

New ant (Hymenoptera: Formicidae) records for Ecuador deposited at the Carl Rettenmeyer ant collection in the QCAZ Museum

Fernanda Salazar¹ & David A. Donoso²

¹Museo de Zoología QCAZ, Sección Invertebrados, Escuela de Ciencias Biológicas, Pontificia Universidad Católica del Ecuador, Av. 12 de Octubre 1276 y Roca, Quito, Ecuador.

²Departamento de Ciencias Naturales, Universidad Técnica Particular de Loja, San Cayetano Alto s/n, CP 11-01-608, Loja, Ecuador. E-mail: david.donosov@gmail.com

ABSTRACT

Here we report 3,221 ant specimens from >150 ant species, deposited in the Carl Rettenmeyer ant collection, in the QCAZ Museum, Entomology section, of the Pontifical Catholic University of Ecuador. This material was originally collected at Limoncocha (currently Sucumbios Province, Ecuador), between 1968–1973, by Dr. Carl Rettenmeyer and collaborators. Twenty eight ant species in this list are reported for Ecuador for the first time. Given the size and age of this collection, it constitutes the biggest and oldest ant collection for any Ecuadorian locality inside the country.

Keywords.- Limoncocha, Yasuni, *Solenosis geminata*, army ants, new records.

RESUMEN

Reportamos el depósito de 3 221 especímenes de hormigas, correspondientes a >150 especies de hormigas, en la colección Carl Rettenmeyer del Museo QCAZ, Sección Entomología, de la Pontificia Universidad Católica del Ecuador. Este material fue originalmente colectado en la localidad de Limoncocha (actualmente Provincia de Sucumbios, Ecuador), entre los años 1968–1973, por el Dr. Carl Rettenmeyer y sus colaboradores. Veintiocho especies de hormigas en esta lista son reportadas para el Ecuador por primera vez. Dado el tamaño y la edad de la colección, ésta constituye la más grande y antigua colección de hormigas para una localidad ecuatoriana, actualmente depositada en el País.

Palabras Clave.- Limoncocha, Yasuni, *Solenosis geminata*, hormigas legionarias, nuevos registros.

INTRODUCTION

In 2005, Dr. Carl W. Rettenmeyer deposited a large ant collection in the laboratory reference collection of Dr. Michael Kaspari, in the state Oklahoma, USA. Most of this material correspond to ants captured as prey of different army ant species (Subfamily Ecitoninae) during Rettenmeyer's field trips to Ecuador, and constitute the reference material for publications (Chadab & Rettenmeyer, 1977), and taxonomic revisions of several ant species in genera such as *Odontomachus* (Brown, 1976), *Rogeria* (Kugler, 1994), *Camponotus* (*Dendromyrmex*) (Fernandez, 2002), *Ochetomyrmex* and *Tranopelta* (Fernandez, 2003), *Carebara* (Fernandez, 2004), *Monomorium* (Fernandez, 2007), and *Leptogenys* (Lattke, 2011). Here we present the results of efforts done to catalogue and document many of these specimens deposited the QCAZ Museum, Entomology section, Pontifical Catholic University of Ecuador (PUCE). This effort adds to current work done by the authors (Donoso *et al.*, 2006, Donoso, 2012) to document Ecuadorian ant fauna.

METHODS

Most of Rettenmeyer's collection in Ecuador, some 3,221 ant specimens from >150 ant species, was collected in Limoncocha (currently Sucumbios Province, Ecuador, 00°24'LS, 76°36' LW) since 1968 to 1973. The material deposited at the QCAZ museum is part of a bigger set of specimens, with additional vouchers deposited at the MELO Museum at Universidad Técnica Particular de Loja, the MEKOU collection at the University of Oklahoma, and the MCZ Museum at Harvard University. The main source of identification for these specimens comes from original labels. Dr. William Brown, Carl W. Rettenmeyer, R. Chabad and P. Kazan, among others, identified these specimens; but, when appropriate, identifications were confirmed or provided by DAD. We have provided to all specimens in the collection with a "QCAZI" number [final "I" for Invertebrate]. In this work the *en dash* symbol "-" is used when a continuous set of QCAZI numbers is given to a specimen series, e.g. the specimens under the "*Acromyrmex* spp." label are six, from QCAZI 100585 to QCAZI 100590.

RESULTS AND DISCUSSION

Acromyrmex coronatus (Fabricius 1804)

Record for Ecuador: First report for Ecuador by Ryder *et al.* 2010 (Orellana)

Ecological information: Prey of *Eciton lucanoides*

Name on label: *Acromyrmex coronatus*

QCAZI Numbers: 50103.

Acromyrmex spp.

Name on label: *Acromyrmex* sp.

QCAZI Numbers: 100585-90.

***Acropyga goeldii* Forel 1893a**

New record for Ecuador.

Name on label: *Acropyga goeldii*

QCAZI Numbers: 50803, 50807-8, 50846, 50850, 50890, 50932, 50937.

***Acropyga guianensis* Weber 1944**

Record for Ecuador: Reported previously by LaPolla 2004 (Manabí and Napo Provinces) and Ryder *et al.* 2010 (Orellana)

Name on label: *Lasius* sp.1

QCAZI Numbers: 50847, 50849, 50889, 50894.

***Acropyga* spp.**

Name on label: *Acropyga* sp.

QCAZI Numbers: 50805-6, 50809, 50852, 50893, 50895, 50933, 50936, 50938-9.

***Allomerus decemarticulatus* Mayr 1878**

New record for Ecuador.

Name on label: *Allomerus decemarticulatus*

QCAZI Numbers: 100969-72.

***Allomerus octoarticulatus* Mayr 1878**

New record for Ecuador.

Name on label: *Allomerus octoarticulatus*

QCAZI Numbers: 50043.

***Anochetus bispinosus* (Smith 1858)**

Record for Ecuador: First report for Ecuador by Ryder *et al.* 2010 (Orellana)

Ecological information: Prey of *Eciton hamatum*

Name on label: *Anochetus bispinosus*

QCAZI Numbers: 51544-5.

***Apterostigma epinotale* Weber 1937**

New record for Ecuador.

Name on label: *Apterostigma epinotale*

QCAZI Numbers: 51555.

***Apterostigma mayri* Forel 1893b**

Record for Ecuador: First record for Ecuador by Kaspari *et al.* 2000 (Orellana)

Name on label: *Apterostigma* cf. *mayri*

QCAZI Numbers: 51381-3, 51409, 51512, 51636.

***Apterostigma urichii* Forel 1893b**

Record for Ecuador: First record for Ecuador by Kaspari *et al.* 2000 (Orellana)

Name on label: *Apterostigma* cf. *urichi*

QCAZI Numbers: 51553.

***Apterostigma* spp.**

Name on label: *Apterostigma* sp.

QCAZI Numbers: 50025, 51295-6, 51338-40, 51380, 51408, 51423, 51425-6, 51466-9, 51487, 51491, 51493, 51509, 51537, 51552, 51554, 51593, 51598, 51637-9, 51679, 51681-2, 51684, 51724, 51769, 51793-4, 51796.

***Atta cephalotes* (Linnaeus 1758)**

Record for Ecuador: Recorded for Ecuador by Forel 1921 ("Environs de Quito")

Name on label: *Atta*

QCAZI Numbers: 52082-6.

***Azteca alfari* Emery 1893**

New record for Ecuador.

Name on label: *Azteca alfari*

QCAZI Numbers: 51486, 51678.

***Azteca trigona* Emery 1893**

New record for Ecuador.

Name on label: *Azteca trigona*

QCAZI Numbers: 51407.

***Azteca velox nigriventris* Forel 1899**

New record for Ecuador.

Name on label: *Azteca velox nigriventris*

QCAZI Numbers: 51754.

***Azteca* spp.**

Ecological information: Prey of *Eciton rapax* and *Eciton hamatum*

Name on labels: *Azteca* spp.

QCAZI Numbers: 100370-399, 51323, 51363-4, 51366, 51406, 51495, 51506, 51508, 51623-4, 51635, 51664-5, 51756, 51798.

***Basiceros alopeciosum* (Brown and Kempf 1960)**

Record for Ecuador: Brown and Kempf 1960 described this species from Trinidad and Tobago. Brandão 1991 reported this species in his catalogue, but no info is further given. Fernandez and Sendoya (2003) reported it for Trinidad and Tobago and Ecuador.

Name on label: *Eurhopalothrix* nr. *alopeciosa*

QCAZI Numbers: 51419, 51720

***Brachymyrmex* spp.**

Name on label: *Brachymyrmex* spp.

QCAZI Numbers: 50179, 50187-91, 50196, 50207-9, 50211, 50213, 50215-20, 50222, 50224-5, 50227-30, 50233-35, 50238-58.

***Camponotus ager* (Smith 1858)**

New record for Ecuador.

Name on label: *Camponotus agra*

QCAZI Numbers: 51473, 51519, 51601, 51653, 5165

***Camponotus atriceps* (Smith 1858)**

Record for Ecuador: First report for Ecuador by Ryder *et al.* 2007 (Orellana).

Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton rapax* and *Eciton hamatum*

Name on label: *Camponotus abdominalis*

QCAZI Numbers: 50350–407

***Camponotus cacicus* Emery 1903**

Record for Ecuador: First report for Ecuador by Ryder *et al.* 2007 (Orellana).

Ryder *et al.* 2010 (Orellana).

Name on label: *Camponotus cacicus*

QCAZI Number: 51661

***Camponotus chartifex* (Smith 1860)**

New record for Ecuador.

Ecological information: Prey of *Eciton hamatum*

Name on label: *Dendromyrmex chartifex*

QCAZI Numbers: 101034–39, 50528–9, 52024–31, 52039–40, 52064–66, 52092–96

***Camponotus femoratus* (Fabricius 1804)**

Record for Ecuador: First record for Ecuador in Forel 1921 (“Environs de Quito”). Reported by Ryder *et al.* 2007 (Orellana). Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton burchelli* and *Eciton rapax*

Name on label: *Camponotus femoratus*

QCAZI Numbers: 49915, 49917, 49924, 49929, 49944, 49979, 51314–19, 51324, 51327, 51334, 51357–59, 51361–2, 51373–4, 51400–5, 51410, 51413, 51420, 51443–48, 51457, 51460, 51464, 51529–34, 51572, 51574, 51577, 51586, 51589, 51616–18, 51630, 51662, 51672–74, 51702, 51707, 51716, 51766, 51789, 51803

***Camponotus nidulans* (Smith 1860)**

Record for Ecuador: First report for Ecuador by Fernandez 2002 (using Rettenmeyer’s material). Ryder *et al.* 2007 (Orellana). Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton hamatum*

Name on label: *Dendromyrmex nidulans*

QCAZI Numbers: 52022–3

***Camponotus novogranadensis* Mayr 1870a**

Record for Ecuador: First report for Ecuador by Ryder *et al.* 2010 (Orellana).

Ryder *et al.* 2010 (Orellana).

Name on label: *Camponotus novogranadensis*

QCAZI Numbers: 100140–1

***Camponotus rapax* (Fabricius 1804)**

Record for Ecuador: First report for Ecuador by Ryder *et al.* 2010 (Orellana)

Name on label: *Camponotus rapax*

QCAZI Numbers: 49914, 49965, 50008, 50014, 50440, 50444, 50447-8, 50459, 50461, 50463

***Camponotus renggeri* Emery 1894b**

New record for Ecuador.

Name on label: *Camponotus renggeri*

QCAZI Numbers: 49918, 49930, 49939, 49948, 49964, 51328-31, 51371, 51500, 51503, 51543, 51546, 51588, 51708-10, 51721, 51790

***Camponotus sericeiventris* (Guérin-Méneville 1838)**

Record for Ecuador: First report for Ecuador by Donoso & Ramon 2009 (Santo Domingo de los Tsáchilas).

Ecological information: Prey of *Eciton burchelli*

Name on label: *Camponotus sericeiventris*

QCAZI Numbers: 51501, 51576, 51660, 51663, 51701, 51703-6, 51788, 51792, 51801, 51804

***Camponotus sexguttatus* (Fabricius 1793)**

Record for Ecuador: First record for Ecuador in Forel 1921 ("Environs de Quito"). Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton hamatum* and *Eciton rapax*

Name on label: *Camponotus sexguttatus*

QCAZI Numbers: 100134-9, 100400-49

***Camponotus silvicola* Forel 1902**

New record for Ecuador.

Name on label: *Camponotus silvicola*

QCAZI Numbers: 51032, 51161, 51645, 51652, 51831, 51833, 51840, 51868, 51872, 51876-8, 51882, 51926

***Camponotus wheeleri* Mann 1916**

New record for Ecuador.

Ecological information: Prey of *Eciton rapax*

Name on label: *Camponotus wheeleri*

QCAZI Numbers: 49916, 49931, 49934, 49938

***Camponotus* spp.**

Ecological information: Prey of *Eciton hamatum*, *Eciton rapax*, and *Eciton burchelli*

Name on label: *Camponotus* spp., *Dendromyrmex* spp., *Myrmobrachys* spp.,

QCAZI Numbers: 100300-33, 100486-504, 100512-41, 100556-84, 101043-102, 50408-30, 50445, 50464-73, 51372, 51502, 51573, 51575, 51587, 51615, 51620, 51658-9, 51746, 101040-2, 52032-8, 52041-63, 52067-81, 100997-1033.

***Carebara* spp.**

Record for Ecuador: Based in part on Rettenmeyer's collections, Fernandez 2004 described two *Carebara* species (*C. angulata* and *C. globularia*). It is likely that these two species are represented in material at QCAZI.

Name on label: *Carebara* sp1, *Carebara* sp2.

QCAZI Numbers: 100542-55, 100597-608

***Cephalotes atratus* (Linnaeus 1758)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton hamatum*

Name on label: *Cephalotes atratus*

QCAZI Numbers: 49845-66

***Cephalotes depressus* (Klug 1824)**

Record for Ecuador: de Andrade and Baroni Urbani 1999 (using Rettenmeyer's material).

Name on label: *Cephalotes depressus*

QCAZI Numbers: 49867-74

***Cephalotes opacus* Santschi 1920**

Record for Ecuador: de Andrade and Baroni Urbani 1999 (using Rettenmeyer material). Ryder *et al.* 2010 (Orellana).

Name on label: *Cephalotes opacus*

QCAZI Numbers: 49875-80

***Cephalotes spinosus* (Mayr 1862)**

Record for Ecuador: de Andrade and Baroni Urbani 1999 (using Rettenmeyer material). Ryder *et al.* 2010 (Orellana).

Name on label: *Cephalotes spinosus*

QCAZI Numbers: 49881-91

***Cephalotes umbraculatus* (Fabricius 1804)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton hamatum*

Name on label: *Zacryptocerus umbraculatus*

QCAZI Numbers: 49892-93

***Cerapachys neotropicus* Weber 1939**

Record for Ecuador: Brandão 1991

Name on label: *Cerapachys neotropicus*

QCAZI Numbers: 101103

***Crematogaster acuta* (Fabricius 1804)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Crematogaster acuta*

QCAZI Numbers: 100071-79, 49919, 49922, 49977, 49988

***Crematogaster brasiliensis* Mayr 1878**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Crematogaster brasiliensis*

QCAZI Numbers: 100099–109, 49920, 49960, 49967–8

***Crematogaster crinosa* Mayr 1862**

New record for Ecuador.

Name on label: *Crematogaster brevispinosa*

QCAZI Numbers: 100089–92

***Crematogaster curvispinosa* Mayr 1862**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton burchelli*

Name on label: *Crematogaster curvispinosa*

QCAZI Numbers: 100093

***Crematogaster egregior* Forel 1912**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Attached to leg of *Eciton hamatum*

Name on label: *Crematogaster egregior*

QCAZI Numbers: 100094–98

***Crematogaster erecta* Mayr 1866**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Crematogaster erecta*

QCAZI Numbers: 100110–12

***Crematogaster limata* Smith 1858**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton rapax*

Name on label: *Crematogaster limata*

QCAZI Numbers: 100142–94, 100964–66, 49932–3, 49936, 49940, 49945, 49947, 50005, 50020, 50026, 50168, 50173–8, 50180–6, 50192–206, 50210, 50212, 50214

***Crematogaster longispina* Emery 1890a**

Record for Ecuador: Forel 1921

Name on label: *Crematogaster longispina*

QCAZI Numbers: 100080–88

***Crematogaster stollii* Forel 1885**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Crematogaster stollii*

QCAZI Numbers: 49925, 49949, 49951–2, 49956–7, 100334–69

***Crematogaster* spp.**

Name on label: *Crematogaster* sp.

QCAZI Numbers: 51191, 51807, 51852, 51857, 51992

***Cyphomyrmex bigibbosus* Emery 1894a**

New record for Ecuador.

Name on label: *Cyphomyrmex bigibbosus*

QCAZI Numbers: 101110, 50090, 50126, 50801, 50830, 50884, 50918, 50929, 51016, 51090, 51103, 51131, 51145

***Cyphomyrmex laevigatus* Weber 1938**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Cyphomyrmex laevigatus*

QCAZI Numbers: 50131, 50141, 50144

***Cyphomyrmex cf. rimosus* (Spinola 1853)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Cyphomyrmex cf. rimosus*

QCAZI Numbers: 50088, 50092, 50101, 50104, 50108-9, 50111, 50135, 50169, 50840, 51058, 51182, 51186-7

***Cyphomyrmex* spp.**

Name on label: *Cyphomyrmex*

QCAZI Numbers: 50839, 50924, 51003, 51013, 51053, 51093, 51181, 51221, 51224, 51232

***Dolichoderus abruptus* (Smith 1858)**

New record for Ecuador.

Name on label: *Dolichoderus abrupta*

QCAZI Numbers: 50067-8, 50080, 50532-3, 50542, 50560-1, 50563, 50565, 50572, 50576, 50636-7, 50645, 50679, 50688, 50723, 50726, 50769, 50773

***Dolichoderus attelaboides* (Fabricius 1775)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton hamatum* and *Eciton rapax*

Name on label: *Dolichoderus attelaboides*, *Dolichoderus imbecillus*

QCAZI Numbers: 50064, 50085, 52101-27, 100973-89, 49946, 49975, 49978, 49995

***Dolichoderus bidens* (Linnaeus 1758)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Dolichoderus bidens*

QCAZI Numbers: 51290

***Dolichoderus bispinosus* (Olivier 1792)**

Record for Ecuador: Mackay 1993.

Name on label: *Dolichoderus bispinosa*

QCAZI Numbers: 50860, 51832

***Dolichoderus decollatus* Smith 1858**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Dolichoderus decollatus*

QCAZI Numbers: 51884

***Dolichoderus diversus* Emery 1894a**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton hamatum*

Name on label: *Hypocylynea championi*, *Hypocylynea championi melanoticus*,
Dolichoderus championi, *Dolichoderus championi ornata*

QCAZI Numbers: 50001, 50003, 50017, 50022, 50036, 50040, 51094, 51097,
51133, 51139, 51141-3, 51175, 51217-8, 51220, 51225-6, 51228-9, 51262, 51265-
74, 51470-2, 51474-6, 51478-82, 51513-4, 51517-8, 51520-1, 51521, 51523-5,
51528, 51557-62, 51564-69, 51599-600, 51602-10, 51613-14, 51642, 51647,
51649, 51651, 51654-6, 51685-9, 51690, 51691, 51692, 51694, 51697, 51728-9,
51731-8, 51740, 51742-3, 51771-2, 51784, 51786, 51693, 51739

***Dolichoderus gagates* Emery 1890b**

New record for Ecuador.

Ecological information: Prey of *Eciton hamatum*

Name on label: *Dolichoderus gagates*

QCAZI Numbers: 51891-2

***Dolichoderus germaini* Emery 1894a**

New record for Ecuador.

Name on label: *Hypoclinea germaini*

QCAZI Numbers: 49894, 49895, 49898, 49903, 50787, 50843, 50882, 50885,
50917, 50927, 50973, 51008, 51012, 51054, 51056, 51092, 51134, 51137

***Dolichoderus imitator* Emery 1894a**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton burchelli*

Name on label: *Dolichoderus imitator*

QCAZI Numbers: 100195-299, 49923, 49941, 49953, 49958, 49961-3, 49969,
49974

***Dolichoderus lamellosus* (Mayr 1870a)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: with parasite in abdomen

Name on label: *Monacis* nr. *lamellosa*

QCAZI Numbers: 51526

***Dolichoderus lugens* Emery 1894a**

Record for Ecuador: Mackay 1993.

Ecological information: Prey of *Eciton rapax* and *Eciton hamatum*

Name on label: *Dolichoderus lugens*

QCAZI Numbers: 50903, 51247, 51483, 51835, 51870, 51881, 51934

***Dolichoderus lutosus* (Smith 1858)**

Record for Ecuador: Mackay 1993. Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton hamatum*

Name on label: *Dolichoderus lutosus*

QCAZI Numbers: 49904-5, 49907, 49909, 49911, 49913, 51193, 51811, 51815, 51820, 51851, 51856, 51859, 51863-5, 51867, 51893, 51895, 51898, 51903, 51906-7, 51936, 51939-42, 51944, 51946, 51950, 51953-9, 51961, 51980-3, 51986, 51989, 51993-5, 51997-2004

***Dolichoderus quadridenticulatus* (Roger 1862b)**

Record for Ecuador: Mackay 1993. Ryder *et al.* 2010 (Orellana).

Name on label: *Dolichoderus gibbosa*, *Hypoclinea gibbosa*.

QCAZI Numbers: 51887

***Dolichoderus rugosus* (Smith 1858)**

Record for Ecuador: Forel 1921 ("Environs de Quito"), Mackay 1993, Ryder *et al.* 2010 (Orellana).

Name on label: *Dolichoderus rugosus*

QCAZI Numbers: 100450-85, 50019, 50028, 50031, 50033-4, 50038

***Dolichoderus septemspinus* Emery 1894a**

Record for Ecuador: Kempf 1972, Mackay 1993.

Name on label: *Dolichoderus septemspinosa*, *Monacis septemspinosa*

QCAZI Numbers: 49896-7, 49900, 49902, 51195, 51808, 51850, 51894, 51902, 51937, 51948, 51979

***Dolichoderus varians* Mann 1916**

Record for Ecuador: Ryder *et al.* 2010

Ecological information: Prey of *Eciton hamatum*

Name on label: *Dolichoderus varians*

QCAZI Numbers: 51869, 51871, 51889-90

***Dolichoderus* spp.**

Name on label: *Dolichoderus* sp.

QCAZI Numbers: 51888.

***Ectatomma edentatum* Roger 1863**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton vagans*, Prey of *Eciton mexicanum*

Name on label: *Ectatomma edentatum*, *Ectatomma morgani*

QCAZI Numbers: 50785, 51044, 51127, 51172, 51213, 51256, 51259, 50618.

***Ectatomma goninion* Kugler and Brown 1982**

Record for Ecuador: Kugler & Brown 1982 (Sucumbios, Pichincha [currently Santo Domingo de los tsachilas])

Name on label: *Ectatomma goninion*

QCAZI Numbers: 50660.

***Ectatomma lugens* Emery 1894a**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton lucanoides*

Name on label: *Ectatomma lugens*

QCAZI Numbers: 51042, 51171, 51173

***Ectatomma ruidum* (Roger 1860)**

Record for Ecuador: Forel 1899

Name on label: *Ectatomma ruidum*

QCAZI Numbers: 50957, 51257

***Ectatomma tuberculatum* (Olivier 1792)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton lucanoides*, *Eciton burchelli*

Name on label: *Ectatomma tuberculatum*

QCAZI Numbers: 50571, 50574-5, 50605, 50610-1, 50613-4, 50623, 50631-2, 50634-5, 50657, 50661, 50664, 50667, 50669, 50671, 50673-4, 50676, 50678, 50697-8, 50701-2, 50737, 50741, 50743-4

***Ectatomma* spp.**

Ecological information: Prey of *Eciton lucanoides* and *Eciton vagans*

Name on label: *Ectatomma*

QCAZI Numbers: 50914-5, 50955-6, 51001, 51034, 51041, 51085-6, 51128-9, 51170, 51207, 51215-6, 51249, 51251

***Gigantiops destructor* (Fabricius 1804)**

Record for Ecuador: Ryder *et al.* 2009. Ryder *et al.* 2010

Ecological information: Prey of *Eciton rapax*, *Eciton lucanoides* and *Eciton hamatum*

Name on label: *Gigantiops destructor*

QCAZI Numbers: 101104-7, 50590, 50690, 51291-3, 51320-2, 51325-6, 51335-6, 51360, 51365, 51367-70, 51377-9, 51411-2, 51421-2, 51453-5, 51458-9, 51463, 51492, 51496-9, 51507, 51539-42, 51542, 51549-51, 51578-80, 51582-5, 51621-2, 51625-7, 51666-71, 51711-3, 51750-3, 51764-5, 51797, 51799-800.

***Gnamptogenys aculeaticoxae* (Santschi 1921)**

New record for Ecuador.

Name on label: *Gnamptogenys aculeaticoxae*

QCAZI Numbers: 50129

***Gnamptogenys acuminata* (Emery 1896)**

New record for Ecuador.

Name on label: *Gnamptogenys acuminata*

QCAZI Numbers: 50128

***Gnamptogenys concinna* (Smith 1858)**

Record for Ecuador: Ryder *et al.* 2010

Name on label: *Gnamptogenys concinna*

QCAZI Numbers: 101109, 50048, 50052, 50054, 50060, 50065

***Gnamptogenys haenschi* (Emery 1902)**

Record for Ecuador: Ryder *et al.* 2010

Ecological information: Prey of *Eciton lucanoides*

Name on label: *Gnamptogenys haenschi*

QCAZI Numbers: 50113, 50123, 50125

***Gnamptogenys lanei* Kempf 1960**

New record for Ecuador.

Name on label: *Gnamptogenys lanei*

QCAZI Numbers: 50102

***Gnamptogenys mecotyle* Brown 1958**

New record for Ecuador.

Name on label: *Gnamptogenys mecotyle*

QCAZI Numbers: 51414, 51629, 51715, 51717, 51749

***Gnamptogenys mordax* (Smith 1858)**

Record for Ecuador: Lattke 2004 (Morona Santiago and Napo Provinces)

Name on label: *Gnamptogenys mordax*

QCAZI Numbers: 50114, 50826, 50828, 50870-1, 51548, 51634, 51719

***Gnamptogenys pleurodon* (Emery 1896)**

Record for Ecuador: Ryder *et al.* 2010

Ecological information: Prey of *Eciton hamatum*

Name on label: *Gnamptogenys pleurodon*

QCAZI Numbers: 100113-33, 49926-8, 49942, 49954-5

***Gnamptogenys regularis* Mayr 1870b**

Record for Ecuador: Ryder *et al.* 2010

Ecological information: Prey of *Eciton rapax*

Name on label: *Gnamptogenys regularis*

QCAZI Numbers: 101108

***Gnamptogenys teffensis* (Santschi 1929)**

New record for Ecuador.

Name on label: *Gnamptogenys teffensis*

QCAZI Numbers: 49959, 49981, 50009-10, 50015-6, 50035, 50076, 50078, 50084, 50097, 50099, 50115-21

***Gnamptogenys tortuolosa* (Smith 1858)**

Record for Ecuador: Forel 1921 ("Environs de Quito"). Lattke 2005 (Morona Santiago)

Name on label: *Gnamptogenys tortulosa*

QCAZI Numbers: 50059, 50061, 50074

***Hypoponera distinguenda* (Emery 1890b)**

Record for Ecuador: Donoso & Ramon 2009 (Pichincha)

Name on label: *Hypoponera distinguenda*

QCAZI Numbers: 50799, 50844, 50878, 50968, 50971, 51002, 51004-7, 51009-10, 51015, 51017, 51045, 51048-51, 51057, 51059-60, 51174, 51176-80, 51184, 51188, 51189

***Hypoponera* spp.**

Name on label: *Hypoponera*

QCAZI Numbers: 50837, 51011, 51014, 51047, 51052, 51183, 51185

***Lachnomyrmex pilosus* Weber 1950**

Record for Ecuador: Ecuador (Morona Santiago)

Name on label: *Lachnomyrmex pilosus*

QCAZI Numbers: 100967-8

***Leptogenys unistimulosa* Roger 1863**

Record for Ecuador: Lattke 2011

Name on label: *Leptogenys unistimulosa*

QCAZI Numbers: 49982, 49985, 50044, 50783, 50872, 50912, 50998-9, 51043, 51122, 51169, 51205, 51252-3, 51375, 51418, 51462, 51547, 51762, 51805.

***Leptogenys* spp.**

Record for Ecuador: Two new species of *Leptogenys*, *L. phylloba* Lattke 2011 and *L. nigricans* Lattke 2011, based on Rettenmeyer's material was described by Lattke in 2011 and is likely present within this material.

Name on label: *Leptogenys*

QCAZI Numbers: 100907-18

***Mycetarotes* spp.**

Name on label: *Mycetarotes*

QCAZI Numbers: 100990-3

***Mycocepurus* spp.**

Name on label: *Mycocepurus*

QCAZI Numbers: 100994-5, 51510-11, 51596, 51641, 51680

***Myrmicocrypta* spp.**

Name on label: *Myrmicocrypta*

QCAZI Numbers: 100996

***Nylanderia* spp.**

Name on label: *Paratrechina*

QCAZI Numbers: 50810–17, 50853–9, 50896–902, 50940–6, 50975–89, 51018–31, 51061–75, 51091, 51095, 51100, 51104–18, 51135, 51144, 51147–60, 51196–204, 51219, 51222–3, 51227, 51230, 51236, 51239–46, 51260–1, 51263–4, 51276–89, 51477, 51484–5, 51515–6, 51522, 51527, 51556, 51563, 51570–1, 51611–2, 51643–4, 51646, 51783, 51785, 51813–4, 51818, 51821–2, 51824–30, 51834, 51836–39, 51841–9, 51853, 51855, 51858, 51860, 51866, 51873–5, 51879–80, 51883, 51885–6, 51899–900, 51904, 51909–25, 51927–33, 51935, 51938, 51943, 51945, 51952, 51985, 51987, 51991, 51996

***Ochetomyrmex neopolitus* Fernandez 2003**

Record for Ecuador: Fernandez 2003 described this species based in part in Rettenmeyer's specimens.

Name on label: *Ochetomyrmex* sp1.

QCAZI Numbers: 51298–9, 51302–5, 51307, 51309–10, 51312–13, 51342–44, 51347–49, 51351, 51353–6, 51384, 51388, 51395–6, 51433, 51436, 51438–9

***Odontomachus bauri* Emery 1892**

Record for Ecuador: Brown 1976

Ecological information: Prey of *Eciton rapax* and *Nomamyrmex esenbecki*

Name on label: *Odontomachus bauri*

QCAZI Numbers: 51190, 51192, 51194, 51233, 51235, 51816–7, 51854, 51897, 51905, 51949, 51984, 51988, 51990

***Odontomachus biumbonatus* Brown 1976**

Record for Ecuador: Brown 1976 described this species based in part on Rettenmeyer's specimens. Ryder *et al.* 2010 (Orellana).

Name on label: *Odontomachus biumbonatus*

QCAZI Numbers: 50070, 50079, 52174–91

***Odontomachus brunneus* (Patton 1894)**

Record for Ecuador: Brown 1976.

Ecological information: Prey of *Eciton rapax* and *Nomamyrmex esenbecki*.

Name on label: *Odontomachus brunneus*

QCAZI Numbers: 50051, 50053, 50062–3, 50072, 50075, 50591, 50616, 50665, 50700, 50707, 50711–4, 50718, 50745, 50748, 50750–2, 50755, 50775–82, 50818–21, 50823, 50861–4, 50867–8, 50904–8, 50910–11, 50947–50, 50952, 50954, 50990–3, 51033, 51036–7, 51039–40, 51076, 51078–80, 51083, 51119, 51124, 51126, 51162–66, 51168, 51206, 51208–11, 51248, 51254–5

***Odontomachus caelatus* Brown 1976**

Record for Ecuador: Brown 1976 described this species based in part on Rettenmeyer's specimens.

Name on label: *Odontomachus caelatus*

QCAZI Numbers: 52172–3

***Odontomachus haematodus* (Linnaeus 1758)**

Record for Ecuador: Brown 1976. Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton rapax*

Name on label: *Odontomachus haematodus*

QCAZI Numbers: 100054-70, 49980, 49996, 52256-323

***Odontomachus hastatus* (Fabricius 1804)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton rapax*

Name on label: *Odontomachus hastatus*

QCAZI Numbers: 49950, 49971-3, 49976, 49986, 49989, 49991-3, 52198-250

***Odontomachus laticeps* Roger 1861**

New record for Ecuador.

Ecological information: Prey of *Eciton hamatus* and *Eciton rapax*

Name on label: *Odontomachus haematoda striativentris* and *Odontomachus striativentris*

QCAZI Numbers: 52128-171, 50049, 50056-7, 50086

***Odontomachus mayi* Mann 1912**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton rapax*

Name on label: *Odontomachus mayi*

QCAZI Numbers: 51275, 51695-6, 51698-700, 51730, 51741

***Odontomachus meinerti* Forel 1905**

Record for Ecuador: Brown 1976 (as *O. minutus*). Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton rapax*

Name on label: *Odontomachus minutus*

QCAZI Numbers: 50006, 50011-2, 50032, 50039, 50042, 50536, 50562, 50564, 50566-8, 50570, 50577-8, 50581-8, 50592, 50603-4, 50606-9, 50627, 50646-54, 50689, 50691-6, 50703-6, 50708-10, 50715-7, 50719-21, 50732-6, 50738-9, 50746-7, 50749, 50753-4, 50756-64

***Odontomachus ruginodis* Smith 1937**

New record for Ecuador.

Ecological information: Prey of *Eciton rapax*

Name on label: *Odontomachus ruginodis*

QCAZI Numbers: 51862, 51947

***Odontomachus* spp.**

Name on label: *Odontomachus*

QCAZI Numbers: 51861

***Oxyepoecus* spp.**

Name on label: *Oxyepoecus*

QCAZI Numbers: 100957-63

***Pachycondyla apicalis* (Smith 1857)**

Record for Ecuador: Mackay & Mackay 2010 (Sucumbios). Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton rapax*

Name on label: *Pachycondyla apicalis*

QCAZI Numbers: 50439, 50507-8, 50511-2, 50550, 50552-3, 50556, 50558-9, 50599, 50602, 50851.

***Pachycondyla arhuaca* (Forel 1901)**

Record for Ecuador: Mackay & Mackay 2010 (Sucumbios). Ryder *et al.* 2010 (Orellana).

Name on label: *Pachycondyla arhuaca*

QCAZI Numbers: 49912, 50478, 50485, 50498, 50551, 50555

***Pachycondyla carinulata* (Roger 1861)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Neoponera carinulata*

QCAZI Numbers: 50535, 50539

***Pachycondyla cavinodis* (Mann 1916)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton hamatum*

Name on label: *Neoponera cavinodis*

QCAZI Numbers: 49743-52

***Pachycondyla commutata* (Roger 1860)**

Record for Ecuador: Hermann 1968

Ecological information: Prey of *Eciton rapax*

Name on label: *Pachycondyla commutata*, and *Termitopone commutata*

QCAZI Numbers: 49756, 49759, 49763-5, 49768, 49787, 49753-5, 49757-8, 49760-2, 49766-7, 49769-71

***Pachycondyla constricta* (Mayr 1884)**

Record for Ecuador: Mackay & Mackay 2010 (Sucumbios). Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton rapax*

Name on label: *Neoponera constricta*

QCAZI Numbers: 50797-8, 50802, 50833, 50836, 50841-2, 50845, 50877, 50881, 50886, 50888, 50920, 50926, 50928, 50962, 50974, 51300-1, 51306, 51308, 51341, 51345-6, 51350, 51385, 51387, 51389, 51392, 51397-8, 51428, 51430, 51432, 51437, 51683, 51755, 51757

***Pachycondyla crassinoda* (Latreille 1802)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton rapax*

Name on label: *Pachycondyla crassinoda*

QCAZI Numbers: 50002, 50004, 50018, 50021, 50024, 50027, 50029, 50037, 50041, 50260–349

***Pachycondyla crenata* (Roger 1858)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Neoponera crenata*

QCAZI Numbers: 50502, 50549

***Pachycondyla harpax* (Fabricius 1804)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton rapax*

Name on label: *Pachycondyla harpax*

QCAZI Numbers: 50432, 50452, 50462, 50510, 50598, 50600, 50638, 50643–4, 50687, 50725, 50727, 50770, 50772

***Pachycondyla oberthueri* Emery 1890b**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton rapax* and *Eciton hamatum*

Name on label: *Pachycondyla cosmia* and *Neoponera oberthueri*

QCAZI Numbers: 50479, 50486, 50488, 50501, 50505

***Pachycondyla obscuricornis* Emery 1890b**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Pachycondyla obscuricornis*

QCAZI Numbers: 50790–1, 50794, 50831–2, 50874–5, 50879–80, 50887, 50916, 50919, 50922–3, 50930, 50963, 50966–7, 50972

***Pachycondyla stigma* (Fabricius 1804)**

Record for Ecuador: Santschi 1913 (Pichincha [currently Santo Domingo de los Tsáchilas]), Mackay & Mackay 2010 (Esmeraldas, Guayas, Imbabura, Los Ríos, Napo, Pichincha, Santo Domingo de los Tsáchilas, Sucumbios), Wetterer 2012.

Name on label: *Pachycondyla stigma*

QCAZI Numbers: 50521, 50524–5, 50543, 50546, 50642, 50680–3, 50685, 50722, 50765–6

***Pachycondyla unidentata* Mayr 1862**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Pachycondyla unidentata*

QCAZI Numbers: 49899, 49901, 49908, 49910, 50474, 50477, 50489, 50491, 50494, 50503–4, 50506, 50509, 50513

***Pachycondyla villosa* (Fabricius 1804)**

Record for Ecuador: Mackay & Mackay 2010 (Sucumbios). Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton hamatum*, *Eciton rapax*

Name on label: *Pachycondyla pedunculata* and *Pachycondyla villosa*

QCAZI Numbers: 49773, 49775, 49788-95, 49798-804, 49806, 49810-4, 49819-20, 49829, 49832-3, 49835, 49837, 49839, 49772, 49774, 49776-86, 49796-7, 49805, 49807-9, 49815-8, 49821-8, 49830-1, 49834, 49836, 49838, 49840

***Paraponera clavata* (Fabricius 1775)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton rapax*

Name on label: *Paraponera clavata*

QCAZI Numbers: 50442-3, 50446

***Pheidole* spp.**

Name on label: *Pheidole*

QCAZI Numbers: 100591-6

***Platythyrea sinuata* (Roger 1860)**

New record for Ecuador.

Name on label: *Platythyrea meinerti*

QCAZI Numbers: 50869, 51806

***Prionopelta antillana* Forel 1909**

New record for Ecuador.

Name on label: *Prionopelta prope antillana*

QCAZI Numbers: 51631-2, 51744-5, 51787, 51791

***Pseudomyrmex atripes* (Smith 1860)**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Pseudomyrmex atripes*

QCAZI Numbers: 50523, 50538

***Pseudomyrmex flavidulus* (Smith 1858) {{{{{{near}}}}}}**

New record for Ecuador.

Name on label: *Pseudomyrmex flavidulus*

QCAZI Numbers: 52099-100

***Rogeria blanda* (Smith 1858)**

Record for Ecuador: In his revision of *Rogeria*, Kugler (1994) studied *R. blanda* specimens from Rettenmeyer's collection. Ryder *et al.* 2010 (Orellana).

Name on label: *Rogeria blanda*

QCAZI Numbers: 51055, 51089, 51098-9, 51101, 51132, 51136, 51138, 51140, 51231

***Rogeria* spp.**

Record for Ecuador: Two additional species, *Rogeria ciliosa* and *Rogeria scobinata* are known to occur in Limoncocha from S. & J Peck's collections (Kugler 1994).

Name on label: *Rogeria* spp.

QCAZI Numbers: 50800, 51096, 51146

***Sericomyrmex* sp.**

Name on label: *Sericomyrmex* sp.

QCAZI Numbers: 51594

***Solenopsis geminata* (Fabricius 1804)**

Record for Ecuador: Kempf 1972 (Possibly Galápagos)

Name on label: *Solenopsis geminata*

QCAZI Numbers: 51311, 51386, 51390-1, 51429, 51434, 51440-1

***Solenopsis virulens* (Smith 1858)**

Record for Ecuador: First record for Ecuador in Ryder 2007 (Orellana). Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton rapax*

Name on label: *Solenopsis bondari*

QCAZI Numbers: 49921, 49966, 49987, 49994, 50475-6, 50480-2, 50484, 50487, 50490, 50492-3, 50495-7, 50499

***Solenopsis* spp.**

Ecological information: Prey of *Eciton hamatum* and *Eciton rapax*

Name on label: *Solenopsis* spp.

QCAZI Numbers: 50656, 50822, 50827, 50865-6, 50909, 50913, 50951, 50953, 50995, 51081, 51125, 51167, 51212, 51258, 51333, 51449, 51451-2, 51461, 51504-5, 51535, 51538, 51592, 51633, 51677, 51795

***Strumigenys alberti* Forel 1893a**

Record for Ecuador: Kempf 1975 reports *S. alberti* for Ecuador, using Rettenmeyer's specimens.

Name on label: *Strumigenys alberti*

QCAZI Numbers: 100923-25

***Strumigenys denticulata* Mayr 1887**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Strumigenys denticulata*

QCAZI Numbers: 100926-32

***Strumigenys eggersi* Emery 1890a**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton hamatum*

Name on label: *Strumigenys eggersi*

QCAZI Numbers: 50824-5, 50994, 50996-7, 51038, 51082, 51121, 51123, 51332, 51590-1, 51676, 51763

***Strumigenys elongata* Roger 1863**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Strumigenys elongata*

QCAZI Numbers: 100940–4

***Strumigenys fairchildi* Brown 1961**

New record for Ecuador.

Ecological information: Prey of *Eciton hamatum*

Name on label: *Strumigenys fairchildi*

QCAZI Numbers: 100934–39

***Strumigenys louisianae* Roger 1863**

Record for Ecuador: Bolton 2000 (Esmeraldas)

Name on label: *Strumigenys louisianae*

QCAZI Numbers: 100919–22

***Strumigenys subdentata* Mayr 1887**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Strumigenys subdentata*

QCAZI Numbers: 100954–6

***Strumigenys trinidadensis* Wheeler 1922**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Strumigenys trinidadensis*

QCAZI Numbers: 100933

***Trachymyrmex* spp.**

Name on label: *Trachymyrmex*

QCAZI Numbers: 52192, 52195–7

***Tranopelta subterranea* (Mann 1916)**

Record for Ecuador: The first record for Ecuador for *Tranopelta subterranea* was given in by Fernandez 2003, who used specimens in Rettenmeyer's collection. Ryder *et al.* 2010 (Orellana).

Name on label: *Tranopelta subterranea*

QCAZI Numbers: 100882–906

***Typhlomyrmex rogenhoferi* Mayr 1862**

Record for Ecuador: Ryder *et al.* 2010 (Orellana).

Name on label: *Typhlomyrmex rogenhoferi*

QCAZI Numbers: 50784

***Wasmannia auropunctata* (Roger 1863)**

Record for Ecuador: Ryder 2007. Ryder *et al.* 2010 (Orellana).

Ecological information: Prey of *Eciton rapax* and *Eciton hamatum*

Name on label: *Wasmannia auropunctata*

QCAZI Numbers: 50023, 50146–9, 50154, 50161, 50164, 50167

Other Formicidae

Several other ant material remains unidentified in this collection under the QCAZI Numbers: 100609–91, 100728–849.

REFERENCES

- Bolton, B.** 2000. The ant tribe Dacetini. With a revision of the *Strumigenys* species of the Malgasy Region by Brian L. Fisher, and a revision of the Austral epopostrumiform genera by Steven O. Shattuck. *Memoirs of the American Entomological Institute* 65: 1–1028.
- Brandão, C.R.F.** 1991. Adendos ao catálogo abreviado das formigas da região Neotropical (Hymenoptera: Formicidae). *Revista Brasileira de Entomologia* 35: 319–412.
- Brown, W.L.** 1958. Contributions toward a reclassification of the Formicidae. II. Tribe Ectatommini (Hymenoptera). *Bulletin of the Museum of Comparative Zoology of Harvard College* 118: 175–362.
- Brown, W.L.** 1961. The Neotropical species of the ant genus *Strumigenys* Fr. Smith: miscellaneous concluding studies. *Psyche* 68: 58–69.
- Brown, W.L.** 1976. Contributions toward a reclassification of the Formicidae. VI. Ponerinae, tribe Ponerini, subtribe Odontomachiti. Section A. Introduction, subtribal characters. Genus *Odontomachus*. *Studia Entomologica (N.S.)* 19: 67–171.
- Brown, W.L. & W.W. Kempf.** 1960. A world revision of the ant tribe Basicerotini. *Studia Entomologica (N.S.)* 3: 161–250.
- Chadab R. & C.W. Rettenmeyer.** 1979. Observations on Swarm Emigrations and Dragging Behavior by Social Wasps (Hymenoptera: Vespidae). *Psyche* 86: 347–352.
- Donoso, D.A.** 2012. Additions to the taxonomy of the armadillo ants (Hymenoptera, Formicidae, *Tatuidris*). *Zootaxa* 3503: 61–81.
- Donoso, D.A. & G. Ramón.** 2009. Composition of a high diversity leaf litter ant community (Hymenoptera: Formicidae) from an Ecuadorian pre-montane rainforest. *Annales de la Société Entomologique de France (n.s.)* 45(4): 487–499.
- Donoso, D.A., J.M. Vieira & A.L. Wild.** 2006. Three new species of *Leptanilloides* Mann from Andean Ecuador (Formicidae: Leptanilloidinae). *Zootaxa* 1201: 47–62.
- Emery, C.** 1890a. Studi sulle formiche della fauna neotropica. *Bullettino della Società Entomologica Italiana* 22: 38–80.
- Emery, C.** 1890b. Voyage de M. E. Simon au Venezuela (Décembre 1887 – Avril 1888). 7e Mémoire. Formicides. *Annales de la Société Entomologique de France* 6(10): 55–76.
- Emery, C.** 1892. Voyage de M. Ch. Alluaud dans le territoire d'Assinie (Afrique occidentale) en juillet et août 1886. Formicides. *Annales de la Société Entomologique de France* 60: 553–574.
- Emery, C.** 1893. Studio monografico sul genere *Azteca* Forel. *Memorie della R. Accademia delle Scienze dell'Istituto di Bologna* (5)3: 119–152

- Emery, C.** 1894a. Studi sulle formiche della fauna Neotropica. *Bullettino della Societe Entomologica Italiana* 26: 137-241.
- Emery, C.** 1894b. Viaggio del dottor Alfredo Borelli nella Repubblica Argentina e nel Paraguay. *Bollettino dei Musei di Zoologia ed Anatomia Comparata della R. Universita di Torino* 9: 1-4.
- Emery, C.** 1896. Studi sulle formiche della fauna Neotropica. *Bullettino della Societe Entomologica Italiana* 28: 33-107.
- Emery, C.** 1902. Note mirmecologiche. *Rendiconto delle Sessioni della R. Accademia delle Scienze dell'Istituto di Bologna* 6: 22-34.
- Emery, C.** 1903. Intorno ad alcune specie di *Camponotus* dell'America meridionale. *Rendiconto delle Sessioni della R. Accademia delle Scienze dell'Istituto di Bologna* 6: 62-81.
- Emery, C.** 1906. Note sur *Prenolepis vividula* Nyl. et sur la classification des especes du genre *Prenolepis*. *Annales de la Societe Entomologique de Belgique* 50: 130-134.
- Emery, C.** 1913. Etudes sur les Myrmicinae. *Annales de la Societe Entomologique de Belgique* 57: 250-262.
- Fabricius, J.C.** 1775. *Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*. Libraria Kortii, Flensburgi et Lipsiae. 832 pp.
- Fabricius, J.C.** 1793. *Entomologia systematica emendata et aucta*. Vol. 2. Christ. Gottl. Proft, Hafniae.
- Fabricius, J.C.** 1804. *Systema Piezatorum*. Carolum Reichard, Brunsviga.
- Fernández, F.** 2002. Revisión de las hormigas *Camponotus* del subgénero *Dendromyrmex* (Hymenoptera: Formicidae). *Papeis Avulsos de Zoologia (São Paulo)* 42: 47-101.
- Fernández, F.** 2003. Myrmicine ants of the genera *Ochetomyrmex* and *Tranopelta*. *Sociobiology* 41: 633-661.
- Fernández, F.** 2004a. The American species of the myrmicine ant genus *Carebara* Westwood. *Caldasia* 26: 191-238.
- Fernández, F.** 2007. Two new South American species of *Monomorium* Mayr with taxonomic notes on the genus, pp. 128-145. In Snelling, R. R., B. L. Fisher, and P. S. Ward (eds). *Advances in ant systematics (Hymenoptera: Formicidae): homage to E. O. Wilson - 50 years of contributions*. *Memoirs of the American Entomological Institute*, 80.
- Forel, A.** 1878. Etudes myrmecologiques en 1878 (primiere partie) avec l'anatomie du gesier des fourmis. *Bulletin de la Societe Vaudoise des Sciences Naturelles* 15: 337-392
- Forel, A.** 1885. Etudes myrmécologiques en 1884; avec une description des organes sensoriels des antennes. *Bulletin de la Société Vaudoise des Sciences Naturelles* 20: 316-380.
- Forel, A.** 1893a. Formicides de l'Antille St. Vincent. Récoltées par Mons. H. H. Smith. *Transactions of the Entomological Society of London* 1893: 333-418.
- Forel, A.** 1893b. Note sur les "Attini". *Annales de la Societe Entomologique de Belgique* 37: 586-607

- Forel, A.** 1899. *Biologia Centrali-Americana; or, contributions to the knowledge of the fauna and flora of Mexico and Central America. Insecta. Hymenoptera. Vol. III. (Formicidae.)* London.
- Forel, A.** 1901. Nouvelles espèces de Ponerinae. (Avec un nouveau sous-genre et une espèce nouvelle d'*Eciton*). *Revue Suisse de Zoologie* 9: 325-353.
- Forel, A.** 1902. Quatre notices myrmécologiques. *Annales de la Société Entomologique de Belgique* 46: 170-182.
- Forel, A.** 1905. Miscellanea myrmécologiques, II (1905). *Annales de la Société Entomologique de Belgique* 49: 155-185.
- Forel, A.** 1909. Ameisen aus Guatemala, usw., Paraguay und Argentinien (Hym.). *Deutsche Entomologische Zeitschrift* 1909: 239-269.
- Forel, A.** 1921. Quelques fourmis des environs de Quito (Ecuador), récoltées par Mme Eléonore Naumann. *Bulletin de la Société Vaudoise des Sciences Naturelles* 54: 131-135.
- Forel, A.** 1912. Formicides Néotropiques. Part III. 3^{me} sous-famille Myrmicinae (suite). Genres *Cremastogaster* et *Pheidole*. *Memoires de la Société Entomologique de Belgique* 19: 211-237.
- Guérin-Méneville, F.E.** 1838. Histoire naturelle des crustacés, arachnides et insectes. Page pl. 8 in Duperrey, L. I. Voyage autour du monde, exécuté par ordre du Roi, sur la corvette de Sa Majesté, La Coquille, pendant les années 1822, 1823, 1824 et 1825. *Zoologie* 2. Paris. 319 pp.
- Hermann, H.R.** 1968a. Group raiding in *Termitopone commutata* (Roger) (Hymenoptera: Formicidae). *J. Ga. Entomol. Soc.* 3: 23-24
- Kaspari, M., S. O'Donnell & J. Kercher.** 2000. Energy, density, and constraints to species richness: ant assemblages along a productivity gradient. *American Naturalist* 155: 280-293
- Kempf, W.W.** 1960. Insecta Amapaensia. - Hymenoptera: Formicidae (segunda contribuição). *Studia Entomologica (N.S.)* 3: 385-400.
- Kempf, W.W.** 1975. Report on Neotropical dacetine ant studies (Hymenoptera: Formicidae). *Revista Brasileira de Biologia* 34: 411-424.
- Klug, F.** 1824. *Entomologische Monographien*. Berlin.
- Kugler, C. & W.L. Brown.** 1982. Revisionary & other studies on the ant genus *Ectatomma*, including the descriptions of two new species. *Search: Agriculture; Cornell University Agricultural Experiment Station* 24: 1-7.
- Kugler, C.** 1994. Revision of the ant genus *Rogeria* (Hymenoptera: Formicidae) with descriptions of the sting apparatus. *Journal of Hymenoptera Research* 3: 17-89.
- LaPolla, J.S.** 2004. *Acropyga* of the world. *Contributions of the American Entomological Institute* 33 (3): 1-130.
- Lattke, J.E.** 2011. Revision of the New World species of the genus *Leptogenys* Roger (Insecta: Hymenoptera: Formicidae: Ponerinae). *Arthropod Systematics & Phylogeny* 69: 127-264.
- Latreille, P.A.** 1802. *Histoire naturelle des fourmis, et recueil de memoires et d'observations sur les abeilles, les araignees, les faucheurs, et autres insectes*. Paris.

- Latreille, P.A.** 1804. Tableau méthodique des insectes. Classe huitième. Insectes, Insecta. *Nouveau Dictionnaire d'Histoire Naturelle* 24: 129–200.
- Latreille, P.A.** 1818. Oecodome. *Nouveau Dictionnaire d'Histoire Naturelle* 23: 223–225
- Linnaeus, C.** 1758. *Systema naturae. Regnum Animale*. 10th ed. W. Engelmann, Lipsiae.
- Lund, P.W.** 1831. Lettre sur les habitudes de quelques fourmis du Brésil, adressée a M. Audouin. *Annales des Sciences Naturelles* 23: 113–138.
- MacKay, W.P.** 1993. A review of the New World ants of the genus *Dolichoderus* (Hymenoptera: Formicidae). *Sociobiology* 22: 1–148.
- Mann, W.M.** 1912. Parabiosis in Brazilian ants. *Psyche* 19: 36–41.
- Mann, W.M.** 1916. The ants of Brazil. Bulletin of the Museum of Comparative Zoology of Harvard College 60: 399–490.
- Mayr, G.** 1861. Die europäischen Formiciden. Vienna. 80 pp.
- Mayr, G.** 1862. Myrmecologische Studien. Verhandlungen der Zoologisch-Botanischen Gesellschaft in Wien 12: 649–776.
- Mayr, G.** 1865. Reise der Oesterreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859, unter den befehlen des Commodore B. von Wuellerstorff-Urbair. Zoologischer Theil. Formicidae. Vienna.
- Mayr, G.** 1866. Diagnosen neuer und wenig gekannter Formiciden. *Verhandlungen der Zoologisch-Botanischen Gesellschaft in Wien* 16: 885–908.
- Mayr, G.** 1868. Formicidae novae americanae collectae a Prof. P. de Strobel. *Annuario della Societa dei Naturalisti Modena* 3: 161–178.
- Mayr, G.** 1870a. Formicidae novogranadenses. *Sitzungsberichte der Koenigliche Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Classe* 61: 370–417
- Mayr, G.** 1870b. Neue Formiciden. *Verhandlungen der Zoologisch-Botanischen Gesellschaft in Wien* 20: 939–996.
- Mayr, G.** 1878. Formiciden. Gesammelt in Brasilien von Professor Trail. *Verhandlungen der Zoologisch-Botanischen Gesellschaft in Wien* 27: 867–878
- Mayr, G.** 1887. Südamerikanische Formiciden. *Verhandlungen der Zoologisch-Botanischen Gesellschaft in Wien* 37: 511–632.
- Mayr, G.L.** 1853. Einige neue Ameisen. *Verhandlungen des Zoologisch-Botanischen Vereins in Wien* 2: 143–150.
- Motschoulsky, V. de.** 1863. Essai d'un catalogue des insectes de l'ile Ceylan. *Bulletin de la Société Imperiale des Naturalistes de Moscou* 36: 1–153.
- Olivier, A.G.** 1792. Encyclopedie methodique. *Histoire naturelle. Insects* 6: 469–506.
- Patton, W.H.** 1894. Habits of the leaping-ant of southern Georgia. *American Naturalist* 28: 618–619
- Radoszkowsky, O.** 1884. Fourmis de Cayenne Française. *Trudy Russkago Entomologicheskago Obshchestva* 18: 30–39.
- Roger, J.** 1860. Die Ponera-artigen Ameisen. *Berliner Entomologische Zeitschrift* 4: 278–312.

- Roger, J.** 1861. Die Ponera-artigen Ameisen. (Schluss.) *Berliner Entomologische Zeitschrift* 5: 1-54.
- Roger, J.** 1862a. Einige neue exotische Ameisen-Gattungen und Arten. *Berliner Entomologische Zeitschrift* 6: 233-254.
- Roger, J.** 1862b. Synonymische Bemerkungen. *Berliner Entomologische Zeitschrift* 6: 283-297.
- Roger, J.** 1863. Die neu aufgeführten Gattungen und Arten meines Formiciden-Verzeichnisses, nebst Ergänzung einiger freher gegeben Beschreibungen. *Berliner Entomologische Zeitschrift* 7: 131-214.
- Ryder, K.T.W., A.L. Mertl & J.F.A. Tranello.** 2007. Biodiversity below ground: probing the subterranean ant fauna of Amazonia. *Naturwissenschaften* 94: 725-731
- Ryder, K.T., A.L. Mertl & J.F.A. Traniello.** 2010. Species Diversity and Distribution Patterns of the Ants of Amazonian Ecuador. *PLoS ONE* 5(10): e13146.
- Santschi, F.** 1913. Hyménoptères. Formicides. - Mission du Service Geographique de l'Armée pour la mesure d'un arc de méridien équatorial en Amérique du Sud 10: 33-43.
- Santschi, F.** 1920. Nouvelles fourmis du genre Cephalotes Latr. *Bulletin de la Société Entomologique de France* 1920: 147-149.
- Santschi, F.** 1921. Ponerinae, Dorylinae et quelques autres formicides néotropiques. *Bulletin de la Société Vaudoise des Sciences Naturelles* 54: 81-103.
- Santschi, F.** 1926. Deux nouvelles fourmis parasites de l'Argentine. *Folia Myrmecologica et Termitologica* 1: 6-8.
- Santschi, F.** 1929. Revision du genre Holcoponera Mayr. *Zoologischer Anzeiger* 82: 437-477.
- Santschi, F.** 1938. Notes sur quelques Ponera Latr. *Bulletin de la Société Entomologique de France* 43: 78-80.
- Smith, F.** 1857. Catalogue of the hymenopterous insects collected at Sarawak, Borneo; Mount Ophir, Malacca; and at Singapore, by A. R. Wallace. *Journal of the Proceedings of the Linnean Society of London, Zoology* 2: 42-88.
- Smith, F.** 1858. Catalogue of the hymenopterous insects in the collection of the British Museum. Part VI. Formicidae. London.
- Smith, F.** 1860. Descriptions of new genera and species of exotic Hymenoptera. *Journal of Entomology* 1: 65-84.
- Smith, M.R.** 1937. The ants of Puerto Rico. *Journal of Agriculture of the University of Puerto Rico* 20: 819-875.
- Spinola, M.** 1853. Compte rendu des Hyménoptères inédits provenants du voyage entomologique de M. Ghiliani dans la Para en 1846. *Memorie della Reale Accademia delle Scienze di Torino* (2)13: 19-94.
- Weber, N.A.** 1937. The biology of the fungus-growing ants. Part I. New forms. *Revista de Entomologia, Rio de Janeiro* 7: 378-409.
- Weber, N.A.** 1939. New ants of rare genera and a new genus of ponerine ants. *Annals of the Entomological Society of America* 32: 91-104.

- Weber, N.A.** 1944. The Neotropical coccid-tending ants of the genus *Acropyga* Roger. *Annals of the Entomological Society of America* 37: 89–122.
- Weber, N. A.** 1950. New Trinidad Myrmicinae, with a note on *Basiceros* Schulz (Hymenoptera, Formicidae). *American Museum Novitates* 1465: 1–6.
- Westwood, J.O.** 1839. An introduction to the modern classification of insects. Vol. 2, part 11, pp. 193–224. London.
- Westwood, J.O.** 1840. Observations on the genus *Typhlopone*, with descriptions of several exotic species of ants. *Annals and Magazine of Natural History* 6: 81–89.
- Wetterer, J.K.** 2012. Worldwide spread of the stigma ant, *Pachycondyla stigma* (Hymenoptera: Formicidae). *Myrmecological News* 16: 39–44.
- Wheeler, W.M.** 1922. The ants of Trinidad. *American Museum Novitates* 45: 1–16.