

New species of *Cheiloneurus* Westwood, 1833 (Hymenoptera: Encyrtidae) from Alaska (USA), Mexico, and Cuba

НОВЫЕ ВИДЫ РОДА *Cheiloneurus* Westwood, 1833 (Hymenoptera: Encyrtidae) из Аляски (США), Мексики и Кубы

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КЛЮЧЕВЫЕ СЛОВА: Hymenoptera, Encyrtidae, *Cheiloneurus*, Аляска, Мексика, Куба, новые виды, синонимия, определитель.

ABSTRACT. Five new species of the encyrtid genus *Cheiloneurus* Westwood, 1833 are described: *Ch. alaskae* sp.n. from Alaska (USA), *Ch. elcielo* sp.n. and *Ch. izhevskiy* sp.n. from Mexico, *Ch. morozkoi* sp.n. and *Ch. tainus* sp.n. from Cuba. Keys to the species of *Cheiloneurus* without a scutellar tuft of long setae and to the *elegans* species group of the genus are provided. The new synonymy *Cheiloneurus* Westwood, 1833 = *Tobiasia* Trjapitzin, 1962 syn.n. as well as the new combination *Cheiloneurus bifasciatus* (Trjapitzin, 1962) comb. n. are established.

РЕЗЮМЕ. Описаны пять новых видов рода *Cheiloneurus* Westwood, 1833: *Ch. alaskae* sp.n. с Аляски (США), *Ch. elcielo* sp.n. и *Ch. izhevskiy* sp.n. из Мексики, *Ch. morozkoi* sp.n. и *Ch. tainus* sp.n. с Кубы. Даны определительные таблицы самок *Cheiloneurus* без пучка длинных волосков на щитке и видов группы *elegans*. Устанавливаются: новая синонимия *Cheiloneurus* Westwood, 1833 = *Tobiasia* Trjapitzin, 1962 syn.n. и новая комбинация *Cheiloneurus bifasciatus* (Trjapitzin, 1962) comb. n.

Introduction

The encyrtid genus *Cheiloneurus* Westwood, 1833 (type species: *Encyrtus elegans* Dalman, 1820, by monotypy) belongs to the subfamily Encyrtinae, tribe Cheiloneurini, subtribe Cheiloneurina. General information on the genus was published by the senior author earlier [Trjapitzin, 2002]. Its recent diagnoses were published by Noyes [1988], Singh & Agarwal [1993], and Anis & Hayat [2002]. As some of these publications are difficult to obtain, we provide a brief, updated diagnosis of this genus.

Acronyms of the specimen depositories are as follows: EMUT — Entomological Museum, Centro de Investigación, U.A.M. Agronomía y Ciencias, Universidad Autónoma de Tamaulipas, Ciudad Victoria, Tamaulipas, Mexico; UCRC — Entomology Research Museum, University of California, Riverside, California, USA; USNM — National Museum of Natural History, Washington, District of Columbia, USA; ZISP — Zoological Institute, Russian Academy of Sciences, St.-Petersburg, Russia.

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

Genus *Cheiloneurus* Westwood, 1833

= *Tobiasia* Trjapitzin, 1962 syn.n.

DIAGNOSIS. **Female.** Body compact or elongate and sometimes slightly flattened dorso-ventrally. Head hypognathous. Antennal scape sublinear or broadened and flattened, sometimes strongly; funicle 6-segmented; clava 3-segmented, rounded or more or less truncate at apex. Mandible with 3 teeth or with 2 teeth and a truncation. Mesoscutum without notauli. Scutellum usually with an apical tuft of long setae (Fig. 1) but such tuft is absent in some species (Fig. 2). Wings either well developed or rudimentary. If well developed, forewing usually infusate beginning from apical third of submarginal vein, which is slightly bent towards hind margin of wing at that place; marginal vein long, at least 4x as long as wide; stigmal vein short, with uncus, only inconsiderably separated from anterior margin of wing; postmarginal vein very short. Hypopygium usually reaching not more than half length of gaster. Ovipositor sheaths not exerted or slightly exerted, but sometimes long.

Male. Body usually compact. Antenna filiform; funicular segments with long hairs. Forewing hyaline, with shorter marginal vein.

BIOLOGY. Endohyperparasitoids of various insects.

DISTRIBUTION. Cosmopolitan, with 132 species described in the world fauna [Noyes, 2003].



Figs 1–2. *Cheiloneurus* spp., habitus of females: 1 — *Ch. boldyrevi* Trjapitzin et Agekian, 1978 (drawing by N.G. Agekian); 2 — *Ch. rediculus* (Trjapitzin et Khlopunov, 1978) (drawing by E.N. Khlopunov).

Рис. 1–2. *Cheiloneurus* spp., самки, габитус: 1 — *Ch. boldyrevi* Trjapitzin et Agekian, 1978 (рис. Н.Г. Агекяна); 2 — *Ch. rediculus* (Trjapitzin et Khlopunov, 1978) (рис. Е.Н. Хлопунова).

Cheiloneurus alaskae V. Trjapitzin et S. Triapitsyn **sp.n.**
Fig. 3.

TYPE MATERIAL. Holotype ♀: USA, Alaska, Fairbanks, University of Alaska Campus, 19.VII.1985, H. Andersen [UCRC]. The holotype specimen is point-mounted, with one antenna detached and mounted on a slide in Canada balsam.

DESCRIPTION. **Female** (holotype). Body compact. Head as wide as high. Occipital margin concave and sharp. Temples almost absent. Inner orbits of eyes diverging anteriorly. Minimum width of vertex about 0.25 maximum head width; frontovertex 2.5x as long as wide. Ocelli form nearly an equilateral triangle; distance between posterior ocelli slightly less than that from posterior to anterior ocellus and somewhat more than distance to occipital margin; distance from posterior ocelli to eye margins 2x less than diameter of an ocellus. Anterior margin of frons strongly concave. Facial cavity deep, formed by antennal scrobes meeting above, wider than high (5:3), its upper edge and lateral edges sharp; distance from upper edge of facial cavity to mouth margin about 1/3 head height. Interantennal prominence well developed. Antennal toruli close to mouth margin. Antennal scape (Fig. 3) somewhat broadened ventrally, 4.3x as long as wide and 3.25x longer than pedicel; dorsal lobe of scape overhanging its outer ventral part, forming a cavity into which pedicel and basal segments of funicle can be placed; pedicel 2x as long as wide at apex and 2x longer than F1. Funicle broadening gradually and rather strongly to its apex, so that F6 2x as wide as F1, which is subquadrate or slightly longer than wide; F2 a little longer than wide (5:4); F3 subquadrate, not longer than F2, but a little wider; F4–F6 noticeably longer than F1–F3 and somewhat wider than long; clava a little wider than F6 (5:4), 2x as long as wide and as long as 4 preceding funicle segments combined; dorsal margin of clava slightly convex; ventral margin straight; 3-rd segment of clava obliquely truncate on ventral side, this truncation as long as ventral margin of clava; sutures dividing claval segments oblique. Height of malar space (frontal view) 3x less than greatest diameter of eye; subocular suture absent. Width of oral orifice about 0.5 head width. Pronotum (together with its anterior inclined part) conical, 2x as wide as long; posterior (not inclined) part of pronotum occupies 0.5 length of pronotum, and its length about 0.25 of its width; posterior margin

of pronotum slightly concave. Mesoscutum somewhat convex, longer than pronotum (25:18) and wider than long (8:5). Axillae rather large. Scutellum with rounded apex, as long as mesoscutum and somewhat shorter than wide. Wings not abbreviated; forewing 2.6x as long as wide; costal cell 12x as long as wide; submarginal vein bent and broadened near apex; marginal vein noticeably broadened, especially to apex, occupying about 1/7 wing's length; stigmal vein somewhat broadened, 4x shorter than marginal vein and forming about 60° angle with anterior wing's margin; postmarginal vein shorter than marginal vein. Mesopleura not reaching base of gaster, so that metapleura seen as narrow sclerites, and sides of propodeum touch metacoxae. Mesotibial spur as long as 1st segment of mesotarsus. Propodeum inclined posteriorly, short in the middle (5x shorter than scutellum). Gaster a little longer than mesosoma. Pygostyles somewhat nearer to base of gaster than to its apex. Exserted part of ovipositor sheaths (in lateral view) about 1/10 gaster length, or 1/5 length of metatibia. Epipygium overhanging ovipositor sheaths, so that only half of them visible from above.

Body dark, with intensive metallic luster. Frontovertex, temples and malar space bronze-violet-green. Radicle black. Scape dark yellow-brown, obscured along dorsal margin, with infuscated base and black stripe along basal half of ventral margin; pedicel, funicle, and clava black. Palpi dark. Pronotum with green-bronze-violet luster. Mesoscutum green-violet-blue. Axillae and scutellum black, almost without metallic luster. Tegulae black. Forewing infuscate, with hyaline base (about 1/3 the length of wing) and a narrow straight vertical subhyaline stripe beyond apices of postmarginal and stigmal veins, occupying about 1/4 maximum width of wing; apical hyaline part of wing's blade occupies in its middle approximately 1/12 of wing's length; submarginal vein blackish-brown, remainder of venation brownish-black. Mesopleura with strong violet-blue luster. Legs brownish or brown-yellow, with dark base of mesocoxa and with more or less darkened metafemur and tibia, except bases and apices of both; distal segments of all tarsi dark. Gaster bronze-violet. Exserted part of ovipositor sheaths dark, with brownish apex.

Frontovertex with cellulate sculpture, with adorbital rows of punctures and with 2 longitudinal rows of punctures;

vertex punctulate. Mesoscutum with cellulate sculpture resembling that of vertex, but more superficial; almost reticulate. Axillae and scutellum with microcellulate sculpture. Mesopleura minutely cellulate. Gaster with reticulate sculpture.

Mesoscutum with rather short white pubescence. Upper parts of lateral sides of propodeum with white hairs.

Body length 2.2 mm.

Male unknown.

HOST(s) unknown.

ETYMOLOGY. The new species is named after Alaska (genitive case), where it occurs.

DIAGNOSIS. *Ch. alaskae* sp.n. is most similar and possibly closely related to the widely distributed Palearctic species *Ch. submuticus* (Thomson, 1876) [Thomson, 1876; Hoffer, 1957 (as *Metacheiloneurus moestus* Hoffer, 1957); Trjapitzin, 1989]. It differs from *Ch. submuticus* in broader frontovertex (about 1/3 width of head), whereas in *Ch. submuticus* head width is about 4.5–5.0x more than width of frontovertex. Besides, frontovertex of *Ch. alaskae* sp.n. has rather bright metallic luster, but it is dull in *Ch. submuticus*.

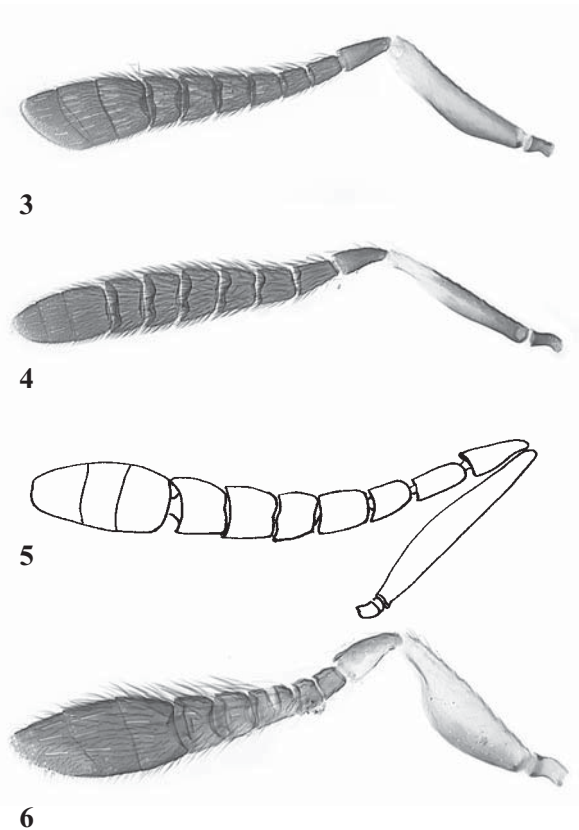
COMMENTS. In East Siberia, *Ch. submuticus* was found in Magadan Province. *Ch. alaskae* sp.n. is the first member of the family Encyrtidae recorded from Alaska.

Cheiloneurus elcielo V.Trjapitzin et S.Triapitsyn sp.n.

Fig. 4.

TYPE MATERIAL. Holotype ♀: Mexico, Tamaulipas, Gómez Farías, Reserva "El Cielo", Canindo, bosque mesófilo, 15.VII.1995, V.A. Trjapitzin (EMUT No. 338) [UCRC]. The holotype specimen is point-mounted, with one antenna detached and mounted on a slide in Canada balsam.

DESCRIPTION. **Female** (holotype). Body elongate. Head somewhat wider than high and clearly wider than mesoscutum. Occipital margin only inconsiderably concave. Temples present, but very short. Inner orbits of eyes subparallel. Minimum width of vertex about 0.25x maximum head width (7:29). Ocelli form an acute triangle with apical angle of about 45°. Posterior ocelli nearly touching eye margins; distance between posterior ocelli less than that from posterior to anterior ocellus (3:5) and that to occipital margin. Facial cavity high and deep, formed by antennal scrobes meeting above. Interantennal prominence developed, but not reaching mouth margin. Toruli well beneath level of lower eye margin and rather close to mouth margin; distance between toruli equal to distance from a torulus to eye margin and 1.5x more than distance to mouth margin. Scape (Fig. 4) not broadened, about 5.7–7.0x as long as wide and 5x longer than radicle; pedicel elongate, 3x shorter than scape and twice as long as wide at apex; funicle broadening to its apex, so that F6 about 3x wider than F1, a little shorter than pedicel (5:6) and longer than wide at apex (5:3); F2 subquadrate and somewhat shorter than F1 (4:5); F3 as long as F2 and slightly wider than long (6:5); F4 somewhat shorter than F3 (4:5) and 1.5x as long as wide; F5 as long as F4 and noticeably wider than long (7:4); F6 somewhat wider than long; clava as wide as F6, about 1.5x longer than wide and as long as 2 preceding funicle segments combined. Malar space about 1/2 greatest diameter of eye. Width of oral orifice about 1/3 head width; mouth margin concave. Pronotum conical, narrowing anteriorly, only inconsiderably shorter than its greatest width at apex (16:21) and longer than mesoscutum (17:11), and about 2x as long as wide. Tegulae large, only a little shorter than mesoscutum (8:11). Wings rudimentary; rudiments of forewings reach only about level of scutellum apex; a rudiment 1.6x as long as wide, its apex rounded. Mesopleura large, convex. Mesotibial spur as long as 1st segment of mesotarsus.



Figs 3–6. *Cheiloneurus* spp., female antennae: 3 — *Ch. alaskae* sp.n.; 4 — *Ch. elcielo* sp.n.; 5 — *Ch. marilandia* (Girault, 1917); 6 — *Ch. izhevskiy* sp.n.

Рис. 3–6. *Cheiloneurus* spp., антенны самок: 3 — *Ch. alaskae* sp.n.; 4 — *Ch. elcielo* sp.n.; 5 — *Ch. marilandia* (Girault, 1917); 6 — *Ch. izhevskiy* sp.n.

Metacoxa very large. Mesosoma wider than gaster. Propodeum large, but very short in the middle. Gaster somewhat longer than mesosoma, narrow (in dorsal view), strongly tapering towards apex, about 2.5x as long as wide; pygostyles at level of 1/3 of gaster length from its apex. Ovipositor sheaths slightly exerted.

Body black, with metallic luster. Vertex with greenish-violet luster, frons greener. Radicle black; outer side of scape entirely dirty-yellowish-white, with black stripe along dorsal margin, not reaching apex of the segment, and with narrow black stripe along dorsal margin, not reaching apex of scape, and with narrow black stripe along ventral margin, extending somewhat beyond half length of segment; inner side of scape more or less dark in its basal half and dirty-yellow in distal half; pedicel, funicle and clava black. Malar space greenish-violet-blue. Palpi dark. Mesoscutum greenish-violet-blue. Axillae black. Scutellum yellow, with dark base and black apex; basal darkened part of scutellum has transverse straight posterior border, occupying 1/5 of scutellum length; apical (black) part of scutellum has a concave, angular (about 20°) anterior border, and this black part, measured in the middle, constitutes 1/3 of scutellum length (laterally 2/3 of scutellum length). Tegulae black. Rudiments of forewings darkened. Mesopleura and dorsal sides of propodeum with strong green-violet luster. Fore- and metacoxa yellowish-white; mesocoxa black, with light apex;

forefemur yellowish-white, with dark apical half or so (4/7 of its length); metafemur entirely black; all trochanters yellowish-white; foretibia dark; mesotibia dark in its dorsal half and brownish-whitish-yellow in its apical half; metatibia dark with white apex (7:2); foretarsus darkened; mesotibial spur and meso- and metatarsi brownish-yellow; last segment of metatarsus darkened. Gaster with bright greenish-blue-violet luster. Exserted part of ovipositor sheaths dark.

Frontoververtex, pronotum and mesoscutum with minute cellulate sculpture. Axillae and scutellum with matt surface and inconspicuous sculpture. Mesopleura with larger meshes of cellulate sculpture than on mesoscutum. Gaster dorsally with minute cellulate or reticulate sculpture.

Lateral parts and posterior part of mesoscutum with short light hairs. Scutellum without tuft of long setae at apex.

Body length 1.45 mm.

Male unknown.

HOST(s) unknown.

ETYMOLOGY. The species name “elcielo” is substantive (gender: masculine) [Spanish: “heaven”] from the Biosphere Natural Reserve “El Cielo” near Gómez Farías, Tamaulipas, Mexico, where the insect was found.

DIAGNOSIS. This new species was indicated for Mexico by Trjapitzin [2002] as *Cheiloneurus* sp. aff. *marilandia* (Girault, 1917). It is indeed similar to *Ch. marilandia* described from Maryland, USA [Girault, 1917, as *Habrolepopteryx marilandia*] and redescribed by the senior author [Trjapitzin, 2002]. Both species have an elongate black body with a contrastingly light scutellum, and are devoid of a tuft of long setae on the apex of scutellum. *Ch. elcielo* sp.n. differs from *Ch. marilandia* in the characters indicated in the key that follows.

KEY TO THE WORLD SPECIES OF *CHEILONEURUS* WITHOUT A SCUTELLAR TUFT OF LONG SETAE (FEMALES)

- 1(10) Ovipositor sheaths rather strongly exserted, not shorter than 1/3 gaster length.
- 2(3) Forewing with 2 transverse broad dark bands, narrow (more than 3x as long as wide). Body elongate, somewhat flattened, brown, with golden-greenish metallic luster. Frontoververtex broad; ocelli form a slightly obtuse triangle. Scape about 3.5x as long as wide; F1 hardly longer than wide; F2 subquadrate, the rest of funicle segments slightly wider than long; clava as long as 3 preceding funicle segments combined. Exserted part of ovipositor sheaths longer than 1/2 gaster length. 1.5 mm — Russia (Daghestan), Turkmenistan. Ex *Nipponaclerda turanica* (Borchsenius, 1950) (Hemiptera: Acleridae) on reed *Phragmites australis* *Ch. bifasciatus* (Trjapitzin, 1962), **comb.n.**
- 3(2) Forewing more or less infuscated, with hyaline base and usually with lighter or hyaline apex.
- 4(5) Funicle with light segments: F1–F5 pale yellow to white, F6 pale brown. Inner orbits of eyes strongly convergent anteriorly. Frontoververtex very narrow: maximum head width 6.6x more than minimal width of frons. Ocellar triangle very acute. Scape 4.3x as long as wide, dark; F1 a little longer than wide, F2 subquadrate, F3–F6 somewhat wider than long; clava large, obliquely truncate at apex, about as long as 3 preceding funicle segments combined. Body black, with metallic luster. Legs, including forecoxa, pale yellow; metafemur, except apex, dark brown. 1.92 mm — India *Ch. apeniculus* Singh et Agarwal, 1993
- 5(4) Funicle without light segments.
- 6(7) Scutellum and axillae brownish-orange-yellow; head yellowish-brown, vertex darker. Mesoscutum dark, with green-bronze luster. 1.5–1.9 mm — Afghanistan, Azerbaijan [ex *Chaetococcus phragmitis* (Marchal, 1909) (Hemiptera: Pseudococcidae) on reed *Phragmites australis*], Ethiopia, Tajikistan, Turkmenistan [ex *Adelosoma phragmitidis* Borchsenius, 1948 (Pseudococcidae) on the same plant species] *Ch. flavoscutatus* (Nikolskaya, 1952)
- 7(6) Scutellum, axillae and head dark brown or black with metallic luster.
- 8(9) F1 and F2 longer than wide, F3–F6 slightly transverse; scape 5x as long as wide. 1.5 mm — India *Ch. manipurensis* Singh et Agarwal, 1993
- 9(8) All funicle segments a little wider than long; scape about 3x as long as wide. 1.25 mm — India *Ch. lakhimpurensis* Singh et Agarwal, 1993
- 10(1) Ovipositor sheaths not exserted or inconsiderably exserted.
- 11(16) Scutellum yellow, pale yellow, or yellowish-white, at most partially dark or black.
- 12(13) Scutellum entirely yellow to pale yellow, axillae yellow; tegulae nearly white; frontoververtex orange-brown; interscrobular area yellow. Vertex about 1/3 head width (3:10). Scape 4.0–4.5x as long as wide; F1–F4 longer than wide, F5 subquadrate, F6 a little wider than long; clava somewhat longer than 3 preceding funicle segments combined. 1.52–2.2 mm — Pakistan [ex Pseudococcidae], Nepal, India, Sri Lanka [ex *Saccharicoccus sacchari* (Cockerell, 1895) (Pseudococcidae) on sugarcane, *Saccharum officinarum*] *Ch. hadrodorys* Anis et Hayat, 2002
- 13(12) Scutellum yellow or yellowish-white with some parts dark or black; rest of body and head black with metallic luster; tegulae black or brownish-black. Vertex about 1/4 head width. Scape 5.7–8.0x as long as wide; F1–F3 longer than wide, F4–F6 subquadrate; or F1 longer than wide, F2 subquadrate and F3–F6 wider than long; clava as long as 2–3 preceding funicle segments combined.
- 14(15) Scutellum only with dark curved transverse subapical stripe occupying about 1/6 scutellum length. F1–F3 (Fig. 5) longer than wide, F4–F6 subquadrate; clava about 2.5x as long as wide and as long as 3 preceding funicle segments combined. Wings not abbreviated. Length of body unknown — USA (Maryland) *Ch. marilandia* (Girault, 1917)
- 15(14) Scutellum with dark base and black apical part. F1 (Fig. 4) longer than wide, F2 subquadrate and F3–F6 wider than long; clava only 1.5x as long as wide and as long as 2 preceding funicle segments combined. Wings rudimentary. 1.45 mm — Mexico *Ch. elcielo* sp.n.
- 16(11) Scutellum entirely black, with metallic luster.
- 17(18) Scape black. Legs black, with brownish apices of tibiae, fore- and mid knees and tarsi. Maximum head width about 3.5x more than minimum width of vertex. 1.6–2.3 mm — Finland, Kazakhstan, Moldova, Russia (Chuvashia; Chita, Kaluga, Leningrad, Moscow Provinces; Republic of Altay), Ukraine *Ch. rediculus* (Trjapitzin et Khlopunov, 1978)
- 18(17) Antennal scape more or less yellow or dark yellow-brown. Legs more or less yellow or brown-yellow, with darkened metafemur and metatibia.
- 19(20) Maximum head width about 4.5–5.0x more than minimum width of vertex. Frontoververtex with dull metallic luster. 1.7–2.0 mm — Armenia, Czech Republic, Denmark, England and Wales (UK), Finland, Hungary, Kaza-

khstan, Kyrgyzstan [new record: Dzhahal-abad Province, Kara-Kusmak Ravine, 42°06'49"N, 71°33'28"E, 2500 m, 18.VI.1999, C.H. Dietrich, 1 female (UCRC)], Moldova, Mongolia, Russia (Leningrad, Kaluga, Moscow [new record: Pushkino District, Bratovschina, Skalba River bank, 18.IX.2006, V.A. Trjapitzin, 1 female (ZISP)], Novosibirsk, Magadan Provinces; Kuril Islands: Shikotan), Slovakia, Sweden

..... *Ch. submuticus* (Thomson, 1876)
20(19) Maximum head width 3.8–4.0x minimum width of vertex.

21(22) F5–F6 noticeably larger than F1–F4; F1–F4 yellow to light brown, F5–F6 dark brown; scape almost not broadened ventrally, about 5x as long as wide and 2x longer than pedicel; clava as long as 5 preceding funicle segments combined. Malar space testaceous in its lower half, as well as sides of face, axillae, pleura and sterna. Exserted part of ovipositor sheath yellowish. 1.3–1.59 mm — India
Ch. noyesi Anis et Hayat, 2002

22(21) F4–F6 (Fig. 3) noticeably longer than F1–F3; funicle and clava black; scape somewhat broadened ventrally, about 4.3x as long as wide and 3.25x longer than pedicel; clava as long as 4 preceding funicle segments combined. Body dark, with intensive metallic luster. Exserted part of ovipositor sheath dark, with brown apex. 2.2 mm — USA (Alaska) *Ch. alaskae* sp.n.

COMMENTS ON THE KEY. These species do not constitute an entity of the related species. It is not clear, however, whether absence of a tuft of long setae on the scutellum is an archaic (plesiomorphic) condition, or the result of a reduction. Probably, in different species or groups of species, the situation is not the same, perhaps even opposite. Three of these species, *Ch. submuticus*, *Ch. rediculus* and *Ch. alaskae* sp.n., form a monophyletic group of closely related taxa with a dark, compact body. We call this informal group here the *Ch. submuticus* species group. It was outlined by Hoffer [1957] as the genus *Metacheiloneurus* Hoffer, 1957 (type species *M. moestus* Hoffer, 1957 = *Ch. submuticus*), which is a synonym of *Cheiloneurus*. Absence of the scutellar tuft of long setae may be an archaic feature in this species group.

Another monophyletic species group that we recognize among the species without a scutellar tuft of setae is the *Ch. marilandia* group, which includes the newly described *Ch. elcielo* sp.n. It is probable that in this very specialized group of species with an elongate body and a long pronotum, absence of the scutellar tuft of setae is secondary due to a reduction. *Ch. bifasciatus* is related to the Indian species with long ovipositor sheaths, which belong to the *Ch. apeniculus* species group, first mentioned by Anis & Hayat [2002].

Two basic characters of the genus *Tobiasia*: flattered body and long ovipositor are an adaptive ones and indicate on the living specific only. As these characters are observed in the same species of genus *Cheiloneurus* they are not enough for genus establishing. Because other external characters of *Tobiasia* are the same as in *Cheiloneurus* the following synonymy *Cheiloneurus* Westwood, 1833 = *Tobiasia* Trjapitzin, 1962 **syn.n.** as well as the new combination *Cheiloneurus bifasciatus* (Trjapitzin, 1962) **comb. n.** are established.

Cheiloneurus izhevskiyi V.Trjapitzin et S.Triapitsyn **sp.n.**

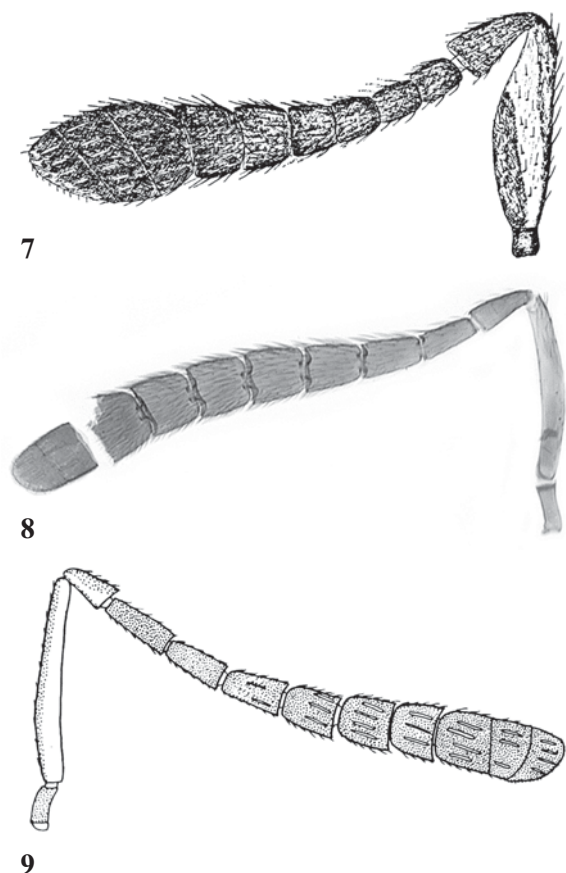
Fig. 6.

TYPE MATERIAL. Holotype ♀: Mexico, Tamaulipas, Gómez Fariás, Estación Los Cedros, 23°03'00"N, 99°09'03"W, 340 m, 14.IV.2002, A. Córdoba-Torres, Malaise trap (installed by S.V.

Triapitsyn and V.V. Berezovskiy) [UCRC]. The holotype specimen is point-mounted, with one antenna detached and mounted on a slide in Canada balsam.

DESCRIPTION. Female (holotype). Height of head somewhat less than its width (25:29). Occipital margin slightly concave. Temples (dorsal view) absent. Inner orbits of eyes almost parallel in the limits of frontovertex; the latter 3x as long as wide. Minimal width of vertex about 2/9 maximum head width. Ocelli form an acute triangle with apical angle of about 45°. Posterior ocelli nearly touching eye margins; distance between posterior ocelli 2x less than distance from posterior to anterior ocellus; distance from posterior ocelli to occipital margin equal to that between them. Anterior margin of frons concave. Facial cavity deep, formed by antennal scrobes meeting above, its upper margin strongly concave, sharp, its highest point at level of 1/2 head height; lateral margins of facial cavity also sharp. Interantennal prominence developed, almost reaching interior head margin. Antenna inserted near mouth margin; distance between toruli 7x greater than distance from torulus to mouth margin and only slightly more than distance from torulus to eye margin. Antenna (Fig. 6) strongly clavate; scape broadened and flattened, 3x as long as wide and more than 2x longer than pedicel; pedicel elongate, 2.5x as long as wide at apex and as long as F1, F2, and half of F3 combined; F1 subquadrate, other segment transverse; funicle strongly broadening to apex, so that F6 2x as wide as F1; clava somewhat more than 2x longer than wide (12:5), a little wider than F6 and as long as 5 preceding funicle segments combined; 3rd segment of clava obliquely truncate ventrally. Malar space less than greatest diameter of eye (10:17). Oral aperture 1/2 of head width; mouth margin strongly concave. Mandible 3–dentate. Pronotum very short. Mesoscutum 2x as long as wide. Scutellum somewhat longer than mesoscutum and as long as wide. Wings not abbreviated; forewing 3x as long as wide and about 6.6x longer than marginal vein, costal cell broadening to apex, approximately 5x as long as wide; marginal vein 4.5x longer than very short stigmal vein, the latter nevertheless noticeably longer than postmarginal vein. Mesotibial spur as long as 1st segment of mesotarsus. Propodeum very short in the middle, so that apex of scutellum almost reaching base of gaster. Gaster as long as mesosoma. Ovipositor sheaths only slightly exserted beyond apex of gaster (dorsal view), but their exserted part (in lateral view) approximately equal to 1/7 gaster length; epipygium partially overhangs ovipositor sheaths.

Body brown-yellow. Vertex dark, greenish-violet in ocellar area; frons with greenish-bronze-golden-violet luster. Each cheek with rather broad dark stripe united with a more narrow stripe above mouth margin; these stripes have strong metallic luster. Radicle dark; scape brown-yellow, with black ventral margin; pedicel brown-yellow, dorsally black; funicle and clava black. Palpi yellow-white. Concealed part of pronotum black. Apical 3/5 of mesoscutum dark, with intensive greenish-bronze-violet luster. Lateral and apical borders of scutellum dark. Tegulae black-brown. Forewing infusate, with the following light parts: basal third, a narrow transverse stripe beyond postmarginal vein (going somewhat obliquely and being slightly curved, this stripe about 1/4 greatest wing width), and a small semicircular patch at wing's apex. Mesopleura with somewhat moderate green-bronze-golden-violet luster, their apical third dark, with more intensive luster. All coxae white. Forefemur more or less white in its basal half and brown-yellow in apical half; mesofemur white, with brownish apex; metafemur brown-yellow, with white base and darkened apex. Foretibia yellow-brown or brown-yel-



Figs 7–9. *Cheiloneurus* spp., female antennae: 7 — *Ch. noxius* Compere, 1925 (after Compere [1925]); 8 — *Ch. morozkoi* sp.n.; 9 — *Ch. cupreicollis* (Ashmead, 1886) (after De Santis [1964]).

Рис. 7–9. *Cheiloneurus* spp., антенны самок: 7 — *Ch. noxius* Compere, 1925 (по Compere [1925]); 8 — *Ch. morozkoi* sp.n.; 9 — *Ch. cupreicollis* (Ashmead, 1886) (по De Santis [1964]).

low, more or less dark basally; mesotibia black, but ventrally and apically brown-yellow (on outer side), and brown-yellow on inner side (with dark base and narrow black dorsal stripe); metatibia black, with light or somewhat lightened basal part (outer apical 1/4 of tibia brown-yellow, inner apical 1/2 yellow-brown); foretarsus darkened; mesotibial spur dark; mesotarsus yellowish-white, with darkened last segment; metatarsus dark. Propodeum more or less dark. Gaster dorsally brown-yellow, with dark base and apex of IX abdominal syntergite; lateral and ventral parts of gaster more or less dark with metallic luster. Ovipositor sheaths dark.

Frontovertex with minute reticulate sculpture. Light parts of mesoscutum, axillae and scutellum very minutely cellulate, but sculpture of dark part of mesoscutum roughly cellulate. Mesopleura with extremely minute cellulate sculpture.

Dark part of mesoscutum with rather dense white pubescence. Costal cell of forewing bare; light basal third of forewing not pubescent, only with 2 oblique rows of very minute hairs; linea calva opened beneath; maximum length of marginal fringe about 1/10 greatest width of wing. Scutellum with a well-developed tuft of long setae near apex.

Body length 1.2 mm.

Male unknown.

HOST(s) unknown.

ETYMOLOGY. The new species is named after Prof. Sergei Sergeevich Izhevsky (Moscow Forest University, Russia).

DIAGNOSIS. Among the species of *Cheiloneurus* in the New World, this new taxon is similar to *Ch. lineascapus* Gahan, 1910 and *Ch. noxius* Compere, 1925 from USA [Gahan, 1910; Compere, 1925] in having a dark flagellum of the female antenna and also a similar length/width ratio of the scape (about 3:1). Both *Ch. lineascapus* and *Ch. noxius* (Fig. 7) have a characteristic light stripe along middle of the scape, whereas the scape of *Ch. izhevskiyi* sp.n. is brown-yellow with a black ventral margin (Fig. 6).

Cheiloneurus morozkoi V.Trjapitzin et S.Triapitsyn sp.n.
Fig. 8

TYPE MATERIAL. Holotype ♀: Cuba, Matanzas, Varadero, 15.XI.1986, I.M. Kerzhner [ZISP]. The holotype specimen is point-mounted, with one antenna detached and mounted on a slide in Canada balsam.

DESCRIPTION. Female (holotype). Body elongate. Head not higher than wide. Occipital margin rather strongly concave, not sharp. Temples 4x shorter than minimum width of vertex. Inner orbits of eyes diverging anteriorly. Minimum width of vertex about 1/3 maximum head width (4:13). Apical angle of ocellar triangle somewhat less than 90°. Distance between posterior ocelli more than distance from posterior to anterior ocellus (4:3); distance from posterior ocelli to eye margins less than diameter of an ocellus, and that to occipital margin is equal to it. Facial cavity deep, formed by antennal scrobes meeting above; upper and lateral margins of facial cavity more or less sharp; ratio of distance from upper margin of facial cavity to apex of vertex (frontal view) to head height 8:13; scrobes form an about 60° angle. Interantennal prominence rather broad. Toruli situated immediately beneath level of interior eye margin. Scape (Fig. 8) only slightly broadening to apex, approximately 5x as long as wide and 2.7x longer than pedicel; the latter long and narrow, 2.4x longer than wide at apex and slightly longer than F1 (6:5). Funicle not broadened, although its apical segments wider than basal segments (F6 2.0–2.5x wider than F1); F1 2.4x as long as wide; F2 as long as F1 and about 2x as long as wide; F3 noticeably wider than F2 and a little shorter than F2 (4:5), only a little longer than wide; F4 somewhat longer than F3 and its own width (5:4); F5 quadrate and as long as F4; F6 subquadrate and a little shorter than F5; clava with rounded apex, a little wider than F6, 2x as long as wide and only slightly longer than 3 preceding funicle segments combined; sutures dividing claval segments almost transverse, straight. Subocular suture absent. Mandible 3-dentate, with somewhat longer median tooth. Pronotum long, conical, as long as wide at apex, its posterior margin almost straight. Mesoscutum, axilla and scutellum almost flat. Mesoscutum shorter than pronotum (5:8) and 2x as wide as long. Axillae rather small. Scutellum slightly longer than mesoscutum and its own width. Tegulae as long as half of mesoscutum. Wings strongly reduced; rudiments of forewings reach only to anterior part of propodeum; a rudiment broadening to its apex where it is transversely truncate, about 3x as long as wide at apex and 2x longer than tegula. Mesopleura not reaching base of gaster, so that lateral parts of propodeum contacting with metacoxae. Metapleura reduced: only a deep suture separating posterior half of dorsal side of mesopleuron from propodeum. Mesotibial spur as long as 1st segment of mesotarsus. Length of propodeum, measured in the middle, about 1/2 length of scutellum, but laterally only inconsiderably shorter than scutellum. Mesonotum and propodeum 1.5x wider than pronotum at posterior margin. Gaster compressed laterally, longer than

mesosoma (5:4). Ovipositor sheaths broad, tapering to their apices, length of their exerted part equal to $2/5$ gaster length and $2/3$ metatibia length.

Body dark. Frontoververtex with greenish-bronze luster. Scape brown-yellow, darkened along dorsal and ventral edges; pedicel, funicle and clava black. Palpi black. Pronotum and mesoscutum with bluish-greenish-bronze luster. Axilla brown-black, without luster. Scutellum brown-yellow, with golden-bronze luster, darkened at base and in apical half. Tegula black. Rudiments of forewings dark. Mesopleura black, with greenish-bronze-violet luster. Fore- and metacoxae dirty yellowish-white, mesocoxa black; femora and tibiae brownish or brown-black (mesofemur and apex of mesotibia black-brown, and metatibia entirely black). Foretarsus dark; mesotibial spur and mesotarsus brownish-yellow, except dark last segment; metatarsus white, except dark last tarsomere. Gaster with rather bright greenish-bronze-golden-violet luster; apex of gaster yellow-brown. Ovipositor sheaths brown-orange-yellow, with dark apices.

Frontoververtex with minute cellulate sculpture and with punctation. Pronotum and mesoscutum with larger meshes of cellulate sculpture. Sculpture of axilla not conspicuous. Scutellum with very minute cellulate sculpture. Meshes of sculpture on frontoververtex and mesonotum not longitudinal. Mesopleura with cellulate, propodeum with minute cellulate, gaster with larger meshes of cellulate or reticulate sculpture.

Mesoscutum with short light hairs. Apex of scutellum with a vertical tuft of long, erect, and straight black setae; height of this tuft slightly exceeds length of scutellum.

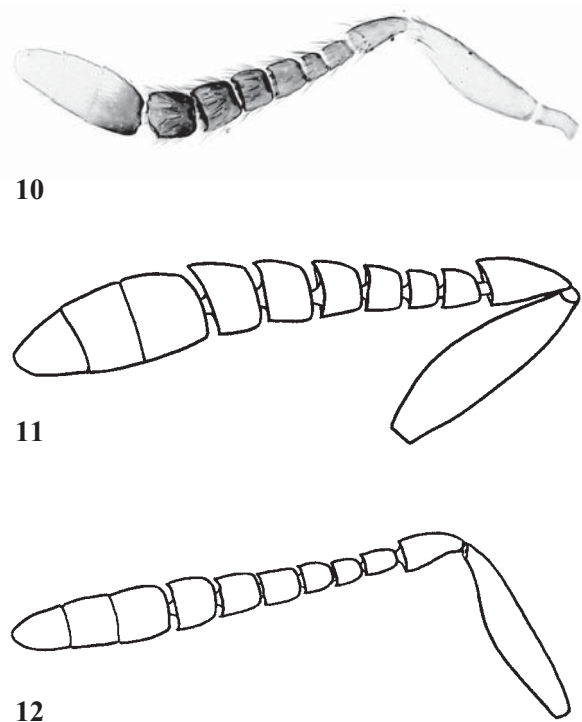
Body length without exerted part of ovipositor sheaths 1.4 mm, with it 1.7 mm.

Male unknown.

HOST(s) unknown.

ETYMOLOGY. This species is named after our ancestor Morozko.

DIAGNOSIS. *Ch. morozkoi* sp.n. belongs to the *cupreicollis* species group of the genus, first mentioned by Anis & Hayat [2002], which also includes *Ch. cupreicollis* (Ashmead, 1886) and *Ch. flaccus* (Walker, 1847). *Ch. cupreicollis* is widely distributed in the New World and is found also in India and Australia [Ashmead, 1886; De Santis, 1964; Noyes, 1979; Anis & Hayat, 2002]. *Ch. flaccus* has been known from the USA (including Hawaii) [Walker, 1847; Noyes & Hayat, 1984]. It was collected by the senior author in Mexico (new record): Tamaulipas, Gómez Farías, Reserva "El Cielo", Valle de Ovnis, arroyo, 20.VII.1995, V.A. Trjapitzin, 1 female (EMUT). These 3 species share such features as the antennal structure and color (the scape is long, not broadened, F1–F3 are elongate, and the funicle and clava are dark) and color of the scutellum (not dark). *Ch. morozkoi* sp.n. differs from both *Ch. cupreicollis* and *Ch. flaccus* in having long ovipositor sheaths. The junior author compared *Ch. morozkoi* sp.n. with the determined specimens of *Ch. flaccus* from California and Hawaii (USA) in UCRC. Female of *Ch. morozkoi* sp.n. is micropterous (that of *Ch. flaccus* is macropterous); the antennal scape of *Ch. morozkoi* sp.n. is slightly broadened at apex (it is broadened in the middle in *Ch. flaccus*); the pedicel of *Ch. morozkoi* sp.n. is only a little longer than F1 (it is conspicuously longer in *Ch. flaccus*). In 2001, the senior author examined the lectotype female of *Ch. cupreicollis* in the USNM. Pedicel of the female antenna of *Ch. cupreicollis* is about 2x shorter than F1 (Fig. 9) whereas it is slightly longer than F1 in *Ch. morozkoi* sp.n..



Figs 10–12. *Cheiloneurus* spp., female antennae: 10 — *Ch. tainus* sp.n.; 11 — *Ch. bimaculatus* Hoffer, 1970; 12 — *Ch. elegans* (Dalman, 1820).

Рис. 10–12. *Cheiloneurus* spp., антенны самок: 10 — *Ch. tainus* sp.n.; 11 — *Ch. bimaculatus* Hoffer, 1970; 12 — *Ch. elegans* (Dalman, 1820).

Cheiloneurus tainus V. Trjapitzin et S. Triapitsyn sp.n.
Fig. 10

TYPE MATERIAL. Holotype ♀ (macropterous): Cuba, Matanzas, Varadero, 15.XI.1986, I.M. Kerzhner [ZISP]. The holotype specimen is point-mounted, with one antenna detached and mounted on a slide in Canada balsam. Paratype female (micropterous, point-mounted), same label as holotype [ZISP].

DESCRIPTION. Female (holotype and paratype). Body elongate, somewhat flattened. Head wider than high (29:25). Occipital margin concave, sharp. Eye (dorsal view) almost reaching occipital margin. Inner orbits of eyes slightly diverging anteriorly. Minimum width of vertex about $1/3$ head width. Frontoververtex 2x as long as wide. Apical angle of ocellar triangle somewhat less than 90° . Distance between posterior ocelli more than that from posterior to anterior ocellus (4:3); distance from posterior ocelli to eye margins less than diameter of an ocellus, and distance to occipital margin slightly less than that between posterior ocelli. Antennal scrobes of holotype developed, but not meeting above, straight and convergent under about 45° angle. Toruli immediately under level of interior eye margins; distance between toruli slightly more than distance from a torulus to eye margin (6:5) and 3x more than distance to mouth margin. Scape (Fig. 10) only slightly broadened ventrally, with curved ventral margin, about 4x as long as wide; pedicel 3x shorter than scape, 2.5x as long as wide at apex and 2.5x longer than F1; F1 and F2 small, F3–F6 large, F1 subquadrate, 2x narrower than F6; F2–F6 slightly wider than long; clava somewhat longer than 3 preceding funicle segments combined, only 2x as long as wide and a little wider than F6. Height of malar

space about 1/2 greatest diameter of eye. Subocular suture absent. Width of oral aperture equal to 1/2 maximum head width. Upper mouth margin very slightly concave. Pronotum transverse, about 4x as wide as long in the middle; posterior margin of pronotum concave. Mesoscutum nearly 2x longer than pronotum and about 2x as wide as long. Scutellum subtriangular, almost 2x as long as mesoscutum and longer than wide (21:16); apex of scutellum almost pointed. Forewing (of holotype) narrow, 3.3x as long as wide. Mesopleura reaching base of gaster. Mesotibial spur slightly shorter than 1st segment of mesotarsus. Propodeum very short, concealed in the middle under apex of scutellum. Gaster acuminate, somewhat longer than mesosoma, widest part of gaster at level of its basal 1/4, at same level with pygostyles. Gaster 2x as long as wide; its convergent sides almost straight beyond pygostyles. Exserted part of ovipositor sheaths about 1/7 gaster length.

Head, mesosoma, scape, pedicel and legs brownish-yellow. Frons with greenish-violet luster. Funicle black; clava yellow, with black basal half of 1st segment (its apical half more or less brown). Mandibles dark. Lateral parts of mesoscutum narrowly black, with greenish-violet luster; posterior half of mesoscutum darkened, with similar but weaker luster. Tegulae and apex of scutellum yellowish-brown. Forewing strongly infuscated except for hyaline basal 2/7 and apex. Mesopleura posteriorly with rather strong green-violet luster. Fore- and metacoxae yellowish-white. Mesotibia with black ring near base. Knees of hind legs black. About 1/3 of metatibia dark near base. Mesotibial spur and meso- and metatarsi yellowish-white, with dark distal segment. Propodeum black, with greenish-violet luster. Gaster dorsally bronze-violet, with more or less brown base; almost all ventral sides of gaster yellowish-brown, as well as its sides in apical half. Ovipositor sheaths yellowish-brown, with darkened tip.

Frontoververtex with microcellulate sculpture and with very minute punctation. Mesonotum minutely cellulate. Mesopleura with reticulate sculpture.

Pronotum with 16 black hairs. Dark parts of mesoscutum with short silvery pubescence. Apical third of scutellum with black hairs and with compact tuft of long setae.

The micropterous female (paratype) differs from the macropterous one (holotype) in the following characters: rudiments of forewings reach only base of gaster; a rudiment about 3x as long as wide; apex of rudiment attenuated, its basal half infuscate.

Body length 1.1–1.4 mm (holotype 1.4 mm).

Male unknown.

HOST(s) unknown.

ETYMOLOGY. This species is named after the Taino, pre-Colombian indigenous inhabitants of Cuba.

DIAGNOSIS. *Ch. tainus* **sp.n.** belongs to the *elegans* species group of the genus, first mentioned by Trjapitzin [1972]. *Ch. tainus* **sp.n.** is similar to *Ch. bangalorensis* (Subba Rao, 1957) from India [Subba Rao, 1957 (as *Chrysopophagus bangalorensis*); Anis & Hayat, 2002] in having a light antennal clava with a dark base, small F1 and F2, and large F3–F6 of the female antenna. The differences between these two species are shown in the key that follows.

KEY TO THE 'ELEGANS' SPECIES GROUP OF CHEILONEURUS OF THE WORLD (FEMALES)

- 1(28) Wings not reduced; forewing reaching beyond apex of gaster.
2(17) Mesoscutum orange-yellow or testaceous anteriorly, but sometimes dark brown and shiny in posterior third, or dark with metallic luster at sides.

3(6) Clava entirely dark.

- 4(5) Infuscate posterior part of mesoscutum interrupted in the middle. Exserted part of ovipositor sheaths about 1/5 gaster length. Antenna as in Fig. 11. 1.82–2.45 mm — Mongolia *Ch. bimaculatus* Hoffer, 1970
5(4) Infuscated posterior part of mesoscutum not interrupted in the middle. Exserted part of ovipositor sheaths not more than 1/10 gaster length. 0.97–1.8 mm — India
..... *Ch. latifrons* Hayat, Alam et Agarwal, 1975
6(3) Clava dark with lighter apex, or yellow with dark base.
7(12) F1 longer than wide.
8(9) F2 and F3 longer than wide (see also couplet 5)
..... *Ch. latifrons* Hayat, Alam et Agarwal, 1975
9(8) F2 and F3 subquadrate.
10(11) F6 a little wider than long (Fig. 12). 1.0–2.1 mm — Algeria, Argentina, Armenia, Austria, Azerbaijan, Bulgaria, Canada, Croatia, Cyprus, Czech Republic, Denmark, Ecuador (Galapagos Islands), England (UK), Finland, France, Georgia, Germany, Greece, Hungary, Israel, Italy (including Sicily), Kazakhstan, Lithuania, Macedonia, Mexico, Moldova, Mongolia, Portugal (including Madeira), Romania, Russia (Leningrad, Pskov, Moscow [new record: Pushkino district, Mamontovka, 26.VIII.2004, V.A. Trjapitzin, 1 female (ZISP)], Kaluga, Voronezh [new record: Alferovka, Khoper Natural Reserve, feather-grass steppe, 7.VIII.1974, V.A. Trjapitzin, 1 female (ZISP)] Provinces; Black Sea Coast of Krasnodar Territory [new records: Sochi, Lazarevskoye: 2.VII.1975, S.V. Triapitsyn, 1 female; bank of Psezuapse River, 7.VII.1975, E.Ya. Shuvakhina, 1 female; dry slope and forest, 13.VII.1975, V.A. Trjapitzin, 1 female; forest in Psezuapse River valley, 14.VII.1975, V.A. Trjapitzin, 1 female (all in ZISP)], Daghestan, Republic of Altay, Primorye Territory), Serbia, Slovakia, Spain, Sweden, Switzerland, Tajikistan, Turkey, Turkmenistan, Ukraine, USA. In some countries of Europe and also in Armenia, Azerbaijan, and Argentina reared from various Coccidae; in USA recorded as parasitoid of *Platygaster zosine* Walker, 1836 (Hymenoptera: Platygasteridae) infesting Hessian fly, *Mayetiola destructor* (Say, 1817) (Diptera: Cecidomyiidae) *Ch. elegans* (Dalman, 1820)
11(10) F6 a little longer than wide. 1.75 mm — Namibia ..
..... *Ch. kuisebi* Prinsloo, 1985
12(7) F1 not longer than wide.
13(14) F1–F4 small, F5–F6 large; funicle with only F6 infuscate. 1.4–1.5 mm — Afghanistan, Australia, Egypt, French Polynesia (Tahiti), Greece, India (including Andaman and Nicobar Islands), Kenya [new record: Lobo, savanna, bushes, gramineous vegetation, 21.VIII.1971, 1 macropterous female, N.N. Drozdov (ZISP)], Tajikistan, Turkmenistan *Ch. yasumatsui* Trjapitzin, 1971
14(13) F1 and F2 small, F3–F6 large; funicle black.
15(16) Clava 2x as long as wide (Fig. 10). Toruli immediately under level of ventral eye margin. 1.4 mm — Cuba
..... *Ch. tainus* **sp.n.**
16(15) Clava 3x as long as wide. Toruli close to mouth margin. 1.3–1.5 mm — India [ex *Antonina graminis* Maskell, 1897 (Hemiptera: Pseudococcidae)]
..... *Ch. bangalorensis* (Subba Rao, 1957)
17(2) Mesoscutum entirely dark with metallic luster.
18(19) F1 transverse or quadrate. Scape somewhat more than 3x as long as wide, black along ventral edge. Body dark, with metallic luster; axilla and scutellum orange-brown. 2.0–2.4 mm — Austria, Czech Republic, Hungary, Kazakhstan, Russia (Primorye Territory), Slovakia
..... *Ch. longiventris* (Ruschka, 1923)

- 19(18) F1 longer than wide.
 20(21) Apex of clava lighter than its basal part. F1 longer than wide (see also couplet 10) ... *Ch. elegans* (Dalman, 1820)
 21(20) Apex of clava not lighter than its basal part, so clava entirely dark or dark brown.
 22(23) Pronotum as long as mesoscutum. F3 and F4 longer than wide. 1.7–2.4 mm — Austria, Bulgaria, Croatia, Czech Republic, Greece, Hungary, Kazakhstan, Kyrgyzstan [new record: Osh Province, Karakuldzha, Lajsu Ravine, 40°31'20"N, 73°37'11"E, 1815 m, 25.VI.1999, C.H. Dietrich, 3 females (UCRC)], Mongolia, Slovakia [new record: Bratislava, no other data (Slovakian Natural History Museum, Bratislava, Slovakia)], Russia (Kaliningrad, Volgograd [ex galls of *Tetramesa aneurolepidii* Zerova, 1965 (Hymenoptera: Eurytomidae) on *Aneurolepidium ramosum*] Provinces; Daghestan), Tajikistan, Turkmenistan, Uzbekistan *Ch. fulvescens* Hoffer, 1957
 23(22) Pronotum clearly shorter than mesoscutum.
 24(25) F3 subquadrate or slightly longer than wide, F4 a little wider than long, F5–F6 subquadrate or transverse. 1.7–2.3 mm — Bulgaria, Czech Republic, Denmark, France [new record: Département Bouches-du-Rhône, Aix-en-Provence, ?ex *Aclerda* sp., Parker et al., 1 female (USNM)], Hungary, Russia (Daghestan), Slovakia, Ukraine *Ch. victor* Hoffer, 1957
 25(24) Funicle segments longer than wide, F6 only slightly.
 26(27) Forewing with 2 large opposite hyaline areas beyond venation; apical fringe very short. Gaster notably longer than mesosoma. 1.5 mm — India *Ch. longipennis* Fatima et Shafee, 1998
 27(26) Forewing only with 2 small subhyaline areas beyond venation; apical fringe rather long (about 1/7 maximum wing width). Gaster only slightly longer than mesosoma. 1.51–1.56 mm — New Zealand *Ch. antipodis* Noyes, 1988
 28(1) Wings rudimentary or strongly abbreviated; if developed, not reaching apex of gaster.
 29(32) Clava entirely black.
 30(31) Gaster noticeably longer than mesosoma. Clava truncate at apex. 2.0–2.4 mm (see also couplet 18) *Ch. longiventris* (Ruschka, 1923)
 31(30) Gaster not longer than mesosoma. Clava more or less rounded at apex. 1.82–2.45 mm (see also couplet 4) *Ch. bimaculatus* Hoffer, 1970
 32(29) Clava with lighter apex or light with infusate base.
 33(34) F1–F4 small, F5–F6 large. 1.4–1.5 mm (see also couplet 13) *Ch. yasumatsui* Trjapitzin, 1971
 34(33) F1–F2 small, F3–F6 large.
 35(36) Clava 3x as long as wide. Toruli close to mouth margin. 1.3–1.5 mm (see also couplet 16) *Ch. bangalorensis* (Subba Rao, 1957)
 36(35) Clava 2x as long as wide (Fig. 10). Toruli immediately under level of ventral eye margin. 1.1–1.4 mm (see also couplet 15) *Ch. tainus* sp.n.

COMMENTS ON THE KEY. According to Anis & Hayat [2002], *Ch. yasumatsui* Trjapitzin, 1971 might be a synonym of *Ch. quadricolor* (Girault, 1915), described from Australia [Girault, 1915].

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