplosis mutabilis* on *Anabasis aphylla* L. (Fedotova)]. Paratypes: 1 ♀ and 2 ♂ with the same labels as the holotype.

Description. Female (fig. 2, 1–3, 5). Body length 1.7 mm. Body dark green with brass bronze reflection, coxae dark green, all femora dark green at the 2/3 basal part, and yellow at the apex, tibia and tarsi yellow; scape and pedicel a little darker than flagellum, which is light yellow; pronotum with small not distinct yellow spots; the tip of ovipositor dark green, almost black. Fore wing hyaline, stigma enlarged, light yellow, almost white.

Head from above slightly wider than pronotum, width to length in ratio 32 : 15, POL longer than OOL as 11 : 3. Head in frontal view wider than high in ratio 32 : 25; malar space a little shorter than eye length (12 : 14), external clypeus margin straight; face and fronts with very thin reticulation and very sparse white pubescence. Antenna inserted some lower the middle of face; scape not reaching median ocellus, pedicel as long, as the first flagellar segment; the second flagellar segment the shortest, 3–5 elon-

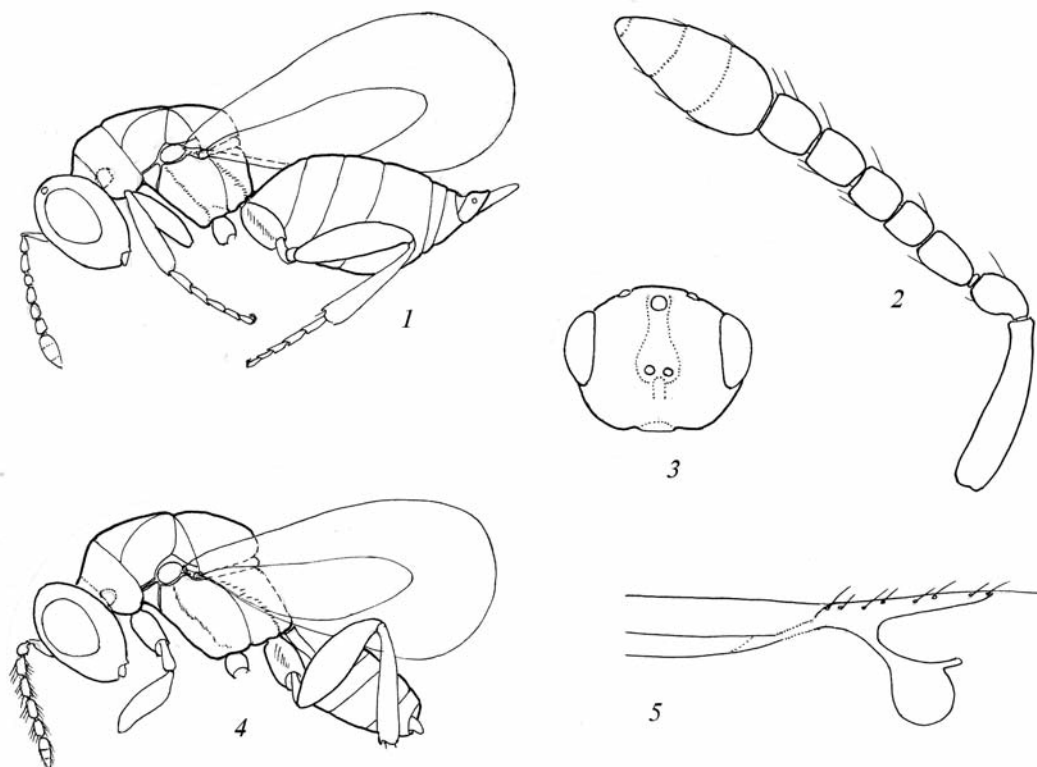


Fig. 2. *Nikanoria pygmaea*: 1 — female, lateral view; 2 — female antenna; 3 — head, frontal view; 4 — male, lateral view; 5 — fore wing venation.

Рис. 2. *Nikanoria pygmaea*: 1 — самка, вид сбоку; 2 — усик самки; 3 — голова спереди; 4 — самец, вид сбоку; 5 — жилкование передних крыльев.

gated; club long and stout, wider than flagellum, as long as three preceding flagellar segments combined; pubescence of flagellum very sparse.

Mesosoma not bulging, pronotum, mesoscutum and scutellum with thin reticulation; pronotum (from above) twice as wide as long. Mesoplura with thin punctuation. Propodeum with thin punctures. Forewing with marginal vein much shorter than post-marginal (12 : 20); stigma bare, prominent, enlarged (length to height 10 : 12); forewing discus with very short pubescence.

Metasoma with abdomen longer than mesosoma in ratio 38 : 26; petiolus short, not visible from above the surface of abdomen tergites flat, polished. The 7th tergite twice as long as the 6th.

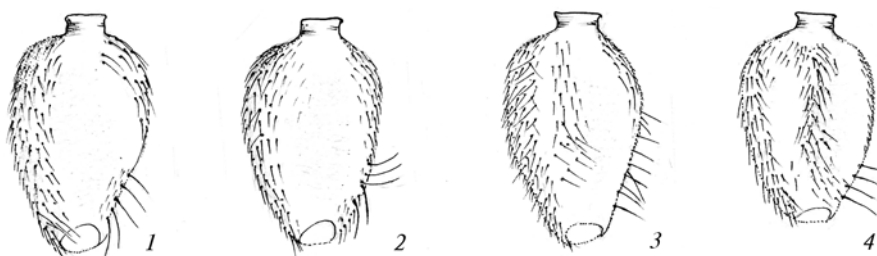


Fig. 3. Morphological peculiarities of hind coxa in Eurytomidae genera: 1 — *Nikanoria mongolica*; 2 — *Bruchophagus sophorae*; 3 — *Eurytoma amygdali*; 4 — *Eurytoma nodularis*.

Рис. 3. Особенности морфологии задних тазиков у представителей различных родов семейства Eurytomidae: 1 — *Nikanoria mongolica*; 2 — *Bruchophagus sophorae*; 3 — *Eurytoma amygdali*; 4 — *Eurytoma nodularis*.

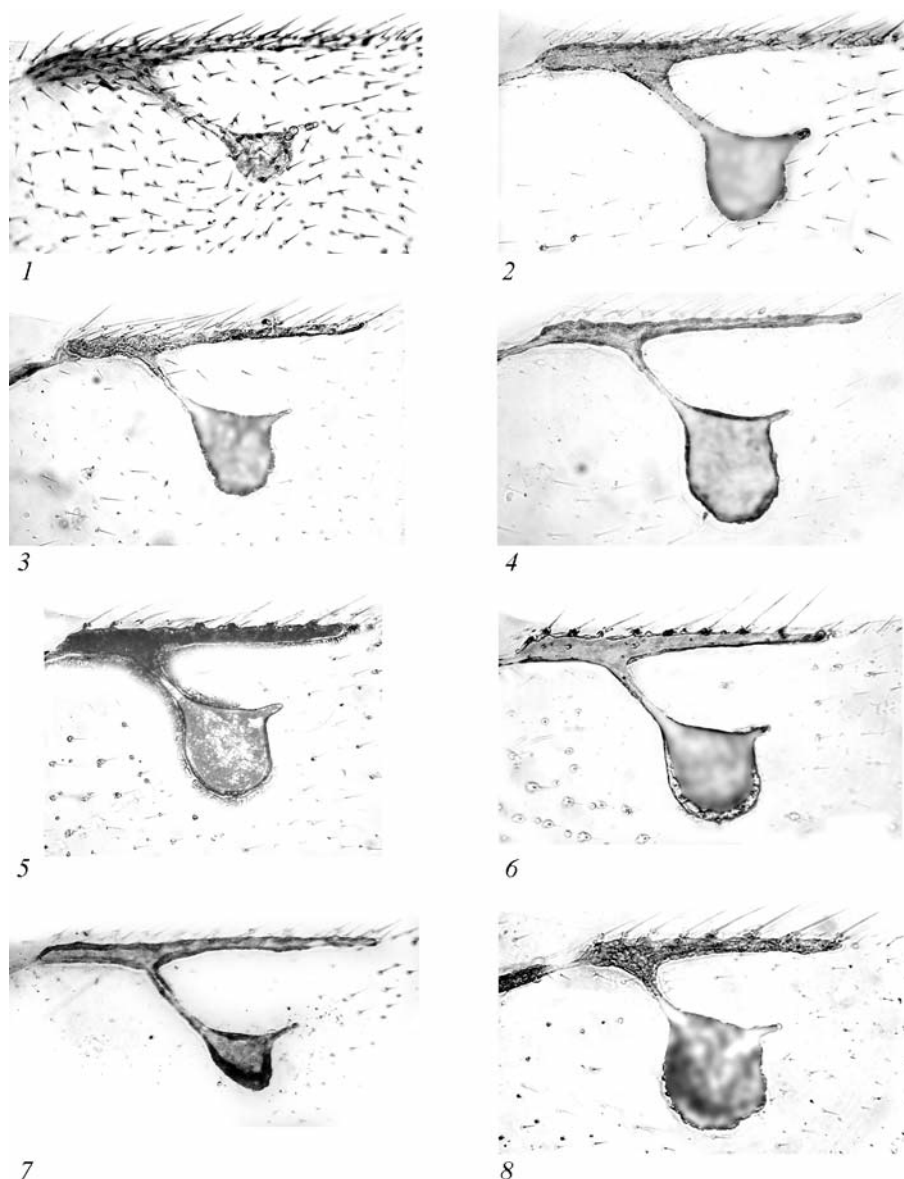


Fig. 4. Forewing venation of *Nikanoria* species: 1 — *Nikanoria metallica*; 2 — *N. punctata*; 3 — *N. mongolica mongolica*; 4 — *N. mongolica punctulata*; 5 — *N. kazakhstanica*; 6 — *N. sugonjaevi*; 7 — *N. nigrescens*; 8 — *N. stigma*.

Рис. 4. Жилкование передних крыльев *Nikanoria*: 1 — *Nikanoria metallica*; 2 — *N. punctata*; 3 — *N. mongolica mongolica*; 4 — *N. mongolica punctulata*; 5 — *N. kazakhstanica*; 6 — *N. sugonjaevi*; 7 — *N. nigrescens*; 8 — *N. stigma*.

Male (fig. 2, 4). Length of body 0.9 mm. Colour as in female; abdominal petiolus as long as hind coxa; all four funicular segments equal in length; club wider than flagellar segments.

Comments. *Nikanoria pygmaea* sp. n. belongs to the *pavlovskii* group of species. The new species is similar to *N. stigma*, but differs by longer flagellar segments in both sexes, especially in female, longer abdomen in female and somewhat shorter postmarginal vein.

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- Bouček Z.* To the taxonomy of the European species of *Schizonotus* and *Caenocrepis* — parasites of economic importance — with notes, and some new synonymy in Pteromalidae and Eurytomidae (Hymenoptera) // *Acta Ent. Mus. Nat. Pragae.* — 1958. — **32**. — P. 395–404.
- Lotfalizadeh H., Delvare G., Rasplus J.-Y.* Phylogenetic analysis of Eurytomidae based on morphological characters (Chalcidoidea: Eurytomidae) // *Zool. J. Linnean Society.* — 2007. — **151**. — P. 441–510.
- Nikolskaja M. N.* New genera and species of the family Eurytomidae and Callimomidae from Middle Asia (Hymenoptera, Chalcidoidea) // *Trudy Zoolgicheskogo Instituta Akademii Nauk SSSR.* — 1955. — **21**. — P. 335–341. — Russian : *Никольская М. Н.* Новый роды и виды семейства Eurytomidae и Callimomidae из Средней Азии (Hymenoptera, Chalcidoidea).
- Noyes S.* Universal Chalcidoidea Database. — 2011. — <http://www.nhm.ac.uk/entomology/chalcidoidea>
- Steffan J. R.* Description d'une nouvelle espèce de *Nikanoria* Nik. Et remarques sur l'identité du "*Bruchophagus sativae* Ashm." (Hym., Eurytomidae) // *Bull. Mus. Nat. Hist. Natur.* — 1961. — **33**, N 2. — P. 197–201.
- Szelényi G.* Notes on Eurytomid genera with descriptions of new species (Hymenoptera, Chalcidoidea) // *Acta entomol. Mus. Nat. Pragae.* — 1971. — **17**, 1–2. — P. 119–137.
- Zerova M. D.* New species of chalcids of the genus *Nikanoria* Nik. (Hymenoptera, Eurytomidae) from the Middle Asia and Mongolia // *Revue d'Entomologie de l'URSS.* — 1971. — **50**, N 1. — P. 147–159. — Russian : *Зерова М.Д.* Новые виды хальцид рода *Nikanoria* Nik. (Hymenoptera, Eurytomidae) из Средней Азии и Монголии.
- Zerova M. D.* A new species of *Nikanoria* *Nikolskaja* from the USSR (Hymenoptera, Eurytomidae) // *Folia Entomol. Hungarica. Series Nova.* — 1974. — **27**, N 1. — P. 233–235.
- Zerova M. D.* Review of chalcids of the genus *Nikanoria* Nik. (Hymenoptera, Chalcidoidea, Eurytomidae) with descriptions of some new species // *Revue d'Entomologie de l'URSS.* — 1978. — **57**, N 2. — P. 386–398. — Russian : *Зерова М. Д.* Обзор хальцид рода *Nikanoria* Nik. (Hymenoptera, Chalcidoidea, Eurytomidae) с описанием новых видов.
- Zerova M. D.* A new species of the eurytomid genus *Nikanoria* Nik. (Hymenoptera, Eurytomidae) from the north of the Caspian Lowland // *Revue d'Entomologie de l'URSS.* — 1982. — **61**, N 3. — P. 626–628. — Russian : *Зерова М. Д.* Новый вид эвритомид рода *Nikanoria* Nik. (Hymenoptera, Eurytomidae) из Северного Прикаспия.
- Zerova M. D.* Parasitic Hymenoptera. Eurytominae and Eudecatominae of Palaearctics. — Kiev : Naukova dumka, 1995. — 459 p. — Russian : *Зерова М. Д.* Паразитические перепончатокрылые. Эвритомиды и Эвдекатомины Палеарктики.
- Zerova M. D., Seryogina L. Ya.* New species chalcidoid wasps of the family Eurytomidae (Hymenoptera, Chalcidoidea) from arid Palearctic regions // *Zool. Journal.* — 2008. — **87**, N 11. — P. 1325–1332. — Russian : *Зерова М. Д., Серегина Л. Я.* Новые виды хальцид семейства Eurytomidae (Hymenoptera, Chalcidoidea) из аридных регионов Палеарктики.
- Zerova M. D., Seryogina L. Ya.* A review of *Nikanoria* species related to *Nikanoria mongolica* (Hymenoptera, Eurytomidae) // *Zool. Journal.* — In press. — Russian : *Зерова М. Д., Серегина Л. Я.* Виды рода *Nikanoria*, близкие к *Nikanoria mongolica* (Hymenoptera, Eurytomidae).
- Zerova M. D., Seryogina L. Ya., van Harten A.* New Eurytomidae species (Hymenoptera, Chalcidoidea, Eurytomidae) from United Arab Emirates // *Entomological Review.* — In press. — Russian : *Зерова М. Д., Серегина Л. Я., Ван Хартен А.* Новые виды семейства Eurytomidae (Hymenoptera, Chalcidoidea, Eurytomidae) из Объединенных Арабских Эмиратов.
- Zerova M. D., Seryogina L. Ya., Karimpour Y.* New species of the chalcidoid wasps of the families Eurytomidae and Torymidae (Hymenoptera, Chalcidoidea) from Iran // *Vestnik zoologii.* — 2008. — **42**, N 6. — P. 489–496.
- Zerova M. D., Seryogina L. Ya., Dawah H., Abdulah M.* New species of chalcidoid wasps of Eurytomidae and Ormyridae families (Hymenoptera, Chalcidoidea) from Saudi Arabia // *Zool. Journal.* — 2003. — **82**, N 7. — P. 884–889. — Russian : *Зерова М. Д., Серегина Л. Я., Давах Х., Абдулах М.* Новые виды хальцидоидных наездников семейств Eurytomidae и Ormyridae (Hymenoptera, Chalcidoidea) из Саудовской Аравии.
- Zerova M. D., Seryogina L. Ya., Pavliček T., Nevo E.* A review of the genus *Nikanoria* *Nikolskaja* (Hymenoptera, Eurytomidae) with description of new species from Israel and Mongolia // *Entomological Review.* — 2006. — **85**, N 4. — P. 877–883. — Russian : *Зерова М. Д., Серегина Л. Я., Павличек Т., Нево Э.* Обзор видов рода *Nikanoria* *Nikolskaja* (Hymenoptera, Eurytomidae) с описанием новых видов из Израиля и Монголии.