

Notes on the genus *Cheiloneurus* Westwood, 1833  
(Hymenoptera: Encyrtidae) with redescription of  
*Ch. marilandia* (Girault, 1917) from USA

Заметки о роде *Cheiloneurus* Westwood, 1833 (Hymenoptera:  
Encyrtidae) с переописанием *Ch. marilandia* (Girault, 1917) из США

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KEY WORDS: Hymenoptera, Encyrtidae, *Cheiloneurus*, *Ch. marilandia*, taxonomy, USA.

КЛЮЧЕВЫЕ СЛОВА: Hymenoptera, Encyrtidae, *Cheiloneurus*, *Ch. marilandia*, таксономия, США.

ABSTRACT: The holotype of *Cheiloneurus marilandia* (Girault, 1917) from USA is redescribed. General information on the genus *Cheiloneurus* Westwood, 1833, and especially on its Nearctic species is given. *Ch. amplicornis* (Gahan, 1914) is regarded to be a junior subjective synonym of *Ch. banksi* (Howard, 1898), syn.n. *Ch. giraulti*, nom.n. pro *Ch. pulcher* (Girault, 1911) non *Ch. pulcher* (Ashmead, 1904) is proposed.

РЕЗЮМЕ: В статье переописан голотип *Cheiloneurus marilandia* (Girault, 1917) из США. Приведена информация о роде *Cheiloneurus* Westwood, 1833, в особенности о его неарктических видах. *Ch. amplicornis* (Gahan, 1914) рассматривается как младший субъективный синоним *Ch. banksi* (Howard, 1898), syn.n. Предложено новое название для *Ch. giraulti*, nom.n. pro *Ch. pulcher* (Girault, 1911) non *Ch. pulcher* (Ashmead, 1904).

### Introduction

Arsene A. Girault (1884–1941) collected a female of a new species of the genus *Cheiloneurus* in Glenn-Dale, Maryland, USA in 1917 and briefly described it as *Habrolepopteryx marilandia* in a private publication [Girault, 1917]. He was strongly impressed by appearance of this encyrtid (dark body with yellowish-white scutellum) that dedicated the following remarkable and inspiring verse to it:

PON CATCHING HABROLEPOPTERYX

To think that such a being as thou  
Lay hid from every mortal eye,  
Century on century, 'till now  
I, Time's child, by chance, seize thee and cry  
Aloud, "no man dost know what is mine,  
For seemeth thou born of me, fruit of sighs  
Such as Ceres did sigh for Proserpine.  
Come, see my lovely child, raped from

Some Vale of Enna, painted and arra'd,  
Fresh and glorious in the flowing sun.  
O men, me forgive if now I'm proud:  
What was once a peri from Heaven  
Has now become my soul's immortal child.  
Thus, immortality's mine, for this I'm given."

Since that time this species has never been collected. Noyes & Wooley [1994] studied the holotype of *Habrolepopteryx marilandia* and found that the insect belonged to the genus *Cheiloneurus*, although they did not redescribe it. Among species of the genus, *Ch. marilandia* occupies an isolated position. However, in 1995, I collected, in the mountains of Sierra Madre Occidental of the Biosphere Natural Reserve "El Cielo" (Mexico), a similar, but apterous form. To ascertain whether this form represents an undescribed species closely related to *Ch. marilandia* or directly belongs to the latter species, it was necessary to redescribe the species from the USA. Therefore, I visited Washington in 2001 to study types of Nearctic species of *Cheiloneurus* and prepared a redescription of *Ch. marilandia* which is given below. I also give here some recent information on the genus *Cheiloneurus*. Description of an apterous form of *Cheiloneurus* sp. aff. *marilandia* from Mexico will be undertaken after evaluating its taxonomic position.

### Taxonomic part

Genus *Cheiloneurus* Westwood, 1833

Type species: *Encyrtus elegans* Dalman, 1820, by monotypy [Synonyms: *Chilonevrus* Agassiz, 1846; *Chiloneurus* Förster, 1856; *Chrysopophagus* Ashmead, 1894; *Blatticida* Ashmead, 1904; *Saronotum* Perkins, 1906; *Cristatithorax* Girault, 1911; *Eusemionella* Girault, 1915; *Chrysopophagoides* Girault, 1915; *Paracheiloneurus* Girault, 1915; *Epicheiloneurus* Girault, 1915;

*Eusemionopsis* Girault, 1918; *Lepidoneurus* Hoffer, 1957; *Metacheiloneurus* Hoffer, 1957].

The genus *Cheiloneurus* belongs to the subfamily Encyrtinae Walker, 1837, tribe Cheiloneurini Hoffer, 1955, and subtribe Cheiloneurina Hoffer, 1955 [Trjapitzin, 1973; Trjapitzin & Gordh, 1978; Trjapitzin, 1989].

According to my unpublished data [V.A. Trjapitzin, in litt.], 113 species of *Cheiloneurus* were described in the world fauna. 31 species is known from Australian Region including New Zealand, 29 species are recorded from Indo-Malayan Region, 20 — in Palaearctic, 17 — in Nearctic, 12 — in Afrotropical, 10 — in Neotropical Region, and 2 in Oceania.

As *Prochiloneurus* Silvestri, 1915, another widespread genus of the subtribe Cheiloneurina, *Cheiloneurus* is usually characterized by having a tuft of more or less long hairs on the apex of female scutellum. However, this tuft is absent in some species of *Cheiloneurus*, for example, in *Ch. submuticus* (Thomson, 1876), *Ch. flavoscutatus* (Nikolskaya, 1952) and *Ch. rediculus* (Trjapitzin et Khlopunov, 1978), and in some members of *Prochiloneurus*, for example, in *P. cabrerai* Mercet, 1919. *Cheiloneurus* differs from *Prochiloneurus* in having the VII abdominal sternite which does not reach apex of the gaster.

All described species of *Cheiloneurus* are to be presumed hyperparasitoids of various insects. Among 113 species of this genus are known now in the world fauna, 60 species, i.e. 53%, have been reared from secondary hosts. Most of species (41) were reared from Homoptera, and among them 38 are known to have been reared from Coccoidea. Some species of *Cheiloneurus* were reared from cocoons of Dryinidae (parasitoids of Auchenorrhyncha), puparia of Diptera, cocoons of Chrysopidae (Neuroptera), oothecae of Blattodea, etc. However, secondary nature of parasitism was proved only for 12 species of *Cheiloneurus*. Immature stages of Encyrtidae and Aphelinidae are usually recorded as their primary hosts, but *Ch. cyanonotus* (Waterston, 1917) was cited as hyperparasitoid of Psylloidea in Africa, and *Ch. elegans* (Dalman, 1820) — as hyperparasitoid of the Hessian fly *Mayetiola destructor* Say (Diptera: Cecidomyiidae) through the primary parasitoid, *Platygaster zosinae* Walker (Hymenoptera: Platygasteridae) in North America. The range of secondary hosts of *Cheiloneurus* species is therefore very broad, which is rather typical for hyperparasitoids.

Larvae have been studied only for 4 species of *Cheiloneurus*: 1) *Ch. bonariensis* De Santis, 1986, parasitoid of Dryinidae [De Santis & Virla, 1991]; 2) *Ch. claviger* (Thomson, 1876), hyperparasitoid of Coccidae in the former USSR [Saakian-Baranova *et al.*, 1971]; 3) *Ch. inimicus* Compere, 1925 from the USA [Compere, 1925; Maple, 1947], and 4) *Ch. noxius* Compere, 1925 from the USA [Le Pelley, 1937; Weseloh, 1969]. First-instar larvae of all these species are endoparasitic, caudate and apneustic, i.e. with closed spiracles.

Keys to Palaearctic species of *Cheiloneurus* were published by Trjapitzin [1971, 1989], to Indian fauna —

by Hayat *et al.* [1975] and Khan & Agarwal [1978]. For New World species, only a review of Argentinian fauna exists [De Santis, 1964]. *Cheiloneurus* species of the Nearctic region are poorly studied, their descriptions being obsolete. The whole genus was never revised in this region, because the revision requires knowledge and redescription of type materials.

As a preliminary result of my studies of types in the National Museum of Natural History in Washington, the following 14 species of *Cheiloneurus* are recognized as valid for the USA fauna: 1) *Ch. albicornis* (Howard, 1881); 2) *Ch. banksi* (Howard, 1898); 3) *Ch. compressicornis* (Ashmead, 1894); 4) *Ch. cupreicollis* (Ashmead, 1886); 5) *Ch. cushmani* Crawford, 1911; 6) *Ch. elegans* (Dalman, 1820); 7) *Ch. flaccus* (Walker, 1847); 8) *Ch. giraulti* Trjapitzin, nom.n. pro *Ch. pulcher* (Girault, 1911) non *Ch. pulcher* (Ashmead, 1904); 9) *Ch. inimicus* Compere, 1925; 10) *Ch. kansensis* (Girault, 1911); *Ch. lineascapus* Gahan, 1910; 12) *Ch. marilandia* (Girault, 1917); 13) *Ch. noxius* Compere, 1925; and 14) *Ch. swezeyi* Ashmead, 1903.

*Cheiloneurus amplicornis* (Gahan, 1914) appeared to be a junior subjective synonym of *Cheiloneurus banksi* (Howard, 1898), **syn.n.**

Comparison between this list of *Cheiloneurus* species discovered in the Nearctic region with that of the Palaearctic one [Trjapitzin, 1989] shows that according to our present knowledge these faunas share the only species, i.e. *Ch. elegans* (Dalman, 1820).

#### *Cheiloneurus marilandia* (Girault, 1917)

##### Fig. 1

Girault, 1917: 1–2 (*Habrolepopteryx*); Peck, 1951: 479 (*H. marylandia*, unjustified emendation); 1963: 352 (*H. marylandia*); Gordh, 1979: 964 (*Habrolepopteryx*); Noyes & Woolley, 1994: 1331 (*Cheiloneurus*).

Type material. Holotype ♀: USA, Maryland, Glenn Dale, meadow, 21. V. 1917 (A.A. Girault). Dry insect. Head with antennae on the microscopic slide prepared by Girault and labelled: "Type No. 21410, USNM." "*Habrolepopteryx marilandia* Girault ♀". Collection of the National Museum of Natural History, Washington, D.C., USA.

DESCRIPTION. Head (frontal view) slightly higher than wide (22.5: 22). Width of vertex about 1/4 maximum head width. Malar space twice shorter than eye height. Antennae (Fig. 1) inserted near mouth margin. Distance between antennal toruli a little less than that between torulus and eye margin (5.5:6.5). Lower margin of head slightly concave, almost straight. Head width 2.44 times more than width of lower head margin. Lateral edge of malar space nearly straight in frontal view. Pronotum conical, twice broader than long apically. Mesoscutum twice wider than long, about as long as pronotum. Scutellum somewhat wider than long (13 : 10), as long as mesoscutum. Forewings narrow, but not reduced. Gaster conically pointed, shorter than mesosoma (26:31). Pygostyles situated near base of gaster at about 1/3 the its length. Ovipositor thick, exerted part of its sheath about 1/5 length of gaster.

Head, mesosoma and gaster dark. Mesoscutum golden-violet-bronze. Tegulae brownish-black. Scutellum yellowish-white, with curved dark transverse subapical stripe, occupying about 1/6 of scutellum length. Forewings dark, hyaline

at the base (up to the level of the base of marginal vein), with an oblong transverse clear marking beyond apex of stigmal vein and with similar opposite marking at hind margin of wing. Hind wings hyaline. Fore legs (including coxae) more or less clear, tarsi infuscate. Apical half of middle tibiae and 1–4 segments of mid tarsi clear; mesotibial spur infuscate. Bases of hind tibiae clear. Propodeum with strong golden-green lustre. III tergite abdominal (the first gastral) with strong violet-green lustre, the rest of gaster with violet shine. Ovipositor sheath dark. Mesoscutum with short, horizontal silvery hairs. Tuft near apex of scutellum formed by five short black hairs situated in a longitudinal row. Girault did not mention body length of his specimen; it also cannot be measured on the slide.

COMMENTS. *Cheiloneurus marilandia* differs from all species of the genus *Cheiloneurus* in its characteristic dark body with yellowish-white scutellum and the row of 5 dark hairs near its apex. It is impossible at the moment to find its affinities within the genus.

ACKNOWLEDGEMENTS. I thank Drs. David G. Furth, Michael E. Schauff, Eric E. Grissell and Alexandr Semenovich Konstantinovich for their friendly help during my work in the National Museum of Natural History, Washington, Dr. Izyaslav Moisevich Kerzhner for his valuable consultations on zoological nomenclature.

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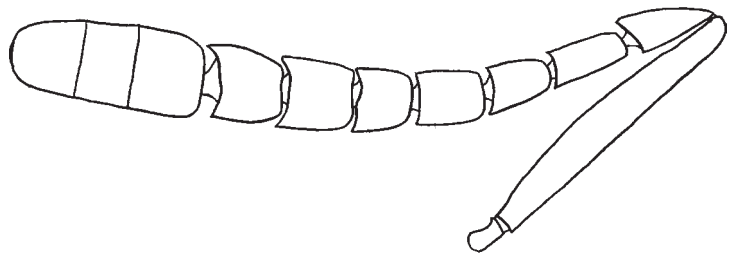


Fig. 1. *Cheiloneurus marilandia* (Girault), ♀, antenna (holotype).  
Рис. 1. *Cheiloneurus marilandia* (Girault), усик ♀ (голотип).

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