

## The Types of Aphelinidae and Signiphoridae (Hymenoptera: Chalcidoidea) Housed at the Museo de La Plata, Argentina

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■ **ABSTRACT.** The 293 type specimens of Aphelinidae and 24 Signiphoridae (Chalcidoidea) housed at the Museo de La Plata (División Entomología) were examined and listed, providing update information on categories of types, data of collection and host. The types belong to 30 species and two subspecies of Aphelinidae described by the following authors: Annecke & Insley (1), Blanchard (2), Compere (4), De Bach & Rosen (1), De Santis (21), and De Santis & Vidal Sarmiento de Regalía (1); and nine species of Signiphoridae described by the following authors: De Santis (6) and Kerrich (3).

**KEY WORDS.** Catalogue. Type material. Aphelinidae. Signiphoridae. Museo de La Plata Collection.

■ **RESUMEN.** Los tipos de Aphelinidae y Signiphoridae (Hymenoptera: Chalcidoidea) depositados en el Museo de La Plata, Argentina. Fueron examinados y listados los 293 tipos de Aphelinidae y 24 de Signiphoridae depositados en el Museo de La Plata (División Entomología), para cada taxón se brinda la información actualizada acerca de los materiales tipo, datos de recolección y huéspedes. Estos tipos pertenecen a 30 especies y dos subespecies de Aphelinidae descritas por los siguientes autores: Annecke & Insley (1), Blanchard (2), Compere (4), De Bach & Rosen (1), De Santis (21), y De Santis & Vidal Sarmiento de Regalía (1); y nueve especies de Signiphoridae descritas por los siguientes autores: De Santis (6) y Kerrich (3).

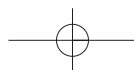
**PALABRAS CLAVE.** Catálogo. Tipos entomológicos. Aphelinidae. Signiphoridae. Colección Museo de La Plata.

### INTRODUCTION

Aphelinidae is currently divided into five subfamilies: Aphelininae, Azotinae, Calesinae, Coccophaginae, and Eriaporinae (Hanson, 1995). The majority of aphelinids species belong to the Aphelininae and Coccophaginae. Azotinae may be situated between these too large subfamilies (Polaszek & Hayat, 1992) or it may be the sister group to the Signiphoridae (Woolley, 1988). According to Martín-Piera & Lobo (2000) 1120 species of Aphelinidae have been described; 72 species have been recorded by De Santis (1998) for Argentina. Greathead (1986) emphasize that the Family Aphelinidae has been more successful in

classical biological control (importations) than any other group of entomophagous insects. The majority of aphelinids are parasitoids of ninfal stages of sternorrhynchous "Homoptera", especially of scale insects (Coccoidea), whiteflies (Aleyrodoidea) and aphids (Aphidoidea). Most aphelinids are primary parasitoids, but species of *Ablerus*, *Azotus* and *Centrodora* are often hyperparasitic. *Marietta* is always hyperparasitic. Most of the primary parasitoids except the genus *Aphytis* are endoparasitic, whereas many hyperparasitic aphelinids are ectoparasitoids.

The Signiphoridae (previously called the Thysanidae) is a small family containing about one hundred species gathered in four genera



(Woolley, 1988). It is a cosmopolitan group that is most species-rich in the Neotropical region. The Signiphoridae appears to be related to the Aphelinidae and a sister-group relationship between it and Azotinae aphelinids is suggested by at least one synapomorphy. According to Martín-Piera & Lobo (2000) 80 species of Signiphoridae have been described; 16 are recorded for Argentina (De Santis, 1998). Signiphorids have rarely been used in classical biological control, probably because many of these species are obligate hyperparasitoids. They are most commonly parasitoids of sternorrhynchous "Homoptera", especially scale-insects (Coccoidea) and white flies (Aleyrodidae), but also Aphidoidea and Psyllioidea. Other signiphorids are known to parasitize larvae or pupae of Diptera, especially those that are in some way associated with these homopterans. Most signiphorids are thought to be solitary endoparasitoids but at least some species of *Signiphora* at least complete development as ectoparasitoids.

#### MATERIAL AND METHODS

The entomological collection of the Museo de La Plata houses 293 type specimens of Aphelinidae and 24 of Signiphoridae as a result of taxonomic studies done by several entomologists. The types herein treated belong to 30 species and two subspecies of Aphelinidae described by the following authors: Anneck & Insley (1), Blanchard (2), Compere (4), De Bach & Rosen (1), De Santis (21), and De Santis & Vidal Sarmiento de Regalía (1); and nine species of Signiphoridae described by the following authors: De Santis (6) and Kerrich (3). We have listed holotypes and syntypes and also paratypes, as it has been recommended by Lavett Smith & Buerkli (1969).

Information on the specimens has been taken from labels and were compared to original descriptions. References for these descriptions were located with the help of catalogues published by De Santis (1967, 1979b, 1981a, 1989) and De Santis & Fidalgo (1994).

The following information is provided for each type specimen:

**Species names.** They correspond to the original combination (basonym) that accompanies original descriptions.

**Bibliographic reference of original publica-**

**tion.** Year, author/s, journal, volumen, and page number/s.

**Type material.** Categories of holotype, allotype, syntype, and/or paratype; number of specimens, sex when it is known; collection number. All specimens of the same series have received the same collection number, each one separated by a slash with an order number. The great number of material are mounted on microscopic slides, pinned material are indicated by "P".

**Collection data.** Country, province or state, locality, date of collection, collector's name.

**Observations.** Host or other bionomic data included on labels.

#### RESULTS

##### APHELINIDAE

##### APHELININAE

*citrinus*, *Aphytis* Compere

1955. *Univ. Calif. Publ. ent.* 10: 312.

- Syntypes (16), females, MLP no. 2012/1.  
UNITED STATES OF AMERICA: California, Tulare County, Visalia.  
20-XII-1948, Hemphill coll.

**Observations:** Obtained from *Aonidiella citrina* (Hemiptera: Diaspididae) on orange. The microscopic slide is labelled as "cotypes", here are considered as syntypes (ICZN, art. 73.2.1)

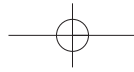
*dubius*, *Aphytis* De Santis

1948a. *Rev. Mus. La Plata zool.* 5 (32): 126.

- Holotype, female, MLP no. 2010/1.  
ARGENTINA: Río Negro, Fuerte General Roca. VI-1937, Santos coll.
- Paratypes (3), females, MLP no. 2010/2-4.  
Same data as holotype.
- Paratype, female, MLP no. 2010/5.  
ARGENTINA: Santa Fe, Angel Gallardo. VIII-1938, Griot coll.

**Observations:** Reared from *Quadraspidiotus perniciosus* (Hemiptera: Diaspididae) on *Malus sylvestris* (Rosaceae). The microscopic slide no. 2010/1 is labelled as holotype but the author did not designed it in the original publication. According to art. 72.4.1.1 (ICZN) we considered it as the holotype.

*dubius intermedia*, *Aphytis* De Santis



1948a. *Rev. Mus. La Plata zool.* 5 (32): 129.

- Holotype, female, MLP no. 2011/1.  
ARGENTINA: Buenos Aires, Patagones.  
VI-1938, De Santis coll.

**Observations:** Reared from *Aspidiotus hederae* (Hemiptera: Diaspididae) on *Olea europea* (Oleaceae). In the original publication the date is VII-1938. The microscopic slide no. 2011/1 is labelled as holotype but the author did not designed it in the original publication. According to art. 72.4.1.1 (ICZN) we considered it as the holotype.

*lepidosaphes*, *Aphytis* Compere

1955. *Univ. Calif. Publ. ent.* 10: 307.

- Syntypes (40), sex not determined, MLP no. 2013/1.  
CHINA REPUBLIC: Formosa  
XII-1950, collector unknown.

**Observations:** Propagated C.E.S. Insectarium, original stock from Formosa, China Republic; from *Lepidosaphes beeckii* (Hemiptera: Diaspididae) on citron melon. The microscopic slide no. 2013/1 is labelled as "cotypes", here are considered as syntypes (ICZN, art. 73.2.1).

*lingnanensis*, *Aphytis* Compere

1955. *Univ. Calif. Publ. ent.* 10: 303.

- Syntypes (19), sex not determined, MLP 2009/1.  
UNITED STATES OF AMERICA: California, River Side.  
30-VII-1953, Caltagirone coll.

**Observations:** Propagated C.E.S. Insectarium. The microscopic slide no. 2009/1 is labelled as "cotypes", here are considered as syntypes (ICZN, art. 73.2.1)

*melanostictus*, *Aphytis* Compere

1955. *Univ. Calif. Publ. ent.* 10: 287.

- Paratypes (27), males and females, MLP 2014/1.  
UNITED STATES OF AMERICA: California, River Side.  
15-III-1936, Flanders coll.

**Observations:** Obtained from *Aspidiotus juglans regiae* (Hemiptera: Diaspididae) on walnuts. The author designed holotype and paratypes in the original publication, the microscopic slide no. 2014/1 is labelled as "cotypes", here are considered as paratypes (ICZN, art. 73E).

*notialis*, *Aphytis* De Santis

1965. *Rev. Soc. Entomol. Argent.* 27 (1-4): 75.

- Holotype, female, MLP no. 2032/1.

ARGENTINA: Buenos Aires, Castelar.  
XII-1963, Crouzel coll.

- Allotype, male, MLP no. 2032/2.  
CHILE: Santiago de Chile.  
19-II-1953, Kuschel coll.
- Paratypes (4), males, MLP no. 2032/3-6.  
Same data as holotype.
- Paratypes (4), sex not determined, MLP no. 2032/7.  
Without data.

**Observations:** The microscopic slide no. 2032/6 has only an antenna.

*obscurus*, *Aphytis* De Bach et Rosen

1976. *Ann. ent. soc. amer.* 69 (3): 541.

- Paratypes (2), females, MLP no. 3964/1-2.  
ARGENTINA: Buenos Aires, Isla Martín García.  
VIII-1971, Zimmermann coll.
- Paratype, male, MLP no. 3964/3.  
Same data as paratype.

**Observations:** On *Diplacaspis echinocacti* (Hemiptera: Diaspididae).

*bella*, *Centrodora* De Santis

1953. *Rev. Fac. Agron. La Plata* 29: 80.

- Allotype, male, MLP no. 2016/1.  
ARGENTINA: Buenos Aires, Eva Perón [La Plata].  
11-VI-1953, Balcedo coll.
- Paratype, male, MLP no. 2016/2.  
Same data as allotype.
- Paratypes (2), females, MLP no. 2016/3-4.  
Same data as allotype.
- Paratype, female, MLP no. 2016/5.  
Same data as allotype except 8-IV-1952.
- Paratype, female, MLP no. 2016/6.  
Same data as allotype except 9-II-1953.
- Paratype, female, MLP no. 2016/7.  
Same data as allotype except 9-IV-1952, Balcedo - Paes colls.

*citri*, *Debachiella* De Santis et Vidal Sarmiento de Regalía

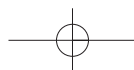
1979. *Acta zool. lilloana* 35 (1): 395.

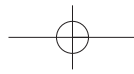
- Holotype, female  
ARGENTINA: Corrientes.  
11-X-1976, Botto coll.

**Observations:** Reared from *Aonidiella aurantii* (Hemiptera: Diaspididae).

*haywardi*, *Marietta* De Santis

1948a. *Rev. Mus. La Plata zool.* 5 (32): 146.





- Paratypes (2), females, MLP no. 3963/1-2. ARGENTINA: Entre Ríos, Concordia. 12-XI-1934, Hayward coll.

- Paratype, female, MLP no. 3963/3. Same data except 23-X-1934.

**Observations:** Host: *Lecanodiaspis* (Hemiptera: Lecanodiaspididae) on *Baccharis* (Asteraceae). The microscopic slide no. 3963/1 has only parts of the specimen.

*intermedia*, Marietta Annecke et Insley 1972. *J. entomol. soc. south. afr.* 35 (1): 1-15.

- Paratypes (3), females, MLP no. 4066/1-3. SOUTH AFRICA: Citrusdal. X-1970, Insley coll.

**Observations:** With *Tachardina* (Hemiptera: Kerriidae) on *Struthiola dodecandia* (Thymelaeaceae).

*mireyae*, Oolathron De Santis 1981. In: De Santis et al. *Rev. Mus. La Plata zool.* 12 (123): 246.

- Holotype, female, MLP no. 2696/1. ARGENTINA: Córdoba, Cruz del Eje. XII-1978, Brewer coll.
- Paratypes (4), females, MLP no. 2696/2-5. Same data as holotype except I-1978.

**Observations:** On *Triatoma infestans* (Hemiptera: Reduviidae) eggs.

#### AZOTINAE

*ciliatus*, Alerus De Santis 1948a. *Rev. Mus. La Plata zool.* 5 (32): 200.

- Holotype, female, MLP no. 2024/1. ARGENTINA: San Juan, Alto de Sierra. VII-1938, López Mansilla coll. Allotype, male, MLP no. 2024/2. Same data as holotype.
- Paratype, sex not determined, MLP no. 2024/3. Same data as holotype.

*leucopidis*, Alerus Blanchard 1942. *Rev. Soc. Entomol. Argent.* 11: 373.

- Syntypes (6), females, MLP no. 2026/1-6. ARGENTINA: Salta, Metán 1935, Koehler coll.

**Observations:** Reared from *Leucopis* sp. (Diptera: Chamaemyiidae) parasite from *Ceroplastes grandis* (Hemiptera: Coccidae). The author designated holotype in the original publication, the mi-

croscopic slide no. 2026/1 is labelled as "cotype", here are considered as paratypes (ICZN, art. 74.4.1.1).

*peruscipennis*, Alerus De Santis 1954. *Bol. Lab. Zool. Gen. Agr. Portici* 33: 191.

- Holotype, female, MLP no. 2025/1. ARGENTINA: Chubut, Puerto Lobos. II-1951, Torres & De Santis colls.
- Allotype, male, MLP no. 2025/2. Same data as holotype.
- Paratypes (2), females, MLP no. 2025/3-4. Same data as holotype.

**Observations:** Host: *Paradiaspis lizeriana* (Hemiptera: Diaspididae).

*crassus*, Azotus De Santis 1974. *Rev. chil. ent.* 8: 14.

- Holotype, female, MLP no. 3939/1. ARGENTINA: Misiones, Loreto. 15-VI-1934, Ogloblin coll.

*lepidus*, Azotus De Santis 1974. *Rev. chil. ent.* 8: 13.

- Holotype, male, MLP 4011/1. ARGENTINA: Buenos Aires, La Plata. II-1938, De Santis coll.

*macilentus*, Azotus De Santis 1974. *Rev. chil. ent.* 8: 14.

- Holotype, female, MLP no. 3938/1. ARGENTINA: Misiones, Loreto. 3-III-1935, Ogloblin coll.

*similis*, Azotus De Santis 1948a. *Rev. Mus. La Plata zool.* 5 (32): 221.

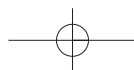
- Holotype, female, 2027/1. ARGENTINA, San Juan, Alto de Sierra. Without date, López Mansilla coll.
- Observations:** reared from coccoids on olive from Brazil.

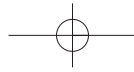
#### COCCOPHAGINAE

*coccidis*, Aneristus Blanchard 1942. *Rev. Soc. Entomol. Argent.* 11: 376.

- Syntypes (2), females, MLP no. 2021/1-2. ARGENTINA: Entre Ríos, Concordia. IV-1938, Hayward coll.

**Observations:** On *Coccus hesperidum* (Hemiptera: Coccidae). The microscopic slides are





labelled as cotypes, here are considered as syntypes (ICZN, Recommendation 73E).

*albiapicella*, *Coccophagus* De Santis

1996. *Acad. Nac. de Agron. y Vet.* 50 (12): 8.

- Holotype, female, MLP no. 4085/1.  
ARGENTINA: Misiones, Loreto.  
3-VIII-1933, Ogloblin coll.

*chilensis*, *Coccophagus* De Santis

1988. *Rev. chil. ent.* 16: 47.

- Holotype, female, MLP no. 3944/1.  
CHILE: Nantoco.  
27-IX-1952, Kuschel coll.

*concinus*, *Coccophagus* De Santis

1963. *Rev. Soc. Entomol. Argent.* 26: 149.

- Holotype, male, MLP no. 2018/1.  
ARGENTINA: Misiones, Villa Lanús.  
29-VII-1963, Togo coll.

*semiatratus*, *Coccophagus* De Santis

1947. *Rev. Soc. Entomol. Argent.* 13 (1-5): 287.

- Holotype, female, MLP no. 2019/1.  
PARAGUAY: Asunción.  
VII-1946, Campos coll.
- Observations:** On *Coccus hesperidum* (Hemiptera: Coccidae).

*zinniae*, *Coccophagus* De Santis

1979a. *Rev. Soc. Entomol. Argent.* 38 (1-4): 135.

- Holotype, female, MLP no. 4084/1.  
ARGENTINA: Corrientes, El Sombrero  
V-1972, Portillo coll.
  - Paratypes (4), females, MLP no. 4084/2-5.  
Same data as holotype.
- Observations:** On coccoids on *Zinnia* sp. (Asteraceae).

*alboscutellaris*, *Encarsia* De Santis

1979a. *Rev. Soc. Entomol. Argent.* 38 (1-4): 134.

- Holotype, female, MLP no. 3940/1.  
ARGENTINA: Misiones, Loreto.  
20-VIII-1934, Ogloblin coll.

*bemisiae*, *Encarsia* De Santis

1981b. *Rev. bras. ent.* 25 (1): 37.

- Holotype, female, MLP no. 2059/1.  
BRAZIL: Sao Paulo, Campinas  
IX-1979, Lourençao coll.
- Paratypes (11), females, MLP no. 2059/2-12.  
Same data as holotype.

- Paratypes (6), females, MLP no. 2059/13.  
Same data as holotype.

**Observations:** On *Bemisia tabaci* (Hemiptera: Aleyrodidae).

*hispida*, *Encarsia* De Santis

1948b. *Notas Mus. La Plata zool.* 13 (101): 45.

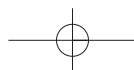
- Holotype, female, MLP no. 2030/1  
ARGENTINA: Santa Fe, Rosario.  
V-1947, Hack coll.
- Paratype, female, MLP no. 2030/2.  
Same data as holotype.
- Paratypes (2), females, MLP no. 2030/3.  
Same data as holotype.
- Paratypes (3), females, MLP no. 2030/4.  
Same data as holotype.
- Paratype, female, MLP no. 2030/5.  
Same data as holotype.
- Paratypes (3), females, MLP no. 2030/6.  
Same data as holotype.
- Paratypes (2), females, MLP no. 2030/7.  
Same data as holotype.
- Paratype, female, MLP no. 2030/8.  
Same data as holotype.
- Paratype, female, MLP no. 2030/9.  
Same data as holotype.
- Paratype, female, MLP no. 2030/10.  
Same data as holotype.
- Paratype, female, MLP no. 2030/11.  
Same data as holotype.
- Paratype, female, MLP no. 2030/12.  
Same data as holotype.
- Paratype, female, MLP no. 2030/13.  
Same data as holotype.
- Paratype, female, MLP no. 2030/14.  
Same data as holotype.
- Paratype, female, MLP no. 2030/15.  
Same data as holotype.
- Paratype, female, MLP no. 2030/16.  
Same data as holotype.
- Paratype, female, MLP no. 2030/17.  
Same data as holotype.

**Observations:** On aleiroidoids on *Salvia splendens* (Lamiaceae).

*lycopersici*, *Encarsia* De Santis

1957. *Notas Mus. La Plata zool.* 19 (172): 103.

- Holotype, female, MLP no. 2031/1.  
ARGENTINA: Buenos Aires, La Plata.  
II-1956, Millán coll.
- Allotype, male, MLP no. 2031/1.  
Same data as holotype.



- Paratypes (11), females; (7), males, MLP no. 2031/2-5.

Same data as holotype.

**Observations:** On aleirodoids (Hemiptera: Aleirodidae) on tomatoes.

*flaviflagellatus*, *Physcus* De Santis

1939. *Rev. Fac. Agron. La Plata* 24: 39.

- Holotype, female, MLP no. 2023/1.  
ARGENTINA: Santa Fe, San Cristóbal.  
X-1938. Griot coll.
- Paratypes (2), females, (1), male, MLP no. 2023/2.  
Same data as holotype.
- Paratypes (4), females, (3), males, MLP no. 2023/3.  
Same data as holotype.
- Paratypes (5), males, MLP no. 2023/4.  
Same data as holotype.
- Paratypes (2), females, (1), male, MLP no. 2023/4.  
Same data as holotype.

**Observations:** Host: *Melanaspis paulistus* (Hemiptera: Diaspididae) on *Aspidosperma quebracho-blanco* (Apocynaceae). On microscopic slide 2023/1 there are 4 females, one of them is the holotype.

*laticapus*, *Prophyscus* De Santis

1940. *Notas Mus. La Plata zool.* 5 (30): 26.

- Paratype, male, MLP no. 2022/1.  
ARGENTINA: Buenos Aires, La Plata.  
I-1938, De Santis coll.

**Observations:** On *Prunus domestica* (Rosaceae). The microscopic slides are labelled as genotype, in the original publication the author designed as holotype (Recommendation 67A, ICZN).

*aurantii argentina*, *Prospaltella* De Santis

1948a. *Rev. Mus. La Plata zool* 5 (32): 238.

- Holotype, female, MLP no. 2028/1.  
ARGENTINA: Río Negro.  
VII-1937, López coll.
- Paratype, female, MLP no. 2028/2.  
ARGENTINA: Río Negro.  
Same data as holotype.
- Paratypes (6), females, MLP no. 2028/3.  
ARGENTINA: Santa Fe, Ángel Gallardo.  
VIII-1938, Griot coll.
- Paratypes (9), females, MLP no. 2028/4.  
Same data as paratype no. 2028/3.
- Paratypes (2), females, MLP no. 2028/5.

Same data as paratype no. 2028/3.

- Paratypes (17), females, MLP no. 2028/6.  
Same data as paratype no. 2028/3.
- Paratype, female, MLP no. 2028/7.  
Same data as paratype no. 2028/3.
- Paratype, female, MLP no. 2028/8.  
Same data as paratype no. 2028/3.
- Paratypes (4), females, MLP no. 2028/9.  
ARGENTINA: Buenos Aires, La Plata.  
X-1937, De Santis coll.
- Paratypes (2), females, MLP no. 2028/10.  
ARGENTINA: Buenos Aires, La Plata.  
X-1943, Lopapa coll.

**Observations:** On *Quadraspidiotus perniciosus* (Hemiptera: Diaspididae). The microscopic slide no. 2028/1 is labelled as holotype and no. 2028/2-10 as paratypes, but the author did not designed it in the original publication. According to art. 72.4.1.1 (ICZN) we considered it as the holotype and paratypes respectively. The collector mentioned in the label of microscopic slides 2028/1-2 is López, but in the original publication says Santos.

## SIGNIPHORIDAE

*axillaris*, *Chartocerus* De Santis

1973. *Rev. Fac. Agron. La Plata* 49: 152.

- Holotype, female, MLP no. 3927/1.  
ARGENTINA: Mendoza, Chacras de Coria.  
25-II-1957, Exp. Mus. La Plata

**Observations:** On *Pseudococcus* sp. (Hemiptera: Pseudococcidae) on *Solanum eleagnifolium* (Solanaceae).

*coleopratus*, *Thysanus* Kerrich

1953. *Bull. ent. Res.* 44: 802.

- Paratype, male, MLP no. 1931/1 (P).  
TRINIDAD Y TOBAGO: Trinidad, St. Augustine.  
1-V-1949, Kirkpatrick coll.
- Paratype, female, MLP no. 1931/2.  
Same data as paratype.

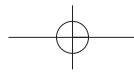
**Observations:** Reared from *Pseudococcus citri* (Hemiptera: Pseudococcidae) on cacao.

*frequentior*, *Thysanus* Kerrich

1953. *Bull. ent. Res.* 44: 803.

- Paratype, male, MLP no. 1929/1 (P).  
VENEZUELA: Mérida, Tovar.  
III-1947, Box coll.
- Paratype, female, MLP no. 1929/2.





Same data as paratype.

**Observations:** Reared from *Paratheresia claripalpis* (Diptera: Tachinidae) in *Diatraea saccharalis* (Lepidoptera: Crambidae) in sugar cane.

*zostericus*, *Thysanus* Kerrich  
1953. *Bull. ent. Res.* 44: 805.

- Paratype, male, MLP no. 1930/1 (P).  
BRAZIL: Amazonas, Santarem.  
X-1933, Myers coll.
- Paratype, female, MLP no. 1930/2.  
Same data as paratype except 1933.

**Observations:** Paratype no. 1930/1 reared from amazon fly; Paratype no. 1930/2 is hyperparasitoid of *Stomatodex*?

*flavopalliata*, *Signiphora* De Santis  
1973. *Rev. Fac. Agron. La Plata* 49: 148.

- Holotype, female, MLP no. 3839/1.  
ARGENTINA: Buenos Aires, La Plata.  
V-1946, Esquivel coll.
- Paratype, male, MLP no. 3839/2.  
Without data.
- Paratype, male, MLP no. 3839/3.  
ARGENTINA: Buenos Aires, Patagones  
VI-1938, De Santis coll.
- Paratypes (2), males, MLP no. 3839/4.  
ARGENTINA: Corrientes, General Paz.  
II-1947, Esquivel coll.
- Paratype, male, MLP no. 3839/5.  
Same data as paratype no. 3839/4 except V-1946.
- Paratype, female, MLP 3839/6.  
Same data as paratype no. 3839/4 except V-1946.
- Paratype, female, MLP 3839/7.  
Same data as paratype no. 3839/4 except X-1946.
- Paratypes (2), males, MLP no. 3839/8-9.  
ARGENTINA: Tucumán, Tucumán.  
9-IX-1956, Terán coll.
- Paratype, male, MLP no. 3839/10.  
ARGENTINA: Entre Ríos, Concordia.  
2-II-1940, Banfi coll.
- Paratype, male, MLP no. 3839/11.  
ARGENTINA: Misiones, Cerro Corá.  
5-III-1934, Ogloblin coll.

**Observations:** Paratype no. 3839/3 was collected on *Aspidiotus hederæ* (Hemiptera: Diaspididae) on olive; paratype no. 3839/4-7 was collected on *Crysomphalus aonidum* (Hemiptera: Coccidae); paratype no. 3839/11 was

collected on *Coccus hesperidum* (Hemiptera: Coccidae) on *Ilex paraguayensis* (Aquifoliaceae). Paratype no. 3839/10 has 2-II-1950 in the original publication.

*tumida*, *Signiphora* De Santis  
1973. *Rev. Fac. Agron. La Plata* 49: 150.

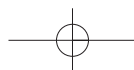
- Holotype, female, MLP no. 3840/1.  
ARGENTINA: Buenos Aires, La Plata.  
XII-1961, De Santis coll.
  - Allotype, male, MLP no. 3840/2.  
Same data as holotype.
  - Paratypes (3), females, MLP no. 3840/3-5.  
Same data as holotype.
- Observations:** On coccids (Hemiptera: Coccidae).

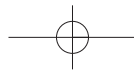
#### ACKNOWLEDGEMENTS

Support from the Secretaría de Ciencia y Técnica de la Universidad Nacional de La Plata and Consejo Nacional de Investigaciones Científicas y Técnicas (Argentina) are gratefully acknowledged. We also thank Dra. Norma Díaz for her valuable comments and Ing. Sonia Suárez for technical support.

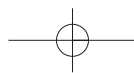
#### LITERATURE CITED

- ANNECKE, D. P. AND H. P. INSLEY. 1972. The species of *Marietta* and a new *Centroдора* from South Africa (Hymenoptera: Aphelinidae). *J. entomol. soc. south. afr.* 35 (1): 1- 15.
- BLANCHARD, E. E. 1942. Nuevos dípteros e himenópteros parásitos de la República Argentina. *Rev. Soc. Entomol. Argent.* 11: 340- 379.
- COMPÈRE, H. 1955. A systematic on the genus *Aphytis* Howard (Hymenoptera, Aphelinidae) with descriptions of new species. *Univ. Calif. Publ. ent.* 10: 271- 319.
- DE BACH, P. & D. ROSEN. 1976. Twenty new species of *Aphytis* (Hymenoptera: Aphelinidae) with descriptions of new species. *Ann. ent. soc. amer.* 69 (3): 541- 545.
- DE SANTIS, L. 1939. Género *Physcus* Howard con descripción de una nueva especie (Hym., Chalcidoidea). *Rev. Fac. Agron.* 24: 29- 44.
- DE SANTIS, L. 1940. Sobre un nuevo afelinido argentino (Hym., Chalcidoidea). *Notas Mus. La Plata zool.* 5 (30): 23- 29.

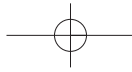




- DE SANTIS, L. 1947. Dos nuevos calcidoideos interesantes (Hymenoptera, Chalcidoidea). *Rev. Soc. Entomol. Argent.* 13 (1-5): 281- 291.
- DE SANTIS, L. 1948a. Estudio monográfico de los Afelínidos de la República Argentina (Hymenoptera, Chalcidoidea). Separado de la *Rev. Mus. La Plata zool.* 5 (32): 23- 280.
- DE SANTIS, L. 1948b. Adiciones a la fauna argentina de Afelínidos. (Hymenoptera: Chalcidoidea). *Notas Mus. La Plata zool.* 13 (101): 43- 48.
- DE SANTIS, L. 1953. Adiciones a la fauna argentina de Afelínidos II. (Hymenoptera: Chalcidoidea). *Rev. Fac. Agron. La Plata* 29: 73- 84.
- DE SANTIS, L. 1954. Nota sobre himenópteros parásitos de dos cochinillas patagónicas. *Bol. Lab. Zool. Gen. Agr. Portici* 33: 188- 191.
- DE SANTIS, L. 1957. Adiciones a la fauna argentina de Afelínidos III. (Hymenoptera. Chalcidoidea). *Notas Mus. La Plata. zool.* 19 (172): 101-106.
- DE SANTIS, L. 1963. Adiciones a la fauna argentina de Afelínidos V. (Insecta: Hymenoptera). *Rev. Soc. Entomol. Argent.* 26: 149-151.
- DE SANTIS, L. 1965. Adiciones a la fauna argentina de Afelínidos VI. (Insecta: Hymenoptera). *Rev. Soc. Entomol. Argent.* 27 (1-4): 75- 77.
- DE SANTIS, L. 1967. *Catálogo de los himenópteros argentinos de la Serie Parasítica, incluyendo Bethyloidea*. Publicación de la Com. Invest. Cient. Prov. Bs. As.: 1-337.
- DE SANTIS. 1973. Nota sobre signífóridos de la República Argentina (Insecta: Hymenoptera). *Rev. Fac. Agron. La Plata* 49: 143- 153.
- DE SANTIS, L. 1974. Adiciones a la fauna argentina de Afelínidos VII. (Insecta: Hymenoptera). *Rev. chil. ent.* 8: 11- 15.
- DE SANTIS, L. 1979a. Adiciones a la fauna argentina de Afelínidos VIII. (Insecta, Hymenoptera). *Rev. Soc. Entomol. Argent.* 38 (1-4): 133- 136.
- DE SANTIS, L. 1979b. *Catálogo de los himenópteros calcidoideos de América al Sur de los Estados Unidos*. Publicación especial de la Com. Invest. Cient. Prov. Bs. As., 488 pp.
- DE SANTIS, L. 1981a. *Catálogo de los himenópteros calcidoideos de América al Sur de los Estados Unidos*. Primer Suplemento. *Rev. peru. Ent.* 24 (1):1-38.
- DE SANTIS, L. 1981b. Sobre dos especies de *Encarsia* (Hymenoptera, Aphelininae) del Brasil parasitoides de *Bemisia tabaci* (Homoptera, Aleyrodidae). *Rev. bras. Ent.* 25 (1): 37-39.
- DE SANTIS, L. 1988. Calcidoideos nuevos de la República Argentina y Chile (Insecta, Hymenoptera). *Rev. chil. ent.* 16: 41-48.
- DE SANTIS, L. 1989. *Catálogo de los himenópteros calcidoideos de América al Sur de los Estados Unidos*. Segundo suplemento. *Act. ent. chil.* 15: 9- 90.
- DE SANTIS, L. 1996. Afelínidos y Tricogramátidos de la colección del Dr. Alejandro A. Ogloblin (Insecta, Hymenoptera). I. Primera Comunicación. *Acad. Nac. de Agron. y Vet.* 50 (12): 7- 9.
- DE SANTIS, L. 1998. Chalcidoidea. In Morrone, J. J. & S. Coscarón (Dirs.). *Biodiversidad de Artrópodos Argentinos. Una perspectiva Biotaxonómica*. Ediciones Sur, Chap. 39: 408- 426.
- DE SANTIS, L. & P. FIDALGO. 1994. *Catálogo de los himenópteros calcidoideos de América al Sur de los Estados Unidos*. Tercer Suplemento. *Ser. Acad. Nac. Agron. y Vet.* 13: 1- 154.
- DE SANTIS, L. & J. A. VIDAL SARMIENTO DE REGALÍA. 1979. El género *Debachiella* y la clasificación de los Afelínidos. *Act. zool. lilloana* 35 (1): 393- 397.
- DE SANTIS, L., M.S. LOIACONO DE SILVA & M.C. COSCARÓN DE LARRAMENDY. 1981. Lucha biológica contra las vinchucas (Hem. Reduvidae). El empleo de insectos entomófagos. *Rev. Mus. La Plata zool.* 12 (123): 239- 260.
- GREATHEAD, D. J. 1986. Parasitoids in classical biological control, pp. 289- 318. In: Waage, J. and Greathead, D. (eds.). *Insects Parasitoids*, 389 pp. Academic Press, London.
- HANSON, P. E. Aphelinidae. In Hanson, P.E. & I. D. Gauld. 1995. *The Hymenoptera of Costa Rica*. Oxford University Press, Oxford. Chapter 11.2: 282- 289.
- INTERNATIONAL CODE OF ZOOLOGICAL NOMENCLATURE. 1999. Edition adopted by the International Union of Biological Sciences.
- KERRICH, G. J. 1953. Report on Encyrtidae associated with mealy-bugs on cacao in Trinidad, and on some other species related thereto. *Bull. ent. Res.* 44: 789- 810.
- LAVETT SMITH, C. & M. BUERKLI. 1969. Should paratypes be included in lists of type specimens? *Syst. Zool.* 18 (2): 247- 250.
- MARTÍN-PIERA, F. & J. M. LOBO. 2000. Diagnóstico sobre el conocimiento sistemático y biogeográfico de tres órdenes de insectos hiperdiversos en España: Coleoptera, Hymenoptera y







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Lepidoptera. *M3M 1*, SEA, Zaragoza: 287- 308.  
POLASZEK, A. & M. HAYAT. 1992. A revision of the  
genera *Dirphrys* Howard and *Encarsiella* Ha-  
yat (Hymenoptera: Aphelinidae). *Syst. Ent.*  
17: 181- 197.  
WOOLLEY, J. B. 1988. Phylogeny and classification

of the Signiphoridae (Hymenoptera: Chalci-  
doidea). *Syst. Ent.* 13: 465- 501.

Recibido: 20-XII-2002  
Aceptado: 3-IV-2003

