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**REVIEW OF THE MYMARIDAE (HYMENOPTERA,
CHALCIDOIDEA) OF PRIMORSKII KRAI: GENERA
CHAETOMYMAR OGLOBLIN, *HIMOPOLYNEMA*
TAGUCHI, AND *STEPHANODES* ENOCK**

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The species of the genera *Chaetomymar*, *Himopolynema*, and *Stephanodes* from Russia are reviewed. *H. parviscutum* Taguchi, *S. reduvioli* (Perkins), and *S. similis* (Foerster) are newly recorded from Russia. *H. aequum* (Girault), **comb. n.** from Australia is redescribed.

KEY WORDS: Hymenoptera, Mymaridae, taxonomy, Russia.

С. В. Тряпицын, В. В. Березовский. Обзор семейства Мумариде (Hymenoptera, Chalcidoidea) Приморского края: роды *Chaetomymar* Ogloblin, *Himopolynema* Taguchi и *Stephanodes* Enock // Дальневосточный энтомолог. 2001. N 110. С. 1-11.

Дан обзор видов родов *Chaetomymar*, *Himopolynema* и *Stephanodes* фауны России. *H. parviscutum* Taguchi, *S. reduvioli* (Perkins) и *S. similis* (Foerster) впервые отмечаются для России. Дано переписание *H. aequum* (Girault), **comb. n.** из Австралии.

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INTRODUCTION

This paper continues a series of articles describing species diversity of some genera of Mymaridae in Primorskii krai, Russia. Our two previous publications from this series dealt with the genera *Mymar* Curtis, 1829 (Triapitsyn & Berezovskiy, 2001), that also included a section on the methods, and *Acmopolynema* Ogloblin, 1946 (Berezovskiy & Triapitsyn, 2001).

Two out of the three genera treated here, *Chaetomymar* Ogloblin and *Himopolynema* Taguchi, occur in the Old World only, with the majority of known species in the Oriental region. They are represented in Russia by one species each, both from southern Primorskii krai. The third one, *Stephanodes* Enock, is a cosmopolitan genus occurring throughout Russia, and therefore we expanded its treatment here beyond Primorskii krai by including material from the European part of Russia, that belongs to *S. similis* (Foerster, 1847). Triapitsyn & Huber (2000) mentioned one or two undetermined species of *Stephanodes* in Primorskii krai; however, after slide-mounting of the specimens from Gornotayozhnoye, we determined that all of them belong to just one species, *S. reduvioli* (Perkins, 1905).

Terms for morphological characters are those of Gibson (1997). All measurements are given in micrometers as length or, where necessary, as length/width. New distribution records are asterisked (*).

Acronyms for the depositories of specimens are as follows: EMEC, Essig Museum, University of California, Berkeley, California, USA; IBPV, Institute of Biology and Pedology, Vladivostok, Russia; MLPA, Museo de La Plata, La Plata, Buenos Aires, Argentina; QMBA, Queensland Museum, Brisbane, Queensland, Australia; UCRC, Entomology Research Museum, University of California, Riverside, California, USA; ZIN, Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia.

Genus *Chaetomymar* Ogloblin, 1946

Chaetomymar Ogloblin, 1946: 277. Type species: *Chaetomymar kusnezovi* Ogloblin, 1946, Ussurijsk, Primorskii krai, Russia, by monotypy and original designation.

Chaetomymar: Annecke & Doutt, 1961: 34; Schauff, 1984: 56; Triapitsyn & Huber, 2000: 613.

COMMENTS. Besides the short original description of the genus by Ogloblin (1946), *Chaetomymar* was later diagnosed by Annecke & Doutt (1961) and Schauff (1984). The genus will be treated in detail in the forthcoming revision by Dr. John T. Huber (personal communication).

Chaetomymar is mainly an Afrotropical and Oriental genus, with 2 described species in the Palaearctic region, keyed by Triapitsyn & Huber (2000), and also with several Australasian species. One species was accidentally introduced recently into Hawaii (Beardsley & Huber, 2000). All reliable host records are from Cicadellidae (Huber, 1986; Beardsley & Huber, 2000); it appears that at least some *Chaetomymar* species are associated with leafhopper hosts laying eggs in leaves of trees.

Only one species, *C. kusnezovi*, has been recorded so far from Russia (southern Primorskii krai); however, presence of the Japanese species *C. hishimoni* Taguchi, 1975 there is also possible (Triapitsyn & Huber, 2000).

***Chaetomymar kusnezovi* Ogloblin, 1946**

Chaetomymar kusnezovi Ogloblin, 1946: 277 (holotype - ♀ on slide, Nikol'sk Us surijskii (now Ussurijsk), Primorskii krai, Russia, [MLPA], examined).

Chaetomymar kusnezovi: Triapitsyn & Huber, 2000: 613, ♀ (key).

MATERIAL. Russia: Primorskii krai, Gornotayozhnoye, M. V. Michailovskaya, 21-31.VII 2000, 1 ♀ [UCRC].

DISTRIBUTION. Russia (Primorskii krai).

COMMENTS. *Ch. kusnezovi* is known only from the female sex. Despite the recent intensive collecting in Gornotayozhnoye (Triapitsyn & Berezovskiy, 2001), which is about 18 km from the type locality, only one specimen of *C. kusnezovi* was found, a female captured by a Malaise trap. We decided to mount this valuable specimen on a point because the only other known specimen of this species, the holotype, is on a slide and is uncleaned. Host associations of this species are unknown.

Genus *Himopolynema* Taguchi, 1977

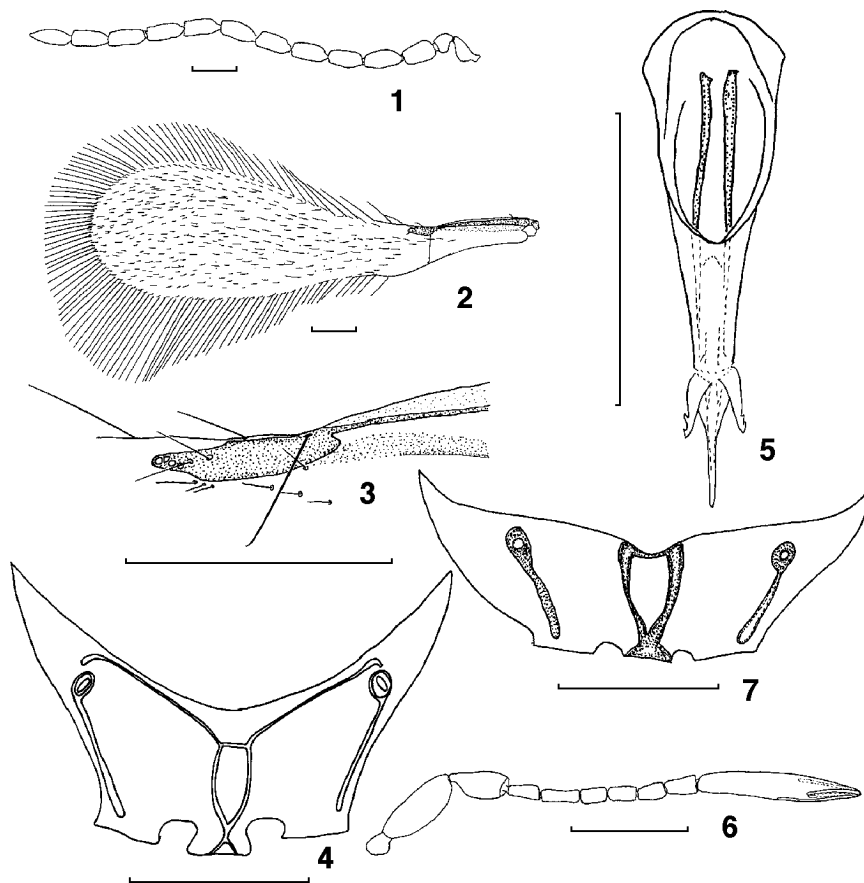
Himopolynema Taguchi, 1977: 137. Type species: *Himopolynema hishimonus* Taguchi, 1977, Ayabe, Kyoto Prefecture, Japan, by original designation.

Himopolynema: Hayat & Anis, 1999: 16, 18; Triapitsyn & Huber, 2000: 614.

COMMENTS. The original, very brief diagnosis of *Himopolynema* by Taguchi (1977) was complemented recently by Hayat & Anis (1999). The genus is still not well defined at present but its species are relatively easy to recognize by a combination of the following morphological characters (in addition to the features mentioned in the original description): color mostly dark brown or black; face with a pit next to each torulus, on the line between them; prosternum «closed» by propleura anteriorly; frenal line of scutellum without a row of foveae (with the exception of one undescribed species from Papua New Guinea); propodeum not in the same plane with mesoscutum and scutellum but often at almost a right angle to them; marginal vein of the forewing usually with one (distal) dorsal macrochaeta, what is probably the basal macrochaeta is attached to the margin of the wing membrane anterior of the marginal vein, almost touching it (Fig. 3); petiole attached to the gastral tergum posteriorly. *Himopolynema* appears to be most closely related to the New World genus *Platyfrons* Yoshimoto, 1990.

Known host records are from Cicadellidae (Taguchi, 1977) and also from Machaerotidae (S. V. Triapitsyn, unpublished data).

A key to the two species that are known so far from the Palaearctic region is presented below. Because *H. parviscutum* Taguchi, 1977 is known from males only,



Figs. 1–6. *Himopolynema* spp.: 1–5) *H. ?parviscutum* Taguchi, ♂ (Gornotayozhnoye, Primorskii krai, Russia): 1) antenna, 2) forewing, 3) marginal vein of forewing, 4) propodeum, 5) genitalia; 6, 7) *H. aequum* (Girault), ♀ (Queensland, Australia): 6) antenna, 7) propodeum. Scale bars = 0.1 mm.

this key is based on the configuration of the carinae on the propodeum (assuming that there is no sexual dimorphism in the propodeal characters), following the key by Taguchi (1977), with significant modifications.

Key to the described Palearctic species

- 1. Median carinae on propodeum widely separated from each other medially (Fig. 4) *H. ?parviscutum*
- Median carinae on propodeum parallel and close to each other posteriorly, diverging anteriorly and forming a "Y" *H. hishimonus*

***Himopolynema ?parviscutum* Taguchi, 1977**

Figs 1-5

Himopolynema parviscutum Taguchi, 1977: 140 (holotype – ♂ [?lost], Ronshung Spa, Taiwan, not examined).

MATERIAL. Russia: Primorskii krai, Gornotayozhnoye, M. V. Michailovskaya: 1-2.VIII 1999, 1 ♂; 5-11.VIII 1999, 1 ♂; 7-9.VIII 2000, 1 ♂ [UCRC].

DISTRIBUTION. *Russia (Primorskii krai); China (Taiwan).

COMMENTS. This species was described from two male specimens from Taiwan, the holotype and the paratype. Because the Taguchi collection of Mymaridae is apparently lost, comparison of our material from Gornotayozhnoye with the type specimens of *H. parviscutum* is not possible. The tentative identification was made based on Taguchi's key as well as his description and illustrations of *H. parviscutum*. The antenna (Fig. 1) is typical for *Himopolynema*. The forewing (Fig. 2) in the Russian specimens is slightly wider (length/width ratio 3.3:1) than in the specimen measured by Taguchi (1977) (length/width ratio 3.7:1). The male genitalia (Fig. 5) are very similar in shape and structure to those in *Polynema* s. str.

***Himopolynema hishimonus* Taguchi, 1977**

Himopolynema hishimonus Taguchi, 1977: 137 (holotype – ♀ [?lost], Ayabe, Kyoto Prefecture, Japan, not examined).

Himopolynema hishimonus: Hayat & Anis, 1999: 20; Hayat & Singh, 2001: 97.

MATERIAL. Japan: 3 ♀ on slides, labeled: "ex. overwintering eggs *Hishimonus sellatus* Uhler on Mulberry #B, Fukuoka, Japan, ?Sept. 1967, K. Yasumatsu" (misidentified as *Chaetomymar* sp. by R. L. Doutt) [EMEC, UCRC].

DISTRIBUTION. Japan (Honshu, Kyushu), China (Taiwan), India (Andhra Pradesh, Assam, Bihar, West Bengal).

COMMENTS. This species was described from a series of females reared in Japan from eggs of the leafhopper *Hishimonus sellatus* (Uhler, 1896) and one male from Taiwan. Our identification of the specimens mentioned above, reared in Japan from the same host, is based on the original description and illustrations of *H. hishimonus* (Taguchi, 1977). Hayat & Anis (1999) and Hayat & Singh (2001) recorded this species from India.

***Himopolynema aequum* (Girault, 1920), comb. n.**

Figs 6, 7

Polynema aequum Girault, 1920: 96 (holotype - ♀ on slide, Nelson (= Gordonvale), Queensland, Australia, [QMBA], examined).

Polynema aequum: New, 1976: 2; Dahms, 1983: 19.

MATERIAL. Also examined and measured was the non-type female on slide [QMBA], mentioned by Dahms (1983). The holotype was measured by New (1976), except for the head, antennae, and gaster that are missing. The below redescription of

this species is based mainly on the non-type female because it is more complete, although bases of both forewings are not clearly visible. Therefore, forewing and hind wing length/width ratios are calculated from the corresponding measurements of the holotype taken by New (1976).

REDESCRIPTION. FEMALE. Color. Dark brown except pedicel, funicle, metatrochanter, bases of femora, apices of pro- and metatibiae, 3 basal tarsomeres of all legs, and petiole light brown.

Head. As wide as high, about as wide as mesosoma, round in frontal view. Torulus about at mid level of eye, very close to eye margin. Mandible tridentate.

Antenna (Fig. 6) much shorter than body. Scape smooth, without cross-ridges; all funicle segments short, shorter than pedicel (second segment the longest), and without longitudinal sensilla; clava large, long, with 4 visible longitudinal sensilla but their number is likely greater (6 or 7, as in other species of *Himopolynema*).

Mesosoma. Pronotum undivided, with about 9-10 gross, blunt setae on or close to anterior margin; mesoscutum smooth, longer than scutellum; scutellum smooth, transverse; axilla with a strong, blunt seta reaching posterior margin of scutellum; propodeum (Fig. 7) with well-developed, U-shaped submedian carinae connected anteriorly.

Wings. Forewing hyaline, 5.3 x as long as wide, as illustrated by New (1976) who, however, drew the marginal vein and the setation on the base of forewing incorrectly (p. 57, figs. 88, 89); in fact, they are very similar to those of *H. ?parviscutum* (Figs. 2, 3). Longest marginal cilia slightly longer than maximum width of forewing in holotype, almost equal in non-type specimen. Hind wing length/width ratio 32:1.

Metasoma. Petiole 2.5 x as long as wide, with fine cross-ridges. Ovipositor occupying about 4/5 length of gaster, slightly exerted beyond its apex (ratio of total ovipositor length to length of its exerted part 12:1).

Measurements ($n=1$): Body (without head): 738; head (width): 208; mesosoma: 357; pronotum: 44; mesoscutum: 117/194; scutellum: 73/117; propodeum: 73; petiole: 80/32; gaster: 347; ovipositor: 339. Antenna: scape (including radicle): 80; pedicel: 56; F1: 31; F2: 38; F3: 31; F4: 22; F5: 25; F6: 26; clava: 146. Forewing (width): 146; longest fringe cilia: 145. Legs (given as coxa, femur, tibia, tarsus): fore: 73, 164, 146, 175; middle: 62, 153, 193, 201; hind: 73, 179, 226, 197.

DIAGNOSIS. This species differs from the other two described species of *Himopolynema* with the median carinae widely separated medially, *H. parviscutum* and *H. taiwanum* Taguchi, 1977, by lacking the carinae along the anterior margin of the propodeum (as shown in Fig. 4). It differs from *H. robustum* (Sveum, 1982) in the shape and chaetotaxy of the forewing; the configuration of the propodeal carinae in *H. robustum*: is unknown because the only known specimen of that species, the holotype female, is mounted laterally and is illustrated accordingly (Sveum, 1982). The single female known of *H. longiclavatum* Hayat et Anis, 1999, the holotype from Kerala, India, is also mounted laterally; in its diagnosis, Hayat & Anis (1999) state that it may have a broad propodeal canal (i.e., widely

separated median carinae). If that is the case, *H. longiclavatum* may turn out to be very closely related to *H. aequum*, from which it differs by having the scape of the female antenna markedly striate, as illustrated by Hayat & Anis (1999, Fig. 8); the female scape is smooth in *H. aequum*.

DISTRIBUTION. Australia (Queensland).

COMMENTS. The above new combination adds one more taxon to the six species of *Himopolynema* that are presently recognized (Hayat & Anis, 1999). Because three of these species are based on males only (Taguchi, 1977) and the other described species of *Himopolynema* are based on females, synonyms among them are possible; if *H. aequum* were involved in any such case, it would have a priority as the oldest name. It is quite likely that *H. aequum* may occur outside of Queensland, Australia, where elements of the Oriental mymarid fauna are not uncommon.

Genus *Stephanodes* Enoch, 1909

Stephanodes Enoch, 1909: 457. Type species: *Stephanodes elegans* Enoch, 1909, Woking, England, by monotypy.

Stephanodes: Annecke & Doutt, 1961: 34; Viggiani, 1973: 277; Schauff, 1984: 52; Huber & Fidalgo, 1997: 34 (list of synonyms and world revision); Triapitsyn & Huber, 2000: 614.

COMMENTS. This genus was not long ago revised by Huber & Fidalgo (1997); their key and excellent illustrations were used to determine the two species from Russia included in this review. Reliable host records of *Stephanodes* are from Nabidae (Huber & Fidalgo, 1997).

In the Palaearctic region, *Stephanodes* is represented by two closely related species that may be recognized using the key by Triapitsyn & Huber (2000). Recognition of *Stephanodes* species from dry-mounted specimens is generally very difficult, and almost impossible in the areas where more than one species may be present. Because all previous keys are based on the female sex, at present males of *Stephanodes* may be positively identified only by associating them with the females of the same species. To facilitate recognition of the two Palaearctic species treated below, we provide illustrations of the male genitalia of both as there are slight differences between them in the length and shape of the phallobase, which is relatively longer in *S. reduvioli* (Figs. 8, 9) and shorter in *S. similis* (Fig. 10), and also the aedeagus is relatively narrower in the middle in *S. reduvioli*. The overall structure of the male genitalia of *Stephanodes* appears to be more related to that of *Acmopolynema* than to that of *Polynema* Haliday, 1833.

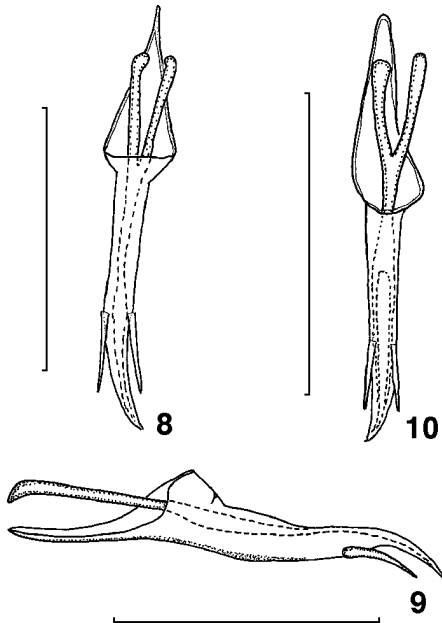
***Stephanodes reduvioli* (Perkins, 1905)**

Figs 8, 9

Polynema reduvioli Perkins, 1905: 196 (lectotype – ♀, Hawaiian Islands [The Natural History Museum, London, England, UK], not examined).

Stephanodes reduvioli: Huber & Fidalgo, 1997: 41; Beardsley & Huber, 2000: 17; Triapitsyn & Huber, 2000: 614.

MATERIAL. Russia: Primorskii krai, Gornotayozhnoye, M. V. Michailovskaya: 27.V.1999, 1♀; 20-30.VI.1999, 1♀; 28.VI-4.VII.1999, 1♀; 21-22.VII.1999, 3♀; 17-18.VIII.1999, 2♂; 20-28.VIII.1999, 1♂; 10-15.IX.1999, 1♀; IX.1999, 1♀; 2-4.V.2000, 1♀; 15-31.V.2000, 1♀; V.2000, 1♀; 11-12.VI.2000, 1♀; 22-30.VI.2000, 1♂; 4-5.VII.2000, 3♀; 1-10.VII.2000, 3♀; 5-6.VIII.2000, 1♂; 7-9.VIII



Figs. 8-10. *Stephanodes* spp., ♂ genitalia: 8, 9) *S. reduvioli* (Perkins): 8) dorsal view (Gornotayozhnoye, Primorskii krai, Russia), 9) lateral view (10 km W Mellinga, New South Wales, Australia); 10) *S. similis* (Foerster) (Mamontovka, Moscow region, Russia), dorsal view. Scale bars = 0.1 mm.

COMMENTS. This species was redescribed and illustrated by Huber & Fidalgo (1997) who also listed its synonyms and the detailed distribution records. Beardsley & Huber (2000) provided references subsequent to the original description as well as information on the known hosts of *S. reduvioli*. We followed the diagnosis by Huber & Fidalgo (1997) in identifying the females from Georgia and Kyrgyzstan as *S. reduvioli* because of the presence of a sickle-shaped sensillum on F3 on both antennae. However, at least with the specimen from Issyk-Kul Lake shore, such species assignment is tentative as all other female specimens in Kyrgyzstan that we slide-mounted lack such a sensillum on F3 on both antennae and thus belong to *S. similis*.

2000, 1♀; VIII.2000, 1♀ [IBPV, UCRC, ZIN]. **Georgia:** Adzharia, Khulo, 31.VII.1953, V. A. Trjapitzin, 1♀ [ZIN]. **Kyrgyzstan:** Issyk-Kul, S Shore Issyk-Kul Lake, 10 km E Kadzhi-Saj, 1675 m, 5.IX.1998, C. H. Dietrich, 1♀. **Australia:** Australian Capital Territory, Canberra, 11.I.1999, J. M. Heraty, 4♂. New South Wales, 10 km W Mellinga, 13.I.1999, J. M. Heraty, 4♀, 2♂. Queensland: Gatton, 4.XII.1979, G. Gordh, 2♀. Indooroopilly, 21.X.1979, G. Gordh, 1♀. Mundubbera, 17.III.2000, C. Freebairn, 2♀. **Hawaiian Islands:** Hawaii I., 0.5 mi. SE Kahola, 6.VII.1989, H. E. Andersen, 3♀, 1♂ [UCRC].

DISTRIBUTION. *Russia (Primorskii krai); Australia, China (Taiwan), Ecuador, Fiji, French Polynesia, *Georgia, Hawaiian Islands, India, Iran, Japan (Honshu, Kyushu, Shikoku), *Kyrgyzstan, New Zealand, Northern Mariana Islands, Peru, USA (California).

***Stephanodes similis* (Foerster, 1847)**

Fig. 10

Polynema similis Foerster, 1847: 218 (?lectotype - ♀, Aachen, Germany, [Naturhistorisches Museum Wien, Vienna, Austria], not examined).

Stephanodes similis: Huber & Fidalgo, 1997: 37; Triapitsyn & Huber, 2000: 614.

MATERIAL. **Russia:** Leningrad region, 69-km Railroad Station near Sosnovo, 25-26.VIII 1985, V. A. Trjapitzin, 1 ♀ [ZIN]. Moscow region, Mamontovka, 10-20.VIII 2000, E. Y. Shouvakhina, 2 ♂ [UCRC]. Samara region, Zhigulevskiy zapovednik: Yagodnaya Polyana, 13.VII 1985, V. A. Trjapitzin, E. Y. Shouvakhina, 1 ♂; Bakhilova Polyana, 17.VII 1985, V. A. Trjapitzin 1 ♀ [ZIN]. **Kyrgyzstan:** Chuy, Suusamyr Valley, 2291 m, 14.VI 1999, C. H. Dietrich, 1 ♀. Dzhahalal-Abad, 18 km WSW Kazarman, 1550 m, 15.VII 2000, C. H. Dietrich, 1 ♀. Osh: Gultcha Ravine, 50 km SSW Gultcha, 2530 m, 7.VII 2000, C. H. Dietrich, 1 ♀; Karakuldzha, Lajsu Ravine, 1815 m, 25.VI 1999, C. H. Dietrich, 1 ♀. Talas, near Boo-Terek, 1000 m, 15.VI 1999, C. H. Dietrich, 1 ♀. **Turkmenistan:** Ashgabat region, Enev, 14.VII 1993, S. N. Myartseva, 1 ♀, 1 ♂. **Cyprus:** Archangelos, 7.XI 1967, G. P. Georghiou, 1 ♀; Saitta, 1.XI 1967, G. P. Georghiou, 1 ♀. **Germany:** Eisenach, 950 m, 1.VII 1990, H. E. Andersen, 1 ♀. **Paraguay:** San Pedro, Cororo, Río Ypane, 1-4.XII 1983, M. Wasbauer, 1 ♀ [UCRC].

DISTRIBUTION. *Russia (European part); Argentina, Austria, Belgium, Canada, Cape Verde Islands, Czech Republic, *Cyprus, Denmark, Finland, France, Germany, Greece, Hungary, Italy, *Kyrgyzstan, *Paraguay, Poland, Romania, Slovenia, Spain, Sweden, Switzerland, Turkey, *Turkmenistan, Ukraine, United Kingdom (England, Scotland, Wales), USA (Illinois, Iowa, Minnesota, Missouri, Wisconsin).

COMMENTS. This widespread species was redescribed and illustrated by Huber & Fidalgo (1997) who also discussed its long nomenclatural history and provided a list of synonyms. The above new country records complement those listed by Huber & Fidalgo (1997), one of which (a male collected by A. A. Ogloblin in Podkarpat'ie, p. 41) must be corrected: it is actually from Ukraine, not from Russia.

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