

# Sawflies from northern Ecuador and a checklist for the country (Hymenoptera: Argidae, Orussidae, Pergidae, Tenthredinidae, Xiphydriidae)

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## Abstract

An illustrated list of species of sawflies collected in northern Ecuador, mainly during the end of 2016, is given. *Manaos mulsus* (Konow, 1906), *Ptenos delta* (Malaise, 1957), *Scobina styx* Malaise, 1949 (Argidae), *Stromboceros suppar* Konow, 1903 and *Stromboceros sutilis* Konow, 1903 (Tenthredinidae) are species new for the country. A checklist of species for the country is also provided. Approximately 120 species of Symphyta are known from Ecuador, 25 Argidae, 1 Orussidae, about 40 Pergidae, about 60 Tenthredinidae, and 3 Xiphydriidae.

## Keywords

Species list, adult feeding behaviour, host plant, South America

## Introduction

As a hotspot of biodiversity, Ecuador includes various environments harbouring many species still to be discovered, especially among the insects (e.g., Heckman 2006). Sawflies known from the country belong to the families Argidae, Orussidae, Pergidae, Tenthredinidae, and

Xiphydriidae (see checklist and references below). A list of species collected more recently in the southern part of the country was published by Boevé et al. (2016).

Here, an illustrated list is given for sawfly adults from the northern part of Ecuador, which were collected in the frame of a Global Taxonomy Initiative (GTI) project. We also compiled data and list the sawfly species known for the country.

## Methods

Sawflies were collected in the north-eastern (province Orellana) and north-western (Pichincha) sides of Ecuador, mainly during November 2016 (Fig. 1) plus a few during March 2015. Nearly all of them were collected as adults using a net and they are stored in ethanol. Field observations include the mention of plants, not necessarily host plants, on which adults were found.

Pictures were taken by J.-L. Boevé with the following cameras: Pentax Optio W10, Nikon Coolpix P300, and Canon EOS 5D Mark III. Since adult specimens are kept in ethanol, they were partly dried to take the pictures, which were mainly intended to illustrate the habitus. Specimens of each species collected in 2015 and 2016 were photographed (Figs 2–22). Screenshots (see Fig. 1e, f, g) were extracted from video sequences taken by Alain Pauly.

The sawfly specimens collected as part of the GTI project are stored in the Royal Belgian Institute of Natural Sciences, Brussels, Belgium (RBINS; J.-L. Boevé collection, with specimen reference codes starting with 'P'), with duplicates that will be located in the Pontificia Universidad Católica del Ecuador, Quito (PUCE). Sawfly specimens from the RBINS, Senckenberg Deutsche Entomologisches Institut, Münchenberg, Germany, and National Museum of Natural History, Washington, D.C., USA were examined. Dates are given by dd.mm.year.

The adult sawflies were identified by D. R. Smith. Identifications of Argidae and Pergidae are based on Smith (1990, 1992). Identifications of Blennocampinae and Selandriinae (Tenthredinidae) are based on Smith (2007) and unpublished manuscripts by DRS.

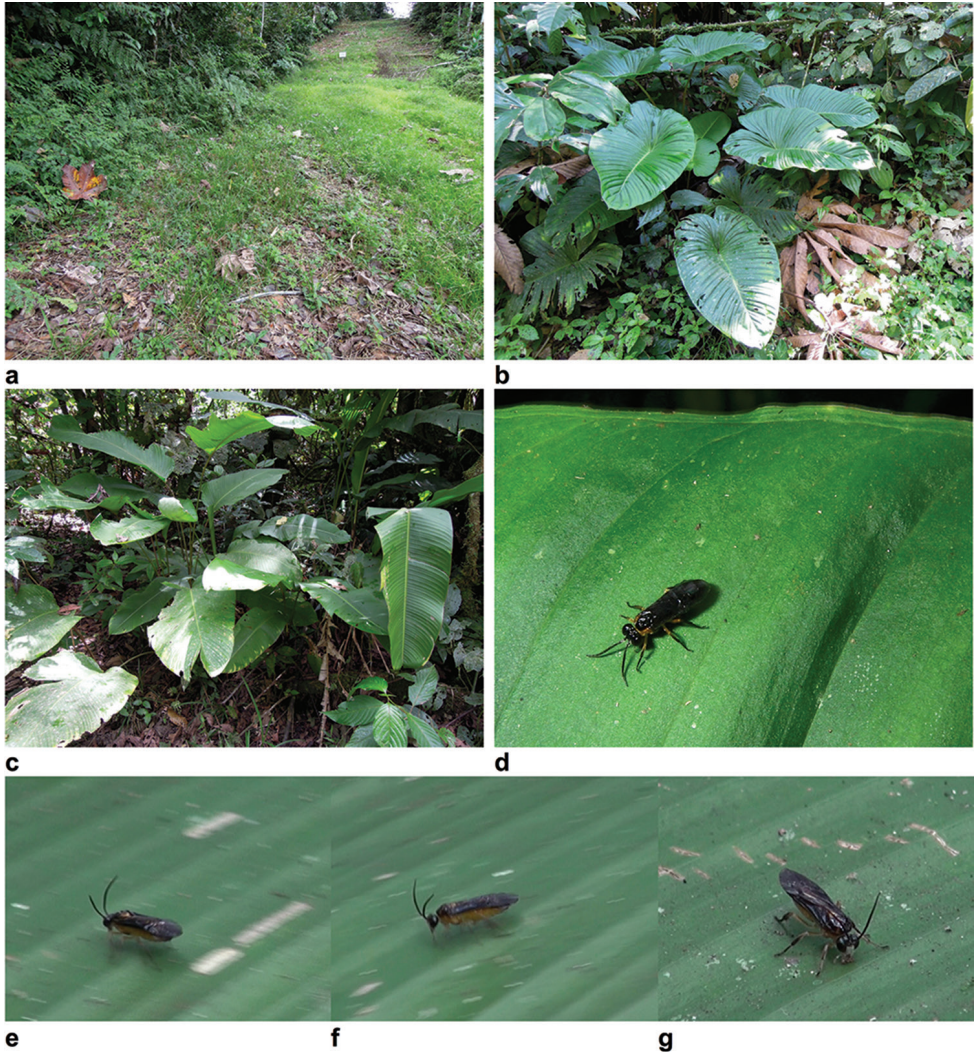
## Results

### Family Argidae

#### *Manaos mammeatus* (Konow, 1906b)

Fig. 2

**Material.** Estación científica Yasuní, near río Tiputini, 00°40'S, 076°24'W, 220m, 02.03.2015, P4119.B (1 ♀), leg. T. Delsinne, 14–16.11.2016, on leaf of *Heliconia* sp. (Heliconiaceae), P4217.A, P4220.A, P4220.B, P4222, P4223.C, P4223.D (6 ♀), leg. J.-L. Boevé.



**Figure 1.** Pictures taken in the field, showing some biotopes and sawfly adults from northern Ecuador. Location **a–g** Yasuni National Park **h** Pacto **i–m** Hacienda San Vicente, Mindo. Leaves of **b** *Anthurium* sp. and **c** *Heliconia* sp., inspected by **d** *Proselandria alvina* and **e–g** probably *Manaos mammeatus*, respectively.

***Manaos mulsus* (Konow, 1906b)**

Fig. 3

**Material.** Estación científica Yasuní, 00°40'S, 076°27'W, 235, 13.11.2016, on leaf of *Anthurium* sp. (Araceae), P4214.G (1 ♀), 00°33'S, 076°31'W, 260m, 14.11.2016, on leaf of *Heliconia* sp., P4216 (1 ♂), 00°40'S, 076°27'W, 250m, 15.11.2016, on leaf of *Anthurium* sp., P4221.D (1 ♂), leg. J.-L. Boevé.

**Note.** This is a new record for Ecuador. The species was previously known from Brazil, Peru, and Surinam (Smith 1992).



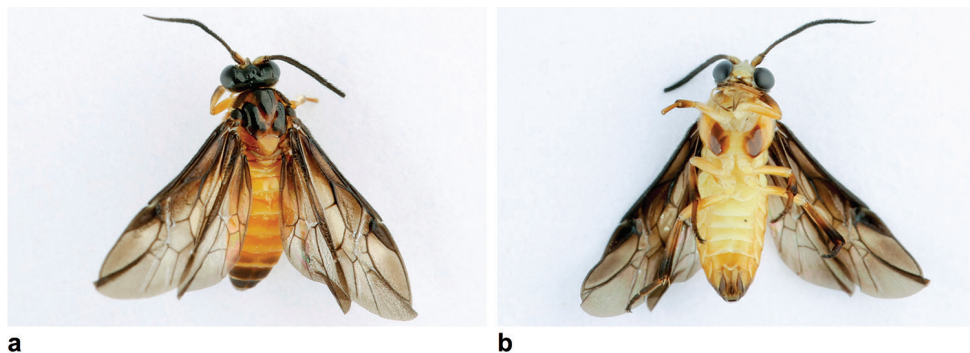
**Figure 1.** Continued. **h** Biotope where *Waldheimia* sp. A was common **i** Biotope of pasture (with orchard in the foreground) where, among others **j** *Inea* sp. (P4239.E) and **k** *Waldheimia* sp. A were collected **l** Biotope of forest path **m** with the precise spot where *Stromboceros sutilis* (P4239.G) was collected.

### *Ptenos delta* (Malaise, 1957)

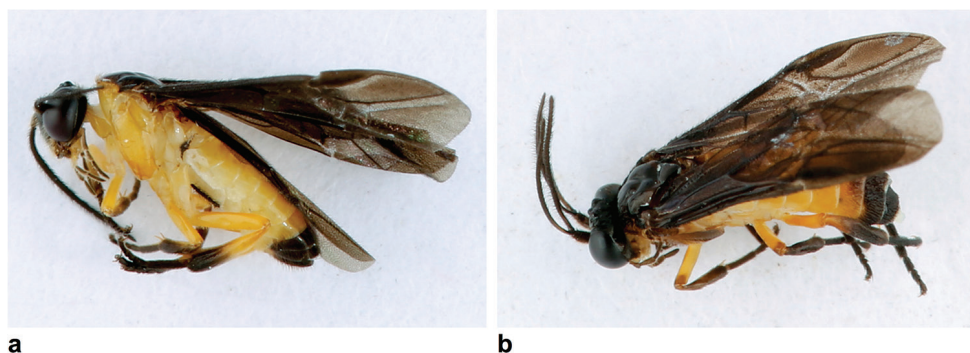
Fig. 4

**Material.** Estación científica Yasuní, near río Tiputini, 00°40'S, 076°24'W, 220m, 02.03.2015, P4119.C (1 ♀), leg. T. Delsinne.

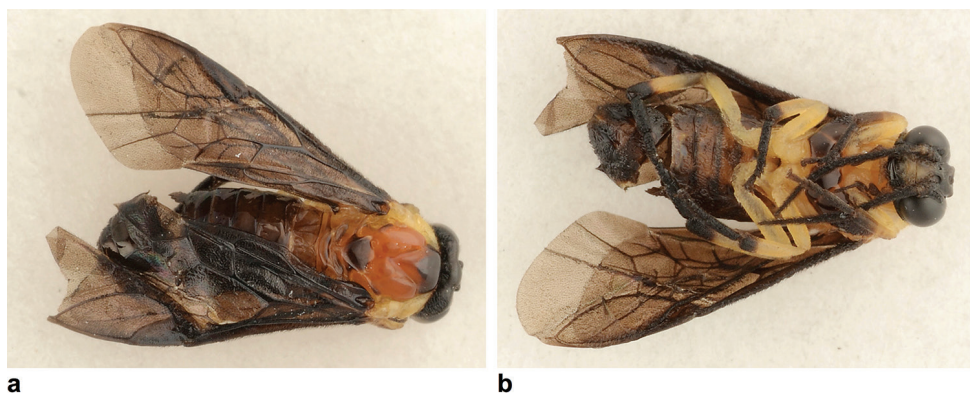
**Note.** This is a new record for Ecuador. It was previously known only from Brazil and Peru (as *Hemidineura delta* Smith, 1992).



**Figure 2.** *Manaos mammeatus*, female (P4223.D), body length 6.5 mm. **a** Dorsal view **b** ventral view.



**Figure 3.** *Manaos mulsus*. **a** Female (P4214.G), body length 4.5 mm **b** male (P4221.D), body length 4.5 mm  
**a** Lateral view **b** dorso-lateral view.

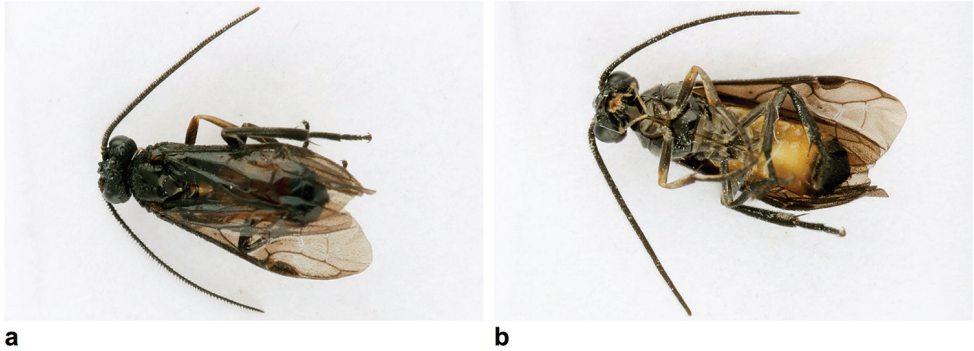


**Figure 4.** *Prenos delta*, female (P4119.C), body length 6.5 mm. **a** Dorsal view **b** ventral view.

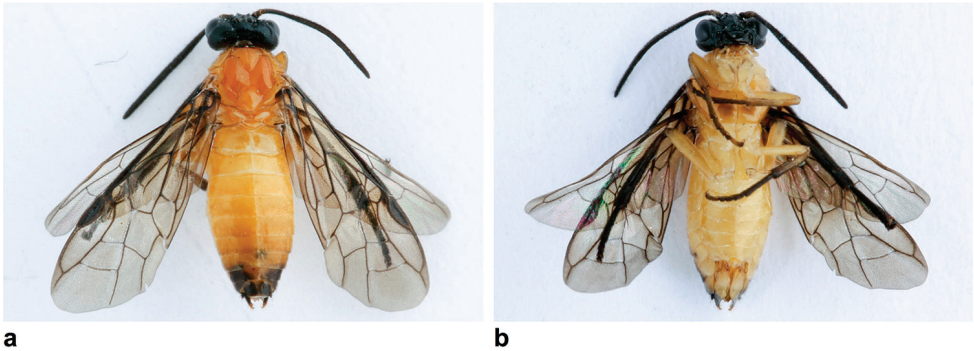
### *Scobina inculta* (Konow, 1906a)

Fig. 5

**Material.** Estación científica Yasuní, 00°36'S, 076°30'W, 240m, 14.11.2016, by sweeping, P4215.E (1 ♂), leg. J.-L. Boevé.



**Figure 5.** *Scobina inculta*, male (P4215.E), body length 6.5 mm. **a** Dorsal view **b** ventral view.



**Figure 6.** *Scobina notaticollis*, female (P4213), body length 7.5 mm. **a** Dorsal view **b** ventral view.

***Scobina notaticollis* (Konow, 1899a)**

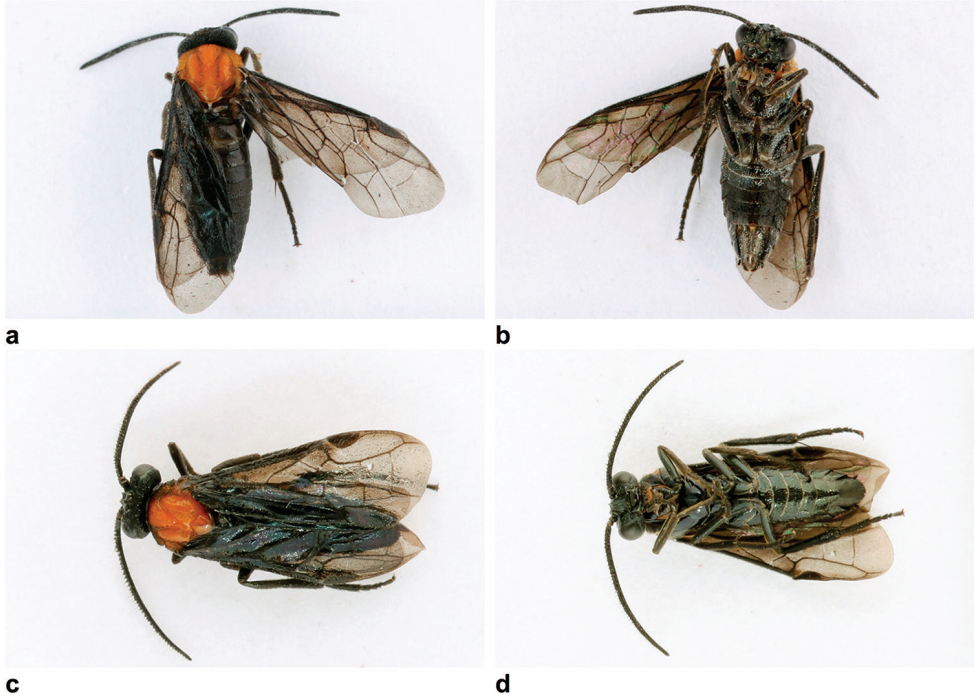
Fig. 6

**Material.** Pompeya, 00°27'S, 076°37'W, 240m, 11.11.2016, flying, P4213 (1 ♀), leg. J.-L. Boevé.

***Scobina strophosa* (Konow, 1906a)**

Fig. 7

**Material.** Nanegal, Reserva Biológica Maquipucana, 00°08'N, 078°38'W, 1300m, 25.11.2016, P4238.A (1 ♀), P4238.F, P4238.H (2 ♂), leg. A. Pauly, J.-L. Boevé; Mindo, Mindo Lindo, 00°01'S, 078°46'W, 1680m, 27.11.2016, flying, P4241.B (1 ♂), leg. J.-L. Boevé.



**Figure 7.** *Scobina strophosa*. **a, b** Female (P4238.A), body length 7.5 mm **c, d** male (P4241.B), body length 7.5 mm. **a, c** Dorsal views **b, d** ventral views.

### *Scobina styx* Malaise, 1949

Fig. 8

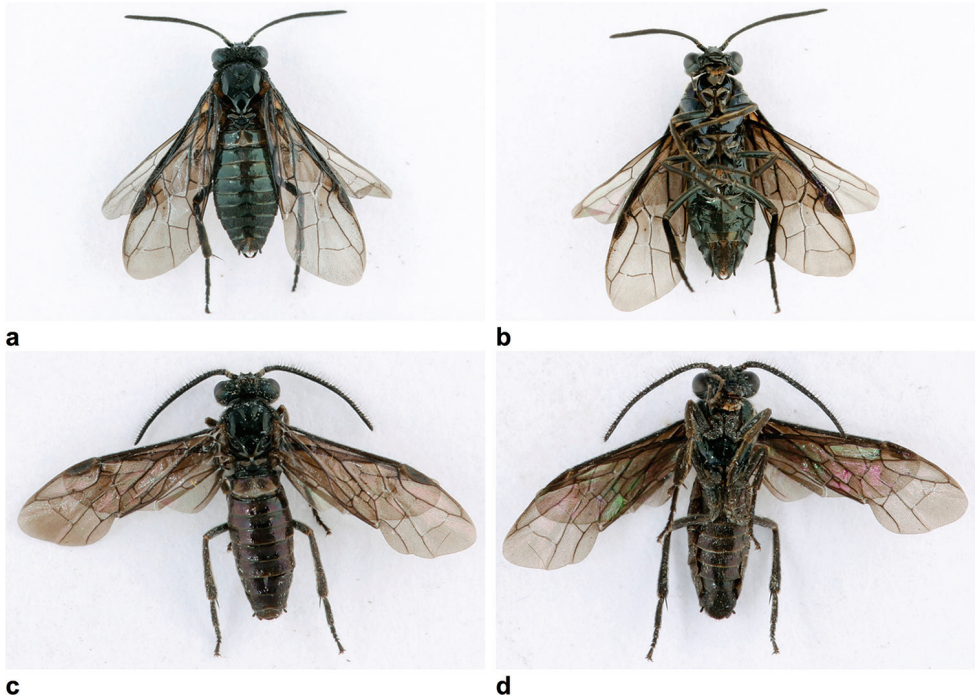
**Material.** Nanegal, Reserva Biológica Maquipucana, 00°08'N, 078°38'W, 1300m, 25.11.2016, P4238.D, P4238.E (2 ♀), P4238.L (1 ♂), leg. A. Pauly, J.-L. Boevé; Mindo, Hacienda San Vicente, 00°03'S, 078°46'W, 1445, 26.11.2016, flying along pasture, P4239.F (1 ♀), leg. J.-L. Boevé.

**Note.** This is a new record for Ecuador. It was previously known only from northern Argentina (Smith 1992).

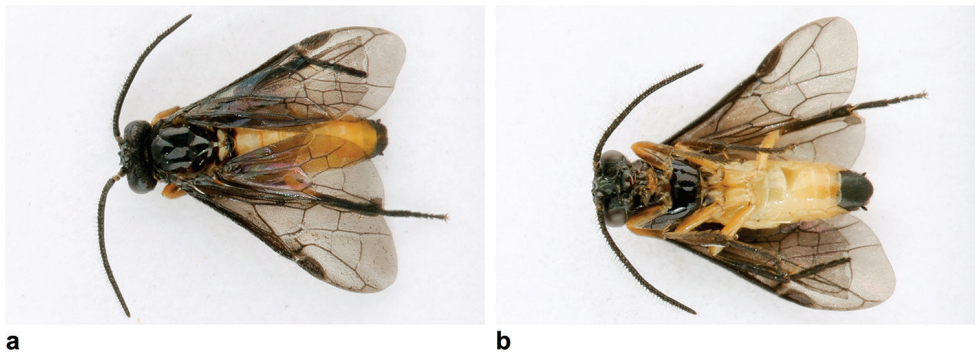
### *Scobina* sp.

Fig. 9

**Material.** Mindo, Hacienda San Vicente, 00°02'S, 078°46'W, 1420m, 23.11.2016, by sweeping along pasture, P4232.C (1 ♂), leg. A. Pauly, J.-L. Boevé.



**Figure 8.** *Scobina styx*. **a, b** Female (P4239.F), body length 7.5 mm **c, d** male (P4238.L), body length 6.0 mm. **a, c** Dorsal views **b, d** ventral views.



**Figure 9.** *Scobina* sp., male (P4232.C), body length 6.0 mm. **a** Dorsal view **b** ventral view.

## Family Pergidae

### *Acordulecera* spp.

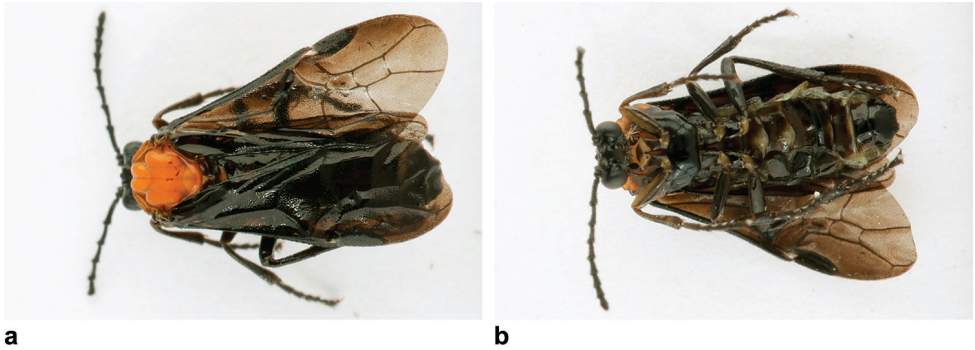
Fig. 10

**Material.** Estación científica Yasuní, 00°33'S, 076°31'W, 260m, 15.11.2016, on leaf of *Heliconia* sp., P4219.A (1 ♀), leg. J.-L. Boevé; Nanegal, Reserva Biológica Maquipucana, 00°07'N, 078°38'W, 1380m, 25.11.2016, on leaf of Melastomataceae, P4236 (1 ♀), leg. J.-L. Boevé.





**Figure 10.** *Acordulecera* spp. **a** Female (P4219.A), body length 4.5 mm **b** female (P4236), body length 3.5 mm. **a, b** Lateral views.



**Figure 11.** *Decameria* sp., male (P4238.B), body length 8.0 mm. **a** Dorsal view **b** ventral view.

*Decameria* sp.

Fig. 11

**Material.** Nanegal, Reserva Biológica Maquipucana, 00°08'N, 078°38'W, 1300m, 25.11.2016, P4238.B (1 ♂), leg. A. Pauly, J.-L. Boevé.

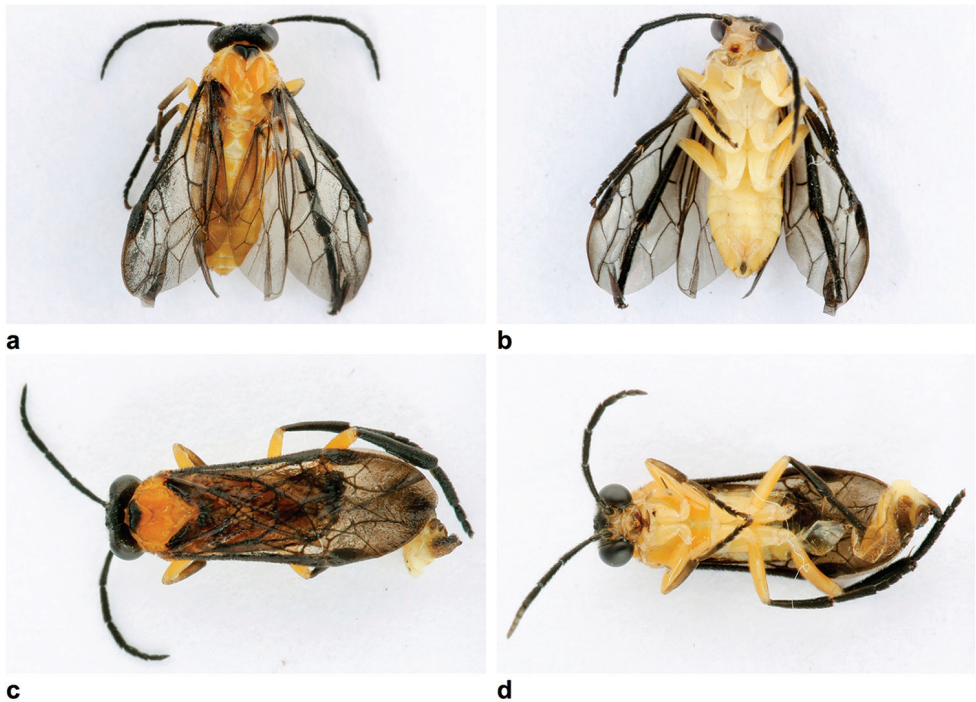
**Family Tenthredinidae**

**Subfamily Blennocampinae**

*Waldheimia pallens* (Klug, 1816)

Fig. 12

**Material.** Estación científica Yasuní, near río Tiputini, 00°40'S, 076°24'W, 220m, 02.03.2015, P4119.A (1 ♂), leg. T. Delsinne; Estación científica Yasuní, 00°36'S, 076°30'W, 240m, 14.11.2016, by sweeping, P4215.H (1 ♀), P4215.J (1 ♂), leg. A. Pauly, J.-L. Boevé.



**Figure 12.** *Waldheimia pallens*. **a, b** Female (P4215.H), body length 8.0 mm **c, d** male (P4215.J), body length unknown. **a, c** Dorsal views **b, d** ventral views.

***Waldheimia pellucida* Konow, 1904**

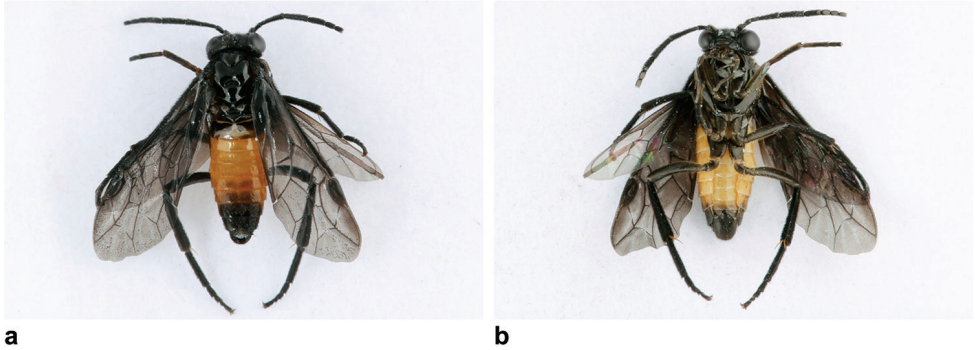
Fig. 13

**Material.** Estación científica Yasuní, 00°36'S, 076°30'W, 240m, 14.11.2016, flying above plants of *Rhynchospora* (Cyperaceae), P4215.A, P4215.B (2 ♂), by sweeping, P4215.D (1 ♂), on fern, P4215.F (1 ♂), leg. J.-L. Boevé, by sweeping, P4215.I (1 ♂), leg. A. Pauly, J.-L. Boevé, 00°33'S, 076°31'W, 260m, 15.11.2016, on leaf of *Heliconia* sp., P4218 (1 ♂), leg. J.-L. Boevé.

***Waldheimia* sp. A**

Fig. 14

**Material.** Mindo, Hacienda San Vicente, 00°02'S, 078°46'W, 1420m, 23.11.2016, on leaf along pasture, P4227.A (1 ♂), 1470m, 23.11.2016, on fern along forest path, P4227.B (1 ♂), leg. J.-L. Boevé, 1480m, 23.11.2016, P4231.A (1 ♂), leg. D. F. Dominguez, J.-L. Boevé, 1420m, 23.11.2016, by sweeping along pasture, P4232.A



**Figure 13.** *Waldheimia pellucida*, male (P4218), body length 6.5 mm. **a** Dorsal view **b** ventral view.



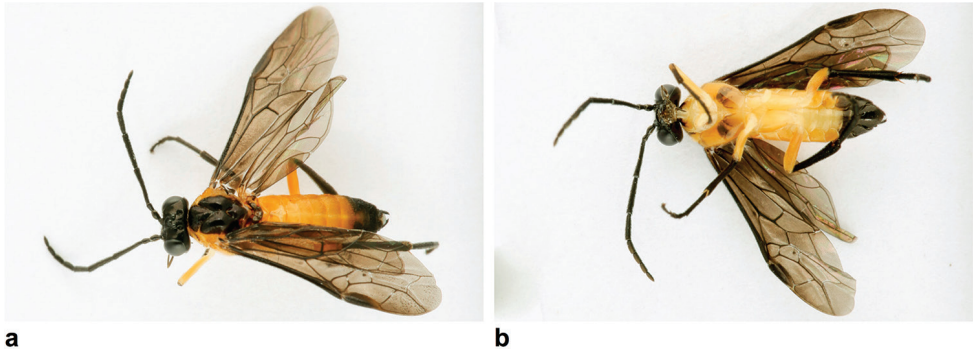
**Figure 14.** *Waldheimia* sp. A, male (P4237.B), body length 5.5 mm. **a** Dorsal view **b** ventral view.

(1 ♂), leg. A. Pauly, J.-L. Boevé; Pacto, 00°09'N, 078°46'W, 1105, 24.11.2016, flying or on leaf, P4233.A, P4233.B, P4233.C, P4233.D, P4233.E, P4233.F (6 ♂), leg. J.-L. Boevé, P4233.G, P4233.H (2 ♂), leg. A. Pauly, J.-L. Boevé; Nanegal, Reserva Biológica Maquipucana, 00°08'N, 078°38'W, 1260m, 25.11.2016, flying above low plants, P4235.A, P4237.B (2 ♂), leg. J.-L. Boevé; Mindo, Hacienda San Vicente, 00°03'S, 078°46'W, 1375, 26.11.2016, flying above and on low plants along pasture, P4239.B, P4239.C (2 ♂), 1415m, 26.11.2016, flying along pasture, P4239.D (1 ♂), leg. J.-L. Boevé.

### *Waldheimia* sp.

Fig. 15

**Material.** Bellavista Cloud Forest Reserve, 00°02'S, 078°45'W, 1825m, 22.11.2016, on leaf, P4226.C (1 ♂), leg. J.-L. Boevé.



**Figure 15.** *Waldheimia* sp., male (P4226.C), body length 8.0 mm. **a** Dorsal view **b** ventral view.

### Subfamily Selandriinae

#### *Adiaclema* sp.

Fig. 16

**Material.** Estación científica Yasuní, near río Tiputini, 00°40'S, 076°24'W, 230m, 14.11.2016, on leaf of *Heliconia* sp., P4217.B (1 ♂), 16.11.2016, on leaf of *Heliconia* sp., P4223.A (1 ♂), leg. J.-L. Boevé.

#### *Bolivius* sp.

Fig. 17

**Material.** Estación científica Yasuní, 00°36'S, 076°30'W, 240m, 14.11.2016, on fern, P4215.C (1 ♂), leg. J.-L. Boevé.

#### *Inea* sp.

Fig. 18

**Material.** Reserva Otongachi, 00°19'S, 078°57'W, 925, 19.11.2016, on fern in forest, P4224 (1 ♀), leg. J.-L. Boevé; Bellavista Cloud Forest Reserve, 00°02'S, 078°44'W, 1945, 22.11.2016, on *Anthurium* sp., P4226.A (1 ♂), 00°02'S, 078°45'W, 1890m, 22.11.2016, on leaf, P4226.B (1 ♂), 00°02'S, 078°45'W, 1820m, 22.11.2016, flying quite frantically, P4226.D (1 ♂), 00°02'S, 078°45'W, 1820m, 22.11.2016, on leaf, P4226.E (1 ♂), 00°02'S, 078°45'W, 1775m, 22.11.2016, flying around a large fern, P4226.F (1 ♀), leg. J.-L. Boevé; Mindo, Hacienda San Vicente, 00°03'S, 078°45'W, 1520m, 23.11.2016, flying around a fern along forest path, P4227.C, P4227.D, P4227.E, P4227.F (4 ♂), 00°03'S, 078°46'W, 1470m, 23.11.2016, on leaf along forest path, P4229 (1 ♀), leg. J.-L.

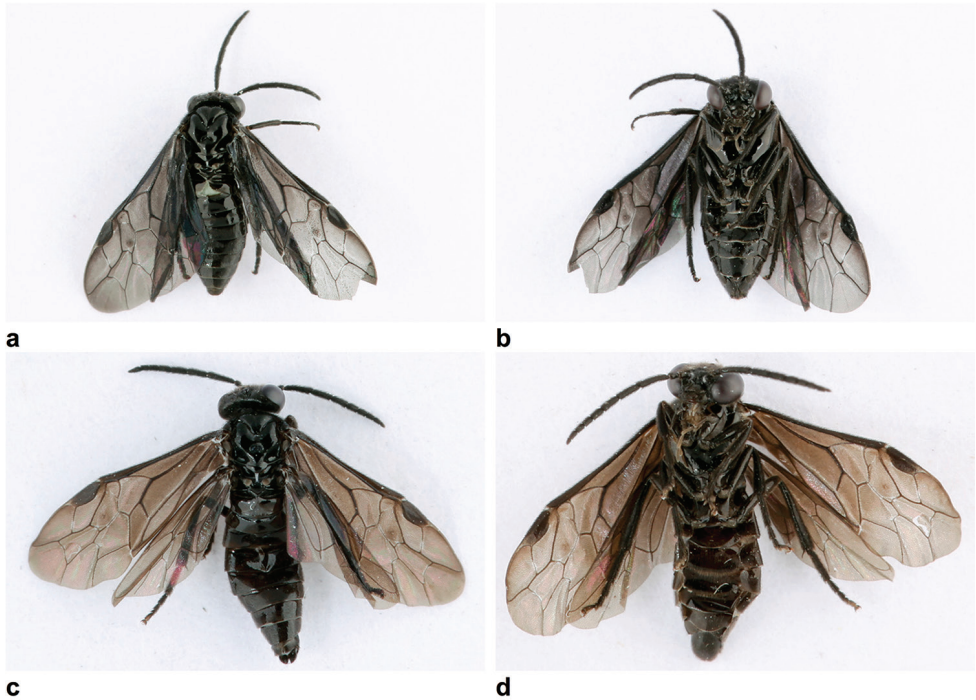


**Figure 16.** *Adiaclema* sp., male (P4223.A), body length 7.5 mm. **a** Dorsal view **b** ventral view.



**Figure 17.** *Boliviuss* sp., male (P4215.C), body length 6.0 mm. **a** Dorsal view **b** ventral view.

Boevé, 00°03'S, 078°46'W, 1500m, 23.11.2016, by sweeping along forest path, P4230.A, P4230.B, P4230.C, P4230.D, P4230.E, P4230.F, P4230.G, P4230.H, P4230.I (9 ♂), leg. A. Pauly, J.-L. Boevé, 00°03'S, 078°46'W, 1480m, 23.11.2016, P4231.B, P4231.C (2 ♂), leg. D. F. Dominguez, J.-L. Boevé, 00°02'S, 078°46'W, 1420m, 23.11.2016, by sweeping along pasture, P4232.B (1 ♂), leg. A. Pauly, J.-L. Boevé; Pacto, Río Toalí, 00°09'N, 078°45'W, 1000m, 24.11.2016, P4234 (1 ♂), leg. A. Pauly, J.-L. Boevé; Nanegal, Reserva Biológica Maquipucana, 00°08'N, 078°38'W, 1260m, 25.11.2016, flying above low plants, P4235.B, P4237.A (2 ♂), leg. J.-L. Boevé, 1300m, 25.11.2016, P4238.G, P4238.I (2 ♀), P4238.J, P4238.K (2 ♂), leg. A. Pauly, J.-L. Boevé; Mindo, Hacienda San Vicente, 00°03'S, 078°46'W, 1375m, 26.11.2016, on leaf along pasture, P4239.A (1 ♂), 1415m, 26.11.2016, on leaf of *Rubus* (Rosaceae) along pasture, P4239.E (1 ♂), leg. J.-L. Boevé; Mindo, Mindo Lindo, 00°01'S, 078°46'W, 1680m, 27.11.2016, flying, P4241.A (1 ♀), P4240.A, P4240.B, P4240.C, P4240.D (4 ♂), leg. J.-L. Boevé, 00°01'S, 078°46'W, 1680m, 27.11.2016, P4241.D (1 ♀), P4241.C, P4241.E, P4241.F, P4241.G (4 ♂), 1635m, 27.11.2016, on leaf (forest clearing), P4241.H, P4241.I (2 ♂), leg.



**Figure 18.** *Inea* sp. **a, b** Female (P4241.A), body length 6.5 mm **c, d** male (P4230.B), body length 6.5 mm. **a, c** Dorsal views **b, d** ventral views.

D. F. Dominguez, J.-L. Boevé, 1680m, 27.11.2016, flying just above the ground, P4242.A (1 ♂), 27.11.2016, by sweeping, P4242.B (1 ♂), 27.11.2016, flying, P4242.C, P4243 (2 ♂), leg. J.-L. Boevé.

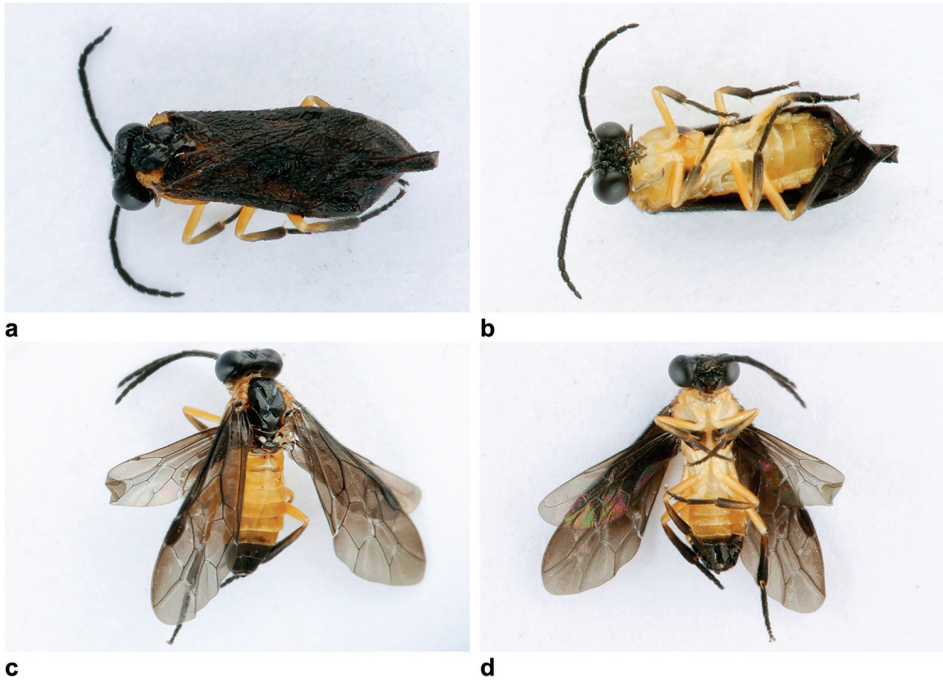
***Proselandria alvina* (Konow, 1899b)**

Fig. 19

**Material.** Estación científica Yasuní, 00°40'S, 076°27'W, 235m, 13.11.2016, on leaf of *Anthurium* sp., P4214.A, P4214.D (2 ♀), P4214.B, P4214.C, P4214.E, P4214.F (4 ♂), 00°36'S, 076°30'W, 240m, 14.11.2016, on fern, P4215.G (1 ♂), 00°40'S, 076°27'W, 250m, 15.11.2016, on leaf of *Anthurium* sp., P4221.A, P4221.C (2 ♀), on leaf of Melastomataceae, P4221.B (1 ♀), near río Tiputini, 00°40'S, 076°24'W, 230m, 16.11.2016, on leaf of *Heliconia* sp., P4223.B (1 ♂), leg. J.-L. Boevé.

***Proselandria* sp.**

**Material.** Estación científica Yasuní, 00°33'S, 076°31'W, 260m, 15.11.2016, on leaf of Melastomataceae, P4219.B (1 ♂), leg. J.-L. Boevé.



**Figure 19.** *Proselandria alvina*. **a, b** Female (P4221.A), body length 5.0 mm **c, d** male (P4214.C), body length 6.0 mm. **a, c** Dorsal views **b, d** ventral views.

***Stromboceridea albilabris* (Konow, 1885)**

Fig. 20

**Material.** Reserva Integral Otonga, 00°25'S, 079°00'W, 1950m, 20.11.2016, on leaf (forest), P4225 (1 ♂), leg. J.-L. Boevé.

***Stromboceros suppar* Konow, 1903b**

Fig. 21

**Material.** Nanegal, Reserva Biológica Maquipucana, 00°08'N, 078°38'W, 1300m, 25.11.2016, P4238.C (1 ♀), leg. A. Pauly, J.-L. Boevé.

**Note.** This is a new record for Ecuador. It was described from Peru.

***Stromboceros sutilis* Konow, 1903b**

Fig. 22

**Material.** Mindo, Hacienda San Vicente, 00°03'S, 078°46'W, 1465m, 26.11.2016, on fern along forest path, P4239.G (1 ♀), leg. J.-L. Boevé.

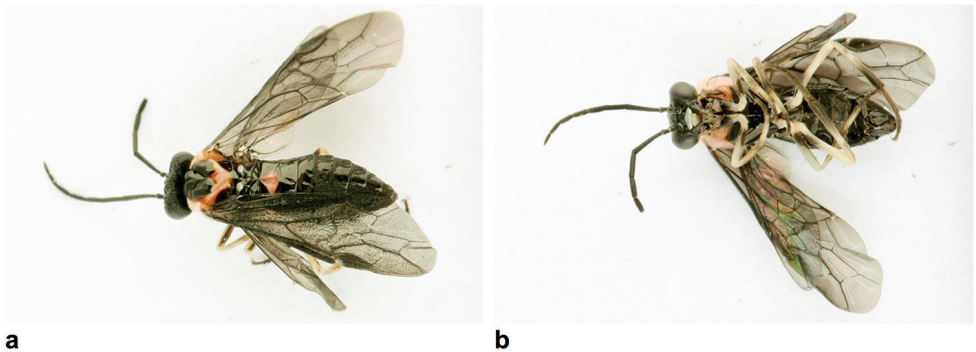
**Note.** This is a new record for Ecuador. It was described from Peru.



**Figure 20.** *Stromboceridea albilabris*, male (P4225), body length 7.0 mm. **a** Dorsal view **b** ventral view.



**Figure 21.** *Stromboceros suppar*, female (P4238.C), body length 7.5 mm. **a** Dorsal view **b** ventral view.



**Figure 22.** *Stromboceros sutilis*, female (P4239.G), body length 6.5 mm. **a** Dorsal view **b** ventral view.

### Checklist of Ecuador Symphyta

The following checklist (Table 1) reflects the current status of the known Symphyta from Ecuador. The source of the first Ecuador record is given as well as known host plants. The list includes 66 identified species and it mentions the occurrence of about



**Table 1.** Checklist of Ecuador Symphyta.

Taxon	Occurrence	Host
<b>Family Argidae</b>		
<i>Acrogymnidea udata</i> D.R. Smith, 1992	Described	
<i>Atomacera lobula</i> D.R. Smith, 1992	Described	
<i>Atomacera pubicornis</i> (Fabricius, 1804)	Recorded by Smith (1992)	<i>Ipomoea</i> sp. (Convolvulaceae) (Mc Callan 1953, Smith 1992)
<i>Diolocerus fasciatus</i> (Enderlein, 1919)	Described	<i>Sclerobium paniculatum</i> (Fabaceae) (Smith and Adis 1984)
<i>Manaos mammeatus</i> (Konow, 1906b)	Recorded by Smith (1992)	
<i>Manaos mulsus</i> (Konow, 1906b)	New record in this paper	
<i>Manaos toula</i> D.R. Smith, 1992	Described	
<i>Neoptilia liturata</i> (Konow, 1903a)	Described	<i>Sida rhombifolia</i> (Malvaceae) (Smith 1992)
<i>Prenos delta</i> (Malaise, 1957)	New record in this paper	
<i>Prenos leucopoda</i> (Cameron, 1883)	Recorded by Smith (1992)	
<i>Scobina bolivari</i> (Konow, 1899a)	Recorded by Smith (1992)	
<i>Scobina inculta</i> (Konow, 1906a)	Recorded by Smith (1992)	
<i>Scobina lurida</i> (Klug, 1834)	Recorded by Smith (1992)	
<i>Scobina nigripennis</i> (Enderlein, 1919)	Described	
<i>Scobina notaticollis</i> (Konow, 1899a)	Recorded by Smith (1992)	
<i>Scobina strophosa</i> (Konow, 1906a)	Recorded by Smith (1992)	
<i>Scobina styx</i> Malaise, 1949	New record in this paper	
<i>Scobina terminalis</i> (Klug, 1814)	Recorded by Smith (1992)	
<i>Sericoceros dimidiatus</i> Konow, 1908	Recorded by Smith (1992)	
<i>Sericoceros ecuadoriensis</i> (Enderlein, 1919)	Described	
<i>Sericoceros gibbus</i> (Klug, 1834)	Recorded by Smith (1992)	<i>Coccoloba</i> spp. (Polygonaceae) (Smith 1992, Smith and Janzen 2003)
<i>Themnos laqueatus</i> (Enderlein, 1919)	Described	
<i>Themnos ochreus</i> D.R. Smith, 1992	Described	
<i>Themnos semiadusta</i> (Enderlein, 1919)	Described	
<i>Themnos surinamensis</i> (Klug, 1814)	Recorded by Smith 1992	<i>Ceiba pentandra</i> (Malvaceae), <i>Thespesia populnea</i> (Malvaceae) (Smith 1992)
<b>Family Orussidae</b>		
<i>Ophrynopus nigricans</i> (Cameron, 1883)	Recorded by Vilhelmsen and Smith (2002)	
<b>Family Pergidae</b>		
<i>Acordulecera</i> spp.	This is a large genus in the Neotropics. At least 25 or more species probably occur in Ecuador (Smith, unpublished; estimate from material in USNM)	
<i>Aulacomerus ecuadoriensis</i> (Enderlein, 1919)	Described	
<i>Camptoprium</i> sp.	Unidentified species recorded by Schmidt and Smith (2006)	
<i>Decameria carbo</i> (Malaise, 1937)	Described	
<i>Decameria noxua</i> D.R. Smith, 1990	Described	

Taxon	Occurrence	Host
<i>Decameria varipes</i> Cameron, 1883	Recorded by Smith (1990)	
<i>Haplostegus subclavatus</i> Malaise, 1942	Described	
<i>Lagideus kolonus</i> D.R. Smith, 1990	Described	
<i>Lagideus podocarpus</i> D.R. Smith, 2016 (in Boevé et al. 2016)	Described	<i>Fuchsia vulcanica</i> (Onagraceae) (Boevé et al. 2016)
<i>Lagideus romius</i> D.R. Smith, 1990	Described	
<i>Perreyia fumipennis</i> (Westwood, 1874)	Recorded by Smith (1990)	
<i>Perreyia nigriceps</i> (Westwood, 1874)	Recorded by Enderlein (1919; as <i>Perreyia melanopyga</i> Konow)	
<i>Perreyia picea</i> (Westwood, 1874)	Recorded by Smith (1990)	
<i>Perreyia tropica</i> (Norton, 1869)	Recorded by Rohwer (1921; as <i>Lophyorides modesta</i> )	Larvae travel in groups on the ground and feed on dead leaves and probably fungi (Flores et al. 2000)
<i>Perreyiella</i> sp.	Unidentified species recorded by Smith (1990)	
<b>Family Tenthredinidae</b>		
<b>Subfamily Allantinae</b>		
<i>Probleta columbianus</i> (Enderlein, 1920)	Recorded by Smith (2003)	
<b>Subfamily Blennocampinae</b>		
<i>Metapedias torva</i> (Konow, 1899a)	Described	
<i>Metapedias</i> spp.	At least two undescribed species are known (Smith, unpublished)	
<i>Synaptoneura vopida</i> D.R. Smith, 1973	Described	
<i>Waldheimia atripennis</i> (Fabricius, 1804)	Recorded by Boevé et al. (2016)	
<i>Waldheimia erebus</i> (W.F. Kirby, 1882)	Recorded by Boevé et al. (2016)	
<i>Waldheimia galerita</i> Konow, 1904	Described	
<i>Waldheimia ochra</i> (Norton, 1867)	Recorded by Enderlein (1920)	
<i>Waldheimia pallens</i> (Klug, 1816)	Not before recorded (Smith, unpublished)	
<i>Waldheimia pellucida</i> Konow, 1904	Recorded by Enderlein (1920; as <i>Waldheimia ochreiventris</i> )	
<i>Waldheimia sulphurea</i> (Fabricius, 1804)	Not before recorded (Smith, unpublished)	
<i>Waldheimia</i> spp.	At least seven or more undescribed species are known (Smith, unpublished)	
<b>Subfamily Nematinae</b>		
<i>Pristiphora fernandesi</i> D.R. Smith, 2003	Recorded by Boevé et al. (2016)	
<b>Subfamily Selandriinae</b>		
<i>Adiaclema blandulum</i> (Enderlein, 1920)	Described	
<i>Adiaclema calvescens</i> Enderlein, 1920	Not before recorded (Smith, unpublished)	
<i>Adiaclema maculipennis</i> (Cameron, 1883)	Not before recorded (Smith, unpublished)	
<i>Adiaclema tetricum</i> (Konow, 1908)	Recorded by Enderlein (1920; as <i>Stromboceros longicornis</i> )	

Taxon	Occurrence	Host
<i>Adiaclema</i> spp.	Several undescribed species occur (Smith, unpublished)	
<i>Andeana farcta</i> (Konow, 1900)	Described	
<i>Aneugmenus merida</i> D.R. Smith, 2005	Described	<i>Pteridium aquilinum</i> (Dennstaedtiaceae) (Smith 2005, Avila-Nunez et al. 2007)
<i>Aneugmenus</i> sp.	An unidentified species was recorded by Boevé et al. (2016)	
<i>Belea nigripennis</i> (Konow, 1908)	Described	
<i>Bolivius notabilis</i> (Konow, 1899b)	Recorded by Boevé et al. (2016)	
<i>Dochmioglene</i> spp.	Possibly several undescribed species from Ecuador (Smith, unpublished)	
<i>Inea</i> spp.	Probably two or more undescribed species are known (Smith, unpublished)	
<i>Neoanapeptamena nitida</i> (Strand, 1911)	Described	
<i>Neoanapeptamena</i> sp.	Probably an undescribed species (Smith, unpublished)	
<i>Plaumanniana biclinia</i> (Konow, 1899b)	Recorded by Boevé et al. (2016)	
<i>Plaumanniana</i> spp.	Three or four other species occur in Ecuador (Smith, unpublished)	
<i>Proselandria alvina</i> (Konow, 1899b)	Recorded by Boevé et al. (2016)	
<i>Proselandria carminea</i> (Jørgensen, 1913)	Recorded by Enderlein (1920; as <i>Strongylogaster ecuadoriensis</i> )	
<i>Stromboceridea albilabris</i> (Konow, 1885)	Recorded by Enderlein (1920)	
<i>Stromboceridea</i> spp.	Possibly two or three undescribed species (Smith, unpublished)	
<i>Tioloma nigrita</i> Strand, 1911	Described	
<b>Family Xiphydriidae</b>		
<i>Derecyrtia andrei</i> Konow, 1897	Described	
<i>Derecyrtia flavescens</i> D.R. Smith, 2004	Described	
<i>Derecyrtia striatifrons</i> Malaise, 1942	Described	

50 unidentified ones. The numbers will undoubtedly increase when certain groups especially such as *Acordulecera* are revised or taxonomic problems resolved. However, many species described from other Andean countries should eventually be found in Ecuador, but these potential species are not listed. “Described” indicates that the species was originally described from Ecuador.

The following species are unplaced Tenthredinidae that have been described from Ecuador, but the correct combination has not yet been published or they are unpublished synonyms of species listed above (Smith, unpublished). Placement and synonymies will be made in papers in preparation.

*Waldheimia ochreiventris* Enderlein, 1920 (Blennocampinae).

*Blennocampa albofemoralis* Cameron, 1883; *Hylotoma analis* Fabricius, 1804; *Stromboceros cruralis* Konow, 1899b; *Stromboceros liscivus* Konow, 1908; *Stromboceros suppar* Konow, 1903b; *Stromboceros sutilis* Konow, 1903b; *Stromboceros torquatus* Konow, 1903b; *Stromboceros ustipennis* Konow, 1899b; *Strongylogaster ecuadoriensis* Enderlein, 1920; *Strongylogaster giganteus* Enderlein, 1920; *Strongylogaster longicornis* Enderlein, 1920; *Strongylogaster murcivena* Enderlein, 1920; *Strongylogaster obliquevenosa* Enderlein 1920; *Tioloma rosigena* Enderlein, 1920 (Selandriinae).

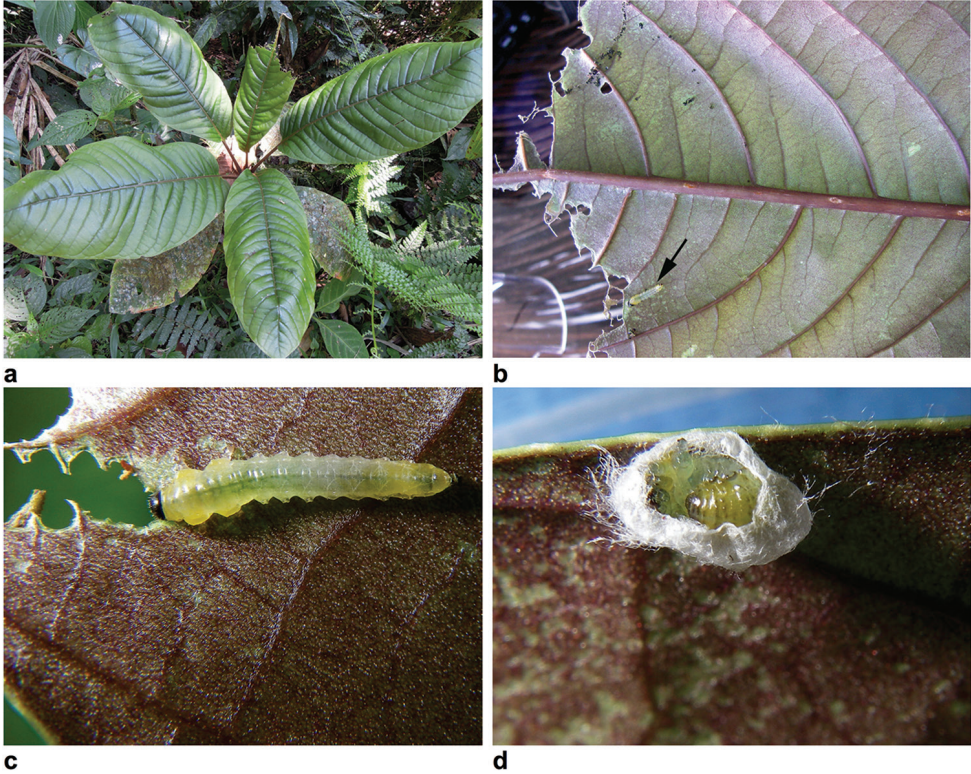
## Discussion

Sawfly adults were mainly found in shadowed places. Plants such as *Anthurium* and *Heliconia* have large leaves (Fig. 1), and sawfly adults were often observed running on the leaf surface. Fig. 1e–g illustrate by screenshots of a video sequence that an adult, probably of *Manaos mammeatus*, walked dozens of cm within a relatively short time (ca 20 sec), finally stopping in order to feed (Fig. 1g). Other sawfly species were observed showing the same behaviour of moving rapidly on the surface of leaves, such as *Manaos mulsus*, *Adiaclema* sp., *Waldheimia pellucida*, and *Proselandria alvina*. Since sawfly adults are known to feed on plant (floral and leaf) tissues, sugar sources (nectar and honeydew) as well as insect tissues and faeces (Jarvis and Vilhelmsen 2000, Wäckers et al. 2005), it is likely that our observations relate to the uptake of food fragments of plant and/or animal origin. Large plant leaves accumulate such organic particles dropped from the canopy, which may facilitate their uptake by the sawflies.

During the three-week field trip in north-western and north-eastern Ecuador, only a single larva was collected, in Mindo (Hacienda San Vicente, 00°03'S, 078°45'W, 1530m, 23.11.2016, P4228, leg. J.-L. Boevé; Fig. 23). It was found along a forest path (Fig. 11) and it probably belongs to the pergid genus *Acordulecera*. Their larvae are characterized by lateral sucker-like protuberances on abdominal segments 2–4 or 2–5 and 8 (Smith and Middlekauff 1987), and the collected larva possesses such protuberances (see Fig. 23c). It was feeding at the underside of a leaf of an unidentified plant (height 70 cm; Fig. 23a, b), probably a young tree. On 25.11.2016, the small prepupa (body length 3.5 mm) built a fragile cocoon of white silk appearance (Fig. 23d). The larvae of this genus feed gregariously, which was most probably the case for the larva collected, because it seems not plausible that this single larva consumed such an important leaf part (see Fig. 23a), and because it pupated a couple of days after having been collected (while its rearing was unsuccessful). Thus, it was presumably the last individual of a group.

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**Figure 23.** Pictures related to the single larva (P4228) found during a 3-week field trip. **a** Host plant with feeding damage on one of the leaves **b, c** Underside of that leaf occupied with the larva (*arrow*) **d** Cocoon partly damaged, showing the prepupa.

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