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Revision of *Macrocamptoptera* Girault, 1910 (Insecta: Hymenoptera: Mymaridae)

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Abstract

The Holarctic fairyfly genus *Macrocamptoptera* Girault, 1910 is revised. One new species, *M. setata* sp.n., is described from California, USA. *Macrocamptoptera sundholmi* (Hedqvist, 1962) syn.n., known from Belgium and Sweden, is synonymized under the Nearctic species *M. metotarsa* (Girault, 1905), which thus has a Holarctic distribution. *Macrocamptoptera grangeri* Soyka, 1961, restored status (from *Camptoptera* Foerster, 1856) and *M. metotarsa* are redescribed and illustrated. A key to females of the four currently recognized species of *Macrocamptoptera* is given.

Key words: Hymenoptera, Mymaridae, *Macrocamptoptera,* new species, new synonymy, Holarctic region.

Zusammenfassung

Die holarktische Gattung *Macrocamptoptera* Girault, 1910 wird revidiert. Eine neue Art, *M. setata* sp.n. wird aus Kalifornien, USA, beschrieben. *Macrocamptoptera sundholmi* (Hedqvist, 1962) syn.n., bekannt aus Belgien und Schweden, wird mit der nearktischen Art *M. metotarsa* (Girault, 1905) synonymisiert, welche folglich eine holarktische Verbreitung hat. *Macrocamptoptera grangeri* Soyka, 1961, (hier von *Camptoptera* Foerster, 1856 in *Macrocamptoptera* gestellt) und *M. metotarsa* werden wiederbeschrieben und abgebildet. Ein Schlüssel für die Weibchen der derzeit bekannten vier Arten von *Macrocamptoptera* wird präsentiert.

Introduction

The strictly Holarctic fairyfly genus *Macrocamptoptera* Girault, 1910 (Hymenoptera: Mymaridae) was diagnosed by Huber & Lin (1999) who also provided valuable information on its synonyms and the species included. Particularly, they noted that *Camptoptera grangeri* (Soyka, 1961), described originally as *Macrocamptoptera grangeri* but later included in *Camptoptera* Foerster, 1856 by Viggiani & Jesu (1988), could be either a very small *Macrocamptoptera* or a large *Camptoptera* – that was uncertain at the time without examination of its holotype. Therefore Huber & Lin (1999) did not include this species in their lists of either *Camptoptera* or *Macrocamptoptera* species, but Noyes (2003) listed it formally as a member of *Camptoptera*. While curating the Walter Soyka collection of Mymaridae at Naturhistorisches Museum Wien, Vienna, Austria in June 2007 (Triapitsyn 2010), I found and then borrowed the holotype of *M. grangeri*; right away its examination revealed that the species was correctly described in *Macrocamptoptera*. Its status is restored here accordingly.

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Terminology used follows Gibson (1997). Abbreviation used: F = antennal funicle (in females) or flagellar segment (in males).

The following acronyms are used to designate depositories of specimens:

CAS	California Academy of Sciences, San Francisco, California, USA
CNCI	Canadian National Collection of Insects, Ottawa, Ontario, Canada
DEZA	Dipartimento di Entomologia e Zoologia Agraria "Filippo Silvestri", Università degli Studi di Napoli "Federico II", Portici, Napoli, Campania, Italy
ISNB	Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium
NHMW	Naturhistorisches Museum Wien, Vienna, Austria
NHRS	Swedish Museum of Natural History, Stockholm, Sweden
PUPB	Department of Zoology, University of Plovdiv "Paisii Hilendarski", Plovdiv, Bulgaria
UCDC	The R.M. Bohart Museum of Entomology, University of California, Davis, California, USA
UCRC	Entomology Research Museum, University of California, Riverside, California, USA
USNM	National Museum of Natural History, Washington, District of Columbia, USA

Taxonomy

Genus *Macrocamptoptera* Girault, 1910 (Figs. 1–22)

Macrocamptoptera Girault, 1910: 239. Type species: *Camptoptera metotarsa* Girault, 1905, by original designation.

Macrocamptoptera: Girault 1929: 19 (key), 20 (distribution, diagnosis); Soyka 1961: 86 (diagnosis); Noyes & Valentine 1989: 45 (brief diagnosis); Huber & Lin 1999: 38–39 (included in the *Camptoptera* group of genera, resurrected formally as a valid genus, synonymy, relationships with other genera of the group, distribution, list of species, comments); Triapitsyn & Huber 2000: 607, 610 (key), 614 (comments).

Camptoptera Foerster, 1856 (in part): Peck 1951: 411 (catalog); Annecke & Doutt 1961: 15-16 (discussion); Peck 1963: 19 (catalog); Schauff 1984: 39; Viggiani & Jesu 1988: 1022 (as the "*metotarsa* Girault group (*Macrocamptoptera*)").

Herulia Hedqvist, 1962: 103. Type species: *Herulia sundholmi* Hedqvist, 1962, by original designation. Synonymized under *Macrocamptoptera* by Huber & Lin 1999: 38 (from the previous synonymy under *Camptoptera* by Schauff 1984: 39; formerly also synonymized under *Sphegilla* Debauche, 1948 by Taguchi 1971: 52).

Herulia: Trjapitzin 1978: 518 (key), 527 (as *Herulia* Bakkendorf [sic]).

Rhila Donev, 1989: 79. Type species: *Rhila bulgarica* Donev, 1989, by original designation. Synonymized under *Macrocamptoptera* by Huber & Lin 1999: 38.

Camptoptera (*Macrocamptoptera*): Yoshimoto 1990: 34–35 (diagnosis although apparently including species now in the subgenus *Camptopteroides* (*Alalinda* Huber, 1999); key to subgenera of New World *Camptoptera*).

Diagnosis: Body dark, length ca. 0.66–1.25 mm. Head (Fig. 11), mesosoma (Figs. 14, 21), coxae, and partially petiole with strong reticulate sculpture; setae on head very short and indistinct. Mandible with 2 teeth (Fig. 11). Female antenna (Figs. 1, 4, 12, 20) with funicle 7-segmented (F2 very short), all funicle segments without longitudinal sensilla (F7 the broadest among funicle segments); clava entire, with 4 longitudinal sensilla. Male antenna (Fig. 16) with flagellum 10-segmented (F2 very short, inconspicuous).

Fore wing (Figs. 2, 6, 9, 13, 17, 22) gradually broadening towards apex, with slightly incurved posterior margin; proximal and distal macrochaetae on marginal vein of fore wing short and weak. Hind wing (Figs. 6, 10, 22) almost as long as fore wing. Marginal setae on all wings mostly very long, the longest (subapical ones) on posterior margin. Tarsi 5-segmented. Ovipositor very short (usually occupying much less than 0.5× length of gaster), not or at most barely exserted beyond gastral apex. See also HUBER & LIN (1999).

Although *Macrocamptoptera* is an easily recognized genus only two recent, appropriate generic keys to the Mymaridae may be used for its recognition: HUBER & LIN (1999) for the *Camptoptera* group of genera and TRIAPITSYN & HUBER (2000) for the Palaearctic genera. *Macrocamptoptera* is most closely related to *Camptopteroides* VIGGIANI, 1974 from which it differs by the relatively short and inconspicuous macrochaetae and slightly incurved posterior margin of the fore wing, the lack of a transverse groove on the occiput above the foramen, and the shape of the prosternum (HUBER & LIN 1999).

Biology and host associations of *Macrocamptoptera* species are unknown. The genus is known to occur in Europe (western Palaearctic region) and North America (Nearctic region).

Key to species of *Macrocamptoptera*, females

1 Antenna with scape (minus radicle) 5.9–7.0× as long as wide 2

– Antenna with scape (minus radicle) 4.4–5.2× as long as wide 3

2 (1) Antenna (Fig. 20) with F3 about 1.54× length of pedicel; fore wing with several uninterrupted rows of discal setae (Fig. 22) ..... *M. setata* sp.n.

– Antenna (Fig. 12) with F3 1.8–2.0× length of pedicel; fore wing with fewer, interrupted rows of discal setae (Figs. 9, 13) ..... *M. metotarsa* (GIRAULT, 1905)

3 (1) Fore wing 10.1× as long as wide, with discal setae relatively fewer (Fig. 6) .... *M. grangeri* SOYKA, 1961

– Fore wing 7.9–8.1× as long as wide, with discal setae relatively more numerous (Fig. 2) ..... *M. bulgarica* (DONEV, 1989)

Alphabetical synopsis of species

Macrocamptoptera bulgarica (DONEV, 1989) (Figs. 1, 2)

Camptoptera sp. (member of the *metotarsa* group): VIGGIANI & JESU 1988: 1022 (record of a female from Italy).

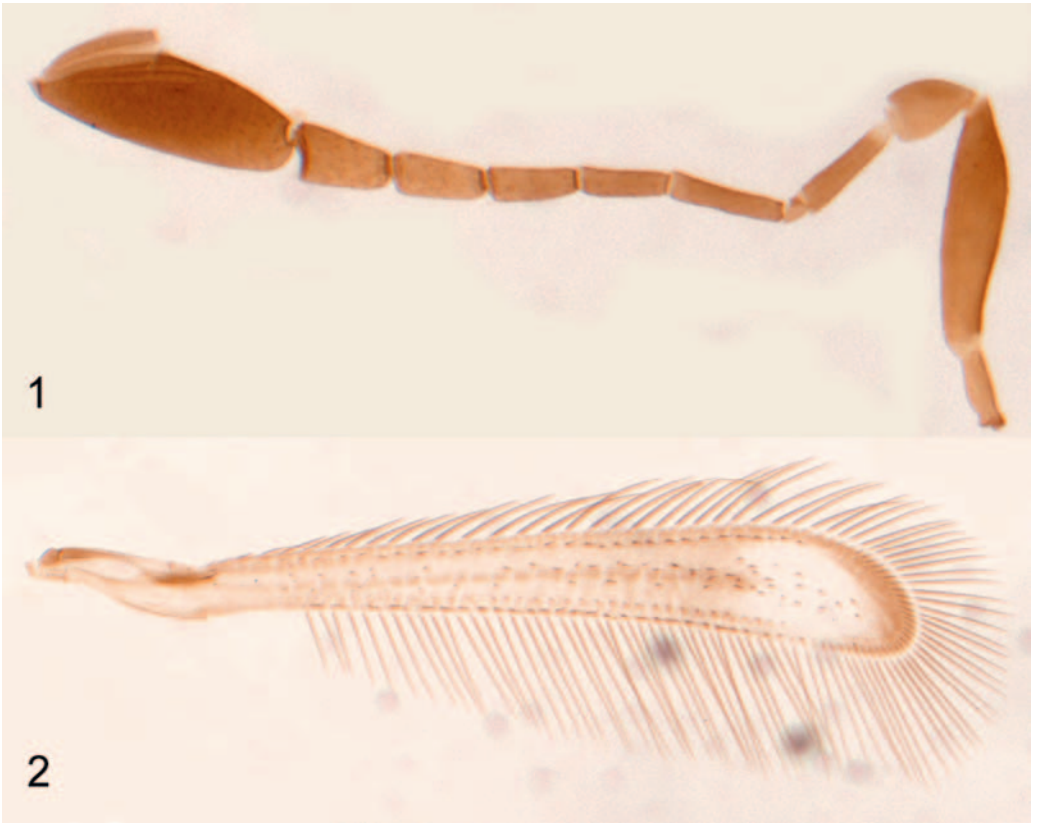
Rila bulgarica DONEV: DONEV 1988: 204 (collection locality in Bulgaria only). **nom. nud.**

Rhila bulgarica DONEV, 1989: 79–83. Type locality: Bodrost (Rila Mountains), Blagoevgrad, Bulgaria.

Macrocamptoptera bulgarica (DONEV): HUBER & LIN 1999: 39 (a likely synonym of *M. sundholmi*).

Type material examined: Holotype female [A. Donev collection, c/o PUPB] on slide labeled: 1. "Fam. Mymaridae *Rhila bulgarica* Donev Det. A. Donev"; 2. [red] "Holotype"; 3. "24.08.1983, Bodrost, Rhila Mts, Bulgaria, Leg. A. Donev". The holotype is in good condition, mounted dorsoventrally.

Material examined: ITALY. **Calabria**, Cosenza Province, Camigliatello Silano, 1277 m, vii-viii.1985, L. Micieli [1 female, DEZA].



Figs. 1, 2: *Macrocamptoptera bulgarica*, female (Camigliatello Silano, Calabria, Italy): (1) antenna; (2) fore wing.

Diagnosis: Holotype female of this species was well described and illustrated by Donev (1989). For its easier recognition, here illustrated are the female antenna (Fig. 1) and fore wing (Fig. 2) of the examined conspecific non-type specimen from Camigliatello Silano, Italy, in which the scape minus radicle is about 4.4× as long as wide, F3 is about 1.2× as long as pedicel, and the fore wing is about 7.9× as long as wide. The male is unknown.

Distribution: Europe (western Palaearctic region): Bulgaria (Donev 1989, as *Rhila bulgarica*), and Italy (Viggiani & Jesu 1988, as *Camptoptera* sp. of the *metotarsa* group).

Comments: It is quite possible that the only known two specimens of *M. bulgarica* represent large individuals of *M. grangeri* so the relatively narrower fore wing in the holotype of the latter species is somehow correlated with the difference in its body size – according to Donev (1989), the body length of the holotype of *Rhila bulgarica* is 0.875 mm. However, it is impossible now to assess the intraspecific variability in both nominal species having available so few specimens, and therefore I have no other choice to consider them, at least for the time being, as separate, valid taxa.

Macrocamptoptera grangeri Soyka, 1961, restored status (Figs. 3–6)

Macrocamptoptera grangeri Soyka, 1961: 87. Type locality: Toulon, Var, Provence-Alpes-Côte d'Azur, France.

Camptoptera grangeri (Soyka): Viggiani & Jesu 1988: 1022 (member of the *metotarsa* group).

Type material examined: Holotype female [NHMW] on slide (Fig. 3) labeled: 1. "TOULON VAR 23.7.48 J BARBIER"; 2. "877"; 3. "*Macrocamptoptera grangeri* ♀ Type Soyka"; 4. [red] "[Geno- – crossed out] Type". The holotype is poorly mounted laterally close to the edge of the coverslip so that the antennae are partially in the excess balsam not covered by it (Figs. 3, 4).

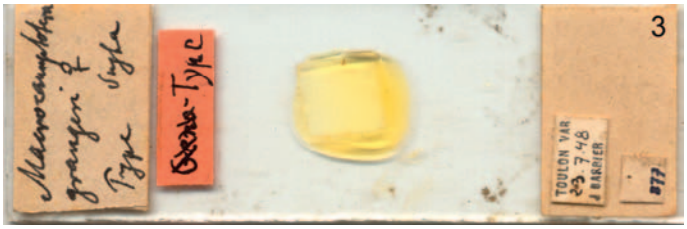
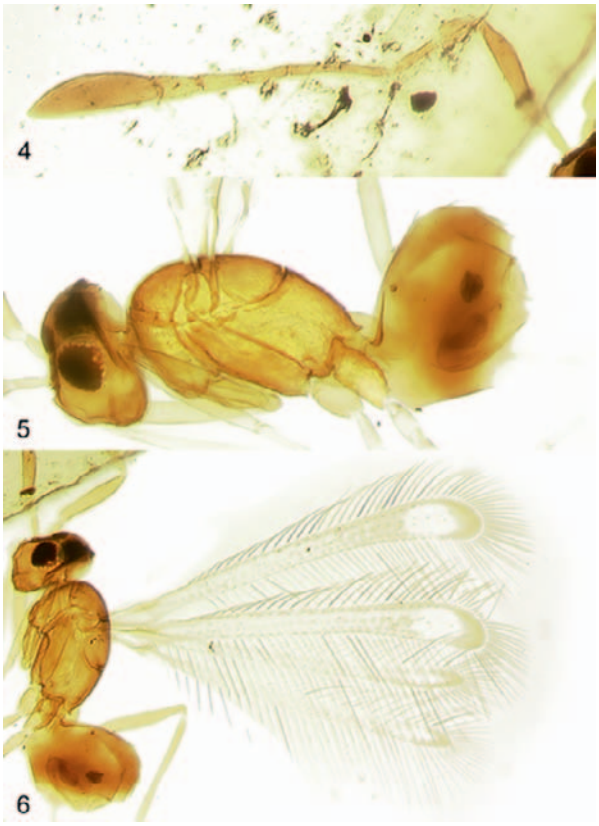


Fig. 3: *Macrocamptoptera grangeri*, female (holotype): slide.

Redescription: Female (holotype).

Color: Body dark brown; antenna mostly brown except clava dark brown; legs light brown to brown except coxae dark brown. **Antenna** (Fig. 4) with scape minus radicle 5.2× as long as wide, a little shorter than clava; pedicel a little shorter than F1; F3 the longest funicle segment, a little more than 1.3× as long as pedicel; clava 3.3× as long as wide (in lateral view), about as long as combined length of F5–F7. **Mesosoma** (Figs. 5, 6) longer than metasoma. **Fore wing** (Fig. 6) longer than body, 10.1× as long as wide; disc with a brownish tinge almost throughout (particularly with a conspicuous infuscation at apex) except for a large hyaline subapical spot, sparsely setose (with 2 incomplete rows of setae along margins and scattered setae between them); the longest marginal seta 2.4× maximum wing width. **Hind wing** (Fig. 6) almost 19× as long as wide, disc



Figs. 4–6: *Macrocamptoptera grangeri*, female (holotype): (4) antenna; (5) body; (6) body and wings.

with a slight brownish tinge throughout (more conspicuously so apically) and mostly asetose except for a complete row of small setae along posterior margin and a few setae at apex; the longest marginal seta 4.3× maximum wing width. **Metasoma** (Figs. 5, 6) with petiole poorly visible due to poor mounting. Ovipositor 0.47× length of gaster and 0.78× length of mesotibia.

Measurements (in microns [µm], as length or length:width for the wings): Body: 660; head: 125; mesosoma: 314; petiole: 62; gaster: 274; ovipositor: 130. Antenna: radicle: 45; rest of scape: 182; pedicel: 61; F1: 67; F2: 12; F3: 82; F4: 69; F5: 64; F6: 67; F7: 73; clava: 200. Fore wing: 923:91; longest marginal seta: 218. Hind wing: 886:47; longest marginal seta: 203.

Male: Unknown.

Diagnosis: Very similar to *M. bulgarica* except for a narrower fore wing with relatively fewer discal setae, as indicated in the key above (also see "Comments" to the latter species).

Distribution: Europe (western Palaearctic region): France (Soyka 1961).

Macrocamptoptera metotarsa (Girault, 1905) (Figs. 7–19)

Camptoptera metotarsa Girault, 1905: 91. Type locality: Arlington, Arlington Co., Virginia, USA.

Camptoptera metotarsa: Girault 1909: 23 (mentioned), 26–27 (reproduction of the original description, additional diagnostic features, type information), 28 (key); Peck 1951: 411 (catalog, status revised); Annecke & Doutt 1961: 16 (type information, brief discussion); Peck 1963: 20 (catalog); Schauff 1984: 40 (mentioned).

Macrocamptoptera metotarsa (Girault): Girault 1910: 239–240 (type information, diagnosis); Girault 1911: 323 (list); Girault 1929: 20 (diagnosis); Soyka 1961: 86–87 (diagnosis); Huber & Lin 1999: 39 (distribution, comments), 44, 50, 54, 56, 58, 61 (illustrations).

Herulia sundholmi Hedqvist, 1962: 103–104. Holotype female [K.-J. Hedqvist collection, c/o NHRS] (not examined). Type locality: near Tromtö, Förkärla, Blekinge, Sweden. **syn.n.**

Sphegilla sundholmi (Hedqvist): Taguchi 1971: 54 (in key to *Sphegilla* species).

Herulia sundholmi: Trjapitzin 1978: 527 (brief diagnosis, distribution).

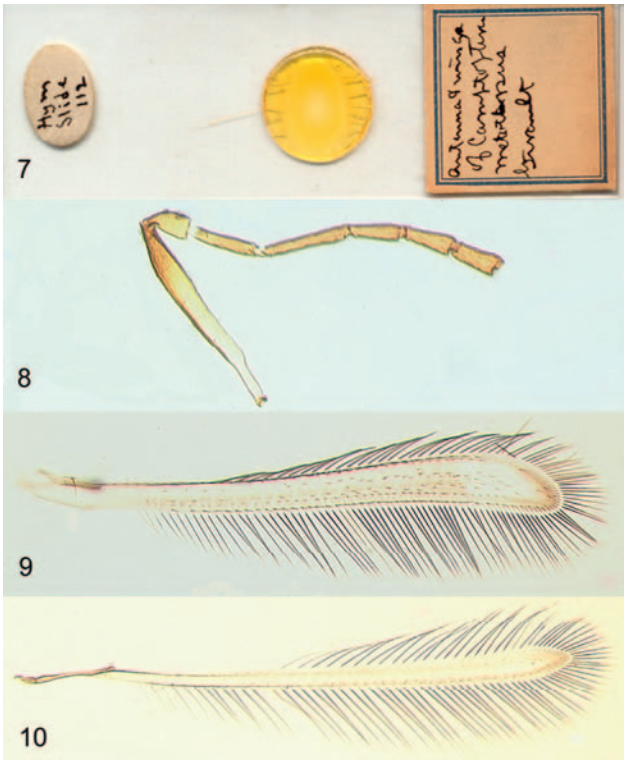
Camptoptera sundholmi (Hedqvist): Schauff 1984: 40.

Camptoptera (*Macrocamptoptera*) *metotarsa* Girault: Yoshimoto 1990: 35 (list), 130, 137, 145 (illustrations).

Macrocamptoptera sundholmi (Hedqvist): Huber & Lin 1999: 39 (distribution).

Type material examined: Holotype female of *M. metotarsa* (parts) [USNM] on point labeled: 1. "Arlington, Va. VI-20 1905." [but the collecting date was indicated by Girault (1905, 1910) as 2.vi.1905 or 28.vi.1905, respectively]; 2. "A A Girault Collector"; 3. "Quaintance No. 361"; 4. [red] "♀ Type No. 8941"; 5. [light blue] "Antenna mounted"; 6. [light blue] "Wing mounted"; 7. "Hym slide 112"; 8. [in A.A. Girault's handwriting] "*Camptoptera metotarsa* Girault ♀". On this point, the head and mesosoma (without the appendages except for one fore wing and one hind wing) are mounted separately from the gaster and a few remnants of the leg segments. Also one incomplete antenna (lacking F7 and the clava, Fig. 8), a fore wing (lacking the base, Fig. 9), a hind wing (Fig. 10), and a fore leg (lacking the coxa) of the holotype are mounted on slide (Fig. 7) [USNM] labeled: 1. "antenna & wings of *Camptoptera metotarsa* Girault"; 2. "Hym slide 112".

Material examined: BELGIUM. **Flemish Brabant**, Tervuren, Étang du Merisier, 7.viii.1945, H.R. Debauche [1 female, ISNB] (misidentified apparently by G. Mathot as *Camptoptera papaveris* Foerster). **Liège**, Wanze, Antheit, Corphalie, 28.vii-11.viii.1989, R. Detry [1 female, ISNB]. CANADA. **Alberta**, Writing-on-Stone Provincial Park, 29.v-6.vi.1981, D. McCorquodale [1 female, CNCI]. **Ontario**, 6 mi. W of Aylmer, Springwater Conservation Area, 28.v-4.vi.1979, L. Masner [1 female, CNCI]. 7 km SW of Carleton Place, S.J. Miller: 14-20.v.1980 [1 male, CNCI]; 18-24.v.1980 [1 female, CNCI]; 20-25.vi.1980 [1 male, CNCI]; 18-24.vii.1980 [1 male, CNCI]; 24-31.vii.1980 [1 male, CNCI]; 20-26.v.1981 [2 males, CNCI]. 7



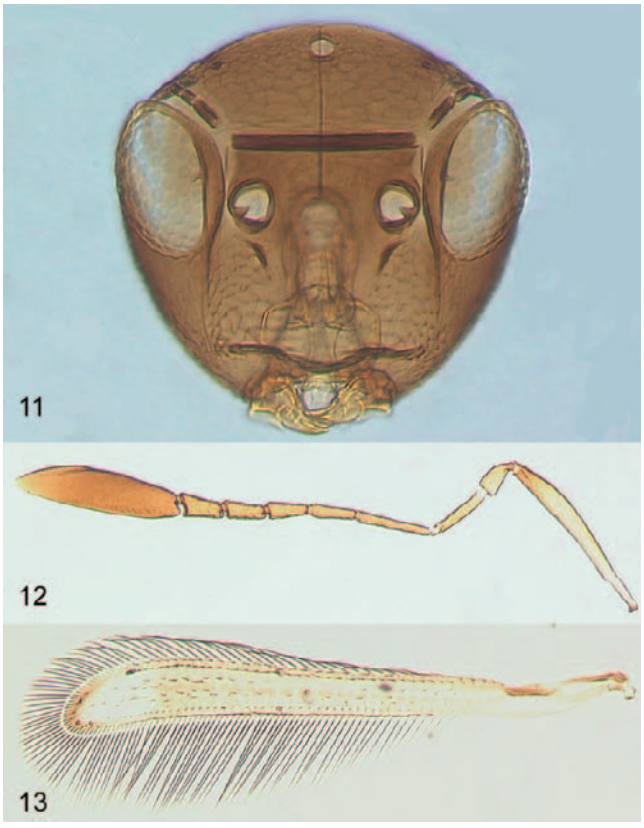
Figs. 7–10: *Macrocamptoptera metotarsa*, female (holotype): (7) slide (parts); (8) antenna (missing F7 and clava); (9) fore wing; (10) hind wing.

mi. E of Griffith, vii.1990, B.E. Cooper [1 female, CNCI]. Near Guelph, University of Guelph Arboretum, 43°32'N 80°13'W, 14.vi.2006, L. Coote [1 female, UCRC]. Near Kemptville, 10-17. vi.1984, J. Denis [1 female, CNCI]. Mer Bleu, 28.viii.1981, S.J. Miller [1 male, CNCI]. Rondeau Provincial Park, vi-vii.1979, L. Masner [1 female, 1 male, CNCI]. Scotch Corners, S. Miller's farm, 11-16.vii.1980 [1 male, CNCI]. Shaw Forest (near Eganville), M. Sharkey: 4-11.vi.1992 [1 male, CNCI]; 11-18.vi.1992 [2 males, CNCI]; 9-16.vii.1992 [1 female, CNCI]; 16.vii-13.viii.1992 [1 female, CNCI]. 7 km SE of Westport, 44°37.727'N 76°21.545'W, 134 m, 1-31.viii.2005, S. Peck [1 male, CNCI]. 4 mi. NW of St. Williams, 23.vi.1981, H. Goulet [1 female, CNCI]. **Quebec**, Old Chelsea, National Capital Commission woodpile, L. Masner: 22-29.v.1987 [1 female, 1 male, CNCI; 1 male, UCRC]; 27.v-5.vi.1987 [2 females, 3 males, CNCI]; 5-15.vi.1987 [1 female, 1 male, CNCI]. USA. **Arkansas**, Polk Co., Bard Springs (ca. 20 mi. SE of Mena), vii-11.x.1995, H.W. Robison [1 female, CNCI]. **Florida**, Alachua Co.: Gainesville: 14-21.iv.1987, W.R.M. Mason [1 female, CNCI]; American Entomological Institute, 2-19.iv.1988, D.B. Wahl [1 female, CNCI]. San Felasco, 29°44'N 82°27'W, 50 m, iv-v.1993, J. Pickering [2 females, CNCI]. Jefferson Co., Monticello, University of Florida North Florida Research & Education Center, 24.iii. 2001, R.F. Mizell, III [1 female, UCRC]. Leon Co., 30°39'N 84°15'W, 6-13.iv.1993, J. Pickering [2 females, CNCI]. **Georgia**, Monroe Co., Forsyth: 21.iv-5.v.1971, G. Heinrich [3 females, CNCI]; 5-14.v.1971, F. Naumann [3 females, 1 male, CNCI]. **Kansas**, Riley Co., Konza Prairie Biological Station, Kings Creek, 39°06.20'N 96°35.77'W, 18-25.v.2001, G. Zolnerowich, R. Kula [1 female, CNCI]. **Louisiana**, Grant Parish, Iatt Lake uplands, 48 km N of Alexandria, 1-15.v.1998, A. Brazeel, N.M. Schiff [1 female, UCDC]. Webster Parish, Lake Bistineau State Park, iv.1972, G. Heinrich [1 female, CNCI]. **Maryland**, Howard Co., Clarksville, 3.viii.1986, E.E. Grissell [1 female, USNM]. **Mississippi**, Bolivar Co., Dahomey National Wildlife Refuge (19 km W of Boyle), 33°42'N 90°56'W: 20.iv-3.v.1999, N.M. Schiff [1 female, UCDC]; 17.v-2.vi.1999, N.M. Schiff [1 female, UCDC]. Washington Co.: Leroy Percy State Park, 8 km W of Hollandale, 33°01'N 90°56'W, 21.vi-5.vii.1998, N.M. Schiff [1 female, UCDC]. Near Stoneville, Delta Experimental Forest, N.M. Schiff: 33°28'N 90°54'W, 20.vii-3.viii.1997 [1 female, UCDC]; 33°28'N 90°54'W, 3-17.v.1999 [1 female, UCRC]; 33°29'N 90°55'W, 3-17.v.1999 [1 female, UCDC]; 33°29'N 90°55'W, 17.v-2.vi.1999 [1 male, UCRC]; 33°29'N 90°55'W, 17.v-2.vi.1999 [2 females, UCDC]. **Missouri**, Shannon Co., 10 km NNE of Mountain View, 37°03.44'N 91°36.56'W, 320 m, 16-30.iv.2001, J.V. Maddox [1 female, CAS]. **New Mexico**, Socorro Co., Water Canyon, 7000 ft, 28.vi-7.vii.1979, S. Peck [1 female, CNCI]. **North Carolina**, Anson Co., Pee Dee National Wildlife Refuge, 20.iv.1987, L. Masner [1 female, CNCI]. Jackson Co., Whiteside Mt. (near Highlands), 1600 m, 14-20.vii.1987, CNC Hymenoptera team [4 females, CNCI]. Northampton Co., Bald Cypress Swamp (7 km S of Jackson), 1-7.vii.1987, CNC Hymenoptera team [1 female, CNCI]. Swain Co., Great Smoky Mountains, Andrews Bald, 35°32'13''N 83°29'39''W, 31.vii-16.viii.2001, I.C. Stocks [1 female, CNCI]. **South Carolina**, Anderson Co., Pendleton,

250 m, CNC Hymenoptera team: 13-18.v.1987 [8 females, CNCI]; 19-27.v.1987 [1 female, CNCI]; 5-10. vi.1987 [3 females, CNCI]; 17-27.vi.1987 [4 females, CNCI]; 1-7.vii.1987 [1 male, CNCI]. **Tennessee**, Blount Co., Great Smoky Mountains: Cades Cove, 35°35'25''N 83°50'17''W, 18.vi-2.vii.2001, I.C. Stocks [1 female, CNCI]. Top of the World, 35°38'N 83°55'W, 670 m, R. Bartlett: 18.vi-2.vii.1997 [1 female, CNCI]; 18.vi-2.vii.1998 [1 female, CNCI]. 2-16.vii.1998 [1 male, CNCI]. Henderson Co., Natchez Trace State Park (near Lexington), G. Heinrich: 9-11.vi.1972 [3 females, CNCI]; 11-15.vi.1972 [1 female, CNCI]. **Texas**, Lamar Co., Camp Maxey Texas Army National Guard training facility area, 33°47'N 95°33'W, 15.vii.2003, W. Godwin [6 females, UCRC]. Robertson Co., 8 mi. E of Hearne, 3.vi.1991, M. Hallmark [2 females, UCRC]. **Virginia**, Essex Co., 1 mi. SE of Dunnsville, D.R. Smith: 12-29.iv.1991 [1 female, USNM]; 30.iv-13.v.1991 [1 female, USNM]; 14-24.v.1991 [1 female, USNM]. Fairfa× Co., near Annandale, D.R. Smith: 21-27.v.1989 [1 female, USNM]; 11-17.vi.1989 [1 female, USNM]. Hardy Co., 3 mi. NE of Mathias, 38°55'N 78°49'W, 4-16.v.2002, D.R. Smith [1 female, CNCI]. Louisa Co., 4 mi. S of Cukoo, J. Kloke, D.R. Smith: 13-27.v.1987 [1 female, USNM]; 8-19.vi.1989 [1 female, USNM]; 22.vi-3.vii.1989 [1 female, USNM].

Redescription: Female (holotype of *M. metotarsa* and non-type specimens).

Body: Length ca. 800–1,250 µm. **Color:** Body dark brown to black (often gaster a little lighter than head and mesosoma); radicle and most of scape yellowish to light brown except scape brown to dark brown apically, flagellum brown to dark brown, clava dark brown to black; legs light brown to brown except coxae dark brown or black. **Head** (Fig. 11) narrower than mesosoma. **Antenna** (Figs. 8, 12) with scape minus radicle 6.2–7.0× as long as wide, a little shorter than clava, sculptured apically; pedicel much shorter than F1; F3 the longest funicle segment, 1.8–2.0× as long as pedicel; clava 3.4–4.1× as long as wide (in lateral view), longer than combined length of F5–F7 but shorter than combined length of F4–F7. **Mesosoma** (Fig. 14) a little longer than metasoma. **Fore wing** (Figs. 9, 13) longer than body, 8.0–8.7× as long as wide; disc with a brownish tinge almost throughout (particularly with a conspicuous infuscation at apex) except for a hyaline subapical spot (sometimes inconspicuous), with several incomplete, interrupted rows of setae and a few scattered setae not arranged in rows (most in apical half of wing); the longest



Figs. 11–13: *Macrocamptoptera metotarsa*, female (Camp Maxey Texas Army National Guard training facility area, Lamar Co., Texas, USA): (11) head (frontal view); (12) antenna; (13) fore wing.

marginal seta 1.6–1.8× maximum wing width. **Hind wing** (Fig. 10) 17–18× as long as wide, disc with a slight brownish tinge throughout (more conspicuously so apically and often with a small hyaline subapical spot) and mostly asetose except for a complete row of small setae along posterior margin and a few setae at apex and elsewhere; the longest marginal seta 3.1–3.6× maximum wing width. **Metasoma** (Fig. 15) with petiole apparently from about as long as wide to a little longer than wide. Ovipositor 0.33–0.35× length of gaster and 0.4–0.5× length of mesotibia.

Measurements (of the holotype parts, in microns [μm], as length or length:width for the wings): Antenna: radicle: 61; rest of scape: 276; pedicel: 70; F1: 100; F2: 15; F3: 136; F4: 84; F5: 79; F6: 75. Fore wing width: 110; longest marginal seta: 202. Hind wing: 1169:64; longest marginal seta: 197.

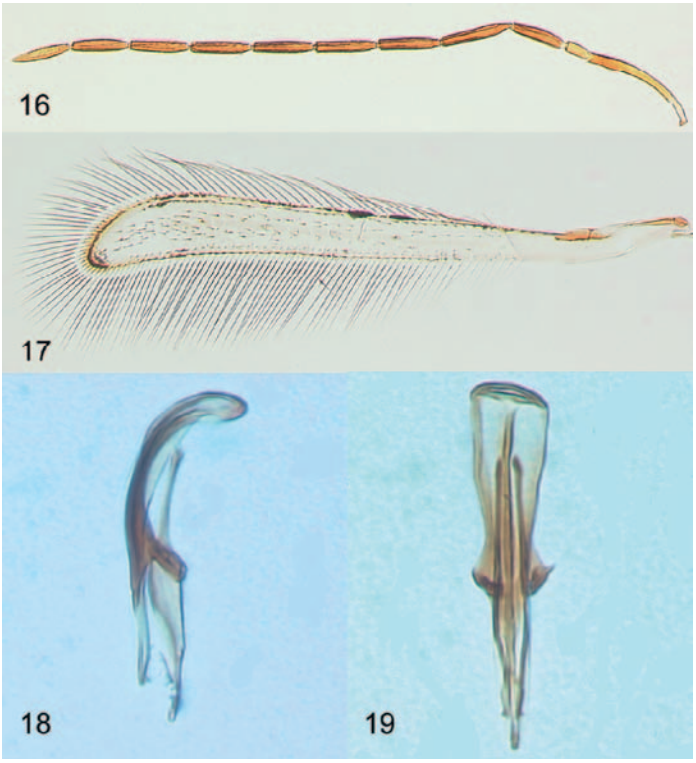
Male [previously undescribed but known as Huber & Lin (1999: 38) mentioned in their diagnosis of *Macrocamptoptera* that "Male flagellum 10-segmented with F2 ring-like"; that could only be referred to the male of *M. metotarsa* because the males of either *M. bulgarica*, *M. grangeri*, or *M. setata* sp.n. are not known]. The male of *M. metotarsa* is thus described here for the first time based on the non-type specimens from the Nearctic region listed above, as follows.

Description: Body length ca. 800–1,000 μm. Similar to female except for normal sexually dimorphic features and the following. Body dark brown to black; radicle light brown, rest of scape light brown basally to brown and dark brown apically, pedicel brown, flagellum dark brown; coxae brown to dark brown, remaining leg segments light brown to brown. Antenna (Fig. 16) with scape minus radicle about 7× as long as wide; all funicle segments except F2 much longer than wide and each with several longitudinal sensilla. Fore wing (Fig. 17) about 9.6× as long as wide, sometimes somewhat less pigmented than in female. Genitalia as in Figures 18 and 19.

Diagnosis: Female of this species is easy to distinguish by its slender scape of the female antenna (Figs. 8, 12), as indicated in the key above, and also by color of the scape: yellowish or light brown basally to brown and dark brown apically.

Female of *M. metotarsa* was also well-illustrated by Yoshimoto (1990) and Huber & Lin (1999) who provided very nice scanning electron micrographs.

Figs. 14, 15: *Macrocamptoptera metotarsa*, female (Camp Maxey Texas Army National Guard training facility area, Lamar Co., Texas, USA): (14) mesosoma; (15) metasoma.



Figs. 16–19: *Macrocamptoptera metotarsa*, male (Old Chelsea, Quebec, Canada): (16) antenna; (17) fore wing; (18–19) genitalia (lateral and dorsoventral views, respectively).

Distribution: North America (Nearctic region): Canada (Huber & Lin 1999) and USA (Girault 1905 [as *Camptoptera metotarsa*]; Huber & Lin 1999); Europe (western Palaearctic region): Belgium (Huber & Lin 1999, as *M. sundholmi*), and Sweden (Hedqvist 1962, as *Herulia sundholmi*).

Remark: Although I did not have the opportunity to examine the holotype of *Herulia sundholmi*, which was not available to me, its proposed synonymy under *M. metotarsa* is obvious based on the original description of the former and the study of the specimens of the latter species from Belgium and North America; also earlier, Huber & Lin (1999) stated (p. 39) that: "*Macrocamptoptera sundholmi* (Hedqvist) occurs in Sweden and Belgium (two specimens in CNCI)…".

Macrocamptoptera setata sp.n. (Figs. 20–22)

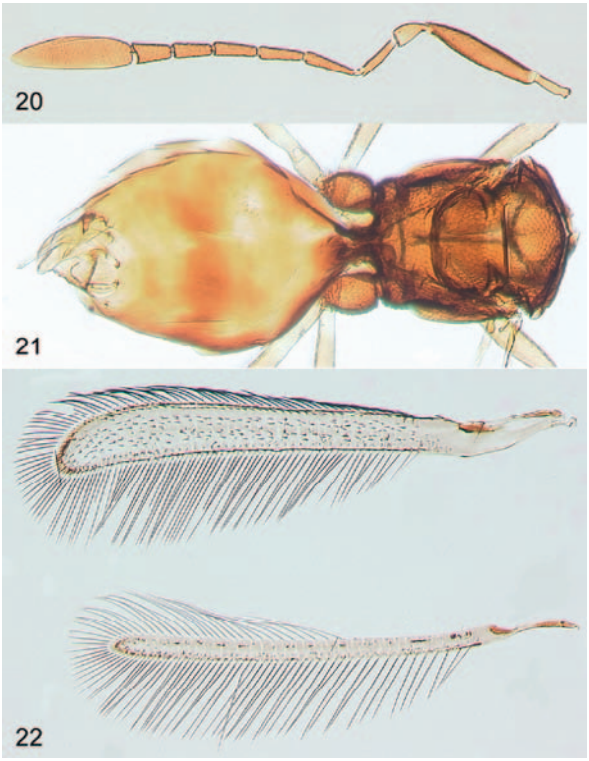
Type material: Holotype female [UCRC] on slide labeled: 1. "Oak Glen, Cal. S. Bd'no Co."; 2. "24-V-84 Coll. R.E. Wagner"; 3. "Univ. Calif. Riverside Ent. Res. Museum UCRC ENT 153645"; 4. "Mounted at UCR/ERM by V. V. Berezovskiy 2011 in Canada balsam"; 5. "*Camptoptera* (*Macrocampt-optera*) sp. Det. J.T. Huber 1984"; 6. [red] "*Macrocamptoptera setata* Triapitsyn HOLOTYPE ♀". The holotype is in excellent condition, mounted under four coverslips (with the head, both antennae, and a pair of wings detached).

2 Paratypes: USA. **California**, San Bernardino Co., Oak Glen, 34°02'N 116°57'W, 1500 m, 14-21.vi.1984, Malaise trap [1 female on point, CNCI]. **Oregon**, Lake Co., Bull Creek Campground (15 km NE of Lakeview), 20.vii.1994, S.L. Heydon [1 female on point, UCDC].

Description: Female (holotype).

Color: Radicle brown, rest of scape dark brown; pedicel light brown, flagellum brown. Head, mesosoma, and coxae dark brown; petiole dark brown, gaster brown. Legs except coxae light brown to brown. **Head** about as wide as mesosoma. **Antenna** (Fig. 20) with scape minus radicle 5.9× as long as wide, almost as long as clava, notably sculptured but more strongly so apically; pedicel shorter than F1; F3 the longest funicle segment,

about 1.54× as long as pedicel; clava 3.7× as long as wide (in lateral view), about as long as combined length of F5–F7. **Mesosoma** (Fig. 21) shorter than metasoma. **Fore wing** (Fig. 22) longer than body, about 8.1× as long as wide; disc with an uneven, conspicuous brownish tinge, with several complete, uninterrupted rows of setae; the longest marginal seta 1.7× maximum wing width. **Hind wing** (Fig. 22) about 19× as long as wide, disc with a conspicuous brownish tinge throughout and mostly asetose except for a complete row of small setae along posterior margin and a few setae at apex and elsewhere; the longest marginal seta 4.0–4.1× maximum wing width. **Metasoma** (Fig. 21) with petiole apparently about as long as wide. Ovipositor about 0.3× length of gaster and about 0.5× length of mesotibia, barely exserted beyond gastral apex.



Figs. 20–22: *Macrocamptoptera setata* sp.n., female (holotype): (20) antenna; (21) mesosoma and metasoma; (22) wings.

Measurements (of the holotype, in microns [µm], as length or length:width for the wings): Body (measured from dry specimen before slide-mounting): 1,155; head (measured from dry specimen before slide-mounting): 165; mesosoma: 412; petiole: 45; gaster: 646; ovipositor: 215. Antenna: radicle: 42; rest of scape: 144; pedicel: 39; F1: 51; F2: 10; F3: 60; F4: 55; F5: 52; F6: 46; F7: 46; clava: 146. Fore wing: 1316:163; longest marginal seta: 276. Hind wing: 1230:64; longest marginal seta: 260.

Body length of the paratypes: 990 µm (from Bull Creek Campground, Oregon) and 1,178 µm (from Oak Glen, California).

Male: Unknown.

Diagnosis: Female of this species differs from that of *M. metotarsa*, besides the antennal characters indicated in the key, also by the uniformly dark brown color of the scape (minus radicle) whereas in the latter species it is yellowish or light brown basally to brown and dark brown apically. *Macrocamptoptera setata* differs from all other known species of the genus by presence of several uninterrupted rows of discal setae on the fore wing (Fig. 22).

Etymology: The species name (an adjective) is a meaningless combination of letters derived from the word “seta”.

Distribution: North America (Nearctic region): USA (California, Oregon).

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