Catalog of entomological types in the Museo de Historia Natural (MUSM), Lima, Peru: Hymenoptera

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RESUMEN. *RASMUSSEN C, LAMAS G. 2011. Catálogo de tipos entomológicos en el Museo de Historia Natural (MUSM), Universidad Nacional Mayor de San Marcos, Lima, Perú: Hymenoptera. Rev. peru. entomol. 46(2): 51-58. Se presenta una lista de 193 ejemplares tipo (9 holotipos) de Hymenoptera depositados en el MUSM, incluyendo una breve descripción de la colección.*
Palabras clave: Apidae, Colletidae, Halictidae, Ichneumonidae, Megachilidae, Pompilidae, Vespidae.

ABSTRACT. *RASMUSSEN C, LAMAS G. 2011. Catalog of entomological types in the Museo de Historia Natural (MUSM), Universidad Nacional Mayor de San Marcos, Lima, Peru: Hymenoptera. Rev. peru. entomol. 46(2): 51-58.* A list of the 193 type specimens (9 holotypes) of Hymenoptera deposited in the MUSM is presented, along with a brief history of the collection.
Key words: Apidae, Colletidae, Halictidae, Ichneumonidae, Megachilidae, Pompilidae, Vespidae.

History of the Hymenoptera collection in MUSM

The Museo de Historia Natural (MUSM; Arnett *et al.* 1993, previously known as Museo de Historia Natural 'Javier Prado'), of the Universidad Nacional Mayor de San Marcos (UNMSM) in Lima, Peru, was founded on February 28, 1918. The collection is today the largest insect collection in Peru with several important primary type specimens. We here provide a short history of the Hymenoptera collection and list all primary and secondary types of Hymenoptera deposited in it.

The oldest Hymenoptera specimens are those collected by Antonio Raimondi (1824-1890) and Paul Ferdinand Martin (1884-1935) and later donated to the Museum. However, it was not until the collecting effort of German-born Wolfgang Karl Weyrauch (1907-1970), that the Museum expanded its collection of Hymenoptera. Arriving in Peru from a turbulent Europe in 1938, Weyrauch was appointed head of the entomological department at the Estación Experimental Agrícola La Molina (currently known as Servicio Nacional de Sanidad Agraria, SENASA), Lima. After that, Weyrauch was contracted by Joseph Bequaert (1886-1982) at Harvard University (Cambridge) and Herbert Ferlando Schwarz (1883-1960) at the American Museum of Natural History (New York) to collect social insects and snails in 1940, and subsequently in 1941 by the German authorities and the Peruvian Ministry of Agriculture to study the biology of leaf-cutting ants. Weyrauch also produced or contributed to several scientific papers in this period with field observations and photographs to document the new species collected (e.g., Weyrauch 1940, 1942, Schwarz 1943, 1948, Bequart 1944, Willink 1964). Later Weyrauch extended his contract with the German authorities to study the biogeography of the Peruvian fauna, with special attention to social wasps (1942-1943; see also Weyrauch 1943). In 1946 Weyrauch was appointed head of the Department of Entomology at the Estación Experimental Agrícola de Tingo María (Huánuco) and finally as full professor at the Universidad Nacional Mayor de San Marcos from 1948 to 1961. From 1959 to 1961, he also served as faculty member in Agronomy at Pontificia Universidad Católica del Perú, Lima (Aguilar 1970, Zilch 1970, Barbosa et al. 2008). In 1962 Weyrauch moved to the Instituto Miguel Lillo, Tucumán, Argentina, to where he transferred most of his private collection of Peruvian insects (e.g., Colombo and Berta 2005, 2006). Some of the insects collected in 1948 and onward are still in the MUSM collection, along with a limited material collected before this date.

Another important early contributor to the collection was Fortunato Blancas Sánchez (1919-1988), who began in 1947-1948 as assistant to Weyrauch in the Museo de Historia Natural. Through the collecting by both Blancas and Weyrauch during these years, a large number of specimens were gathered for the museum (e.g., bumble bees, *Bombus*, as listed by Rasmussen 2003). Blancas, in particular, contributed with material from his native Acolla near Jauja (Junín), but also Puno, Lima, and few other Departments (Lamas 1988).

Following graduate studies under Weyrauch, Renán Julio García Aronés (1936-1977) was appointed as laboratory assistant to Weyrauch and Pedro G. Aguilar in 1962. In 1964 García was made responsible for the laboratory exercises in entomology at the UNMSM, and also occupied positions at Universidad San Luis de Gonzaga de Ica (1963-1964), Servicio de Pesquería del Ministerio de Agricultura (1964-1967), Universidad Nacional Agraria La Molina (1966-1967), and Instituto de Medicina Tropical "Daniel A. Carrión" at UNMSM (from 1972 until his death). García received his doctorate in 1975 with a thesis on the social wasps (Vespidae, Polistinae) of Peru, which only after his death was edited and published by P.G. Aguilar (as García 1978). García collected chiefly from the valleys of Lima and many areas around his native Andean Ayacucho, as well from east of the Andes, including the Chanchamayo valley, Tingo Maria, Pucallpa and Tarapoto. Following Renán García's untimely death the García family donated the 12,000 specimens from his private

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Hymenoptera collection to the MUSM (Lamas 1979).

Additional material in the MUSM collection has been collected by Jaroslav Soukup Jeníček (1902-1989) who collected many Hymenoptera from Puno and Lima (Aguilar 1990, Rasmussen 2003). Pedro Hocking, Lamas, and Rasmussen have brought many additional specimens from most parts of the country to the collection. Lately, material has also been received as part of Peruvian biodiversity laws, requiring all primary types and 50% of all other material collected in Peru, to be deposited in Peruvian institutions.

Currently the collection of Peruvian bees (Colletidae, Andrenidae, Halictidae, Megachilidae, Apidae) consists of approximately 9,500 pinned specimens curated to genus and often species level, and about an equal amount of other "Aculeata" wasps (Rasmussen & Asenjo 2009). The collections of Hymenoptera "Parasitica" and Symphyta have only recently increased in size.

The list below is alphabetical according to species name. There are a total of nine primary types (holotypes) and 184 secondary types (180 paratypes, 4 paralectotypes), representing 36 species of Hymenoptera in the MUSM collection. Specimens are listed by type status (holotype, paratype, paralectotype) with quantity and sex of specimens in parenthesis. Male specimens are noted as "♂" and females (or workers) as "♀". This is followed by country of origin and department or state, the latter in hard brackets. Lastly is recorded the full label information from top and down. Separate labels are recorded by comma. A few specimens in the collection are labeled as types with manuscript names that were never published and there are also a number of topotypical specimens in the collection, although none are labeled as such. The MUSM collection also has a large collection of Peruvian insects in general, and is used actively by students and researchers. Most material from the collection, including the types listed, are available for institutional loans through the head curator (GL).

List of type material of Hymenoptera in MUSM

APIDAE

[1] ***Triepeolus atoconganus*** Moure 1955: 128-130.
Paralectotype (2♂): Peru [Lima] "Atocongo, PERU, (cerca Lima), VIII.1948, leg. Weyrauch", "MHN 1350", "SYNTYPE *Triepeolus atoconganus* Moure, 1955". Paralectotype designated by Urban (2003b).

[2] ***Dolichotrigona chachapoya*** Camargo & Pedro 2005: 90-91, figs. 13, 23, 29, 36, 44, table 2.
Holotype (1♀): Peru [San Martín] "PERU, SM, Tarapoto-Yurimaguas road km 20 "BIODIVERSIDAD" S0634/ W7620, 950 masl February 2003, Rasmussen leg", "HOLOTYPUS *Dolichotrigona chachapoya* Camargo & Pedro 2004"; Paratype (1♀): Peru [San Martín] "PERU, SM, Tarapoto-Yurimaguas road km 20 "BIODIVERSIDAD" S0634/W7620, 950 masl February 2003, Rasmussen leg", "PARATYPUS", "*Dolichotrigona chachapoya* Camargo & Pedro 2004, Det. Camargo, 2004".

[3] ***Trigona (Trigona) chanchamayoensis*** Schwarz 1948: 15, 51, 54, 55, 61, 65, 115, 201, 206, 207, 209, 299, 301, 303, 304-312, 314, 315, 317, 345, figs. 40b, 41b, 42.
Paratype (1♀): Ecuador [Guayas] "Ecuador, Guayaquil, II.1902, Buchwald", "Paratype", "*Trigona (Trigona) chanchamayoensis* H.F.Schwarz".

[4] ***Euglossa (Glossura) lugubris*** Roubik 2004: 244-245, fig 10.
Paratype (1♀): Peru [Cusco] "Peru, CU, Proyecto Camisea", "*Euglossa lugubris* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Allpahuayo-Mishana, INIA trail, 24v01, Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa piliventris* Guerin-Meneville, Det. Rasmussen, 2001", "*Euglossa piliventris* Guerin R.L.Dressler, 2002", "*Euglossa lugubris* Roubik n.sp. PARATYPE"; Paratype (2♀): Peru [Loreto] "Peru, LO, Maynas, Masarandubal (Rio Momón), v01, Mario Callegari", "*Euglossa piliventris* Guerin Dressler, 2002", "*Euglossa lugubris* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra, km 10 (Purma), 19v01 Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa piliventris* Guerin R.L. Dressler, 2002", "CR-089", "*Euglossa lugubris* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra, km 10 (Purma), 7vi01 Rasmussen", "eugenol", "*Euglossa lugubris* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra, km 10 (Purma), 7vi01 Rasmussen", "methyl salicylate", "*Euglossa lugubris* Roubik n.sp. PARATYPE"; Paratype (2♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra, km 10 (Purma), 4-7-01 Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa lugubris* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra, km 10 (Purma), 4-7-01 Rasmussen", "methyl salicylate", "*Euglossa piliventris* Guerin R.L. Dressler, 2002", "CR-087", "*Euglossa lugubris* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra, km 10 (Purma), 4-7-01 Rasmussen", "methyl salicylate", "*Euglossa piliventris* Guerin R.L. Dressler, 2002", "CR-088", "*Euglossa lugubris* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 15v01 Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa lugubris* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 15v01 Rasmussen", "methyl salicylate", "*Euglossa lugubris* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 25vi01 Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa lugubris* Roubik n.sp. PARATYPE"; Paratype (1♀): Brazil [Pará] "Brazil: Para, Belem, IPEAN, 16vi1966 R.L. Dressler", "*Euglossa piliventris* Guerin", "*Euglossa lugubris* Roubik n.sp. PARATYPE".

[5] ***Trigona (Paratrigona) lineata*** var. ***nuda*** Schwarz 1943: 4-6, figs. 2, 3.
Paratype (2♀): Peru [Junín] "No 176", "Paratype", "Valle de Chanchamayo (Peru) 800m, 1939 leg. Weyrauch", "*Trigona (Paratrigona) lineata* var. *nuda* H.F.Schwarz". Both specimens pinned on one pin.

[6] ***Euglossa (Glossura) occidentalis*** Roubik 2004: 246-248, fig. 12.

Paratype (2♂): Peru [Loreto] "Peru, LO, Maynas, Allpahuayo-Mishana, INIA trail, 5v01, Rasmussen", "methyl salicylate", "*Euglossa occidentalis* Roubik n. sp. PARATYPE"; Paratype (3♂): Peru [Loreto] "Peru, LO, Maynas, Allpahuayo-Mishana, INIA trail, 13v01, Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (2♂): Peru [Loreto] "Peru, LO, Maynas, Allpahuayo-Mishana, INIA trail, 24v01, Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Allpahuayo-Mishana, INIA trail, 24v01, Rasmussen", "methyl salicylate", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Allpahuayo-Mishana, INIA trail, 13vi01, Rasmussen", "Vanillin", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (2♂): Peru [Loreto] "Peru, LO, Maynas, Allpahuayo-Mishana, INIA trail, 14vi01, Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Allpahuayo-Mishana, INIA trail, 14vi01, Rasmussen", "methyl salicylate", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra, km 10 (Purma), 20v01 Rasmussen", "methyl salicylate", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra, km 10 (Purma), 5vi01 Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra, km 10 (Purma), 4-7-01 Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 9v01 Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 13v01 Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 15v01 Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 28v01 Rasmussen", "methyl salicylate", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 29v01 Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 30v01 Rasmussen", "Eugenol", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 25vi01 Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 28vi01 Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (2♂): Peru [Loreto] "Peru, LO, Maynas, Panguana III, S3°54.672' W7°37,674' 8-11vi01 Rasmussen", "1,8 cineole (Eucalyptol)", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Panguana III, S3°54.672' W7°37,674' 8-11vi01 Rasmussen", "methyl salicylate", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [San Martín] "PERU, SM, Tarapoto-Yurimaguas road km 20 "BIODIVERSIDAD" S0634/W7620, 950 masl April 2003, C. Rasmussen leg", "Apidae: Euglossini Eg. ignita, M2, Det. C. Skov 2003", "*Euglossa chalybeata* CR 2003", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [San Martín] "PERU, SM, Tarapoto-Yurimaguas road km 20 "BIODIVERSIDAD" S0634/W7620, 950 masl April 2003, C. Rasmussen leg", "Apidae: Euglossini Eg. ignita, M3, Det. C. Skov 2003", "*Euglossa chalybeata* CR 2003", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Bolivia [La Paz] "BOLIVIA: La Paz Dept. Ixiamas 10 km WNW 9Mar2002 Baits DR", "*Euglossa occidentalis* Roubik n.sp. PARATYPE"; Paratype (1♂): Ecuador [Francisco de Orellana] "ECUADOR: Francisco de Orellana Prov. Yasuni Pk. Catholic Univ. Station 18 Feb 2001, DROUBIK #", "*Euglossa occidentalis* Roubik n.sp. PARATYPE".

[7] ***Euglossa (Glossura) orellana*** Roubik 2004: 248-250, fig. 13.

Paratype (2♂): Peru [Huánuco] "Harold G. Hills, 14 April 1987, Tingo Maria, Peru", "cineole", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Huánuco] "Harold G. Hills, 16 April 1987, Tingo Maria, Peru", "cineole", "*Euglossa chalybeata* Friese, Det. R.L.Dressler, 1988", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Huánuco] "Carlos Atachahua E., 30 April 87, Tingo Maria, Peru", "Cineole", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Huánuco] "Peru, HU, Leoncio Prado, P.N. Tingo Maria-Bella Durmiendo, in front of Cueva de las lechuzas, 9ix01 Claus Rasmussen, leg.", "*Euglossa chalybeata* CR 01", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Allpahuaya-Mishana, INIA trail, 23v01 Rasmussen", "1,8-cineole (Eucalyptol)", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Allpahuaya-Mishana, INIA trail, 23v01 Rasmussen", "vanillin", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Allpahuaya-Mishana, INIA trail, 24v01 Rasmussen", "methyl salicylate", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (2♂): Peru [Loreto] "Peru, LO, Maynas, Allpahuaya-Mishana, INIA trail, 24v01 Rasmussen", "1,8-cineole (Eucalyptol)", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (2♂): Peru [Loreto] "Peru, LO, Maynas, Allpahuaya-Mishana, INIA trail, 14vi01 Rasmussen", "methyl salicylate", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (2♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra km 10 (Purma), 19v01 Rasmussen", "1,8-cineole (Eucalyptol)", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra km 10 (Purma), 19v01 Rasmussen", "methyl salicylate", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra km 10 (Purma), 19v01 Rasmussen", "vanillin", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (5♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra km 10 (Purma), 20v01 Rasmussen", "1,8-cineole (Eucalyptol)", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (6♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra km 10 (Purma), 21v01 Rasmussen", "1,8-cineole (Eucalyptol)", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (2♂): Peru [Loreto] "Peru, LO,

Maynas, Peña Negra km 10 (Purma), 5vi01 Rasmussen", "1,8-cineole (Eucalyptol)", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra km 10 (Purma), 5vi01 Rasmussen", "methyl salicylate", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra km 10 (Purma), 6vi01 Rasmussen", "1,8-cineole (Eucalyptol)", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra km 10 (Purma), 6vi01 Rasmussen", "1,8-cineole (Eucalyptol)", "CR-093", "*Euglossa imperialis* Cockerell, R.L.Dressler, 2002", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra km 10 (Purma), 6vi01 Rasmussen", "1,8-cineole (Eucalyptol)", "CR-094", "*Euglossa imperialis* Cockerell, R.L.Dressler, 2002", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (2♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra km 10 (Purma), 4-7-01 Rasmussen", "1,8-cineole (Eucalyptol)", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (3♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra km 10 (Purma), 4-7-01 Rasmussen", "methyl salicylate", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (6♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra km 10 (Purma), 5-7-01 Rasmussen", "1,8-cineole (Eucalyptol)", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Peña Negra km 10 (Purma), 6-7-01 Rasmussen", "methyl salicylate", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Puerto Almendras, 24ix00 Rasmussen", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Quistococha, 23ix00 Rasmussen", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 13v01 Rasmussen", "1,8-cineole (Eucalyptol)", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (3♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 15v01 Rasmussen", "1,8-cineole (Eucalyptol)", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 28v01 Rasmussen", "methyl salicylate", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (2♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 25vi01 Rasmussen", "1,8-cineole (Eucalyptol)", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 26vi01 Rasmussen", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Loreto] "Peru, LO, Maynas, Varillal, C.R.I. – km 15, 26vi01 Rasmussen", "1,8-cineole (Eucalyptol)", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (2♂): Peru [Loreto] "PERU, LO, Yanamono, 80km E Iquitos 120m, 24.vii.84 G.Lamas y J.L.B. Mallett", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Madre de Dios] "PERU:Madre de Dios, 30km sw P.Maldonado, 25Jan.1982 D.L.Pearson 253", "METHYL SALICYLATE", "terre firme", "*Euglossa chalybeata* Friese", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [Pasco] "PERU: Pasco Dept., San Miguel Eneñas, NW, Villa Rica-Puerto Bermudas [sic!] Rd., 1780m, 10º44'0''S, 75º11'54''W, 16OCT 1999, R.Brooks, PERU1B99 037, ex: at yellow composite", "SM0148002 KUNHM-ENT", "*Euglossa chalybeata* Friese, det. R.Brooks", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [San Martín] "Peru, SM, Tarapoto (-Yurimaguas) 22ix00 Rasmussen", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (4♂): Peru [San Martín] "PERU, SM, Tarapoto-Yurimaguas, km 20 "BIODIVERSIDAD", 0634/7620 950 masl, IX-X 2002, Rasmussen & Rios leg.", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Peru [San Martín] "PERU, SM, Tarapoto-Yurimaguas road km 20 "BIODIVERSIDAD" S0634/W7620, 950 masl, April 2003, C. Rasmussen leg.", "Apidae: Euglossini, Eg. ignita, m4, Det. C. Skov 2003", "*Euglossa chalybeata* CR'03", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Brazil [Amazonas] "BRAZIL: AM.: Manaus, R. Ducke, 20 X 1968, R.L.Dressler #115", "*Euglossa chalybeata* Friese", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Brazil [Amazonas] "BRAZIL: AM.: Manaus, R. Ducke 20 X 1968, R.L.Dressler #1151", "Cineol", "*Euglossa chalybeata* Friese", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Colombia [Putumayo] "COLOMBIA: Puerto Asis Putumayo 197", "2 II 1971 H. Kennedy M.Salicylate", "*Euglossa chalybeata* Friese", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Ecuador [Francisco de Orrellana] "ECUADOR: Francisco de, Orellana Prov. Yasuni Pk, Catholic Univ. Station, 18, Feb 2001, DRoubik#", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Ecuador [Francisco de Orrellana] "ECUADOR: Fco. de Orellana Prov. Parque Nacional Yasuni, apr. 1998 D Roubik coll.#", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (2♂): Ecuador [Francisco de Orrellana] "ECUADOR: Fco. de Orellana Prov. Parque Nacional Yasuni, XII 2002 D Roubik coll.# 105", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Ecuador [Francisco de Orellana] "ECUADOR: Fco. de Orellana Prov. Parque Nacional Yasuni dic. 2002, E.Baue, D. Roubik, coll.#102", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): Ecuador [Francisco de Orrellana] "ECUADOR: Napo Depto Yasuni National Park 13-27 April 1998 DRoubik; coll. No. 45", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (2♂): Ecuador [Francisco de Orellana] "ECUADOR: Napo Prov. Yasuni National Park, Est. La Catolica: Nov. 7-15, 1998 DRoubik No.64", "*Euglossa orellana* Roubik n. sp. PARATYPE"; Paratype (1♂): Ecuador [Francisco de Orellana] "ECUADOR: Napo Prov. Yasuni National Park, Est. La Catolica: Nov. 7-15, 1998 DRoubik No.34", "*Euglossa orellana* Roubik n.sp. PARATYPE"; Paratype (1♂): French Guiana [Cayenne] "FRENCH GUIANA: Montagne de Kaw, 20, km SE Camp Caiman, 24 Sept'01 D.Roubik", "*Euglossa orellana* n.sp. det. D.W. Roubik 2003".

[8] ***Trigona (Paratrigona) opaca*** var. ***pacifica*** Schwarz 1943: 6-10, figs. 4, 5.
Paratype (1♂, 1♀): Peru [Junín] "♂", "No 171", "Paratype", "Valle de Chanchamayo (Peru) 800m leg. Weyrauch", "*Trigona (Paratrigona) opaca* var. *pacifica* Schwarz Det. H.F. Schwarz", "in bird nest on limb of tree". Both specimens pinned on one pin.

[9] ***Euglossa (Euglossella) perviridis*** Dressler 1985: 78-79.
Paratype (1♂): Peru [Madre de Díos] "PERU, Madre de

Dios, 30KM sw P.Maldonado, 22 Feb. 1982, J.J.Anderson", "edaphic forest", "EUGENOL", "PARATYPE, *Euglossa perviridis* Dressler, det. R. L. Dressler, 1984".

[10] ***Rhogepeolus rozenorum*** Rightmyer 2003: 290-293, figs. 1, 2, 3, 4.
Holotype (1♀): Peru [Junín] "Perene, Pampa Silva, 28.ago.71, col:R. García", "RG:472", "Holotype, *Rhogepeolus rozenorum* M.G. Righmyer".

[11] ***Euglossa (Glossurella) rufipes*** Rasmussen & Skov 2006: 55-60, figs. 1, 3, 5, 7, 8, 9.
Holotype (1♂): Peru [San Martín] "PERU, SM, Tarapoto-Yurimaguas road km 20 "BIODIVERSIDAD", S0634/W7620, 950 masl, April 2003, C. Rasmussen leg.", "HOLOTYPE *Euglossa rufipes* sp. n. ♂ Rasmussen & Skov"; Paratype (2♂): Peru [San Martín] "PERU, SM, Tarapoto-Yurimaguas road km 20 "BIODIVERSIDAD", S0634/W7620, 950 masl, April 2003, C. Rasmussen leg.", "PARATYPE *Euglossa rufipes* sp. n. ♂ Rasmussen & Skov"; Paratype (1♂): Peru [San Martín] "Peru: Dept. San Martin, Tarapoto-Yurimaguas rd., km 20 (Biodiversidad), 1-4.IV.2003, Leg. C. Skov # 1", "Apidae: Euglossini Eg. "sp. nov.", m1 Det. C. Skov 2003", "PARATYPE *Euglossa rufipes* sp. n. ♂ Rasmussen & Skov"; Paratype (1♂): Peru [San Martín] "Peru: Dept. San Martin, Tarapoto-Yurimaguas rd., km 20 (Biodiversidad), 1-4.IV.2003, Leg. C. Skov # 5", "Apidae: Euglossini Eg. "sp. nov.", m5 Det. C. Skov 2003", "PARATYPE *Euglossa rufipes* sp. n. ♂ Rasmussen & Skov"; Paratype (1♂): Peru [San Martín] "Peru: Dept. San Martin, Tarapoto-Yurimaguas rd., km 20 (Biodiversidad), 1-4.IV.2003, Leg. C. Skov # 6", "Apidae: Euglossini Eg. "sp. nov.", m6 Det. C. Skov 2003", "PARATYPE *Euglossa rufipes* sp. n. ♂ Rasmussen & Skov"; Paratype (1♀): Peru [San Martín] "PERU, SM, Tarapoto-Yurimaguas, km 20 "BIODIVERSIDAD", 0634/7620 950 masl, 18-X-2002 / Claus Rasmussen leg", "ALLOTYPE *Euglossa rufipes* sp. n. ♀ Rasmussen & Skov"; Paratype (1♀): Peru [San Martín] "PERU, SM, Tarapoto-Yurimaguas road km 20 "BIODIVERSIDAD", S0634/W7620, 950 masl, February 2003, C. Rasmussen leg.", "PARATYPE *Euglossa rufipes* sp. n. ♀ Rasmussen & Skov".

[12] ***Brachynomada (Brachynomada) scotti*** Rozen 1997a: 9-15, figs. 13-26.
Paratype (2♂): Peru [Lima] "PERU: Lima Dept. 8 km E Chosica VII-3-95 J.G. Rozen & A. Ugarte", "*Exomalopsis* nesting area # 2", "PARATYPE *Brachynomada (Brachynomada) scotti* Rozen"; Paratype (1♂): Peru [Lima] "PERU: Lima Dept. Ricardo Palma VI-21-95 Rozen, Ugarte & Laime", "PARATYPE *Brachynomada (Brachynomada) scotti* Rozen".

[13] ***Trigona (Tetragona) buchwaldi*** var. ***weyrauchi*** Schwarz 1943: 1-3, fig. 1.
Paratype (1♀): Peru [Junín] "No 173", "Paratype", "Valle de Chanchamayo 800 meters, Peru 1939, No. 173", "*Trigona (Tetragona) buchwaldi* var. *weyrauchi* H.F.Schwarz".

COLLETIDAE

[14] ***Chilicola (Oroediscelis) bigibbosa*** Michener 2002: 36-39, figs. 21f, 27, 28.
Paratype (1♀): Peru [Junín] "Acolla (cerca Jauja) 3460 m, IV.50, coll: F. Blancas", "MHN 3556", "PARATYPE *Chilicola (Oroediscelis) bigibbosa* Michener"; Paratype (1♀): Peru [Junín] "Acolla (cerca Jauja) 3460 m, III.52, coll: F. Blancas", "MHN 3556a", "PARATYPE *Chilicola (Oroediscelis) bigibbosa* Michener"; Paratype (2♀): Peru [Junín] "Acolla (cerca Jauja) 3460 m, V.53, coll: F. Blancas", "MHN 3556b". "PARATYPE *Chilicola (Oroediscelis) bigibbosa* Michener"; Paratype (1♂): Peru [Junín] "Acolla (cerca Jauja) 3460 m, 26.II.55, coll: F. Blancas", "MHN 4532a", "PARATYPE *Chilicola (Oroediscelis) bigibbosa* Michener"

[15] ***Chilicola (Oroediscelis) espleticola*** Michener 2002: 29-32, figs. 1, 3a, 4d, 21a, 22, 29.
Paratype (3♀): Venezuela [Mérida] "VENEZUELA: Mérida, Paso Pico Aguila, Páramo de Mucuchies, 8º51'5''N,70º48'34''W, 3710 m, 26 MAY 1998: J. Ashe, R.Brooks, R.Hanley, VEN1ABH98 130 ex: in dead dried stems of *Espletia schultzii* flower stalks", "PARATYPE *Chilicola (Oroediscelis) espleticola* Michener".

[16] ***Bicolletes pharcidodes*** Moure 1954: 183-186, figs. 6 a-c.
Paralectotype (1♂): Peru [Ayacucho] "Ayacucho, 2760m, III.50, Coll: Blancas", "SYNTYPE ♂, *Bicolletes pharcidodes* Moure, 1954", "*Bicolletes pharcidodes*, MOURE, 1955". Paralectotype designated by Urban (2003b).

[17] ***Caupolicana weyrauchi*** Moure 1953: 63-65.
Paralectotype (1♂): Peru [Huánuco] "Huanuco (Peru), 1900m, 6.4.1940, leg. Weyrauch", "WKW 2640", "MHN 4603", "original-serie", "*Caupolicana weyrauchi*: Moure 1953". Paralectotype designated by Urban and Moure (2001).

FORMICIDAE

[18] ***Pseudomyrmex cretus*** Ward 1989: 412-413, figs. 9a, 9b 26, 27.
Paratype (1♀): Costa Rica [Guanacaste] "CR Prov. Guanacaste, Santa Rosa Nat. Pk., 10º51'N, 85º37'W, 14.xii.1983 300m, P.S.Ward#6434", "ex dead twig of *Schoefia* tropic. dry forest", "PARATYPE *Pseudomyrmex cretus* Ward".

[19] ***Pseudomyrmex crudelis*** Ward 1999: 516-517, figs. 45, 54, 63.
Paratype (1queen, 1♀): Peru [San Martín] "PERU, San Martín: 24km NNE Tarapoto, 6º18'S, 76º16'W, 220m 23.vii.1986, P.S.Ward#8705", "ex Tachigala edge of second-growth rainforest", "PARATYPE *Pseudomyrmex crudelis* Ward".

[20] ***Pseudomyrmex eculeus*** Ward 1999: 518-519, figs. 42, 51, 60.
Paratype (1♀): Ecuador [Francisco de Orellana] "ECU Prov. Napo: Jatun Sacha 01º04'S 77º36'W, 450m 13.ix.1992, B.L.Fischer#458, ex Tachigali, rainfor.", "PARATYPE *Pseudomyrmex eculeus* Ward".

[21] ***Myrcidris epicharis*** Ward 1990: 467-469, figs. 1-6, 21-25, 29-32.

Paratype (1♀): Brazil [Amazonas] "BRAZIL AM: Faz. Esteio, 80km NNE Manaus 15.ix.1987, 80m 2º25'S, 59º46'W, P.S.Ward#9146", "ex Myreia rainforest", "PARATYPE *Myrcidris epicharis* Ward".

[22] ***Pseudomyrmex ferox*** Ward 1999: 519-520, figs. 43, 52, 61.
Paratype (1F, 1♂): Peru [San Martín] "PERU San Martín: 8km ENE Tarapoto, 6º27'S, 76º18'W, 700m 19.vii.1986, P.S.Ward#8604", "PARATYPE *Pseudomyrmex eduelis* Ward".

[23] ***Pseudomyrmex insuavis*** Ward 1999: 492-493, figs. 10, 21, 32, 136, 152, map 168.
Paratype (1♀): Colombia [Amazonas] "COL Amazonas: Araracuara, 0º38'S,72º15'W, .iv.1994, G.Gangi#224", "ex *Tachigali hypoleuca*", "PARATYPE *Pseudomyrmex insuavis* Ward".

[24] ***Pseudomyrmex ultrix*** Ward 1999: 509-510, figs. 6, 17, 28, 72, 78, 98, map 165.
Paratype (1♀): Ecuador [Francisco de Orellana] "ECUADOR Napo: 13km NNE Archidona, 0º48'S, 77º 47'W, 960m 7.vii.1991, P.S.Ward#11393", "ex Triplaria roadside edge", "*Pseudomyrmex ultrix* Ward".

HALICTIDAE

[25] ***Megommation (Stilbochlora) eickworti*** Engel, Brooks & Yanega 1997: 15-17, 18-19, figs. 37-47.
Paratype (3♀): Peru [Madre de Díos] "PERU: Tambopata Prov., 15 km NE Pto. Maldonado, 15 June 1989, 200m, J.Ashe,R.Leschen#59, ex:flight intercept", "PARATYPE *Megommation (Stilbochlora) eickworti* M.Engel, R.Brooks & D. Yanega"; Paratype (1♀): Peru [Madre de Díos] "PERU: Tambopata Prov., 15 km NE Pto. Maldonado, 20 June 1989, 200m, J.Ashe,R.Leschen#179, ex:flight intercept", "HOLOTYPE [sic!] *Megommation (Stilbochlora) eickworti* Engel, Brooks & Yanega". Notice: Specimen labeled as holotype, but not designated as such in the original publication (Engel et al. 1997) and can therefore not be considered the primary type. However, the collection series was listed as paratypes and is here included as such.

[26] ***Goeletapis peruensis*** Rozen 1997b: 8-18, figs. 1,4-17, map 21.
Paratype (1♀): Peru [La Libertad] "PERU, La Libertad Dept., La Gloria, 7.5 km. NNW Paiján V-20-96, J.G.Rozen & A. Ugarte", "on *Exodecome prostratus*", "PARATYPE *Goeletapis peruensis* J.G. Rozen, Jr."; Paratype (3♂, 2♀): Peru [La Libertad] "PERU, La Libertad Dept., La Gloria, 7.5 km. NNW Paiján V-23-96, J.G.Rozen & A. Ugarte", "on *Exodecome prostratus*", "PARATYPE *Goeletapis peruensis* J.G. Rozen, Jr.".

MEGACHILIDAE

[27] ***Anthidulum clausi*** Urban 2003a: 128, figs. 3, 4.
Holotype (1♂): Peru [Junín] "Perené, Pichanaki, 11.Ago.76, Col: R. García", "*Anthidulum clausi* Urban", "HOLOTIPO".

[28] ***Anthidulum lamasi*** Urban 2003a: 127-128, figs. 1, 2.
Holotype (1♂): Peru [Junín] "Chanchamayo, San Rem 8 [sic], 1400m, 27.Ago.70, Col: R. García", "♂", "RG-475", "*Anthidulum lamasi* Urban", "HOLOTIPO".

[29] ***Anthodioctes sanmartinensis*** Urban 2004: 351-352, figs. 8, 9.
Holotype (1♀): Peru [San Martín] "PERU, SM, Tarapoto, Boca Toma (Shilcayo)-out of town, 400-900 masl, 31.VII.2002, Claus Rasmussen leg.", "*Anthodioctes sanmartinensis* Urban", "HOLOTIPO"

[30] ***Anthodioctes shilcayensis*** Urban 2004: 349-350, figs. 6, 7.
Holotype (1♀): Peru [San Martín] "PERU, SM, Tarapoto, Boca Toma (Shilcayo)-out of town, 400-900 masl, 31.VII.2002, Claus Rasmussen leg.", "*Anthodioctes shilcayensis* Urban", "HOLOTIPO"; Paratype (1♂): Peru [San Martín] "PERU, SM, Tarapoto-Yurimaguas road km 20 "BIODIVERSIDAD" S0634/W7620, 950 masl, IX-X.2002, Rasmussen & Ríos leg.", "*Anthodioctes shilcayensis* Urban", "PARATIPO".

[31] ***Duckeanthidium tarapotoense*** Urban 2004: 347-348, figs. 1-3.
Holotype (1♂): Peru [San Martín] "PERU, SM, Tarapoto-Yurimaguas, km 20, "BIODIVERSIDAD", 0634/7620 950 masl, IX-X 2002, Rasmussen & Rios leg.", "*Duckeanthidium tarapotoense* Urban", "HOLOTIPUS".

[32] ***Grafanthidium yurimaguasano*** Urban 2004 : 348-349, figs. 4, 5.
Holotype (1♂): Peru [San Martín] "PERU, SM, Tarapoto-Yurimaguas, km 20, "BIODIVERSIDAD", 0634/7620 950 masl, IX-X 2002, Rasmussen & Rios leg", "*Grafanthidium yurimaguasano* Urban", "HOLOTIPUS"; Paratype (1♀): Peru [San Martín] "PERU, SM, Tarapoto-Yurimaguas, km 20, "BIODIVERSIDAD", 0634/7620 950 masl, IX-X 2002, Rasmussen & Rios leg", "*Grafanthidium yurimaguasano* Urban", "PARATIPO".

POMPILIDAE

[33] ***Pompilocalus mancocapac*** Roig-Alsina 1989: 46-47, figs. 67, 68, map 4.
Paratype (1♂): Peru [Lima] "PERU, Huamantanga, near Canta, 3500m. Col: Weyrauch", "*Pompilocalus mancocapac* PARATYPUS ♂ A. Roig Alsina 1986".

[34] ***Pompilocalus pachacutec*** Roig-Alsina 1989: 48-49, figs. 24, 71, 72, map 4.
Paratype (1♀): Peru [Ayacucho] "Tambo (entre Ayacucho y San Miguel) 3100m; III.50, Coll: Blancas", "*Pompilocalus pachacutec* sp.n. ♀ PARATYPUS A. Roig Alsina"; Paratype (1♀): Peru [Cusco] "CUSCO, Sacsayhuaman, 3585m/27.IV.77, Col: R. García", "Ex. Coll. R. Garcia 1977", "*Pompilocalus pachacutec* ♀ PARATYPUS A. Roig Alsina 1986"; Paratype (1♂): Peru [Cusco] "Paucartambo, 18-2-68" [leg. F. Carrasco Z.], "*Pompilocalus pachacutec* ♂ PARATYPUS A. Roig Alsina"; Paratype (1♀): Peru [Junín] "Acolla, Oct. 1963" [leg. F. Blancas], "*Pompilocalus pachacutec* sp.n. ♀ PARATYPUS A. Roig Alsina"; Paratype (1♀): Peru [Junín] "Acolla, II, 1963, Bl." [leg. F. Blancas],

"*Pompilocalus pachacutec* sp.n. ♀ PARATYPUS A. Roig Alsina".

[35] *Pompilocalus tupacyupanqui* Roig-Alsina 1989: 45-46, figs. 65, 66, map 4.
Paratype (1♂): Peru [Cusco] "Acomayo 28-2-62" [leg. F. Carrasco Z.], "*Pompilocalus tupacyupanqui* PARATYPUS ♂ A. Roig Alsina 1986"; Paratype (1♂): Peru [Junín] "Acolla (cerca Jauja) 3460 m., VI.48, Coll: F. Blancas", "*Pompilocalus tupacyupanqui* PARATYPUS ♂ A. Roig Alsina 1986"; Paratype (1♂): Peru [Junín] "Satipo, AG, 1940.", "J. Prado, Lima", "*Pompilocalus tupacyupanqui* PARATYPUS ♂ A. Roig Alsina 1986".

VESPIDAE

Protopolybia "weyrauchi Bequaert" Weyrauch 1940: 349 *nomen nudum*.
Protopolybia "weyrauchi Bequaert nov. spec." Weyrauch 1943: 73 *nomen nudum*.
[36] ***Protopolybia weyrauchi*** Bequaert 1944: 126, figs. 3a-g.
Paratype (1♀): Peru [Junín] "Valle Chanchamayo (Peru) 800 m, 1.4.1939, leg. Weyrauch", "MHN 2337", "*Protopolybia Weyrauchi* n. spec. Bequaert". According to the Museum journals, the acquisition number "MHN 2337" was collected from a "Nido de nueve panales en envoltura de color amarillo muy claro, en un árbol de un Jardín del pueblo de 5 m de altura".

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