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On the sawflies of Cyprus, with a revision of the *Pristiphora subbifida* species group (Hymenoptera, Symphyta)

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Abstract

Species of the *Pristiphora* (*Pristiphora*) *subbifida* group, here redefined, are revised and *Pristiphora schedli* **sp. n.** is described from Cyprus. This species group is at present known to consist of six West Palaearctic species, all of which probably use maples (*Acer* sp.) as larval hosts. *Pristiphora parnasia* KONOW, 1902, previously considered to belong in the *P. subbifida* species group is transferred to the *P. chlorea* species group (as far as known, with *Quercus* spp. as larval hosts). A lectotype is designated for *Nematus depressus* HARTIG, 1840. *Calameuta festiva* BENSON, 1954 **sp. rev.** is not a synonym of *C. haemorrhoidalis* (FABRICIUS, 1781). The latter is removed from the list of species occurring in Cyprus. The previously unknown male of *C. festiva* and female of *Heterarthrus cypricus* SCHEDL, 2005 are described. *Hoplocampa crataegi* (KLUG, 1816) is newly recorded in Cyprus. *Quercus infectoria* is confirmed by rearing to be a hostplant of *Mesoneura lanigera* BENSON, 1954. Colour characters are presented for the simple identification of the larvae of the two West Palaearctic *Mesoneura* species.

Introduction

The sawfly fauna of Cyprus was first investigated by BENSON (1954) and subsequently by SCHEDL & KRAUS (1988), supplemented by SCHEDL (2002, 2005). The aim of the present contribution is mainly to clarify the taxonomy of the species from Cyprus previously misidentified as *Pristiphora subbifida* (THOMSON, 1871) and to present new data on the recently described *Heterarthrus cypricus* SCHEDL, 2005 as well as *Calameuta festiva* BENSON, 1954, both of which were previously known only from the unique holotype specimens. Furthermore, additional records of several other species which were previously in Cyprus only known from very few specimens, considerably extend their recorded geographical and altitudinal ranges within the island. Rearing of *Mesoneura lanigera* permits presentation of characters for the separation of larvae of this species from those of *M. opaca* (FABRICIUS, 1775).

Material and methods

Material was collected by J. SPÄTH in South Cyprus with a hand net from 10. - 27.04.2006. Specimens were stored initially in ethanol and pinned on his return to Germany. To avoid repetition, the names of collectors are given only for material not collected by J. SPÄTH, except for the types of *Pristiphora schedli* **sp. n.** The following acronyms are used for collections where material examined is deposited:

DEI	=	Deutsches Entomologisches Institut, Müncheberg, Germany
JSD	=	private collection of Dr. Jochen SPÄTH, Dingolfing, Germany
MKN	=	private collection of Dr. Manfred KRAUS, Nürnberg, Germany
MNMS	=	Museo Nacional de Ciencias Naturales, Madrid, Spain
MZLU	=	Zoological Museum of the University of Lund, Sweden
IZUI	=	Institute of Zoology, University of Innsbruck, Austria
ZSM	=	Zoologische Staatssammlung, Munich, Germany.

Results

List of species

The sawflies collected in 2006 comprise 20 species, represented by 201 individuals. The total number of sawfly species known from Cyprus is raised here to 37 by the addition of *Hoplocampa crataegi* (KLUG, 1816).

Cephidae

Calameuta festiva BENSON, 1954 sp. rev.

(Figs 1 & 4)

Calameuta festiva BENSON, 1954: 270. Holotype female, by original designation. Type locality: Cyprus, Yerasa, 1000 ft. [330 m.], 2.iv.1945 (G. A. MAVROMOUSTAKIS), deposited in British Museum (Natural History).

Calameuta festiva: BENSON, 1968. Synonym of *C. haemorrhoidalis* (FABRICIUS, 1781).

Material examined: 2♀, 9♂ (100-1050 m). The wide altitudinal distribution is noteworthy.

1♂, Potamitissa, edge of settlement, road E806 above stream, roadside verge with *Rubus sanctus*, *Smyrniun* sp., grass, Limassol District, 850 m, 18.04.2006; 1♀, 3♂, N. of Stroumpi, N. of Pafos, W. road B7, terraced meadow / roadside, Pafos District, 550 m, 23.04.2006; 1♀, 3♂, Myllomeris Waterfalls, S. of Pano Platres, Limassol District, on inflorescences of *Coriandrum sativum*, 1050 m, 21.04.2006; 1♂, Neo Chorio, W. of Polis, NE of settlement, edge of path & grassy verge with trees, Pafos District, 100 m, 10.04.2006; 1♂, SE of Kato Platres, S. of Karydaki Stream, field path, edge of meadow, Limassol District, 950 m, 22.04.2006.

Taxonomy: It is not clear why BENSON (1968) synonymised *C. festiva*, until now known only from the ♀ holotype, with *C. haemorrhoidalis* (FABRICIUS, 1781). The ♀ of *C. haemorrhoidalis* is almost completely black with the apex of the abdomen reddish coloured, and therefore completely unlike the extensively yellow-marked *C. festiva*. For the present we prefer to regard *C. festiva* as a valid species. It is hoped that material of *C. festiva* given to E. JANSEN will eventually result in a more detailed evaluation of the status of this taxon. For the present, our colleague confirms (pers. comm.) that *C. festiva* is not conspecific with *C. haemorrhoidalis*. Here we present only some notes and illustrations to aid recognition of this species.

C. haemorrhoidalis is recorded from Cyprus based only on the holotype of *C. festiva*. *C. haemorrhoidalis* should therefore be deleted from the list of Cyprus Symphyta.

Sexual dimorphism (♂ previously undescribed): ♂ (Fig. 1) with 20-22 antennomeres (20, n=4; 21, n=4; 22, n=1). ♀ both with 21 antennomeres. ♂ with apex and underside of whole thickened portion of antenna (approx. 6-10 apical antennomeres) pale. ♀ antenna entirely black with at most apical antennomere obscurely brown.

♂ with patch of yellow on lower frons (♀ completely black); basal 3/4 of forewing costa yellow (♀ black), rearwing costa entirely yellow (♀ black). Foreleg yellow with extreme base and whole anterior surface of femur and posterior surface of coxa black; trochanter completely black; apical tarsomere black. Middle leg with coxa completely black; femur black only on base (on both sides). Rear leg entirely black except for yellow apical half of coxa, stripe on apical anterior half of femur, and tibial spurs (♀ with legs entirely black except for anterior quarter of fore femur, whole foretibia, basal part of tarsus, all tibial spurs and small spot on apex of mid femur).

Variability, ♂: Patch of yellow on frons variable in outline and extent. Yellow stripe on rear femur may be reduced to very small apical spot. Extent of yellow on abdomen varies so that in palest individuals terga 3 & 4 are entirely yellow and posterior of 5 with broad, continuous apical yellow band. Tergum 6 with continuous but narrow yellow apical band. Tergum 7 with narrow interrupted stripe on lower apical corner. Sterna 3 &



Figs 1-5: **Figs 1, 4:** *Calameuta festiva* BENSON. **1,** ♂ lateral; **4,** lancet. **Figs 2-3, 5:** *Heterarthrus cypricus* SCHEDL. **2,** ♀ lateral; **3,** ♀ dorsal; **5,** lancet.

4 with only small basal, medial black stripe. Most specimens (6) tend towards this paler pattern. Darkest specimens with terga 3 & 4 bearing a dark, continuous basal stripe and following terga with yellow reduced to a small fleck in ventro-apical corner. Sterna 3 & 4 with medial black stripe along whole length. Length: 7-10 mm.

♀ Variability: not significant. Lancet: Fig. 4. Length: 8-9 mm,

Calameuta filiformis (EVERSMANN, 1847)

Material examined: 12♀, 11♂, 200-550 m.

11♀, 9♂, N. of Stroumpi, N. of Pafos, W. road B7, terraced meadow / pathside, Pafos District, 550 m, 23.04.2006; 1♀, 2♂, N. of Giolou, S. of Polis, E. of road B7, field path verge with meadow and trees, Pafos District, 200 m, 16.04.2006.

***Trachelus tabidus* (FABRICIUS, 1775)**

Material examined: 4♀, 2♂, 5-250 m.

1♀, NE of Polis at Hotel Natura Beach, pathside, grassy verge with flowering Asteraceae, Pafos District, 5 m, 10.04.2006; 1♀, 2♂, Agios Minas Church SW of Polis, meadow below church, Pafos District, 250 m, 12.04.2006; 1♀, Agios Minas Church SW of Polis, meadow below church, Pafos District, 250 m, 14.04.2006; 1♀, N. of Giolou S. of Polis, E. of road B7 field-path verge with meadow and trees, Pafos District, 200 m, 16.04.2006.

Argidae

***Arge ochropus* (GMELIN, 1790)**

Material examined: 1♂, S. of Vouni, SW of Pano Platres, near road 803, on inflorescences of *Foeniculum vulgare*, terraced meadow, Limassol District, 800 m, 23.04.2006.

***Arge scita* (MOCSÁRY, 1880)**

Material examined: 3♀, 4♂, 800-1200 m.

1♀, 4♂, Pano Platres, in grounds of Hotel Forest Park, on inflorescences of *Foeniculum vulgare*, Limassol District, 1200 m, 20.04.2006; 1♀, S. of Vouni, SW of Pano Platres, near road 803, on inflorescences of *Foeniculum vulgare*, terraced meadow, Limassol District, 800 m, 23.04.2006; 1♀, Chandria, S. of settlement, meadows and orchards on cultivation terraces, on inflorescences of *Smyrniun* sp., Limassol District, 1200 m, 18.04.2006.

***Arge melanochna* (GMELIN, 1790)**

Material examined: 7♂, 5-1200 m.

3♂, S. of Vouni, SW of Pano Platres, near road 803, on inflorescences of *Foeniculum vulgare*, terraced meadow, Limassol District, 800 m, 23.04.2006; 1♂, NE of Polis at Hotel Natura Beach, roadside, on inflorescences of *Foeniculum vulgare*, Pafos District, 5 m, 10.04.2006; 2♂, Chandria, S. of settlement, meadows and orchards on cultivation terraces, on inflorescences of *Smyrniun* sp., Limassol District, 1200 m, 18.04.2006; 1♂, Pano Platres, in grounds of Hotel Forest Park, on inflorescences of *Foeniculum vulgare*, Limassol District, 1200 m, 20.04.2006.

***Arge syriaca* (MOCSÁRY, 1880)**

Material examined: 2♀, 8♂, 250-1400 m.

2♀, 3♂, Pano Platres, in grounds of Hotel Forest Park, on inflorescences of *Foeniculum vulgare*, Limassol District, 1200 m, 20.04.2006; 1♂, Chandria, S. of settlement, meadows and orchards on cultivation terraces, on inflorescences of *Smyrniun* sp., Limassol District, 1200 m, 18.04.2006; 1♂, Trikoukia, SW of Prodromos, near road E804, verge, streamside, grass, *Rubus*, Limassol District, 1400 m, 19.04.2006; 2♂, Potamitissa, edge of settlement, road E806 over stream, roadside, streamside with *Rubus sanctus*, *Smyrniun* sp., grass, Limassol District, 850 m, 18.04.2006; 1♂, near Agios Minas Church, SW of Polis, in meadow on yellow flowering Apiaceae, Pafos District, 250 m, 26.04.2006.

The status of this taxon as a valid species follows PESARINI (2002). Otherwise, *A. syriaca* has been widely regarded in the more recent literature as a synonym (following BENSON 1968) of *A. cyanocrocea* (FORSTER, 1771).

Tenthredinidae

Athalia cordata SERVILLE, 1823

Material examined: 2♀, 3♂, 1050-1400 m.

1♂, Pano Platres, N. of settlement, streamside, ruderal vegetation with *Galium* cf. *aparine*, Limassol District, 1200 m, 17.04.2006, 1 further specimen seen. 2♂, Myllomeris Waterfalls, S. of Pano Platres, valley of Kryos-Potamos Stream, on *Acer obtusifolium*, Limassol District, 1050 m, 21.04.2006; 1♀, Chandria, S. of settlement, meadows and orchards on cultivation terraces, on inflorescences of *Smyrniium* sp., Limassol District, 1200 m, 18.04.2006; 1♀, Trikoukia SW of Prodromos, near road E804, verge, streamside, grass, *Rubus*, Limassol District, 1400 m, 19.04.2006.

Strongylogaster multifasciata (GEOFFROY, 1785)

Material examined: 4♀, 950-1050 m.

2♀, Myllomeris Waterfalls, S. of Pano Platres, valley of Kryos-Potamos Stream, on *Pteridium aquilinum*, Limassol District, 1050 m, 21.04.2006; 2♀, SE of Kato Platres, S. of Karydaki Stream, field path, edge of meadow, on *Pteridium aquilinum*, Limassol District, 950 m, 22.04.2006.

All specimens share the characters formerly considered diagnostic of ssp. *cypria* BENSON, 1954 (see BLANK 2002 for current taxonomy).

Monsoma pulveratum (RETZIUS, 1783)

Material examined: 1♀, 18♂, 1050-1300 m.

18♂, Pano Platres, beside Kryos Potamos Stream above Kalidonia Waterfalls, swept from flushing *Alnus orientalis*, mass flight in upper parts of trees, Limassol District, 1300 m, 17.04.2006; 1♀, Myllomeris Waterfalls, S. of Pano Platres, valley of Kryos Potamos Stream, Limassol District, 1050 m, 21.04.2006.

A singular feature of Cypriot *Monsoma pulveratum* is the abundance of males. SCHEDL & KRAUS (1988) record 2 specimens, both ♂, from Cyprus, also from the Kalidonia Waterfalls. In other parts of the W. Palaearctic, males are extremely rare: recorded only as single individuals from Bulgaria, S. France and Corsica.

Heterarthrus cypricus SCHEDL, 2005

(Figs 2-3, 5)

Material examined: 11♀, 30♂, 100-1010 m.

11♀, 28♂, Faneromeni Church, S. of Pano Platres, on *Acer obtusifolium*, pathside, field edge, Limassol District, 1010 m, 22.04.2006; 1♂, 50 larvae in leaf-mines, SE of Kato Platres, S. of Karydaki Stream in Panagias-Faneromenis-Street 500 m E of tavern, on *Acer obtusifolium*, Limassol District, 980 m, 22.04.2006; 1♂, 23 larvae in leaf-mines, S. of Skoulli, S. of Polis, B7 junction to Choli, on *Acer obtusifolium*, pathside with trees, Pafos District, 100 m, 25.04.2006.

Described from a single male adult and a few larvae from two localities in the Troodos Mts., 950-1100 m (SCHEDL 2005). The new records indicate that the altitudinal distribution is considerably wider, reaching down at least to 100 m.

♂ : these agree well with the description by SCHEDL (2005), except that in all the material examined the middle coxae and trochanters and the rear trochanters are clear white, sometimes with small black flecks (not entirely black). Rear coxae are largely black.

Variability, ♂ : number of antennomeres 11 (1), 12 (27), 13 (1). Black basal marking on rear femur reaching one third of length of femur (palest specimens) or covering almost whole posterior face of femur, leaving only an elongate subapical streak of pale (darkest specimens). Body length 3.0-3.5 mm.

♀ (Figs 2, 3): 12 antennomeres. Apart from primary sexual differences, quite closely resembles ♂, except for the following. Head less contracted behind eyes. Scape and pedicel may be more or less infusate (♂ always clear orange). Fore coxae largely black, apically whitish (♂ mostly orange). Fore trochanters whitish, more or less suffused or spotted with black (♂ orange). Middle coxae and middle and rear trochanters largely black (♂ largely white). Hind femur with yellow on anterior face only (♂ more extensively orange, both surfaces). Pale apical margins of tergites narrower than ♂. Sawsheath in dorsal view subparallel, black. Lancet: Fig. 5.

Variability, ♀: orange on anterior face of hind femur covering approximately one third of apex, or reduced to a small subapical spot. Antennal scape and pedicel may be entirely orange as in ♂, or with both basally suffused with black, or (2 specimens) with pedicel completely black. Body length 3.0-3.5 mm.

Habitats: the habitats of *A. obtusifolium* in Cyprus are rocky hillsides, pine forests, field borders and margins of rivulets and streams (MEIKLE 1977). The *A. obtusifolium* on which *H. cypricus* were found grew in all of these habitats, only in pine forest was no maple investigated. Thus *H. cypricus* seems to accept a variety of habitat conditions. At Kato Platres the *A. obtusifolium* grew on dry, rocky hillsides together with *Pinus* sp. and *Cistus* sp. and at Skoulli the maples grew in the shade of *Platanus orientalis* and *Salix alba* at the riverbank.

Occurrence of leaf-mines: leaf-mines (see illustration in SCHEDL 2005) were found on *Acer obtusifolium* at all three localities. In leaves of the current year, mines with living larvae occurred. On the previous year's leaves (*A. obtusifolium* is evergreen), vacated mines from the previous year were present.

At each locality the number of mines on 5 maple plants was counted. At Kato Platres 50 fresh and 9 old (of previous year) mines were found, at Pano Platres no fresh and approximately 700 old mines and at Skoulli 23 fresh and 14 old mines. Remarkable at Pano Platres was a massive occurrence of mines of the previous year on 2 poorly-grown, 2 meter tall *Acer* individuals. Each of these bore approximately 300 mines. Mines of the current year were not yet to be found at this locality.

Mines were present on maples of a variety of sizes (1.5-8 m) and were found up to 2 m above ground level (higher parts of the trees were not searched). Most mines occurred 1.5-2 m above ground level. Size of mines at Kato Platres and Skoulli was similar. The largest mines of the current year were approximately 2.5 cm² in area and the smallest were only just discernible. Several leaves with mines were taken for rearing, but the larvae proved to be too small to permit their successful development.

Position and number of mines in 81 leaves of the current year were recorded. 86 % of the mined leaves contained 1 mine, 14 % contained 2 mines. Leaves of trees affected by the mass outbreak were not included in this investigation. Very occasionally, leaves containing 3 mines also occurred on the latter. In the three-lobed leaves of *A. obtusifolium*, no clear preference was observed for any particular lobe: 72 % of mines were in the lateral lobes and 28 % in the middle lobe. Only 1 mine lay between the leaf petiole and a lateral lobe, indicating that oviposition takes place mainly in the tips of the lobes.

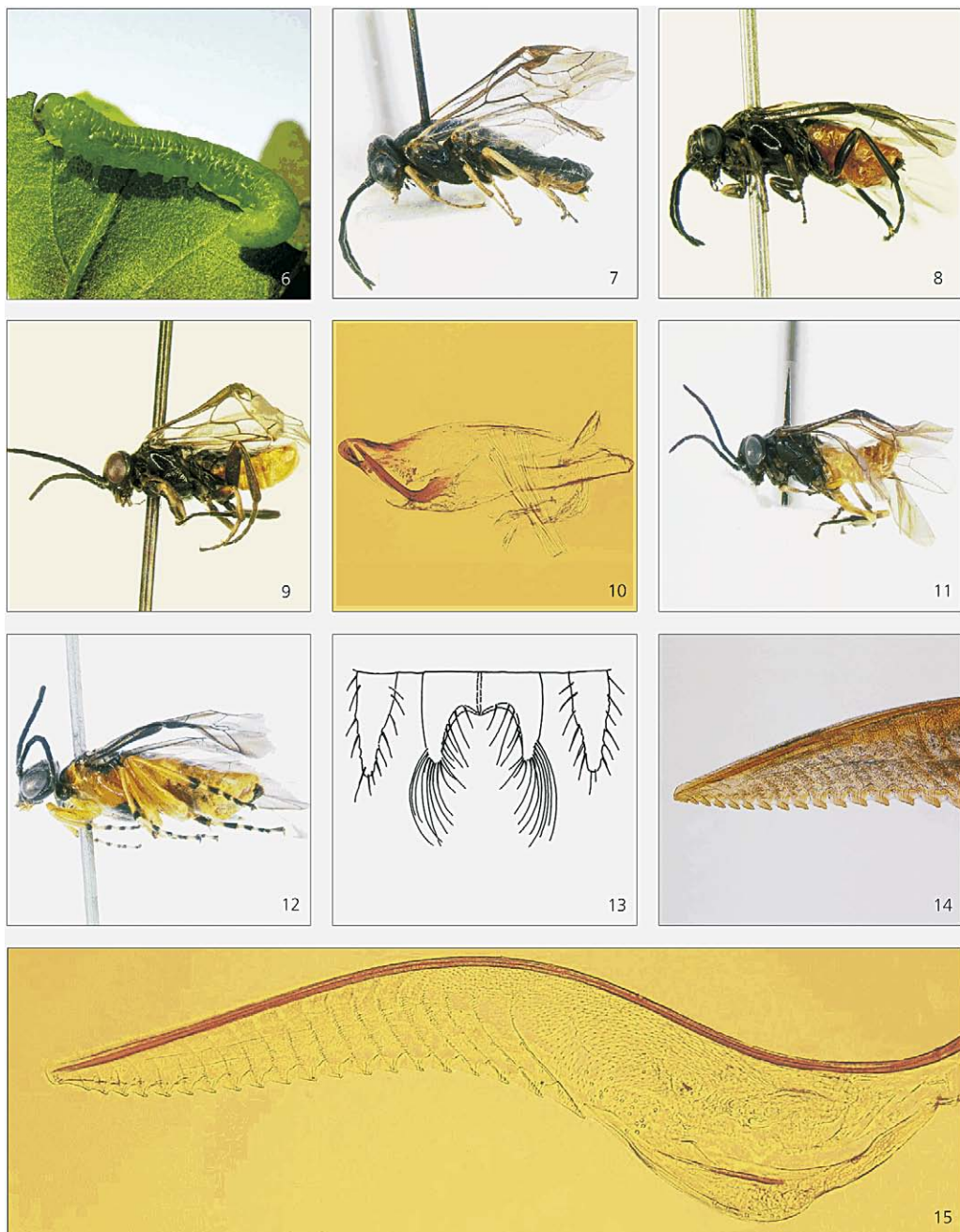
Allantus laticinctus (SERVILLE, 1823)

Material examined: 3♀, 300-500 m.

2♀, SW of Kathikas, S. of Polis, roadside verge E709, on inflorescences of *Foeniculum vulgare*, Pafos district, 500 m, 25.04.2006; 1♀, N. of Kidasi, road to Kedares, at bridge over River Diarizos, swept in meadow, Pafos District, 300 m, 16.04.2006.

Macrophya aphrodite BENSON, 1954

Material examined: 1♀, S. of Skoulli, S. of Polis, B7 junction to Choli, on leaf of *Acer obtusifolium*, pathside, trees, Pafos District, 100 m, 27.04.2006.



Figs 6-15: **Fig. 6:** *Mesoneura lanigera* BENSON. Larva on *Quercus infectoria*. **Fig. 7:** *Pristiphora cretica* SCHEDL. ♀ holotype, lateral. **Figs 8-10, 15:** *Pristiphora tetrica* (ZADDACH). **8,** ♀ lateral; **9,** ♂ lateral; **10,** penisvalve; **15,** lancet. **Fig. 11:** *Pristiphora nievesi* HARIS, ♀, lateral. **Figs 12-14:** *Pristiphora parnasia* KONOW. **12,** ♀ lateral; **13,** sawsheath; **14,** lancet.

This species is only definitely known from Cyprus (BENSON 1954, SCHEDL & KRAUS 1988, SCHEDL 2002). A record from the former Yugoslav Republic of Macedonia (CINGOVSKI 1976) seems very unlikely to be correct: the characters mentioned do not fit *M. aphrodite*.

***Mesoneura lanigera* BENSON, 1954**

(Fig. 6)

Material examined: 1 ♀, 2 ♂, reared from larvae on *Quercus infectoria*, and 3 preserved larvae. 100-1130 m.

1 ♀, reared from larva on *Q. infectoria*, 1 larva preserved, Pedoulas, S. edge of settlement, near road F 960, terraced meadow, Nikosia District, 1130 m, 20.04.2006 (em. 10.03.2007); 2 ♂, reared from larvae on *Q. infectoria*, NW extremity of settlement Foini, W. of Pano Platres, in garden of Tavern Phini, Limassol District, 920 m, 22.04.2006 (em. 07.03.2007); 2 larvae preserved (6 mm and 19 mm long), S. of Skoulli, S. of Polis, B7 junction to Choli, swept from *Acer obtusifolium* and *Q. infectoria*, Pafos District, 100 m, 27.04.2007.

M. lanigera was described by BENSON (1954) from Cyprus based on a series of 3 ♀ and 1 ♂ captured by G. A. MAVROMOUSTAKIS at the flowers of *Q. infectoria*. BENSON (1954) therefore already supposed that oak species are the hostplants of *M. lanigera*, because the larval hosts of species of *Mesoneura* known at that time belonged only to this plant genus. *M. lanigera* is not endemic to Cyprus. ERMOLENKO (1967) demonstrated its presence in the Crimea (Ukraine), and recorded oviposition in *Quercus pubescens*. ZHELOCHOVTSEV (1988) gives the distribution of *M. lanigera* as Transcarpathian Region, Crimea, Northern Caucasus and Cyprus. As suggested by ERMOLENKO (1967), it would be worthwhile to check the identity of specimens previously determined as *M. opaca* (FABRICIUS, 1775), the only other known species of *Mesoneura* in the W. Palaearctic, from more southerly parts of western Europe. The larva (Fig. 6) is very similar to that of *M. opaca*, except that *M. lanigera* has a brown stripe on the side of the head above the eye and brown markings on the upper frons which are missing in *M. opaca*.

Note: A supposed third W. Palaearctic species of *Mesoneura* described from Hungary as *M. nigrostigmata* by HARIS (2001) from a single ♀ with possibly aberrant venation, does not seem likely to really belong to *Mesoneura*.

***Hoplocampa brevis* (KLUG, 1816)**

Material examined: 19 ♀, 1200-1600 m.

12 ♀, S. of Troodos, edge of road B8, 1 km SW of Troodos Junction, on inflorescences of solitary *Pyrus* sp., Limassol District, 1600 m, 19.-20.04.2006; 6 ♀, Pano Platres, N. of settlement, dry slope, swept from inflorescences of *Crataegus monogyna*, Limassol District, 1200 m, 17. & 19.04.2006; 1 ♀, Pano Platres, N. of settlement, near trout farm, on inflorescence of domestic cherry (*Prunus* sp.), Limassol District, 1200 m, 17.04.2006.

The Cyprus specimens are more extensively pale on mesonotum and dorsal posterior of abdomen than those from Central Europe. The records indicate that the inflorescences of a number of rosaceous trees and shrubs are visited by adults, other than the larval host, *Pyrus*.

***Hoplocampa crataegi* (KLUG, 1816)**

Material examined: 2 ♀, Pano Platres, N. of settlement, dry slope, swept from inflorescences of *Crataegus monogyna*, Limassol District, 1200 m, 17. & 19.04.2006.

New record for Cyprus. *H. crataegi* is widespread in southern Europe, and occurs on many of the larger Mediterranean Islands (TAEGER et al. 2006; LISTON 2007).

***Nematus lucidus* (PANZER, 1801)**

Material examined: 1♀, 4♂, 1200-1600 m.

3♂, S. of Troodos, edge of road B8, 1 km SW of Troodos Junction, on inflorescences of solitary *Pyrus* sp., Limassol District, 1600 m, 19.-20.04.2006; 1♀, 1♂, Pano Platres, N. of settlement, dry slope, reared from larvae on *Crataegus monogyna*, Limassol District, 1200 m, 16. & 23.04.2006, em. 01. & 07.03.2007.

***Pontania proxima* (SERVILLE, 1823)**

Material examined: 21 larvae from galls on *Salix alba*. 100-300 m.

8 larvae, 1 km S. of Skouli, S. of Polis, bridge on B7 over River Chrysochou, Pafos District, 100 m, 15.04.2006; 13 larvae, S. Kidasi, road to Nikokleia, River Diarizos, with small area of gallery woodland (*Platanus*, *Alnus*), Limassol District, 300 m, 16.04.2006.

***Pristiphora abbreviata* (HARTIG, 1837)**

Material examined: 23♀, 9♂, S. of Troodos, edge of road B8, 1 km SW Troodos Junction, on inflorescences of solitary *Pyrus* sp., Limassol District, 1600 m, 19.-20.04.2006.

***Pristiphora schedli* LISTON & SPÄTH sp. n.**

2♀, 5♂ (see below).

Present state of knowledge of the sawfly fauna of Cyprus

Cyprus, now with 37 recorded species, seems to support fewer sawflies than the west Mediterranean islands of Sicily (95), Corsica (77) and Sardinia (74) (TAEGER et al. 2006; TURRISI 2007; LISTON 2007). The majority of sawflies require a minimum level of humidity or moistness, at least during their early stages. Presumably one important reason for the comparatively richer fauna of the more western islands is their higher rainfall (e.g. 670 mm average annual precipitation in Ajaccio, Corsica, rising to over 1000 mm in the mountains) compared to 375 mm in lowland Cyprus rising to 500-750 in the Western mountain zone (SCHEDL & KRAUS 1988). Additionally, a slightly greater probability of rainfall in summer exists in the West Mediterranean Region, at least in the mountains, while Cyprus experiences a more extreme summer drought. In view of the significantly higher rainfall of the mountain ranges in Cyprus compared to the plains, it is not surprising that the majority of records for nearly all sawfly species are from the higher mountain ranges, particularly the Troodos Mountains. The coastal and inland plains have also suffered a more complete and earlier removal of the original vegetation by man than the mountainous areas. None of the species found so far in Cyprus is known exclusively from localities near sea-level.

SCHEDL & KRAUS (1988) present a detailed history of previous investigations on the sawfly fauna of Cyprus, from which it is evident that very few entomologists have so far attempted specialized sampling of these insects. More intensive investigation of particular plant genera, known to be important larval hosts of Symphyta in other regions (e.g. *Quercus*, *Pinus*), together with fieldwork conducted earlier in the season than previously, will certainly lead to the discovery of additional sawfly species in Cyprus. Few records of sawflies exist from North Cyprus: SCHEDL (2002) mentions only *Trachelus libanensis* and *T. tabidus* collected there in 1990. It might therefore be particularly rewarding to study the sawfly fauna of the Kyrenian (or Pentadaktylos) Mountains in North Cyprus, an area of relatively high plant endemism (MÉDAIL & QUÉZEL 1997).

Cyprus harbours a higher proportion of sawfly species which may eventually prove to be examples of island endemism, than the West Mediterranean islands, i.e. *Calameuta festiva*, *Heterarthrus cypricus*, *Macrophya aphrodite* and *Pristiphora schedli* sp. n. It is noteworthy that none of these taxa is restricted to

a small area or narrow altitudinal zone within Cyprus. The sawfly fauna of adjacent mainland Mediterranean areas is however so poorly investigated, that it would be rash at present to consider any of these as proven Cypriot endemics. In general, very few sawfly species seem likely to represent taxa endemic only to Mediterranean islands, in accordance with the general pattern already observed in other, better-studied groups of winged insects (e.g. RUCKDESCHER 2007). Some of the few sawfly species which until now were only known from Crete, for example, have recently been found also to occur in the Peloponnese (unpublished information). Provisionally, the two sawfly species (*Heterarthrus cypricus*, *Pristiphora schedli* sp. n.) at present only known in Cyprus and attached to *Acer obtusifolium*, seem amongst the most likely to be true endemics. However, the range of *A. obtusifolium*, regarded by some botanists as a synonym of *A. sempervirens*, also includes the coastal mountain regions of Eastern Turkey, Syria, Lebanon and Palestine (GELDEREN et al. 1994). The occurrence of two distinctive, specialized sawfly phytophages on *A. obtusifolium* in Cyprus, replaced by different sawfly species in the same genera on *A. sempervirens* in Crete and the Peloponnese (unpublished data), might lend support to the view that *A. obtusifolium* is a valid taxon. On the other hand, it can not be assumed that speciation of these sawfly taxa occurred in a way which closely parallels that of their hosts. Study of the sawfly fauna of *Acer* species in mainland areas of the Eastern Mediterranean, in particular series *monspessulana* of the section *Acer* (see GELDEREN et al. 1994), could be expected to shed further light on this problem. Generally, we hope that efforts to improve the still remarkably poor level of knowledge about the taxonomy, distribution and biology of the Mediterranean sawfly fauna will soon concentrate increasingly on the mainland areas. The fauna of Cyprus, or any of the other islands, can only be properly understood within this wider frame of reference.

Revision of the *Pristiphora subbifida* species group

Our understanding of these sawflies has been impeded by a series of unfortunate events and circumstances which have subsequently clouded the morphological and biological characterization of species, starting with the somewhat unfortunate choice of name by THOMSON (1871) for the first species described in the group. The original description states that *Nematus subbifidus* has tarsal claws with the inner tooth slightly longer than the outer. THOMSON was clearly aware of the taxonomic significance of the shape of claw which he described, but the term subbifid has amongst modern entomologists come increasingly to mean that the inner tooth is slightly smaller than the outer. This condition approaches the normal character state in *Pristiphora*, with the inner tooth at most about half as long as the end tooth. The shape of the claw in *P. subbifida* would be described by most modern systematists as bifid. A bifid claw is rather rare in *Pristiphora*, occurring for example in a few species of the *P. melanocarpa* (HARTIG, 1840) species group, and the *P. chlorea* (NORTON, 1867) species group. The latter is represented in Europe by *P. fausta* (HARTIG, 1837) and *P. parnasia* KONOW, 1902. A mistake with serious consequences was the misidentification as *P. subbifida* by LINDQVIST (1973) of *P. conjugata* (DAHLBOM, 1835), or a similar species, reared from larvae in Finland on *Populus tremula*, and his description of the male as the previously unknown male of *P. subbifida*. The characterization of *P. subbifida* by ZHELOCHOVTSEV (1988) is unfortunately based largely on LINDQVIST's misidentification. The real *P. subbifida* is keyed by ZHELOCHOVTSEV under the name *P. carpentieri* KONOW.

Some of these species were recently treated by HARIS (2004). Since then, the realisation that specimens from Cyprus previously identified by W. SCHEDL (SCHEDL & KRAUS 1988, SCHEDL 2002) as *P. subbifida* represent a different, previously undescribed taxon, has prompted a revision of this species group. A new definition of the group is proposed, modified from HARIS (2004). Important differences in the treatment below are the inclusion of *P. tetrica*, and the exclusion of *P. parnasia* (removed to *P. chlorea* group). The characters used here also allow separation of males, as far as these are known, and the group is thought to represent a more natural entity than that proposed by HARIS (2004).

The *P. subbifida* species group is in practice difficult to separate, using adult external morphology alone, from some other *Pristiphora* species which are however distinguished biologically by being attached to *Populus* (*Pristiphora conjugata*) or *Betula* (*Pristiphora testacea* (JURINE, 1807)), in having a gregarious larval habit, larvae with more extensive and pronounced colour pattern (apomictic), and by being plurivoltine. In females of the latter species the projecting part of the sawsheath in dorsal view reaches almost to the apices of the cerci; in the *P. subbifida* group the projecting part of the sawsheath ends well before the apex of a cercus.

Whilst it remains to be proved that the *P. subbifida* group as defined below is monophyletic, similarities in biology and structure of male genitalia seem to indicate that this may be the case. It is therefore regrettable that the male of *P. subbifida* has never been recorded (and possibly does not normally occur: thelytokous?), and that the male of *P. nievesi* is likewise unknown. The penisvalve of the four species in which males are known is distinctive because of the strongly developed ergot, the very long and thin valvispina arising subapically from the paravalva and the well developed paravalva. The latter feature is more reminiscent of *Pachynematus* KONOW, 1890 sensu stricto (LACOURT 1999) than any other species of *Pristiphora* (see figures in BENSON 1958, or ZHELOCHOVTSEV 1988), but is also shared by *Stauronematus* BENSON, 1953.

Members of the *P. chlorea* group (WONG 1977) (as far as known all attached to *Quercus*) share the distinctively variegated adult body colour patterns, black forewing costa and stigma and bifid tarsal claws of most of the *P. subbifida* group. The following characters of the *P. chlorea* group distinguish it from the latter: penisvalve with short paravalva and valvispina arising apically, and a very inconspicuous ergot; extremely deep apical excision of the sawsheath, in dorsal view; lancet with conspicuous bands of long, thick ctenidia. *P. parnasia*, considered by HARIS (2004) to belong in the *P. subbifida* species group, is transferred to the *P. chlorea* species group because it possesses these characters. It is interesting to observe that the European species of the *P. chlorea* group have labial palps which are very similar to those of the *P. subbifida* group; the palpomeres are elongate and all of approximately equal width. SMITH (2003) notes that in the Nearctic species of the *P. chlorea* group palpomere 3 and sometimes also 4 of the labial palp are subglobose and strongly expanded compared to the basal palpomeres, thus differing from other species of *Pristiphora*.

Definition of *P. subbifida* species group

Adult:

- Penisvalve with long, upwardly curved valvispina arising from upperside of well developed paravalva, which is continued beyond base of valvispina. A strongly developed dorsal projection (ergot) arises at base of valviceps.
- Labial palps with all articles of almost equal width.
- Lancet with extensive dorsal area of hair-like microsensilla on radix and in a tapering stripe along the dorsal, basal portion of lamnium. Ctenidia short, fine.
- Stigma and costa of forewing dark (blackish), except in *P. ifranensis*. Stigma never conspicuously bicoloured (dark / pale).
- Sawsheath in dorsal view at most only slightly excised medially, at most three-quarters as long as cerci; pale basally, dark apically.
- Abdomen almost entirely pale ventrally, often also extensively on tergites.
- Claws usually bifid, or very nearly so, except in *P. schedli* **sp. n.** with inner tooth less than half as long as outer.
- Univoltine: adults only in spring, as soon as leaves are fully expanded

Larva:

- Solitary, cryptically coloured; green, at most sometimes with brown markings on head and small black markings on base of thoracic legs.

Hostplants:

- *Acer* species.

At present, representatives of the *P. subbifida* species group are only known from the West Palaearctic, but presence of the group in the East Palaearctic and Oriental Regions would not be surprising.

Key to W. Palaearctic adults of *Pristiphora subbifida* group

(*P. parnasia* of the *P. chlorea* species group is included in the key to species because it might be mistaken for a species of the *subbifida* group).

A: Stigma and costa often pale. Claws various. Sawsheath in dorsal view more than three quarters as long as cerci, sometimes with very well developed scopa. Penisvalve various, but often without long, thin valvispina, or ventral flap. Hostplants: Betulaceae, Ericaceae, Fabaceae, Fagaceae, Ranunculaceae, Rosaceae, Pinaceae, Salicaceae.

Other species groups of *Pristiphora* subgenus *Pristiphora* sensu Lacourt (1999). [not keyed: see for example Benson (1958), Zhelochovtsev (1988), Haris (2006).]

B: Stigma and costa usually dark (one exception). Claws nearly bifid (one exception). Sawsheath in dorsal view less than three quarters as long as cerci, scopa present but not visible as more than an emargination reaching maximally one third of the length of projecting part of valvula 3 in dorsal view. Long thin valvispina arising more or less basally from well-developed ventral flap on penisvalve. Hostplants: *Acer* (Aceraceae).

Pristiphora (*Pristiphora*) species group *subbifida* 1

1. Rear femur extensively black and rear tibia largely whitish, contrasting with other, more orange-brown, pale body parts (Fig. 7). Abdominal tergites black except at most for brown downturned extreme lateral edges (Fig. 7). ♀ and ♂. Crete. *Pristiphora cretica* SCHEDL, 1981
- Rear legs either almost completely black, including tibia (Fig. 8), or if tibia yellow then femur also mainly so (Figs 11, 26). Some abdominal tergites predominantly yellow 2
2. Thorax completely black (Fig. 8), at most tegula pale marked 3
- Thorax with at least pronotum, tegula and often part of mesopleura pale (yellow / orange) (Figs 16, 26) 4
3. Hind legs almost completely black (Fig. 8). Body length 5-7 mm. ♀ and ♂. Central Europe *Pristiphora tetrica* (ZADDACH, 1883)
- Hind legs with femur completely yellow, and at least base of tibia (Fig. 11). Body length 4 mm. ♂ unknown. Spain. *Pristiphora nievesi* HARIS, 2004
4. Tarsomeres ringed apically with black, pale basally (Fig. 12). Head with lower orbits completely black. Sawsheath in dorsal view with very deep apical excision (Fig. 13). ♂ unknown. Larva on *Quercus*. Mainland Greece, Crete. [*Pristiphora parnasia* KONOW, 1902]
- Tarsomeres pale below, or entirely dark, but never clearly ringed with black (Figs 16, 26). Head with at least lower orbits yellow 5
5. Antenna completely black (Figs 16, 18). Claws with inner tooth no more than half as long as outer (Fig. 23). ♀ and ♂. Cyprus. *Pristiphora schedli* **sp. n.**
- Antenna at least pale on underside (Fig. 26, 28). Claws bifid, inner tooth at least as long as outer (Fig. 31) 6
6. Costa and stigma yellow. Antennal flagellum yellow except for base dorsally. Abdomen with broad continuous black vitta. ♀ unknown. Morocco. *Pristiphora ifranensis* LACOURT, 1973
- Costa and stigma fuscous. Antennal flagellum black dorsally throughout, pale below. Middle abdominal tergites entirely pale. ♂ unknown. Central and Southern Europe. *Pristiphora subbifida* (THOMSON, 1871)

Notes on species

Pristiphora cretica SCHEDL, 1981

(Fig. 7)

Pristiphora cretica SCHEDL, 1981: 154-155, holotype female, by original designation. Type locality: Kreta, Nomos Lassithi, Sitia-Berge, oberhalb Thripti, ca. 1300 m. Type depository: IZUI.

Type material examined: Holotype ♀, "Griechenld, Kreta, Lassithi, oberh. Thripti, 1300 m. 26.4.80, leg. W. SCHEDL.", "Von *Pinus brutia* geklopft", "HOLOTYPUS *Pristiphora cretica* W. SCHEDL."; Paratype ♂, first and second labels same as holotype, "Pr. N. 217", "*Pristiphora* (♂) *cretica* W. SCHEDL".

Description

♀ (Fig. 7): black. Labrum and outer orbits red-brown. Tegulae and posterior edges of pronotum dirty yellow-brown. Femora black excepting apices. Legs pale yellow (almost white), apices of tibiae darkened, tarsi infusate on dorsal surface. Abdomen black; tergites brownish on extreme downturned margins; sternites medially yellow, laterally brown. Antennae approximately three quarters as long as costa of forewing. Clypeus slightly emarginate. Claws with inner tooth approximately two thirds as long as outer. Sawsheath in dorsal view only slightly emarginate in middle, appears half as long as cerci.

Length: 5 mm.

♂ : as ♀, but darker. Orbits completely black, tegulae only partly pale, only abdominal sterna 5-7 medially pale. Antennae as long as costa and half of stigma in forewing. Penisvalve illustrated by SCHEDL (1981).

Length: 4 mm.

Diagnosis: pale tibiae (almost white); extensively darkened femora and abdominal tergites.

Hostplant: tentatively associated with *Acer sempervirens* by SCHEDL (1981).

Distribution: Crete.

Pristiphora tetrica (ZADDACH, 1883)

(Figs 8-10, 15)

Nematus tetricus ZADDACH in BRISCHKE, 1883: 148-149, holotype female, by monotypy, Type locality: Gumperda, Thüringen, leg. SCHMIEDEKNECHT. Holotype not traced, possibly destroyed with most of ZADDACH's Collection during World War II (see BLANK & TAEGER 1998).

Nematus velatus ZADDACH in BRISCHKE, 1883: 149, holotype female, by monotypy. Type locality: Baiern (in Munich collection according to ZADDACH). There is no specimen in the ZSM collection which can be unequivocally identified as the holotype.

Pristiphora tetrica: LACOURT, 1976: 143-144, description of male.

Description:

♀ (Fig. 8): head completely black, except for brown palps and apices of mandibles. Thorax including legs completely black except for brownish apical half of front femur, sometimes also mid femur. Dorsum of abdomen with a variable broad black vitta covering whole tergum 1, extending to following terga, tapering towards posterior. The black area may extend to cover the whole dorsal surface, but even in these dark specimens the downturned lateral portions of tergites remain pale. The palest examples, described by ZADDACH as *N. velatus*, have only the first tergite, part of tergum 2 and the apex of the sawsheath black. Claws bifid. Lancet: Fig. 15. Length: 5-7 mm.

♂ (Fig. 9): as ♀, but abdomen usually more extensively black dorsally, apart from terga (7) 8 and 9. Penisvalve: Fig. 10. Length: 4,5-6,0 mm.

Diagnosis: thorax including legs almost completely black.

Hostplant: *Acer pseudoplatanus*. Reared by CARPENTIER (1907) and WEIFFENBACH (1985). Six adults captured in various parts of Germany by A. LISTON were also found on *A. pseudoplatanus*.

Distribution: Central Europe, from Denmark south to N. Italy, east to Slovakia (TAEGER et al. 2006).

Pristiphora nievesi HARIS, 2004

(Fig. 11)

Pristiphora nievesi HARIS, 2004: 164-165, holotype female, by original designation. Type locality: Spain, Madrid, El Ventorillo. Type depository: MNMS.

Type material examined: 2 ♀ paratypes labelled: "El Ventorillo 1480m. Madrid Trampa Malaise (7-15)-V-1990 NIEVES & REY leg.", "*Pristiphora* sp. det. W. SCHEDL 1993", "*Pristiphora nievesi* sp. n. det. A. HARIS 2004", "MNCN Cat Tipos No 9876" (red). Second specimen with labels same except for date "(23-31)-V-1990".

Description:

♀ (Fig. 11): head and thorax entirely black, except for parts of legs and more or less brownish tegulae. Abdomen yellow, with base of first tergite and apex of sawsheath black. Legs yellow, with black fore coxa, stripes on fore and middle femora, apices of middle and more so hind tibiae and tarsi. 3rd antennomere apical width / length 1.5 / 5.5. 7th antennomere 3.5 x as long as apical width. Claws bifid. Sawsheath in dorsal view subtruncate at apex, appearing approximately half as long as cerci. Body length 4 mm.

♂ : unknown.

Comments: HARIS (2004) stated that the tegulae are completely black. In the two paratypes studied this is not so. In one the tegulae are completely pale brown, in the other pale brown at edges and dark centrally.

Diagnosis: pronotum black, tibiae largely yellow. Smallest species in the group.

Hostplant: unknown.

Distribution: Spain.

Pristiphora parnasia KONOW, 1902

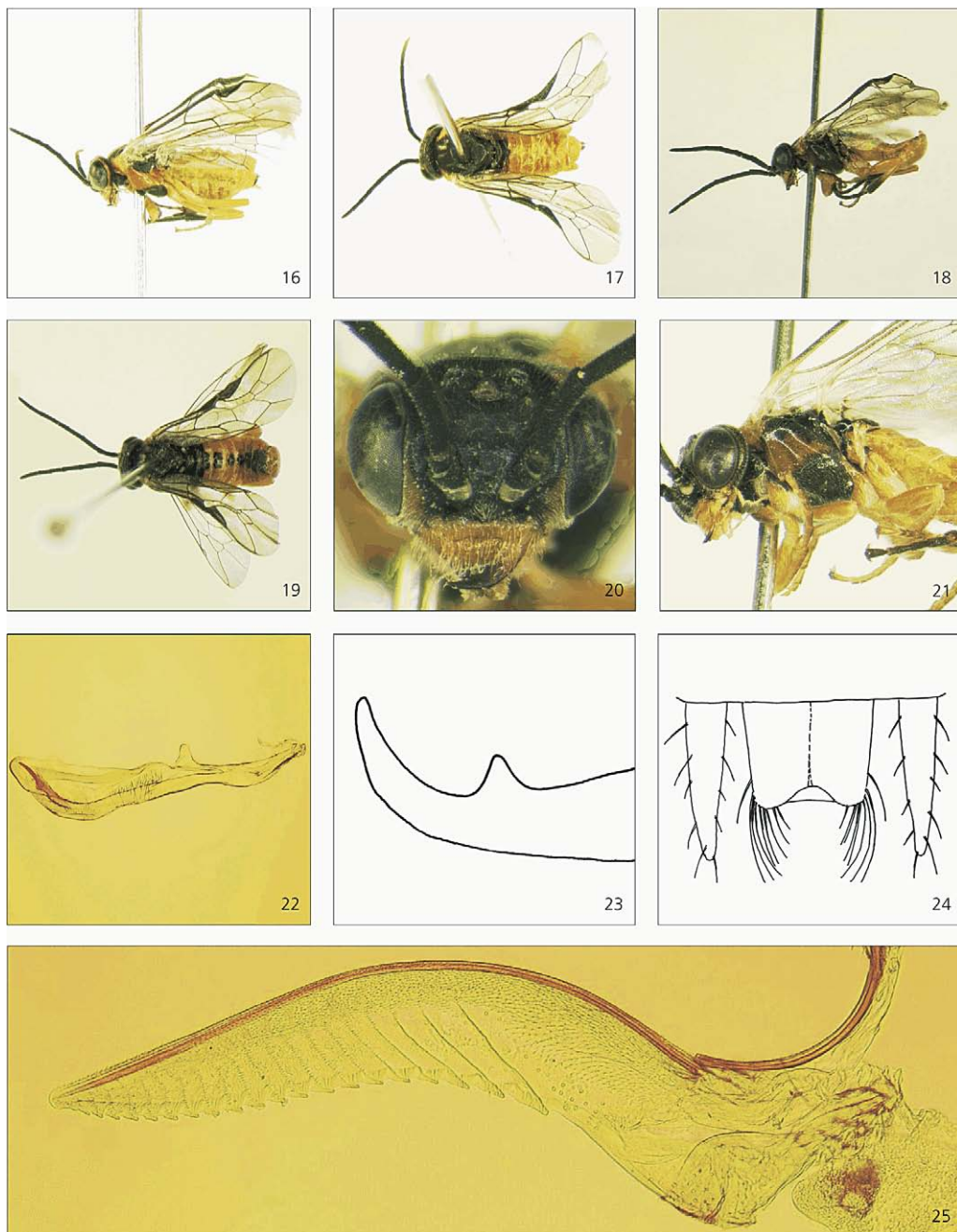
(Figs 12-14)

Pristiphora parnasia KONOW, 1902: 165 (key), 182, female syntypes. Type locality: Graecia, Parnass.

Type material examined: Lectotype (single syntype in DEI regarded by OEHLKE & WUDOWENZ (1984) as holotype, = lectotype designation), ♀: "*Pristiphora Parnasia* Knw. Parnass" (original KONOW label), "Parnass" (from collector?), "Holotypus" (red, added subsequently), "Conde rev.", "GBIF-GISHym 3895". Condition poor. Most of legs and antennae missing. Lancet mounted on a slide by CONDE.

Description:

♀ (Fig. 12): head black, except for labrum, mandibles, palps and obscure brown patch on inner postocular area. Thorax black. Pronotum yellow but tegulae black. Mesepisternum with dorsal and ventral black areas



Figs 16-25: Figs 16-25: *Pristiphora schedli* sp. n. 16, ♀ lateral; 17, ♀ dorsal; 18, ♂ lateral; 19, ♂ dorsal; 20, ♀ head; 21, ♂ lateral (pale form); 22, penisvalve; 23, claw; 24, sawsheath; 25, lancet.

separated by a continuous medial yellow band. Anepimeron black, katapimeron yellow. Legs entirely yellow except for black apices of tibiae and approximately apical half of each tarsal segment (tarsi thus appear ringed with black). Abdomen yellow except for tergum 1, cerci and apex of sawsheath.

Margin of clypeus slightly emarginate. Tarsal claws bifid. Sawsheath deeply excised medially in dorsal view (Fig. 13), approximately as long as cerci. Lancet: Fig. 14. Length: 5-7 mm.

♂ : Unknown.

Diagnosis: pronotum largely yellow, tegulae black. Tarsi ringed with black.

Hostplant: not known for certain, but probably *Quercus*. A *Pristiphora* larva swept from *Quercus pubescens*, Greece, Nom. Magnisía, Vólos SE 36 km, valley SSW Promíri, 39°10.25N 23°16.81E, 200-300 m altitude, 5.5.2007, leg. A. LISTON, seems very likely to belong to *P. parnasia* as adults of this species were the only *Pristiphora* species collected at this locality over several years by K. & L. STANDFUSS. Body of larva entirely green. Head with upper frons extensively black and pattern of brown spots extends from eyes to upper rear of head, without these two stripes meeting. Coxae black marked.

Distribution: mainland Greece, Crete.

Comments: *P. parnasia* is placed here in the *P. chlorea* species group because of the characteristic, very deeply excised sawsheath and strongly developed ctenidia of lancet.

***Pristiphora schedli* LISTON & SPÄTH sp. n.**
(Figs 16-25)

Pristiphora subbifida: SCHEDL & KRAUS, 1988; 221-222, misidentification.

Description:

♀ (Figs 16, 17): head (Figs 20, 21) black, with yellow mouthparts, labrum, clypeus, inner lower orbits, outer orbits. Antenna entirely black. Thorax black; pronotum and tegula yellow; broad yellow horizontal stripe on middle upper mesepisternum; anepimeron black, katepimeron yellow. Legs yellow with black suffused middle tarsus and tip of middle tibia, deep black rear tarsus and approximately 1/4-1/3 of rear tibia apically. Wings subhyaline; all venation including stigma and costa black except at extreme wing-base. Abdomen yellow except for mainly black first tergite, and darkened apex of sawsheath and cerci.

Head with dense, pale pubescence: as long as one third of diameter of ocellus on upper head; around mouthparts at least 1.5x length of ocellar diameter. Clypeus broadly and shallowly excised. Postocellar area approximately 4.5 (width) x 2.5 (medial length). Antenna as long as costa of forewing, scarcely tapering (apical width of antennomere 8 hardly less than that of antennomere 3). Antennomere 3 4x as long as its apical width. Antennomeres 3 and 4 subequal in length.

Inner hind tibial spur 0.40-0.45 as long as basitarsus, or nearly equal to apical width of tibia. Basitarsus 4x as long as apical width. Tarsal claws with small inner tooth, about 1/3rd as long as outer (Fig. 23). Width of cercus approximately one third of basal width of projecting part of valvula 3. Sawsheath (Fig. 24) in dorsal view approximately three times as broad as a cercus, clearly emarginate at middle, with dense fringe of slightly curved setae along edges of excision. Longest setae slightly shorter than projecting part of sawsheath. Lancet: strongly curved, short in relation to basal height (Fig. 25). Body length 5.5-6.0 mm.

Variability: not significant.

♂ (Figs 18, 19): similar to ♀ except for sexual differences, but darker. Head black except for clypeus, labrum and mouthparts. Whole mesepimeron black. 1st abdominal tergite black, with row of medial black spots on at least terga 2 & 3. Apical black spot on middle of terga 7-8. Penis valve: Fig. 22. Length: 4.0-5.0 mm.

Variability: mesepisternum entirely black, or with small anterior pale smudge (Fig. 18), or with horizontal stripe similar to ♀ (Fig. 21). Coxa pale or black marked. Trochanters may also have very small black fleck on upper face. One specimen has black apices of fore tibiae, and minute black stripes on bases of fore and middle femur. Abdominal terga with row of black medial spots on all terga (but spots smaller on terga 4-6), or terga 4-6 completely yellow. The extent of the dark markings on the various body parts does

not seem to be interlinked, i.e. the specimen with the darkest (completely black) mesopleura has paler legs than the specimen with the palest mesopleura.

Holotype: ♀, Myllomeris Waterfalls, s. [South of] Pano Platres, Tal des [valley of] Kryos-Potamos-Baches [Stream] an [on] *Acer obtusifolium*, Limassol District, 1050 m, 21.04.2006, leg. J. SPÄTH. Deposited in DEI.

Paratypes: 1 ♀, Pano Platres, in Ortschaft [in settlement], auf Blatt von [on leaf of] *Rubus sanctus*, Limassol District, 1100 m, 21.04.2006, leg. J. SPÄTH (ZSM). 5 ♂, Myllomeris Waterfalls, s. Pano Platres, Tal des Kryos-Potamos-Baches an *Acer obtusifolium*, Limassol District, 1050 m, 21.04.2006, leg. J. SPÄTH (JSD, DEI and ZSM). 1 ♂, Kyrenia (N. Cyprus), 8.3.1981, leg. H. TEUNISSEN (MKN); 1 ♀, 1 ♂ Troodos, 28.4.1987, leg. M. KRAUS (MKN); 1 ♀, 1 ♂ Troodos, 3.5.1987, leg. M. KRAUS (MKN).

Diagnosis: tarsal claws with inner tooth at most half as long as outer distinguish *P. schedli* from all others in the *P. subbifida* group, whose claws are approximately bifid. Colouration is similar to *P. subbifida*, differing most clearly in the entirely black antennae of *P. schedli* (extensively pale on underside in *P. subbifida*). *P. schedli* **sp. n.** differs morphologically from *P. subbifida* in having shorter antennae, with antennomeres proportionally thicker, and lancet more strongly curved and shorter in relation to its basal width (compare Figs 25 and 32).

Etymology: dedicated to Prof. Dr. Wolfgang SCHEDL of Innsbruck, in recognition of his contribution to our knowledge of the West Palaearctic Tenthredinidae, particularly of the Mediterranean Islands.

Hostplant: *Acer obtusifolium* (SCHEDL & KRAUS 1988, as *P. subbifida* on *A. orientale*). SCHEDL & KRAUS (1988) correctly state that *A. obtusifolium* (= *orientale*) is the only maple species occurring naturally in Cyprus. The mention of *A. sempervirens* by SCHEDL (2002) as a host of *P. subbifida* auct. (= *schedli*) in Cyprus is therefore probably the result of acceptance of the widespread synonymy of *A. obtusifolium* with *A. sempervirens* in botanical literature. These are probably however distinct taxa (GELDEREN 1994).

Distribution: Cyprus, 430 - 1100 m (SCHEDL & KRAUS 1988, and above).

Pristiphora ifranensis LACOURT, 1973

Pristiphora ifranensis LACOURT, 1973: 189-190, male holotype, by original designation. Type locality: Val d'Ifrane, Maroc, 1550 m.

Description:

♀: unknown.

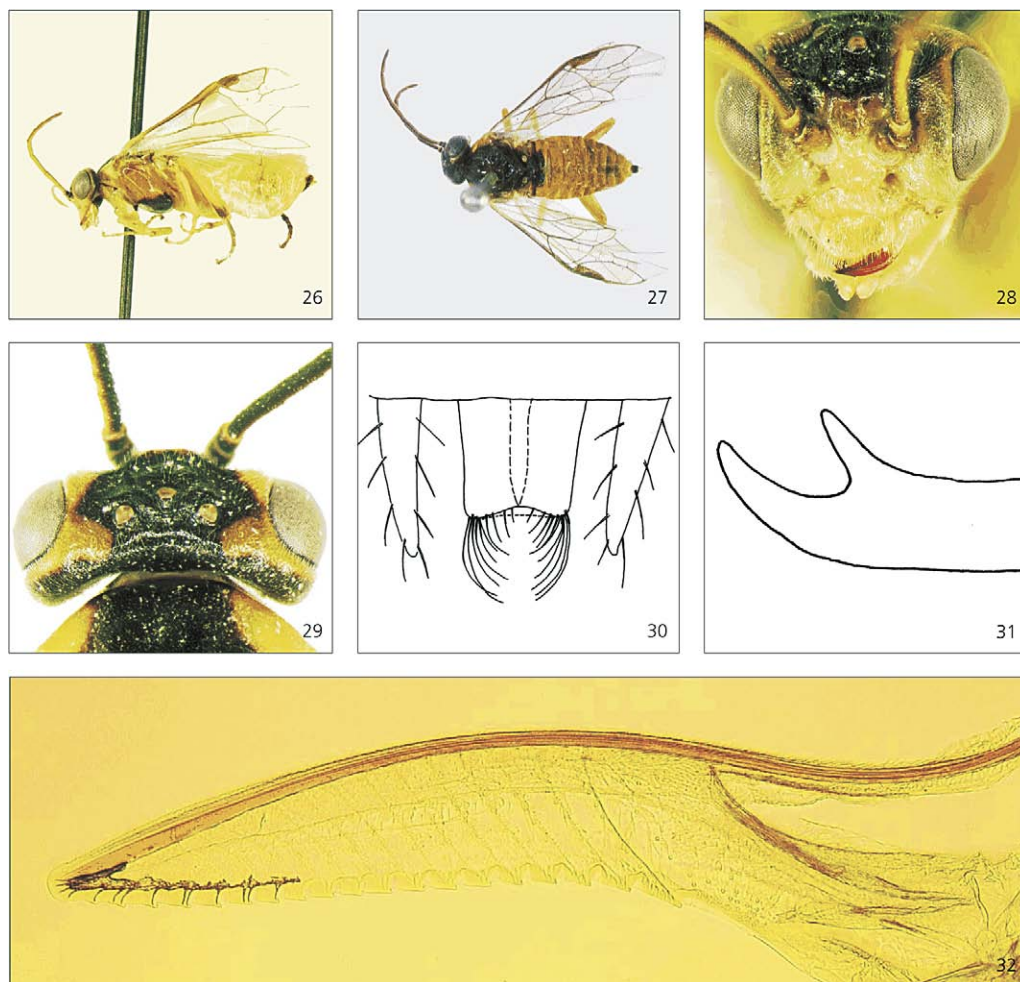
♂: head yellow, with large black ocellar fleck extending into postocellar area and rear of head. Antennal scape black, flagellum yellow with dorsal surface of antennomeres 3, 4, 5 black. Pronotum largely yellow. Tegulae yellow. Mesopleura and metapleura yellow, with black patch on venter of mesepisternum. Legs yellow, all trochanters marked with black, posterior surface of femora with a thin black streak from base reaching just beyond middle, tibiae slightly infuscate at apex, tarsi slightly infuscate. Costa and stigma yellow. Abdomen with broad, uninterrupted dorsal black vitta, otherwise completely yellow.

Clypeus truncate. Tarsal claws with inner tooth slightly shorter than outer. Penisvalve illustrated by LACOURT (1973), whole insect by HARIS (2006). Length: 5.8 mm.

Diagnosis: antenna at apex entirely pale, costa and stigma of forewing pale.

Hostplant: Unknown. According to J. LACOURT (pers. comm.), *Acer monspessulanum* occurs at the type locality. This maple species is suggested as a possible host.

Distribution: Morocco.



Figs 26-32: *Pristiphora subbifida* (THOMSON), ♀. 26, lateral; 27, lectotype dorsal; 28, 29, head; 30, sawsheath; 31, claw; 32, lancet.

***Pristiphora subbifida* THOMSON, 1871**
(Figs 26-32)

Nematus subbifidus THOMSON, 1871: 105, female syntypes. Type locality: Östergöthland, Sweden. *Nomen protectum*.

Nematus depressus HARTIG, 1840: 24, female syntypes. Type locality [according to introduction]: North Germany. Tentatively synonymised with *N. subbifidus* by KRIECHBAUMER (1884: 109-110). *Nematus depressus* must be treated as a *nomen oblitum* according to Article 23.9. (ICZN 1999) on reversal of precedence. The name has not been used as valid since 1900, and *P. subbifida* has been treated as valid more than 25 times by at least 10 authors in the last fifty years.

Pristiphora carpentieri KONOW, 1902: 178, female syntypes. Type locality: Amiens, France. Synonymised with *P. subbifida* by ENSLIN (1916).

Type material examined: *Nematus subbifidus* THOMSON, 1871. According to LINDQVIST (1954: 156): "In der Sammlung ist nur ein Weibchen vertreten, der als Type anzusehen ist" (= lectotype designation, ICZN 1999 Art. 74.6). This ♀ specimen, in good condition, is in the THOMSON Collection (ZML), labelled: "O. G." (= Östergöthland. Small square printed label), "Bhn" (= BOHEMAN. Small square printed label), "*subbifidus*" (large handwritten label in THOMSON's hand, in printed red frame), "Lectotype *Nematus subbifidus* Thomson, 1871 designated by Lindqvist 1954" (added by Liston, printed), "*Pristiphora subbifida* Thomson, 1871 det. A. D. Liston 2007" (printed).

Nematus depressus HARTIG, 1840. One female syntype in good condition is in the ZSM collection. This is here designated as lectotype, in order to promote stability of nomenclature should further syntypes be found. Labelling: "Type" (red, printed), "*Nematus depressus* Th. Hartig det" (white, printed), "*depressus*" (HARTIG's handwriting), "Sammlung Th. Hartig" (white, printed), "*Pristiphora subbifida* Th. E. Clémont det", "Lectotype *Nematus depressus* Hartig, 1840 des. Liston 2007".

Pristiphora carpentieri KONOW, 1902. Single syntype specimen in DEI regarded as "Holotypus" by OEHLKE & WUDOWENZ (1984) (= lectotype designation). Labelling: "*Pristiphora Carpentieri* Knw. Amiens, Gall.", "Amiens, Gall." (both written by KONOW), "Coll. Konow" (printed), "Holotypus" (printed, red), "Conde rev.", "GBIF-GISHym 3902". Condition: part of left flagellum missing, right forewing broken. The lancet was mounted on a microscope slide by CONDE (Symphyta Coll. Nr. 197).

Description:

♀ (Figs 26, 27) (the following refers to the very much more abundant pale form: see also below under "variability"): Head usually extensively yellow (Figs 28, 29). Black are only a large ocellar patch, postocellar area and extreme outer hind orbits and rear of head. Antennae even in darkest form (described as *carpentieri*) clearly pale below, throughout their length. Thorax black, yellow are pronotum, tegulae, entire mesopleura except for ventral black patch on mesepisternum. Abdomen entirely yellow except for tergite 1 (occasionally middle of 2) and apex of sawsheath. Legs yellow except for black apices of rear tibiae and more or less tarsi.

Antenna as long as costa and stigma together. 3rd antennomere 5x as long as apical width. 7th antennomere 3x as long as apical width. Tarsal claws bifid, with inner tooth slightly longer than outer (Fig. 31). Sawsheath in dorsal view (Fig. 30) slightly emarginate in middle, appearing approximately three-quarters as long as cerci; longest setae strongly curved. Lancet: Fig. 32. Length: 5-7 mm.

♂: unknown, species probably thelytokous. Description of ♂ by LINDQVIST (1973) is based on *P. conjugata*, or a similar species. ♂ described by SCHEDL & KRAUS (1988) belongs to *P. schedli* sp. n..

Variability: extent of yellow on head, mesopleura and abdomen may be considerably reduced. In the darkest specimens only labrum, clypeus, a small patch below the antennae and the vertex are pale. The mesopleura may be entirely dark except for a pale patch on upper anterior quarter of mesepisternum. Abdominal tergites 1-3 and 8-9 may bear medial black flecks. The lectotype of *P. carpentieri* corresponds to this darkest form. The lectotype of *Nematus depressus* HARTIG is intermediate between *carpentieri* and typically pale *subbifida*. Its head is very dark, as in *carpentieri*, and abdominal tergites 1-2 & 8-9 medially black. The mesepisternum is narrowly black on dorsal and posterior edges.

Diagnosis: antennae long and antennomeres relatively narrow in relation to length. Antenna black dorsally and pale below.

Hostplants: only *Acer campestre*, first recorded by CARPENTIER (1901), has been confirmed. Also reared from this host by WEIFFENBACH (1985) and LISTON (1996). CARPENTIER (1901) also recorded *A. pseudoplatanus* as a host of *P. subbifida*. This requires confirmation, because the larva of *P. tetrica*, first recognised by CARPENTIER (1907) as associated with this hostplant, is very similar to that of *P. subbifida*. *A. obtusifolium* (= *orientale*) recorded by SCHEDL & KRAUS (1988) for *P. subbifida* refers to *P. schedli* sp. n.

Distribution: Central Europe, north to S. Sweden and Estonia, in south reaching Italy, Hungary and Ukraine (TAEGER et al. 2006). According to BENSON (1968) also in Turkey (Samsun), but the very late date of capture given for the single ♀ (20.07.1959) is incongruous. The record from Finland by LINDQVIST (1973) based on

specimens reared from *Populus tremula* is certainly based on a misidentification, as indicated tentatively by VIITASARI & VIKBERG (1985).

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Zusammenfassung

Die Arten der *Pristiphora* (*Pristiphora*) *subbifida* Artengruppe werden revidiert und *Pristiphora schedli* sp. n. von Zypern neu beschrieben. Nach momentanem Wissensstand besteht die *P. subbifida* Artengruppe aus sechs westpalaearktischen Arten, deren Larven sich vermutlich alle von Ahornarten (*Acer* spp.) ern hren. *Pristiphora parnasia* KONOW, 1902, die bisher der *P. subbifida* Artengruppe zugeordnet war, wird jetzt der *P. chlorea* Artengruppe zugerechnet. So weit bekannt, ern hren sich die Larven dieser Artengruppe von *Quercus* spp.. F r *Nematus depressus* HARTIG, 1840 wird ein Lektotypus festgelegt. *Calameuta festiva* BENSON, 1954 sp. rev. ist kein Synonym von *C. haemorrhoidalis* (FABRICIUS, 1781). Letztere Art wird von der Liste der in Zypern vorkommenden Symphytenarten gestrichen. Das bisher unbekannte M nnchen von *C. festiva* und das Weibchen von *Heterarthrus cypricus* SCHEDL, 2005 werden beschrieben. *Hoplocampa crataegi* (KLUG, 1816) wird neu f r Zypern nachgewiesen. Durch Larvenaufzucht wird *Quercus infectoria* als Larvenfutterpflanze von *Mesoneura lanigera* BENSON, 1954 best tigt. Anhand von F rbungsunterschieden sind die Larven beider westpalaearktischer *Mesoneura*-Arten leicht unterscheidbar.

References

- BENSON, R. B. 1954: Some sawflies of the European Alps and the Mediterranean region (Hymenoptera: Symphyta). – Bull. Brit. Mus. (Nat. Hist.) Ent. ser. **3**(7), 267-295.
- BENSON, R. B. 1958: Hymenoptera, Symphyta. – Handbks Ident. Br. Insects **6**(2c), 139-258.
- BENSON, R. B. 1968: Hymenoptera from Turkey, Symphyta. – Bull. Brit. Mus. (Nat. Hist.) Ent. ser. **22**(4), 111-207.
- BLANK, S. M. 2002: Taxonomic Notes on Strongylogasterini (Hymenoptera: Tenthredinidae). – Proc. ent. Soc. Wash. **104**, 692-701.
- BLANK, S. M. & A. TAEGER 1998: Comments on the taxonomy of Symphyta (Hymenoptera) (Preliminary studies for a catalogue of Symphyta, part 4). In: TAEGER, A. & S. M. BLANK 1998 (Hrsg.): Pflanzenwespen Deutschlands (Hymenoptera, Symphyta). Kommentierte Bestandsaufnahme. – Goecke & Evers, Keltorn: 141-174.
- BRISCHKE, C. G. A. 1883: Beobachtungen  ber die Arten der Blatt- und Holzwespen von C. G. A. Brischke, Hauptlehrer a. D. in Langfuhr und Dr. Gustav Zaddach, Professor in K nigsberg, mitgeteilt von Brischke aus Zaddachs Manuskripten [F nfte Abhandlung, *Nematus* Teil 2]. – Schr. phys.- kon. Ges. K nigsb. **23**[1882], 107-200; plate I (7).
- CARPENTIER, L. 1901: Sur les larves de quelques N matides. (Hym.). – Z. syst. Hymenopt. Dipterol. **1**, 223.
- CARPENTIER, L. 1907: Sur quelques Larves de Chalastrogastrea. (Hym.). – Z. syst. Hymenopt. Dipterol. **7**, 134-135.
- CINGOVSKI, J. 1976: Einige interessante und f r die Fauna Makedoniens neue S gewespen (Symphyta, Hymenoptera). – Pos. izd. Prirod. Muz. Skopje **7**, 97-108.
- ENSLIN, E. 1916: Die Tenthredinoidea Mitteleuropas V. – Dt. ent. Z., Beiheft **5**, 413-538.
- ERMOLENKO, V. M. 1967: [On Tenthredinidae (Hymenoptera) of the genus *Mesoneura* Hartig in Palearctic.] (in Russian). – Vest. zool. **1967**, 83-87.

- GELDEREN, D. M. VAN; JONG, P. C. DE & H. J. OTERDOOM 1994: *Maples of the World*. – Timber Press, Oregon.
- HARIS, A. 2001: Revisional list of the Hungarian Nematinae with the description of three new species (Hymenoptera: Tenthredinidae). – *Folia Ent. Hung.* **62**, 95-114.
- HARIS, A. 2004: New sawflies from Spain (Hymenoptera, Tenthredinidae). – *Graellsia* **60**, 163-165.
- HARIS, A. 2006: Study on the Palearctic *Pristiphora* species (Hymenoptera: Tenthredinidae) – *Natura Somogyiensis* **9**, 201-277.
- HARTIG, T. 1840: Hymenopterologische Mittheilungen vom Forstrathe Dr. Th. Hartwig. [sic!] – *Ent. Ztg. (Stettin)* **1**, 19-28.
- ICZN 1999: International Code of Zoological Nomenclature. Fourth Edition. – London: 1-306.
- KONOW, F. W. 1902: Die Nematiden-Gattung *Pristiphora* Latr. (Hymenoptera, Tenthredinidae) soweit dieselbe bisher aus der palaearktischen Zone bekannt ist. – *Ezheg. Zool. Muz. Imp. Akad. Sci.* **7**, 161-187.
- KRIECHBAUMER, J. 1884: Blattwespenstudien. – *Korrespondenz-Bl. zool.-mineral. Ver. Regensburg* **38**, 104-112.
- LACOURT, J. 1973: Deux nouvelles espèces de Nematinae du Maroc (Hymenoptera, Tenthredinidae). – *Soc. sci. nat. phys. Maroc bull.* **53**, 189-192.
- LACOURT, J. 1976: Description du male de *Pristiphora tetrica* (Hym. Tenthredinidae). – *Entomologiste* **32**, 143-144.
- LACOURT, J. 1999: Répertoire des Tenthredinidae ouest-paléarctiques (Hymenoptera, Symphyta). – *Mém. Soc. ent. Fr.* **3**, 1-432.
- LINDQVIST, E. 1954: Eine Revision der von Thomson beschriebenen Nematinen (Hym. Tenthredinidae). – *Opusc. Ent.* **19**, 150-164.
- LINDQVIST, E. 1973: Taxonomische Bemerkungen über einige Blattwespen I (Hymenoptera, Symphyta). – *Notulae Ent.* **53**, 33-39.
- LISTON, A. D. 1996: Two little known Nematinae larvae (Hym., Tenthredinidae). – *Sawfly News* **1**, 2-6.
- LISTON, A. D. 2007: Revision of *Stauronematus* Benson, 1953 and additions to the sawfly fauna of Corsica and Sardinia (Hymenoptera, Tenthredinidae). – *Beitr. Ent.* **57**, 135-150.
- MÉDAIL, F. & P. QUÉZEL: 1997: Hotspots analysis for conservation of plant biodiversity in the Mediterranean Basin. – *Ann. Missouri. Bot. Garden* **84**, 112-117.
- MEIKLE, R. D. 1977: *Flora of Cyprus*. – Royal Botanic Garden Kew, London.
- OEHLKE, J. & J. WUDOWENZ 1984: Katalog der in den Sammlungen der Abteilung Taxonomie der Insekten des Institutes für Pflanzenschutzforschung, Bereich Eberswalde (ehemals Deutsches Entomologisches Institut), aufbewahrten Typen – XXII (Hymenoptera: Symphyta). – *Beitr. Ent.* **34**, 363-420.
- PESARINI, F. 2002: Contributo alla conoscenza dei sinfiti della regione balcanico-egaea (Hymenoptera, Symphyta). – *Boll. Mus. Reg. Sci. Nat. Torino* **19**, 121-183.
- RUCKDESCHEL, W. 2007: Die Geometriden Kretas (Lepidoptera, Geometridae). – *NachrBl. Bayer. Ent.* **56** (1/2), 2-13.
- SCHEDL, W. 1981: Die Pflanzenwespen der Insel Kreta (Insecta: Hymenoptera, Symphyta). – *Ber. Naturw.-Med. Ver. Innsbruck* **68**, 145-157.
- SCHEDL, W. 2002: Pflanzenwespen von Zypern: Neunachweise und Ergänzungen zu früheren Aufsammlungen (Insecta: Hymenoptera, Symphyta). – *Linzer biol. Beitr.* **34**, 1285-1291.
- SCHEDL, W. 2005: Eine neue minierende Blattwespe des Genus *Heterarthrus* von Zypern (Hymenoptera: Symphyta: Tenthredinidae). – *Ber. Naturw.-Med. Ver. Innsbruck* **92**, 137-140.
- SCHEDL, W. & M. KRAUS 1988: Die Pflanzenwespen von Zypern: Faunistisch- tiergeographische und ökologische Ergebnisse (Insecta: Hymenoptera, Symphyta). – *Ber. Naturw.-Med. Ver. Innsbruck* **75**, 213-226.
- SMITH, D. R. 2003: A Synopsis of the Sawflies (Hymenoptera: Symphyta) of America South of the United States: Tenthredinidae (Nematinae, Heterarthrinae, Tenthredininae). – *Trans. Amer. Ent. Soc.* **129**, 1-45.

- TAEGER, A.; BLANK, S. M. & A. D. LISTON 2006: European Sawflies (Hymenoptera: Symphyta) – A Species Checklist for the Countries. In: BLANK, S. M.; SCHMIDT, S. & A. TAEGER (eds): Recent Sawfly Research: Synthesis and Prospects. Goecke & Evers, Keltern, 399-504.
- THOMSON, C. G. 1871: Hymenoptera Scandinaviae – *Tenthredo* et *Sirex* Lin. – H. Olsson, Lund.
- TURRISI, G. F. 2007: *Xyela curva* Benson, 1938 (Hymenoptera Xyelidae), specie nuova per la fauna siciliana. – *Naturalista sicil.* **31**, 69-76.
- VIITASAARI, M. & V. VIKBERG 1985: A checklist of the sawflies (Hymenoptera, Symphyta) of Finland. – *Notulae Ent.* **65**, 1-17.
- WEIFFENBACH, H. 1985: Symphyta (Hymenoptera) von Süd-Niedersachsen, Nord- und Mittelhessen. – *Mitt. Münch. Ent. Ges.* **75**, 5-44.
- WONG, H. R. 1977: Chinese species of *Pristiphora* and their relationship to Palearctic and Nearctic species (Hymenoptera: Tenthredinidae). – *Can. Ent.* **109**, 101-106.
- ZHELOCHOVTSEV, A. N. 1988: [Order Hymenoptera. Suborder Symphyta]. In: MEDVEDEV, G. C. (ed.): [Keys to the Insects of the European Part of the USSR] (in Russian). – Nauka, Leningrad **3(6)**: 3-237.

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