



УДК 595.792.13

**A NEW PALAEARCTIC SPECIES OF THE GENUS *CTENOCHIRA* FÖRSTER
(HYMENOPTERA: ICHNEUMONIDAE: TRYPHONINAE), PARASITOID
OF GALL-FORMING SAWFLIES (HYMENOPTERA: TENTHREDINIDAE:
NEMATINAE) ON POPLAR AND WILLOWS**

D.R. Kasparyan

Zoological Institute, Russian Academy of Sciences, Universitetskaya Emb. 1, 199034 Saint Petersburg, Russia;
e-mail: hymenopt@zin.ru

ABSTRACT

A new species of ichneumon-fly, *Ctenochira phyllocolpae* sp. nov. is described from Russia (Karelia, Transbaikalia and Yakutia). The new species was reared from three species of gall-forming sawflies of the genus *Phyllocolpa*. *Ctenochira phyllocolpae* sp. nov. and a closely related Palearctic species *C. romani* (Pfankuch) and the Nearctic *C. deplanata* Townes et Townes are distinguished and characterized in a key. Illustrations and photos of all these species are given.

Key words: *Ctenochira*, gall-forming sawfly, Ichneumonidae, Karelia, Nearctic Region, new species, parasitoid, Russia, taxonomy, Transbaikalia Territory, Tryphoninae, Yakutia

**НОВЫЙ ПАЛЕАРКТИЧЕСКИЙ ВИД РОДА *CTENOCHIRA* FÖRSTER
(HYMENOPTERA: ICHNEUMONIDAE: TRYPHONINAE) – ПАРАЗИТ
ГАЛЛООБРАЗУЮЩИХ ПИЛИЛЬЩИКОВ (HYMENOPTERA:
TENTHREDINIDAE: NEMATINAE) НА ТОПОЛЕ И ИВАХ**

Д.Р. Каспарян

Зоологический Институт Российской Академии Наук, Университетская наб. 1, 199034 Санкт-Петербург, Россия,
Russia; e-mail: hymenopt@zin.ru

РЕЗЮМЕ

Из России (Карелия, Забайкалье, Якутия) описывается новый вид наездников-ихневмонид – *Ctenochira phyllocolpae* sp. nov. Новый вид выведен из галлов трех видов пилильщиков рода *Phyllocolpa*. *Ctenochira phyllocolpae* sp. nov. эволюционно близок палеарктическому виду *C. romani* (Pfankuch) и неарктическому *C. deplanata* Townes et Townes; различия между этими видами даны в определительной таблице. Приведены рисунки и фотографии ко всем этим видам.

Ключевые слова: *Ctenochira*, галлообразующие пилильщики, Ichneumonidae, Карелия, Неарктика, новый вид, паразитоид, Россия, таксономия, Забайкальский край, Tryphoninae, Якутия

INTRODUCTION

Ctenochira Förster, 1855 is the largest genus of the tribe Tryphonini (Ichneumonidae, Tryphoninae). The genus is almost entirely Holarctic and includes about 90 recorded species (Yu and Horstmann 1997; Yu et al. 2012; Kasparyan 2013). A revision of Nearctic species was published by H. Townes (Townes and Townes 1949); Palaearctic species were revised by the author (Kasparyan 1973, 1981; Kasparyan and Tolkanitz 1999; Kasparyan 2013). One new species from Russia is described here.

Ctenochira phyllocolpae sp. nov. belongs to the “*pygobarbus*” species-group (Townes and Townes 1949), which includes 3 species and apparently is specialized on gall-forming sawflies. The new species attacks three gallicolous species of the genus *Phyllocolpa* Benson, 1960. These new data complete a recent review on ichneumonid parasitoids of gall-forming sawflies (Kasparyan and Kopelke 2009).

MATERIAL AND METHODS

The new species, *Ctenochira phyllocolpae* sp. nov., is described from material in the Zoological Institute of the Russian Academy of Sciences in Saint Petersburg (ZIN). Type and comparative material of a closely related species, *Scopiorus pygobarbus* Roman, 1937 (= *Ctenochira romani* Pfanckuch, 1925) from the Natural History Museum, London, Great Britain (NHM, curator G. Broad), and from the Naturhistoriska Riksmuseet, Stockholm, Sweden (Mus. Stockholm, curator T. Kronstedt) were studied. Important information (including measurements and photos) on the Nearctic *C. deplanata* Townes et Townes was received from D. Wahl (American Entomological Institute, Gainesville, USA). Additional data on reared material was received from J.-P. Kopelke (Forschungsinstitut Senckenberg, Frankfurt am Main, Germany – Mus. Frankfurt/M).

Taxonomy follows Taxapad (Yu et al. 2012). Photographs were taken at the Zoological Institute of the Russian Academy of Sciences (Saint Petersburg, Russia) with a DFC 290 digital camera attached to a Leica MZ16 stereomicroscope, and partially focused images were combined using Helicon Focus software. The holotype and paratypes of the new species are deposited in the Zoological Institute of the Russian Academy of Sciences (Saint Petersburg).

TAXONOMY

Family Ichneumonidae Latreille, 1802

Subfamily Tryphoninae Shuckard, 1840

Tribe Tryphonini Shuckard, 1840

Genus *Ctenochira* Förster, 1855

Type species: *Ctenochira bisinuata* Förster, 1855. By monotypy.

***Ctenochira phyllocolpae* sp. nov.**

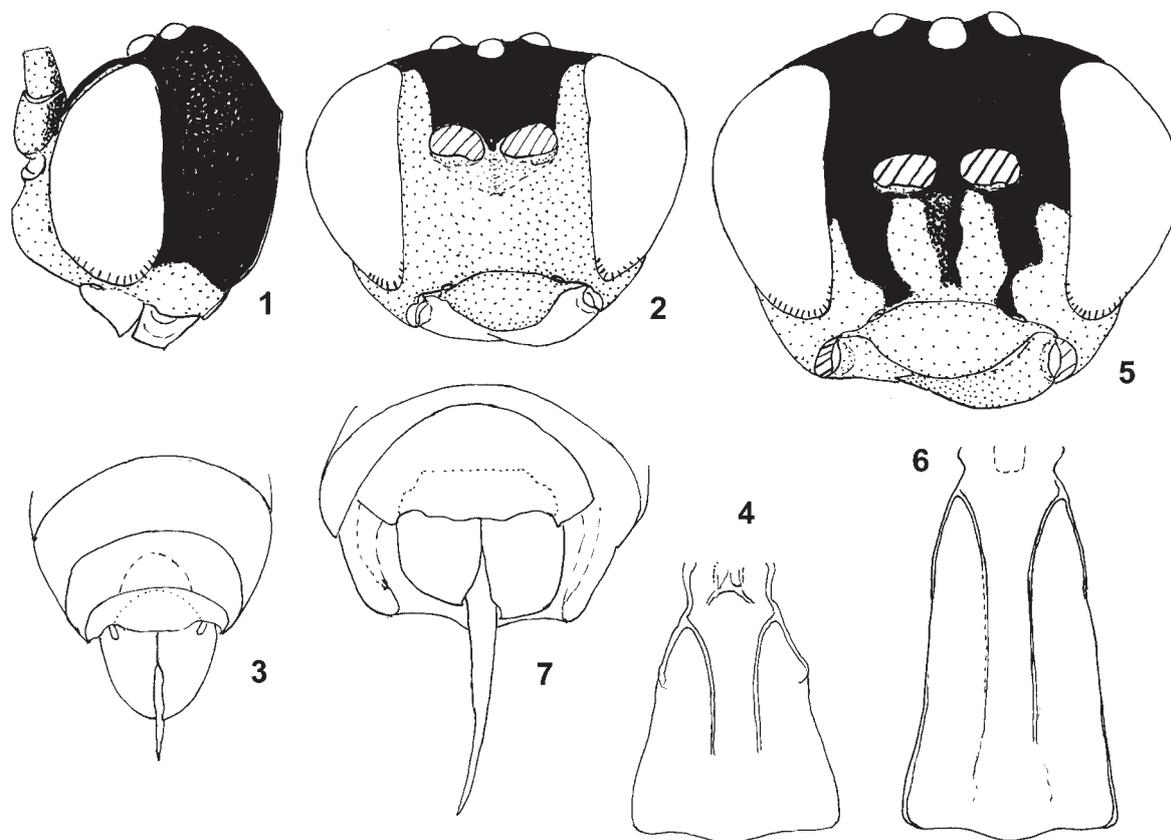
(Figs 1–4, 8)

Etymology. The name refers to the generic name of the host.

Type material. Female (holotype) – RUSSIA, Chita Province, Nerchinsky Zavod, meadows in black-birch forest, 21 July 1975, coll. D. Kasparyan; 1 female (paratype), Karelia, Petrozavodsk, p. Lososinka, Picea-forest, 17 July 1986, coll. D. Kasparyan; 1 female (paratype), Chita Province, Klichka, steppe with Spireae, 17 July 1975, coll. D. Kasparyan; 1 male (paratype), Yakutia, island on Aldan river, Megino-Aldan, 20 km NW mouth of Amga river, from gall of *Phyllocolpa carinifrons* (Benson) on poplar, galls collected 10 August 1981, imago of parasitoid emerged 16 June 1982, coll. E. Kaimuk. 1 male (paratype) – NORWAY, “SZ 37, Norway, Nordland, Lofot, Austvagoya, Delp, *Phyllocolpa plicaglauca* / *Salix glauca*, leaf fold, 13.VIII.2004, emerged 30.V.2005”. 1 male (paratype) – AUSTRIA, “04 A-V1, 4 M, Austria, Salzburg, Obertauern I, *Phyllocolpa ischnocera* / *Salix mielichhoferi*, leaf fold, 27.VIII.1991, emerged 26.VI.1992”.

Description. Female (holotype). Fore wing 3.6 mm long (about 0.8 as long as body); flagellum 19-segmented, 2.7 mm long (about 0.75 as long as fore wing). Flagellomeres 1 and 2 combined 0.88 as long as maximum diameter of eye; flagellum at base rather slender, flagellomere 1 almost 4 times as long as its width at middle, and 0.65 as wide as flagellomere 7, and about as wide as subapical flagellomeres. Sensillae become distinct from flagellomere 6.

Head distinctly narrowed beyond eyes. Face in profile just below antennal sockets strongly convex (Fig. 1), just above clypeus flat and with coarse and dense punctures; face laterally finely punctate. Clypeal foveae small and without hairs. Malar space 0.35 as long as basal width of mandible. Clypeus in



Figs. 1–7. *Ctenochira* spp. *C. phyllocolpae* sp. nov., female, holotype (1–4): 1 – head, lateral view; 2 – head, frontal view; 3 – apex of abdomen, dorsal view; 4 – first metasomal tergite, dorsal view. *C. romani* Pfankuch (5–7): 5 – head, frontal view; 6 – first metasomal tergite, dorsal view; 7 – apex of abdomen, dorsal view.

profile almost flat, genae below eyes roundly narrowed downward, mouth hollow 1.05 times as wide as face at middle (Fig. 2). Oral carina behind mandible 0.5 as long as basal width of mandible and almost as high as occipital carina. Mesopleuron smooth with very fine and scarce punctures; metapleuron in upper 0.5 smooth with large and dense indistinct punctures, in lower 0.5 in irregular rugosity. Propodeum with distinct areas, shining, superficially rugose, costulae absent; basal area and areola not separated by carina, combined 1.1 times as long as apical area. Fore wing without areolet; first portion of Rs 2.3 times as long as second one; nervulus postfurcal, distad of basal vein by 0.33 its length; nervellus intercepted at its lower 0.25. Hind femur 2.9 times as long as wide. Proportion of tarsomeres of hind leg 3.3 : 1.3 : 1 : 0.7 : 1.3 (second segment as long as fifth one); second segments of fore and middle tarsus transverse, corre-

spondingly 0.7 and 0.9 as wide as their length. Claws with about 5 high teeth.

Metasoma with first tergite 1.3 times as long as wide, longitudinal dorsal carinae distinct to its apical 0.78 (Fig. 4); tergite 1 in basal part (0.3–0.4) incrassate and bent to base, its dorsum in median part with longitudinal rugae, its hind margin polished. Tergites 2–5 shining, polished, covered with sparse and very short hairs; basal part of tergite 2 with superficial longitudinal rugosity. Tergites 2–4 weakly transverse, 0.65–0.75 times as long as wide. Sternite 6 (hypopygium) flat and wide, its lateral margins deeply curved upward, its base medially without bulge (present in *C. romani*) and with dense long whitish hairs. Ovipositor sheath covering ovipositor above (not roof-shaped), flat and short, 1.6 times as long as wide, tapered at apex, its dorsoapical concavity superficial, but extending almost to middle of sheath (Fig. 3).



Figs. 8, 9. *Ctenochira* spp., female habitus, lateral view: 8 – *C. phyllocolpae* sp. nov., female; 9 – *C. romani* Pfankuch.

Body black. Antenna yellowish-rufous, brownish dorsally; scape, pedicel, and three basal flagellomeres light yellow ventrally. Face, orbits of frons, clypeus, mandible (except for reddish teeth), gena beyond mandible to level of lower 0.15 height of eye (Fig. 1), palpi, hind corner of pronotum, tegulae, fore and middle coxae anteriorly, all trochanters, apices of all femora (0.1–0.2 of length), base of hind tibia (0.2) light yellow. Fore and middle coxae at base and posteriorly reddish-brown, hind coxa black (at apex ventrally reddish-brown); fore and middle legs distad of trochanters reddish-rufous; hind femur blackish brown; hind tibia (except for pale base) and hind tarsus brownish-rufous. Tergite 1 of metasoma black with hind margin narrowly reddish. Tergites 2–5 and basal 0.5 of tergite 6 dark-brown (blackish), tergites 2–4 with broad reddish-yellow band at hind margin (0.2 of length); tergite 6 in posterior 0.5 ochraceous (Fig. 8); tergites 7, 8 and ovipositor sheath yellowish. Epipleura of tergites 2–8 and all sternites yellow.

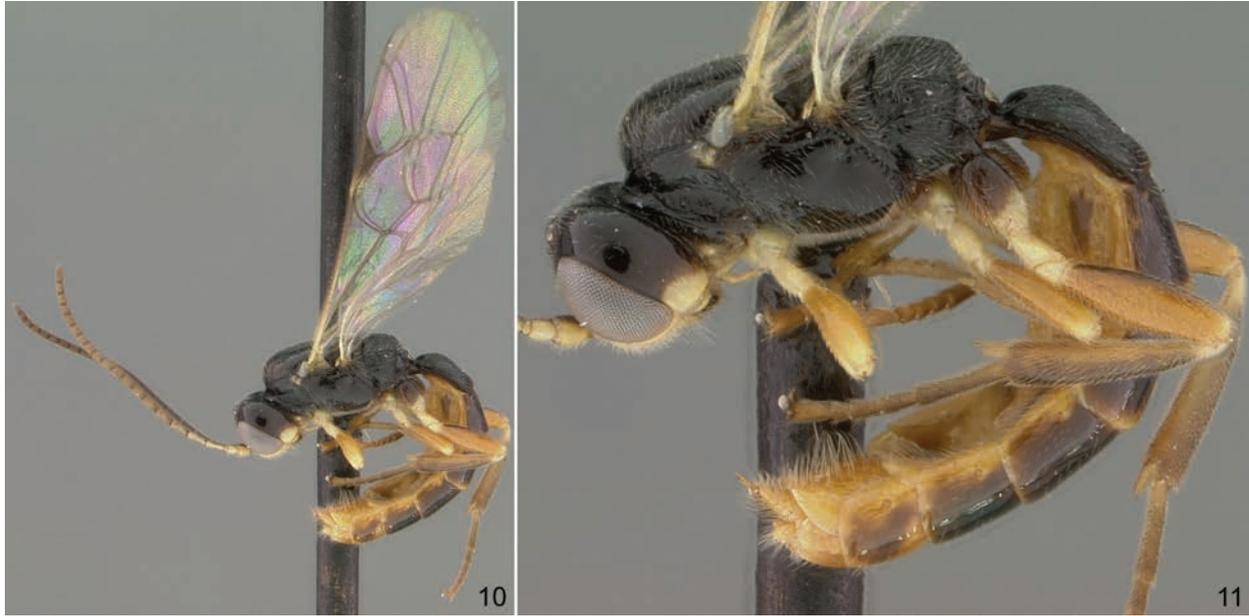
Variability. In all studied specimens from Russia fore wing 3.6 mm long, flagellum with 19 segments. Hind femora occasionally (in female from Yakutia) brownish red.

Biology. In Yakutia the species has been reared from *Phyllocolpa carinifrons* (Benson, 1940) on *Populus suaveolens* Fisch.; in Norway – from *Phyllocolpa plicaglauca* Kopelke, 2007 on *Salix glauca* L.; in Austria – from *Phyllocolpa ischnocera* (Thomson, 1862) on *Salix mielichhoferi* Salisb.

Remarks. Some autapomorphies of the new species (strongly convex face, short malar space, very elongate thorax) are convergent with those of two other ichneumonid parasitoids of gall-forming sawflies – *Erromenus analis* Brischke, 1871 (Tryphoninae) and *Rhorus zinovjevi* Kasparyan, 2012 (Ctenopelmatinae).

***Ctenochira romani* (Pfankuch, 1925)
(= *Scopimenus pygobarbus* Roman, 1937)
(Figs. 5–7, 9)**

Pfankuch 1925a, b: 61, 150, female [*Polyblastus* (*Shopiorus*) (!)]. Holotypus: female, “Spandelt 4.7.16 Pfk”, “*Polyblastus Romani* Pfanck.” (Mus. Berlin); Horstmann 1986: 259 (= *pygobarbus*); Carleton 1937, 1939 (biology, ex “*Pontania proxima*” on *Salix triandra*);



Figs. 10, 11. *Ctenochira deplanata* Townes et Townes, female, habitus, lateral view.

Kasparyan 1973: 246 (*Ctenochira pygobarba*; key), 276 (description);
 Kasparyan and Tolkanitz 1999: 303 [distribution (part), hosts];
 Kasparyan and Kopelke 2009: 862.

Material examined. 1 male – NORWAY, W-G1, 3F1, Oppland, Tretten, Norbu nr. Ringeby, *Pontania lapponica* / *Salix lapponum*, RK1, 18.07.1990, Schlüpfdatum 01.05.1991. 2 females – UNITED KINGDOM, Bristol, ex “*Pontania proxima*” [= *Pontania triandrae* Benson, 1941] / *Salix triandra* (paratypes of *Scopimemus pygobarbus*, Mus. Stockholm). 4 females, 1 male – RUSSIA, Karelia, Arkhangelsk.

Remarks. Data on the distribution of *C. romani* in Yakutia and Chita Provinces (Kasparyan and Khalaim 2007; Kasparyan and Kopelke 2009) are erroneous and refer to *C. phyllocolpae*. The hosts of *C. romani* are two species of *Pontania*: *P. lapponica* Malaise, 1920 and *Pontania triandrae* Benson, 1941.

Key to species of the *Ctenochira* “pygobarba-group” (females only)

1. Frons completely black (Fig. 5). Mesosoma about 1.5 times as long as its height laterally. Tergite 1 about 1.8 times as long as wide (Fig. 6). Face yellow with black pattern (Fig. 5), weakly convex in profile. Hypopygium

- at base with median swelling. Ovipositor sheath broad, short, rounded at apex, its dorsoapical concavity very short (Fig. 7). Tergites 4–8 entirely rufous-yellow (Fig. 9) *C. romani* Pfank. (= *pygobarba* Roman)
- Frons black with yellow orbits (Fig. 2). Mesosoma about 2 times as long as its height laterally. Tergite 1 1.3–1.4 times as long as wide (Fig. 7). Face completely yellow (Fig. 2), strongly convex in profile (Fig. 1). Hypopygium at base without median swelling. Ovipositor sheath narrower, truncate at apex, its dorsoapical concavity extending almost to middle of sheath (Fig. 3). Tergites 4–5 and usually basal part of tergite 6 blackish, and hind half of tergite 6 and tergites 7, 8 entirely rufous (Figs. 8, 10, 11) **2**
- 2. Hind femur brownish black, 2.9–3.0 times as long as wide. Sensillae distinct from flagellomere 6 onwards – Figs. 1–4, 8. Palearctic species *C. phyllocolpae* sp. nov.
- Hind femur reddish with the dorsal surface narrowly brownish, about 3.3 times as long as wide. Sensillae arise from flagellomere 3 – Figs. 10, 11. Nearctic species *C. deplanata* Tow. et Tow.

ACKNOWLEDGEMENTS

I am very grateful to D. Wahl and A. Khalaim for the photos of insects and I am also deeply indebted to D. Wahl for the valuable information on Nearctic species. I am grateful to E. Kaimuk and J.-P. Kopelke for valuable reared

material and A.G. Zinoviev for identification of sawflies (hosts). This work was supported by a grant from the Russian Foundation for Basic Research (No. 13-04-00026).

REFERENCES

- Carleton M. 1937.** A new ichneumonid (*Scopimenus pygobarbus*) parasitic on *Nematus proximus* Lep. (Hym., Tenthredinidae) in Britain. *Entomologist's Monthly Magazine*, **73**: 61–65.
- Carleton M. 1939.** The biology of *Pontania proxima* Lep., the bean gall sawfly on willows. *Zoological Journal of the Linnean Society*, **40**: 575–624.
- Horstmann K. 1986.** Typenrevision der von Karl Pfankuch beschriebenen Arten und Formen der Familie Ichneumonidae (Hymenoptera). *Entomologische Mitteilungen aus dem Zoologischen Museum Hamburg*, **8**: 251–264.
- Kasparyan D.R. 1973.** Fauna of the USSR Hymenoptera T. III. Vyp. 1. Ichneumonidae subfamily Tryphoninae. Tribe Tryphonini. Nauka, Leningrad, 320 p. [In Russian]
- Kasparyan D.R. 1981.** Fauna of the USSR, Hymenoptera. Vol. 3, N 1. Ichneumonidae (Subfamily Tryphoninae). Tribe Tryphonini. Publ. for US Dep. Agric. and Nation. Sci. Found. Washington D.C. by Amerind Publ. Co. Pvt. Ltd. New Delhi, 414 p. (*Ctenochira*: 302–357, Appendix I – 395–400).
- Kasparyan D.R. 2013.** Descriptions of the new species of the genus *Ctenochira* Förster, 1855 (Hymenoptera, Ichneumonidae, Tryphoninae) from Eurasian Subarctic and Siberia, with short remarks about ichneumonid fauna of Chukotka. *Entomologicheskoe Obozrenie*, **92**(3): 574–602.
- Kasparyan D.R. and Khalaim A.I. 2007.** 2. Subfam. Tryphoninae. In: A.S. Lelej (Ed.). Key to the insects of the Russian Far East. Vol. IV. Neuropteroidea, Mecoptera, Hymenoptera. Pt. 5. Dal'nauka, Vladivostok: 333–404. [In Russian]
- Kasparyan D.R. and Kopelke J.P. 2009.** Taxonomic review and key to European ichneumonflies (Hymenoptera, Ichneumonidae), parasitoids of gall-forming sawflies of the genera *Pontania* Costa, *Phyllocolpa* Benson, and *Euura* Newman (Hymenoptera, Tenthredinidae) on willows: Part I. *Entomologicheskoe Obozrenie*, **88**(4): 852–880.
- Kasparyan D.R. and Tolkaitz V.I. 1999.** Ichneumonidae subfamily Tryphoninae: tribes Sphinctini, Phytodietini, Oedemopsini, Tryphonini (Addendum), Idiogrammatini. Subfamilies Eucerotinae, Adelognathinae (addendum), Townesioninae. [Fauna of Russia and neighbouring countries. Insecta Hymenoptera.] V. III. No. 3. Nauka, Saint Petersburg, 404 p. [In Russian]
- Pfankuch K. 1925a.** Ein Beitrag zur Ichneumoniden-Fauna Nordschleswigs. V. *Zeitschrift für Wissenschaftliche Insektenbiologie*, **20**: 57–61.
- Pfankuch K. 1925b.** Ein Beitrag zur Ichneumoniden-Fauna Nordschleswigs. VI. *Zeitschrift für Wissenschaftliche Insektenbiologie*, **20**: 150–156.
- Townes H. K. and Townes M. 1949.** A revision of the genera and of the American species of Tryphoninae. Part I. *Annals of the Entomological Society of America*, **42**: 321–395.
- Yu D.S. and Horstmann K. 1997.** A catalogue of world Ichneumonidae (Hymenoptera). *Memoirs of the American Entomological Institute*, **58**: 1–1558.
- Yu D.S., van Achterberg K. and Horstmann K. 2012.** Taxapad 2012. Ichneumonoidea Database on flash-drive. www.taxapad.com, Ottawa, Ontario, Canada.

Submitted June 30, 2013; accepted August 29, 2013.