

Ooencyrtus leleji* sp.n. from Montenegro (Hymenoptera: Encyrtidae)**Ooencyrtus leleji* sp.n. из Черногории (Hymenoptera: Encyrtidae)**

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Key words: Hymenoptera, Encyrtidae, *Ooencyrtus*, new species, Montenegro.**Ключевые слова:** Hymenoptera, Encyrtidae, *Ooencyrtus*, новый вид, Черногория.

Abstract. An encyrtid wasp, *Ooencyrtus leleji* sp.n., is described from Montenegro. This new species is compared with *O. corei* Trjapitzin, 1979. Some information on the genus *Ooencyrtus* Ashmead, 1900 is provided.

Резюме. Новый вид энциртиды *Ooencyrtus leleji* sp.n. описан из Черногории и сравнивается с *O. corei* Trjapitzin, 1979. Приведена некоторая информация о роде *Ooencyrtus* Ashmead, 1900.

This contribution is dedicated to Professor Arkadiy Stepanovich Lelej, an outstanding researcher of Hymenoptera, in whose honor a new species, *Ooencyrtus leleji* sp.n. (Hymenoptera: Encyrtidae), is described. A single female of this new taxon was collected by the author in Herzeg-novi, Montenegro, on a sandy shore of Adriatic Sea near the border with Croatia.

An abbreviation used in the text is: F — an antennal funicular segment.

***Ooencyrtus* Ashmead, 1900**

Type species: *Encyrtus clisiocampae* Ashmead, 1900, by original designation.

For the list of its synonyms, see Huang, Noyes [1994] and Noyes [2015].

Prior to Ferrière [1947], species of *Ooencyrtus*, which are either primary or sometimes secondary parasitoids of Lepidoptera and Hemiptera, had been usually included in the genus *Schedius* Howard, 1910. More recently, Noyes [2010] included in *Ooencyrtus* some other species which are known to be hyperparasitoids of larvae and pupae of various insects, for instance of some Syrphidae (Diptera), Coccinellidae (Coleoptera), etc., resulting in a significant broadening of its generic diagnosis. Currently, the genus includes 312 valid species [Noyes, 2015].

Practical importance. Two species of *Ooencyrtus* were intentionally introduced from their native ranges to the new regions and have established there as effective biological control agents, as follows.

***Ooencyrtus kuvanae* (Howard, 1910)**

This important egg parasitoid of gypsy moth, *Lymantria dispar dispar* (Linnaeus, 1758) (Lepidoptera: Erebididae) was introduced in 1909 from Japan into Massachusetts, USA [Howard, Fiske, 1911]. Later it was sent (or penetrated with the host) to many other countries. In 1987, O.G. Volkov found *O. kuvanae* in North Korea and brought some females

to Moscow, Russia, where the parasitoid was mass-reared; about two million specimens were then released in many regions of the former USSR. However, its establishment and recovery was confirmed only in 2009 in mountain forests of Krasnodar Territory between Novorossiysk and Gelendzhik [Izhevsky et al., 2010].

***Ooencyrtus pallidipes* (Ashmead, 1904)**

This egg parasitoid of banana skipper *Erionota thrax* (Linnaeus, 1767) (Lepidoptera: Hesperidae) was purposely introduced in 1973 from Guam into the Hawaiian Islands (USA: Hawaii), where it got established [Sailer, 1981]; by 1975, its host was no longer of any economic importance. *O. pallidipes* was also used in Thailand in an augmentative biological control program against the same pest [Napompet, 1992].

Remarks. In the USA, a method of mass production of *Ooencyrtus ennemophagus* Yoshimoto, 1975 using frozen eggs of some species of Lepidoptera was invented (for example, see Drooz, Solomon [1980]). In Italy, *O. pityocampae* (García Mercet, 1921) was propagated using artificial eggs [Masutti et al., 1993].

***Ooencyrtus leleji* V. Trjapitzin, sp.n.**

Type material. Holotype: female (on point, deposited in the collection of Zoological Museum of Moscow State University, Moscow, Russia): Montenegro, Herzeg-novi, shore of Adriatic Sea, IX.2005 (V.A. Trjapitzin).

Description. Female. Occipital margin slightly concave, posterior margins of eyes somewhat not reaching it. Minimum width of vertex about 0.25 times head width. Frontoververtex, measured in the middle, 2.0 times as long as wide. Ocelli in an equilateral triangle; posterior ocelli near eye margins, and distance from each of them to occipital margin about half that between them. Height of eye 2.0 times more than that of malar space. Toruli just below lower eye margin; distance between them somewhat more than distance from each torulus to eye margin (6 : 4–5) and to oral aperture (6 : 5). Antennal scape 6.0 times as long as wide, slightly broadening towards apex, but then narrowing near it; pedicel 3.0 times shorter than scape and 2.0 times as long as wide at apex; funicle gradually broadening towards apex, all its segments longer than wide; F1 shorter than pedicel (3 : 5) and about 3.0 times as long as wide; F2 and F3 each as long as F1, but slightly broader (F3 1.5 times as long as wide); F4 somewhat longer than F3; F5 similar to F3, but a little longer; F6 twice as wide as F1 and about one-third longer than wide; clava 1.5 times as wide as F6, 3.0 times as long as wide and a little

shorter than combined length of three preceding segments, apex of clava pointed. Mesoscutum 2.0 times as wide as long. Scutellum convex, as long as wide and somewhat longer than mesoscutum. Wings not abbreviated; costal cell of fore wing with convex anterior margin, 7.0 times longer than its maximum width; marginal vein approximately 2.0 times as long as wide; postmarginal vein shorter than stigmal vein; angle between stigmal vein and anterior margin of wing about 45°. Propodeum very short in the middle, as a stripe. Mesopleuron rather convex, slightly not reaching base of gaster and separated from it by a very narrow metapleuron. Gaster about as long as mesosoma. Ovipositor sheath barely exerted.

Body black with a slight metallic luster, mesopleuron with a golden violet tinge. Antennal scape black in its dorsal half and brown-yellow in its ventral half; pedicel black; flagellum dark. All coxae black. Fore leg: femur black with yellow base and apex, tibia more or less yellow, tarsus darkened. Middle leg: femur mostly black but its apical third yellow, tibia and mesotibial spur yellow, tarsus brownish yellow with dark apices of 3 apical segments. Hind leg: femur black except its apex yellow, tibia brownish-yellow with a dark ring near its base, tarsus yellow with a darkened fourth segment and a dark fifth segment.

Frontoververtex and mesoscutum with minute cell-like sculpture. Scutellum with a faint micro-cell-like sculpture (almost mat). Face, postspiracular sclerites, coxae and gaster reticulate.

Mesoscutum with light setae. Costal cell of fore wing bare, base of wing before lineal calva entirely pubescent except its most proximal part; lineal calva broad anteriorly and interrupted by setae before its posterior third.

Body length 0.85 mm.

Male. Unknown.

Hosts. Unknown.

Etymology. The species is dedicated to Arkadiy S. Lelej, Vladivostok, Russia, for his 70th birthday.

Distribution. Only known from the type locality Herzegovina (Montenegro).

Diagnosis. In my key to the Palaearctic species of *Ooencyrtus* [Trjapitzin, 1989], this new species goes to *O. corei* Trjapitzin, 1979. The latter was described from Moldavia where it was reared from eggs of the sorrel bug *Coreus marginatus* (Linnaeus, 1758) (Hemiptera: Coreidae). Females of these two species are similar in the following features: width of vertex is about 0.25 times head width; ocelli form an equilateral triangle; scape long, all funicular segments of antenna are longer than wide; mesotibia without a dark ring near its base; gaster completely black. The differences between them are given in the following key:

- 1(2). F1 about 3.0 times as long as wide, clava 1.5 times as wide as F6; fore wing entirely pubescent before lineal calva, the latter interrupted by setae before its posterior third ...
..... *O. leleji* sp.n.
- 2(1). F1 about 1.7 times as long as wide, clava as wide as F6; fore wing with a bare area before lineal calva, the latter open posteriorly *O. corei* Trjapitzin

Remarks. Only two species were previously recorded from Montenegro: *O. telenomicida* (Vassiliev, 1904) [Hoffer,

1975] and the introduced *O. kuvanae* [Milanović et al., 1998].

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References

- Drooz A.T., Solomon J.D. 1980. Rearing the egg parasite *Ooencyrtus ennomophagus* (Hymenoptera: Encyrtidae) on eggs of *Closteria inclusa* (Lepidoptera: Notodontidae) kept below freezing // The Canadian Entomologist. Vol.112. No.7. P.739–740.
- Ferrière Ch. 1947. A chalcidoid egg parasite of an Australian buprestid // Bulletin of Entomological Research. Vol.37. No.4. P.629–631.
- Hoffer A. 1975. Zweiter Beitrag zur Kenntnis der Arten der Familie Encyrtidae (Hym., Chalcidoidea) Jugoslawiens // Studia Entomologica Forestalia (Praha). Vol.2. No.2. P.19–39.
- Howard L.O., Fiske W.F. 1911. The importation into the United States of the parasites of the gypsy moth and of the brown-tail moth // U.S. Department of Agriculture, Bureau of Entomology Bulletin. No.91. P.1–344.
- Huang D.-W., Noyes J.S. 1994. A revision of the Indo-Pacific species of *Ooencyrtus* (Hymenoptera: Encyrtidae), parasitoids of the immature stages of economically important insect species (mainly Hemiptera and Lepidoptera). Bulletin of the Natural History Museum (Entomology Series). Vol.63. No.1. P. 1–136.
- Izhevsky S.S., Volkov O.G., Zelenev N.N., Trjapitzin V.A. 2010. [A successful introduction into Russia of the parasite of gypsy moth — *ooencyrtus kuvanae* (How.)] // Zashchita i karantin rastenii. No.6. P.42–45. [In Russian]
- Masutti L., Battisti A., Milani N., Zanata M., Zannaro G. 1993. In vitro rearing of *Ooencyrtus pityocampae* (Hym., Encyrtidae), an egg parasitoid of *Thaumetopoea pityocampa* (Lep., Thaumetopoeidae) // Entomophaga. Vol.38. No.3. P.327–333.
- Milanović S., Krnjić S., Mihailović L. 1998. A contribution to the study of gypsy moth egg parasitoids (*Lymantria dispar* L.) in Yugoslavia // Acta Entomologica Serbica. Vol.3. No.1/2. P.127–137.
- Napompot B. 1992. [Biological control of insect pests and weeds in Thailand] // Entomologicheskoe Obozrenie. Vol.71. No.1. P. 3–15. [In Russian]
- Noyes J.S. 2010. Encyrtidae of Costa Rica (Hymenoptera: Chalcidoidea), 3. Subfamily Encyrtinae: Encyrtini, Echthroplexiellini, Discodini, Oobiini and Ixodiphagini, parasitoids associated with bugs (Hemiptera), insect eggs (Hemiptera, Lepidoptera, Coleoptera, Neuroptera) and ticks (Acari) // Memoirs of the American Entomological Institute. Vol.84. P.1–848.
- Noyes J.S. 2015. Universal Chalcidoidea database. WWW publication. London: the Natural History Museum. <http://www.nhm.ac.uk/research-curation/projects/chalcidooids/index.html> (last accessed 21.III 2016).
- Sailer R.J. 1981. Progress report on importation of natural enemies of insect pests in the U.S.A. // California Agriculture. Vol.30. No.5. P. 20–26.
- Trjapitzin V.A. 1989. [Parasitic Hymenoptera of fam. Encyrtidae of Palaearctics]. Leningrad: Nauka. 489 p. [In Russian]