

The types of Eupelmidae and Trichogrammatidae (Hymenoptera: Chalcidoidea) housed at the Museo de La Plata, Argentina

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■ **ABSTRACT.** The 20 type specimens of Eupelmidae and 230 of Trichogrammatidae (Hymenoptera: Chalcidoidea) housed at the Museo de La Plata, Argentina (División Entomología) were examined and listed, providing update information on categories of types, data of collection and hosts. The types belong to six species of Eupelmidae described by De Santis, and 26 of Trichogrammatidae by De Santis (22) and Viggiani (4).

KEY WORDS. Catalogue. Type material. Eupelmidae. Trichogrammatidae. Museo de La Plata Collection.

■ **RESUMEN.** Los tipos de Eupelmidae y Trichogrammatidae (Hymenoptera: Chalcidoidea) depositados en el Museo de La Plata, Argentina. Fueron examinados y listados los 20 tipos de Eupelmidae y los 230 de Trichogrammatidae 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 seis especies de Eupelmidae descritas por De Santis y 26 de Trichogrammatidae por De Santis (22) y Viggiani (4).

PALABRAS CLAVE Catálogo. Material tipo. Eupelmidae. Trichogrammatidae. Colección Museo de La Plata.

INTRODUCTION

This catalogue is part of a series of contributions on the type material of Hymenoptera housed at the collection of the División Entomología, Museo de La Plata, Buenos Aires, Argentina. Updates of type material housed at different institutions are particularly useful for taxonomic studies and revisions, as it has been stated in the International Code of Zoological Nomenclature (Article 72 F.4, ICZN, 1999). Materials belonging to superfamilies Cynipoidea (Díaz & Loíacono, 1995), Proctotrupeoidea, Ceraphronoidea (Loíacono & Díaz, 1996), Apoidea (Durante & Díaz, 1998), and Chalcidoidea: Encyrtidae (Loíacono *et al.*, 2001), Eulophidae (Loíacono *et al.*, 2002), Aphelinidae and Signiphoridae (Loíacono *et al.*, 2003) were previously studied. The purpose of this paper is to gather and update information on types

of others families of Chalcidoidea, the Eupelmidae and Trichogrammatidae.

According to Grisell & Schauff (1990) 715 species of Eupelmidae have been described; 93 of them are Nearctic and 74 Neotropical; 34 species have been recorded by De Santis (1998) for Argentina. According to Hanson and Gauld (1995) most eupelmids appear to be idiobiont ectoparasitoids or predators of the immature stages of other arthropods concealed in plant tissue or silken sacs. Some eupelmids especially those that attack exposed insect eggs, develop as endoparasitic idiobionts. The range of hosts utilized by eupelmids is extremely diverse, including species of Orthoptera, Blattaria, Mantodea, Hemiptera (Heteroptera and "Homoptera"), Neuroptera, Coleoptera, Diptera, Lepidoptera, Hymenoptera and the eggs of spiders.

According to Grisell & Schauff (1990) 650 species of Trichogrammatidae have been described; 43 of them are Nearctic and 56 Neotropical; 50 species have been recorded by De Santis (1998) for Argentina, 21 belongs to the genus *Trichogramma*. Trichogrammatids are solitary or gregarious endoparasitic idiobionts in the eggs of other insects. Hemiptera, Lepidoptera and Coleoptera are the most common hosts (Hanson and Gauld, 1995). *Trichogramma* spp. are the most commonly and widely used entomophagous arthropods in programmes of mass rearing for periodic liberation in the field, i.e. augmentative releases (Hassan, 1988).

MATERIAL AND METHODS

The entomological collection of the Museo de La Plata houses 20 type specimens of Eupelmidae and 230 of Trichogrammatidae. The types herein treated belong to six species of Eupelmidae described by De Santis, and 26 of Trichogrammatidae by De Santis (22) and Viggiani (4). 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, 1979a, 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 publication. 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 (M.S.), 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 in-

cluded on labels, and the valid name for some species according (Noyes, 1998).

RESULTS

EUPELMIDAE

charitos, *Anastatus* De Santis. 1982, *Neotrópica* 29 (80): 203. Holotype, female, MLP no. 4138/1 (P), Argentina: Córdoba, Córdoba, 6-I-1981, Brewer coll. Paratype, female, MLP no. 4138/3. Same data as holotype. Observations: Reared from eggs of *Triatoma infestans* (Hemiptera: Reduviidae). In the original publication the author mentioned two paratypes.

grandis, *Lecaniobius* De Santis. 1950, *Notas Mus. La Plata zool.* 15 (130): 2. Syntypes (2), females, MLP no. 2005/1-2 (P and M.S. respectively), Argentina: Buenos Aires, 25 de Mayo, XII-1937, López Mansilla coll. Observations: Reared from *Ceroplastes* sp. (Hemiptera: Coccidae) on *Prunus domestica* (Rosaceae). The microscope slides are labeled as "cotypes", here are considered as syntypes (ICZN, art. 73.2.1).

enterrriana, *Mercetina* De Santis. 1983. In De Santis & Loíacono de Silva, *Contrib. Amer. Ent. Inst.* 20: 410. Paratypes (13), females, MLP no. 4137/3-15, Argentina: Entre Ríos, Paraná, 1979- 1980, Saluso coll. Observations: The author designed holotype, allotype and 40 paratypes in the original publication.

bucheri, *Oozetetes* De Santis. 1970a, *Rev. Mus. La Plata zool.* 11 (94): 33. Holotype, female, MLP no. 5022/1, Argentina: Tucumán, 27-V-1965, Bucher coll. Observations: *Oozetetes bucheri* is the type species of the genus. Reared from *Pseudoischnoptera lineata* (Blattodea) eggs.

filicornis, *Notosandalum* De Santis. 1968, *Rev. Mus. La Plata zool.* 10 (81): 147. Holotype, female, MLP no. 5023/1, Argentina: Buenos Aires, La Plata, 1962, without collector. Observations: *Notosandalum filicornis* is the type species of the genus. The valid name of this species is *Eusandalum filicorne* (De Santis).

excavatus, *Proanastatus* De Santis. 1952. *Rev. Soc. Entomol. Argent.* 15 (4): 268. Holotype,

female, MLP no. 2008/1, Argentina: Buenos Aires, City Bell, X-1948, Chuchuy coll. Observations: *Proanastatus excavatus* is the type species of the genus. The valid name of this species is *Anastatus excavatus* (De Santis). Reared from *Pseudaulacaspis pentagona* (Hemiptera: Diaspididae) on *Prunus persicae* (Rosaceae).

TRICHOGRAMMATIDAE

oblita, *Aphelinoidea* De Santis. 1970b, *Rev. Mus. La Plata zool.* 11 (91): 5. Holotype, female, MLP no. 5024/1. Uruguay: Rocha, Laguna Merín, 21-II-1962, Carbonell and Zolessi colls. Paratype, female, MLP no. 5024/3, Argentina: Buenos Aires, Cazón, 9-II-1960, Millán and De Santis colls.

semiflava, *Aphelinoidea* De Santis. 1970b, *Rev. Mus. La Plata zool.* 11 (91): 7. Holotype, female, MLP no. 5025/1, Argentina: La Pampa, Santa Rosa, 2-II-1958, Exp. Mus. coll. Paratype, female, MLP no. 5025/3, Argentina: Mendoza, Mendoza, 20-II-1957, Exp. Mus. coll. Paratype, female, MLP no. 5025/4, Argentina: La Pampa, Anguil, 28-I-1958, Exp. Mus. coll. Paratype, female, MLP no. 5025/5, same data as holotype. Paratype, female, MLP no. 5025/6, without data. Observations: The autor mentioned seven paratypes in the original publication.

carbonelli, *Bloodiella* De Santis. 1970b, *Rev. Mus. La Plata zool.* 11 (91): 8. Holotype, female, MLP no. 5026/1. Uruguay: Rivera, Curticeiras, 27-III-1962, Carbonell and Morey colls.

caudata, *Brachistographa* De Santis. 1997, *Acad. Nac. Agron. Vet.* 51 (8): 9. Holotype, female, MLP no. 5052/1, Argentina: Misiones, Loreto, 17-IV-1936, Ogloblin coll. Paratype, female, MLP no. 5052/3, same data as holotype except 10-IV-1936. Observations: On *Solanum sisymbriifolium* (Solanaceae).

subannulata, *Burksiella* De Santis. 1957a, *Notas Mus. La Plata zool.* 19 (175): 134. Holotype, female, MLP no. 1895/1, Argentina: Buenos Aires, La Plata, 19-X-1953, Balcedo coll. Allotype, male, MLP no. 1895/2, same data as holotype. Paratype, female, MLP no. 1895/3, same data as holotype. Observations: *Burksiella subannulata*

is the type species of the genus. The valid name of this species is *Zagella subannulata* (De Santis).

schachovskoyi, *Ceratogramma* De Santis. 1957a, *Notas Mus. La Plata zool.* 19 (175): 131. Holotype, male, MLP no. 1901/1, Argentina: Neuquén, Lago Curru-he Grande, 25-II-1955, Torres and De Santis colls. Observations: *Ceratogramma schachovskoyi* is the type species of the genus.

habros, *Encyrtogramma* De Santis. 1957b, *Notas Mus. La Plata zool.* 19 (166): 35. Holotype, female, MLP no. 5027/1, Argentina: Buenos Aires, La Plata, 1952, Balcedo coll. Observations: *Encyrtogramma habros* is the type species of the genus. The valid name of this species is *Aphelinoidea habros* (De Santis).

mexicana, *Epoligosita* Viggiani. 1987. In: Pinto & Viggiani, *Pan-Pacif. Ent.* 63 (4): 374. Paratype, sex not determined, MLP no. 5028/3. Mexico: Coahuila, 28-VIII-1985, Gonzalez coll. Observations: On grape stems with leafhopper (Hemiptera) eggs. There is no reference to type material deposited at Museo de La Plata, Argentina in the original publication.

aliciae, *Gnorimogramma* De Santis. 1972a, *Arch. Univ. Fed. Rur. Rio de Janeiro* 2 (2): 37. Holotype, female, MLP no. 5029/1, Brazil: Rio de Janeiro, Santa Cruz, IV-1972, Lima coll. Allotype, male, MLP no. 5029/2, same data as holotype. Paratype, male, MLP no. 5029/3, same data as holotype. Paratypes (18), sex not determined, MLP no. 5029/4-21, same data as holotype. Paratypes (5), sex not determined, MLP no. 5029/22, same data as holotype. Observations: *Gnorimogramma aliciae* is the type species of the genus. Reared from *Mahanarva rubicunda indentata* (Hemiptera: Cercopidae). There are five specimens on M.S. 5029/22.

bachmanni, *Hydrophylita* De Santis. 1964, *Com. Invest. Cient. Bs. As.* 2 (3): 5. Holotype, female, MLP no. 1898/1, Argentina: Buenos Aires, Delta del Paraná, II-1963, Bachmann coll. Allotype, male, MLP no. 1898/2, same data as holotype. Paratypes (9), females, MLP no. 1898/3-11, same data as holotype. Paratypes (3), males, MLP no. 1898/12-14, same data as holotype. Observations: The author mentioned 12 females and six males in the original publication.

deltae, *Lathrogramma*, De Santis. 1952, *Rev. Soc. Entomol. Argent.* 15: 275. Holotype, female, MLP no. 1894/1, Argentina: Buenos Aires, Delta del Paraná, II-1948, Quintana coll. Allotype, male, MLP no. 1894/1, same data as holotype. Paratypes (2), sex not determined, MLP no. 1894/1, same data as holotype. Paratypes (15), sex not determined, MLP no. 1894/3-8, same data as holotype. Observations: *Lathrogramma deltae* is the type species of the genus. The holotype, allotype and paratypes are on the same microscope slide MLP no. 1894/1. The M.S. 1894/3 has four specimens; 1894/5 has three, 1894/7 has four, 1894/8 has two.

argentina, *Lathromeris* De Santis. 1957b, *Notas Mus. La Plata zool.* 19 (166): 40. Holotype, female, MLP no. 1897/1, Argentina: Buenos Aires, La Plata [Eva Perón], 11-VI-1953, Balcedo coll. Paratypes (2), females, MLP no. 1897/3-4, same data as holotype.

desantisi, *Oligosita* Viggiani. 1981, *Boll. Lab. ent. Agr. Portici* 38: 110. Holotype, female, MLP no. 5030/1, Argentina: Buenos Aires, La Plata [Eva Perón], III-1954, Balcedo coll. Allotype, male, MLP no. 5030/2, same data as holotype. Paratypes (2), females, MLP no. 5030/3-4, same data as holotype. Paratype, female, MLP no. 5030/5, Argentina: Buenos Aires, Grünbein, 9-IX-1960, Rapoport coll. Paratype, male, MLP no. 5030/6, Argentina: Buenos Aires, Los Acantilados, II-1968, De Santis coll. Observations: The author mentioned 11 paratypes in the original publication. The M.S. 5030/6 is not mentioned by the author. Here is considered as paratype according to art. 72.4.1.1 (ICZN).

fasciata, *Oligosita* Viggiani. 1981, *Boll. Lab. ent. Agr. Portici* 38: 112. Holotype, female, MLP no. 5031/1, Uruguay: Rocha, Rio Cebollati, 21-II-1962, Carbonell & Zolessi colls. Observations: There is one paratype mentioned by the author in the original publication.

longifragiata, *Oligosita* Viggiani. 1981, *Boll. Lab. ent. Agr. Portici* 38: 114. Holotype, female, MLP no. 5032/1, Argentina: Buenos Aires, La Plata [Eva Perón], 12-VI-1953, Balcedo coll. Allotype, male, MLP no. 5032/2, same data as holotype except II-1954. Paratype, male, MLP no. 5032/3, same data as holotype except 8-V-

1953. Paratype, female, MLP no. 5032/4, same data as holotype except 14-V-1953. Paratype, female, MLP no. 5032/5, same data as holotype except 27-V-1953. Paratypes (2), female, male, MLP no. 5032/6-7, same data as holotype except 12-VI-1953. Paratypes (2), females, MLP no. 5032/8-9, same data as holotype except VIII-1953. Paratypes (2), female, male, MLP no. 5032/10-11, same data as holotype except 1-X-1953. Paratype, female, MLP no. 5032/12, same data as holotype except 9-X-1953. Paratype, female, MLP no. 5032/13, same data as holotype except 19-X-1953. Paratypes (2), females, MLP no. 5032/14-15, same data as holotype except II-1954. Paratypes (5), males, MLP no. 5032/16-20, same data as holotype except II-1954. Paratype, sex not determined, MLP no. 5032/21, same data as holotype except II-1954. Paratypes (3), females, MLP no. 5032/22-24, Uruguay: Rivera, Curticeiras, 27-III-1962, Carbonell and Morey colls. Paratypes (8), males, MLP no. 5032/25-32, same data as MLP no. 5032/22. Paratype, female, MLP no. 5032/33, Uruguay: Rivera, Curticeiras, without date, Carbonell and Morey colls. Paratype, female, MLP no. 5032/34, Uruguay: San José, Arroyo Pavón, 4-IV-1963, Morey coll. Paratype, female, MLP no. 5032/35, same data as paratype MLP no. 5032/34 except Morey and Tremoleras colls. Observations: The author mentioned 40 paratypes in the original publication.

semicinctum, *Oligositoides* De Santis. (1968) 1969, *Bull. ent. Res.* 59: 465. Holotype, female, MLP no. 5033/1, Kenya: Kimari, 14-III-1967, Benjamin coll. Allotype, male, MLP no. 5033/2, same data as holotype except 28-I-1967. Paratypes (4), sex not determined, MLP no. 5033/3-6, same data as holotype except 28-I-1967. Paratypes (18), sex not determined, MLP no. 5033/7-24, same data as holotype except 22-III-1967. Paratypes (10), sex not determined, MLP no. 5033/25-34, same data as holotype except 14-III-1967. Paratypes (3), sex not determined, MLP no. 5033/35-37, same data as holotype except 16-IX-1968. Paratypes (26), sex not determined, MLP no. 5033/38-63, Kenya: Kericho, 22-II-1967, Benjamin coll. Observations: Reared from eggs of the curculionid *Entypotrachelus meyeri* (Coleoptera: Curculionidae).

- xiphias*, *Tanygramma* De Santis. 1957b, *Notas Mus. La Plata zool.* 19 (166): 38. Holotype, female, MLP no. 5034/1, Argentina: Buenos Aires, La Plata, III-1954, Balcedo coll. Observations: *Tanygramma xiphias* is the type species of the genus. The valid name of this species is *Aphelinoidea xiphias* (De Santis).
- annulata*, *Trichogrammatoidea* De Santis. 1972b, *Arq. Inst. Biol., S. Paulo* 39 (2): 122. Holotype, female, MLP no. 5035/1, Brazil: São Paulo, Campinas, V-1971, Rossetto coll. Allotype, male, MLP no. 5035/2, same data as holotype. Paratypes (3), females, MLP no. 5035/3-5, same data as holotype. Paratypes (4), females (2), males (2), MLP no. 5035/6, same data as holotype. Paratypes (4), males, MLP no. 5035/7-10, same data as holotype. Observations: Parasitoid of *Alabama argillacea* (Lepidoptera: Noctuidae). There are four specimens on M.S. 5035/6.
- pampeana*, *Tumidiclava* De Santis. 1970b, *Rev. Mus. La Plata zool.* 11 (91): 11. Holotype, female, MLP no. 5036/1, Argentina: La Pampa, Santa Rosa, 26-I-1958, Exp. Mus. coll. Allotype, male, MLP no. 5036/2, same data as holotype. Paratype, female, MLP no. 5036/3, same data as holotype. Paratype, female, MLP no. 5036/4, Argentina: La Pampa, Valle del Tigre, 1-II-1958, Exp. Mus. coll. Paratypes (2), female, male, MLP no. 5036/5-6, Argentina: La Pampa, Parque Luro, 3-II-1958, Exp. Mus. coll. Observations: The author mentioned six paratypes in the original publication.
- platensis*, *Ufens* De Santis. 1957a, *Notas Mus. La Plata zool.* 19 (175): 138. Holotype, female, MLP no. 5037/1, Argentina: Buenos Aires, La Plata [Eva Perón], III-1954, Balcedo coll. Allotype, male, MLP no. 5037/2, same data as holotype except 18-XI-1953. Paratype, sex not determined, MLP no. 5037/3, same data as holotype. Paratype, sex not determined, MLP no. 5037/4, Argentina: Buenos Aires, La Plata, 27-III-1951, Bonino coll. Paratypes (2), sex not determined, MLP no. 5037/5-6, Argentina: Buenos Aires, La Plata [Eva Perón], 9-V-1952, Balcedo and Pais colls. Paratype, sex not determined, MLP no. 5037/7, same data as paratypes 5037/5-6. Paratype, sex not determined, MLP no. 5037/8, Argentina: Buenos Aires, La Plata [Eva Perón], 18-XII-1953, Balcedo coll. Paratype, sex not determined, MLP no. 5037/9, same data as paratype 5037/8. Paratype, sex not determined, MLP no. 5037/10, same data as paratype 5037/5 except 16-IV-1952. Paratype, sex not determined, MLP no. 5037/11, Argentina: Buenos Aires, La Plata [Eva Perón], 9-IV-1952, Balcedo coll. Paratype, sex not determined, MLP no. 5037/12, same data as paratype no. 5037/11. Observations: The valid name of this species is *Monorthochaeta platensis* (De Santis).
- hastata*, *Uscanoidea* De Santis. 1997, *Acad. Nac. Agron. Vet.* 51 (8): 11. Holotype, female, MLP no. 5053/1, Argentina: Misiones, Loreto, without date, Ogloblin coll. Allotype, male, MLP no. 5053/2, same data as holotype. Paratype, female, MLP no. 5053/2, same data as holotype. Paratypes (2), females, MLP no. 5053/3, same data as holotype. Observations: On *Solanum sisymbriifolium* (Solanaceae). There are 3 paratypes in the collection; the M.S. are undated, but in the original publication the dates are 5-III-1933 and XII-1935. The paratype 5053/2 is on the same slide of allotype. There are two specimens on M.S. 5053/3.
- parviclavata*, *Uscanoidea* De Santis. 1997, *Acad. Nac. Agron. Vet.* 51 (8): 11. Holotype, male, MLP no. 5054/1, Argentina: Misiones, Apóstoles, 16-I-1937, Ogloblin coll. Observations: Reared from *Capylenchia hastata* (Hemiptera, Membracidae) on *Eryngium* (Apiaceae).
- delicata*, *Zagella* De Santis. 1970b, *Rev. Mus. La Plata zool.* 11 (91): 5. Holotype, female, MLP no. 5038/1, Argentina: Mendoza, Chacras de Coria, 25-II-1957, Exp. Mus. coll.
- mimica*, *Zagella* De Santis. 1997, *Acad. Nac. Agron. Vet.* 51 (8): 13. Holotype, male, MLP no. 5055/1, Argentina: Misiones, Loreto, 23-VII-1936, Ogloblin coll.
- nanula*, *Zagella* De Santis. 1970b, *Rev. Mus. La Plata zool.* 11 (91): 17. Holotype, female, MLP no. 5039/1, Uruguay: Rocha, Laguna Merín, 21-II-1962, Carbonell and Zolessi colls.
- zebrata*, *Zagella* De Santis. 1970b, *Rev. Mus. La Plata zool.* 11 (91): 13. Holotype, female, MLP no. 5040/1, Argentina: Mendoza, Chacras de

Coria, 25-II-1957, Exp. Mus. coll. Allotype, male, MLP no. 5040/2, Argentina: La Pampa, Toay, 30-I-1958, Exp. Mus. coll. Paratype, male, MLP no. 5040/3, same data as holotype. Paratype, female, MLP no. 5040/4, Argentina: La Pampa, Santa Rosa, 26-I-1958, Exp. Mus. coll. Paratype, female, MLP no. 5040/5, Argentina: Buenos Aires, Baradero, 14-I-1960, Exp. Mus. coll. Paratype, female, MLP no. 5040/6, Argentina: La Pampa, Parque Luro, 3-II-1958, Exp. Mus. coll. Observations: The author mentioned three paratypes in the original publication. The M.S. 5040/6 is not mentioned by the author. Here is considered as paratype according to art. 72.4.1.1. (ICZN).

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 Ing. Sonia Suárez for technical support.

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Recibido: 25-X-2003
Aceptado: 8-III-2004