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The ants of the Galápagos Islands (Hymenoptera, Formicidae): A historical overview, preliminary checklist, and identification key

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ABSTRACT

The Galápagos ant fauna has long been understudied, with the last taxonomic summary being published almost a century ago. Here, we provide a comprehensive and updated overview of the known ant species of the Galápagos Islands with updated species distributions. The list is based on an extensive review of literature, the identification of more than 382,023 specimens deposited in different entomological collections, as well as recent expeditions to the islands. The fauna is composed of five subfamilies (Dolichoderinae, Dorilynae, Formicinae, Myrmicinae and Ponerinae), 22 genera and 53 species, though 3 of these species are considered dubious records. Finally, we provide an illustrated identification key of the species in the archipelago.

Key words: Galápagos ants, checklist, distribution, taxonomy.

INTRODUCTION

Until recently, the ant fauna of the Galápagos Islands was poorly studied. Early expeditions to the Galápagos collected only a few specimens at specific sites, primarily in the arid zones, which were more accessible (Smith 1877, Emery 1893, Wheeler 1919, 1924, 1933). This resulted in the first lists of Galápagos ant species published by Wheeler (1919, 1924, 1933) and Stitz (1932). These lists were updated by Linsley and Usinger (1966) who compiled all known reports of the Galápagos ants in the archipelago, reporting a total of 19 species and 34 subspecies. Only after *Wasmannia auropunctata* (Roger 1863) the invasive little fire ant, was discovered in Galápagos the interest in ants increased (Silberglied 1972). Yet, the focus at that time was mainly on understanding the impact of *W. auropunctata* on native and endemic species (Clark et al. 1982, Lubin 1984). Still, these studies led to several new records, but again only focused on certain localities on a few

major islands. Later studies by (Pezzatti et al. 1998) and (Snelling and Longino 1992) provided some important additions to the Galápagos ant fauna, but a systematic sampling of all islands was still needed (Brandão and Paiva 1994). In 2005, a project was initiated to study material deposited in collections worldwide as well as sampling across all major islands in the archipelago, resulting in many new ant records (Fig. 1) (among others (Longino 2003, Pacheco et al. 2007, Herrera and Longino 2008, Herrera and Causton 2010, Lattke 2011, Herrera et al. 2013, 2014). Here, we summarize all known species records (past and present) from the Galápagos Islands and provide an illustrated identification key for the established 53 taxa known to date. This checklist does not include species intercepted in quarantine inspection activities in the Galápagos as they are considered as not confirmed established species in the islands. These species include, *Acromyrmex octospinosus* Reich, 1793, *Camponotus brettlesi* Forel, 1899, *Crematogaster curvispinosa* Mayr, 1862, *Eciton vagans angustatum* Roger, 1863. *Ectatomma ruidum* Roger, 1860, *Notoncus ectatommoides* Forel, 1892, and *Brachymyrmex patagonicus* Mayr, 1868.

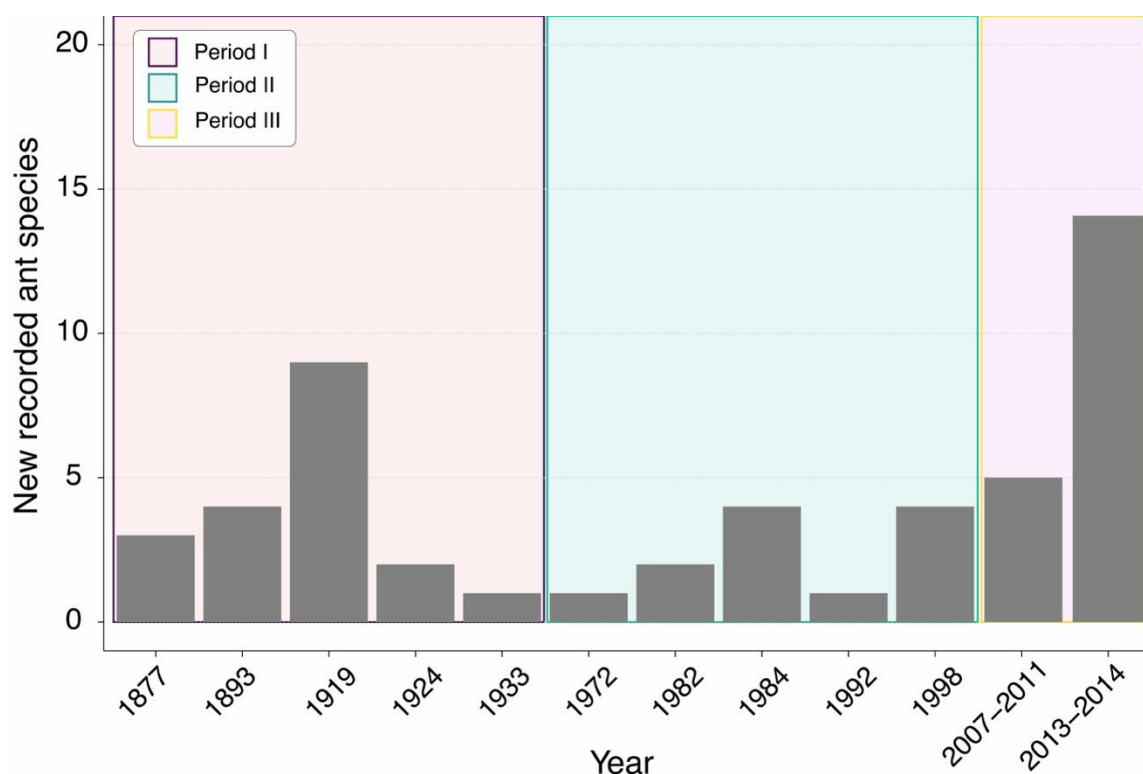


Figure. 1. Delimitation of the three periods in the study of Galápagos ants. Period I: 1877-1933; Period II: 1933 until the end of the 90's; Period III: 2000 onwards. The following references correspond to the years listed in the figure: 1877 = Smith (1877); 1893 = Emery (1893); 1919 = Wheeler (1919); 1924 = Wheeler (1924); 1933 = Wheeler (1933); 1972 = Silberglie (1972); 1982 = Clark et al. (1982); 1984 = Lubin (1984); 1992 = (Snelling and Longino 1992); 1998 = Pezzatti et al. (1998); 2007 – 2011 = Pacheco et al. (2007), Herrera and Longino (2008), Herrera and Causton (2010), Lattke (2011); 2013 – 2014 = Herrera et al. (2013, 2014).

MATERIALS AND METHODS

This paper is based on literature reviews and the study of 382,023 specimens deposited mostly in the Terrestrial Invertebrates Collection of the Charles Darwin Research Station (ICCDRS) as well as the collections of John T. Longino (JTLC), California Academy of Sciences (CAS), Quito Catholic Zoology Museum, PUCE, Quito, Ecuador (QCAZ), the University of Texas Insect Collection (UTIC) and the Royal Belgian Institute of Natural Sciences (RBINS). We revised and updated samples used for previous publications. These records are preceded by the acronym where this material is deposited. The list of subfamilies and species are given alphabetically. An illustrated taxonomic key is provided for the identification at subfamily, genus, and species level. Specimens from the genus *Nylanderia* are currently under revision and merged into *Nylanderia* spp. Accordingly, past literature records of *Nylanderia* species are only included in the checklist. We implemented a similar approach for the endemic subspecies of *Camponotus macilentus* and *Camponotus planus*, for which the taxonomic key is only at the species level. Neither the material examined, nor the vague descriptions found in old literature allowed us to discriminate between putative subspecies. The genus *Nylanderia* in Galápagos and the *Camponotus* subspecies complexes will be addressed in future studies. Scanning images at high resolution were obtained using Scanning Electron microscope (SEM) (Todokoro and Ezumi 1999) and pictures in automontage (available in AntWeb (Herrera 2019) were used to illustrate the key. Morphological terms referred to in the key (Fig. 2A-D), followed Eady (1968), Harris (1979), Bolton (1994), Bolton et al. (2003). Locality terminology referring to the different volcanoes on Isabela Island is as follows: Alcedo Crater (CA), Volcano Alcedo (VA), Volcano Ecuador (VE), Volcano Darwin (VD), Volcano Sierra Negra (SN), and Volcano Wolf (VW).

RESULTS

Five subfamilies of Formicidae can be found in the Galápagos: Dolichoderinae, Dorylinae, Formicinae, Myrmicinae and Ponerinae, representing 21 genera and 53 species. The subfamily Myrmicinae is the largest with 32 species, while Dorylinae is represented by only one species on the islands (*Cylindromyrmex whymperi* Cameron, 1891. *Solenopsis globularia* (Smith 1858) (on 35 islands) of undetermined origin and the introduced species *Tetramorium bicarinatum* Nylander, 1846 (33 islands), *Cardiocondyla emeryi* Forel, 1881 (30 islands), *Monomorium floricola* Jerdon, 1851 (27 islands), *Camponotus zonatus* Emery, 1894 (24 islands), *Tetramorium lanuginosum* (24 islands), *Tapinoma melanocephalum* Fabricius et al. 1792 (18 islands), *Wasmannia auropunctata* Roger, 1863 (21 islands) and *Solenopsis geminata* (20 islands) are the most widely distributed species in the archipelago. Among putative endemic species (9) (Herrera et al. 2020), *Leptogenys santacruz* (Lattke 2011) is the rarest with only a few records from the islands of Santa Cruz and Santiago.

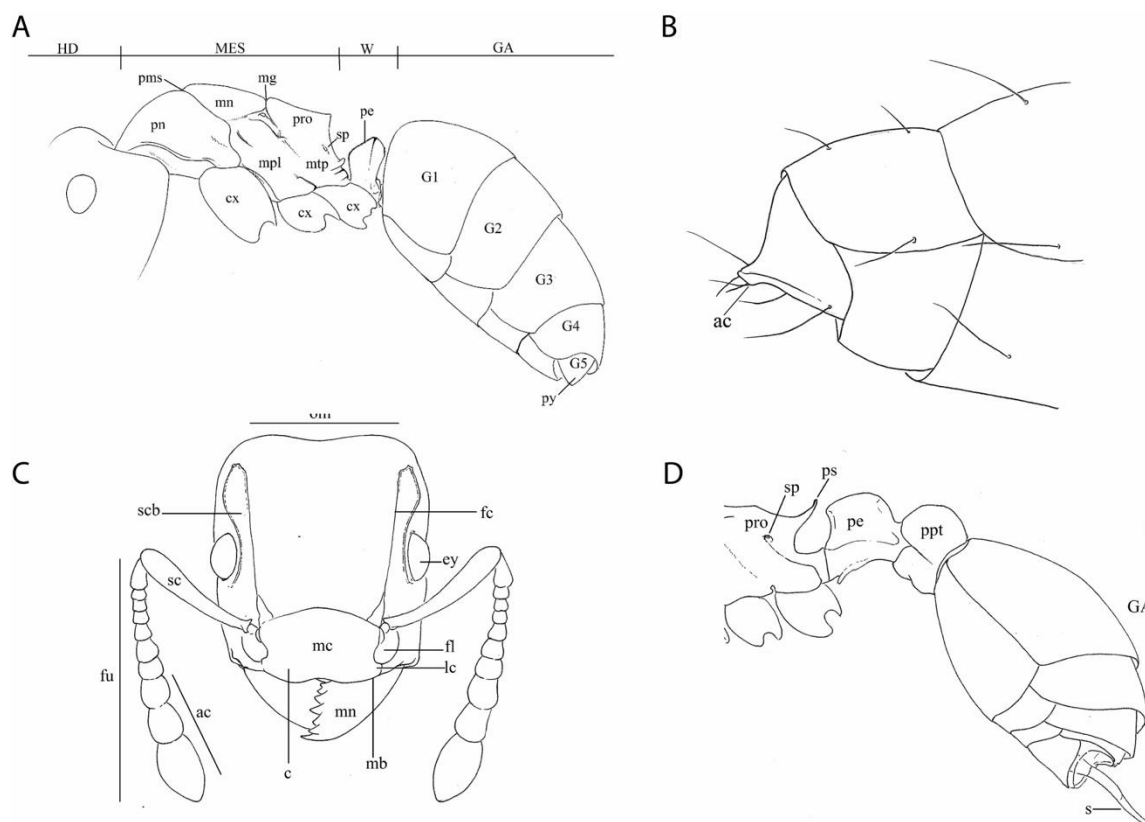


Figure. 2 Glossary of terminology A) Lateral view of a major worker of *Camponotus planus* Smith, 1877, HD = head; MES = mesosoma; W = waist; GA = gaster; pn = pronotum; cx = coxa; pms = promesonotal suture; mn = mesonotum; mpl = mesopleuron; mg = metanotal groove; pro = propodeum; py = pygidium; mtp = metapleuron; sp = spiracle; pe = petiole; G1, 2, 3, 4, 5 = gastral segment 1 to 5. 2B) Profile view of *Paratrechina longicornis*, ac = acidopore Fig. 2C) Frontal view of *Tetramorium bicarinatum* Nylander, 1846, fu = funiculus; sc = scape; ac = antenna club; mn = mandible; mb = basal margin of mandible; c = clypeus; mc = median portion of clypeus; lc = lateral portion of clypeus; fl = frontal lobe; fc = frontal carina; ey = eye; om = occipital margin; scb = scrobe. Fig. 2D) Lateral view of *Tetramorium bicarinatum*, pro = propodeum; ps = propodeal spine; sp = spiracle; pe = petiole; ppt = post-petiole; GA = gaster; s = sting.

CHECKLIST AND IDENTIFICATION KEY

Key to the Subfamilies of the Galápagos Islands

1. Mesosoma attached to the gaster by a single intermediate segment, the petiole (Fig. 44-c).....2
 Mesosoma attached to the gaster by two intermediate segments, the petiole and post-petiole(Fig. 36-c).....**MYRMICINAE**
2. Gaster with a remarkable or slightly remarkable constriction between the first and second segment (Fig. 45-c); in the latter case jaws elongated (Fig. 48-c); last segment of the gaster with sting, sometimes visible.....3
 Gaster without a remarkable or slightly remarkable constriction between the first and second segment (Fig. 8-c); never with long and slender jaws; last segment of the gaster without sting.....4
3. Pygidium with small spines or denticles; antennal scape short and robust, never passing

the middle of the eyes (Fig. 6-c); funiculus robust increasing progressively and lightly toward the apex; head in frontal view with frontal carinae very well marked, and with thick longitudinal ridges running from occipital margin towards the clypeus (Fig. 6-d)..... (**DORYLINAE**); *Cylindromyrmex whympersi*
 Pygidium without spines or denticles (Fig. 44-d); antennal scape widely passing the middle of the eyes (long and slender); head in frontal view without ridges.....

PONERINAE

4. Apex of abdomen with a semicircular to circular orifice, the acidopore, formed from the hypopygium Cloacal orifice in the apex of the gaster with a structure circular surrounded by a fringe of short setae, the acidopore (Fig. 8-d).....**FORMICINAE**

Apex of abdomen with hypopygium lacking a semicircular to circular acidopore Cloacal orifice in the apex of the gaster transverse, never surrounded by setae, without acidopore (Fig. 3-d).....**DOLICHODERINAE**

Subfamily DOLICHODERINAE

Key to species of the subfamily Dolichoderinae

1. In lateral and dorsal views, petiole visible (Fig. 3-b, d); cluster of long hairs located in the ventral surface of the head, “the psammophore” (Fig. 3-e); propodeum with pyramidal structure (Fig. 3-d); head and mesosoma reddish brown, gaster, funiculus of antenna, petiole and legs brownish-black (Fig. 3-b) (*Dorymyrmex*).....***Dorymyrmex pyramicus albemarlensis***
 Petiole squamiform and notably reduced, in lateral and dorsal view hidden under first segment of the gaster (Fig. 4-b, c); psammophore lacking on the ventral surface of the head; propodeum without pyramidal structure on the dorsum (Fig. 4-d) (*Tapinoma*).....2
2. Small (~1.5 mm), head and mesosoma light brown and antennae, legs and gaster pale yellow (Fig. 4-a, b); anterior margin of clypeus relatively straight (Fig. 4-e).....***Tapinoma melanocephalum***
 Ants measuring approximately 2 mm with body and legs brown-gray (Fig. 5-a, b); anterior base of clypeus slightly concave in the middle (Fig. 5-c)...***Tapinoma* sp. hh07**

Genus *Dorymyrmex* Mayr, 1866

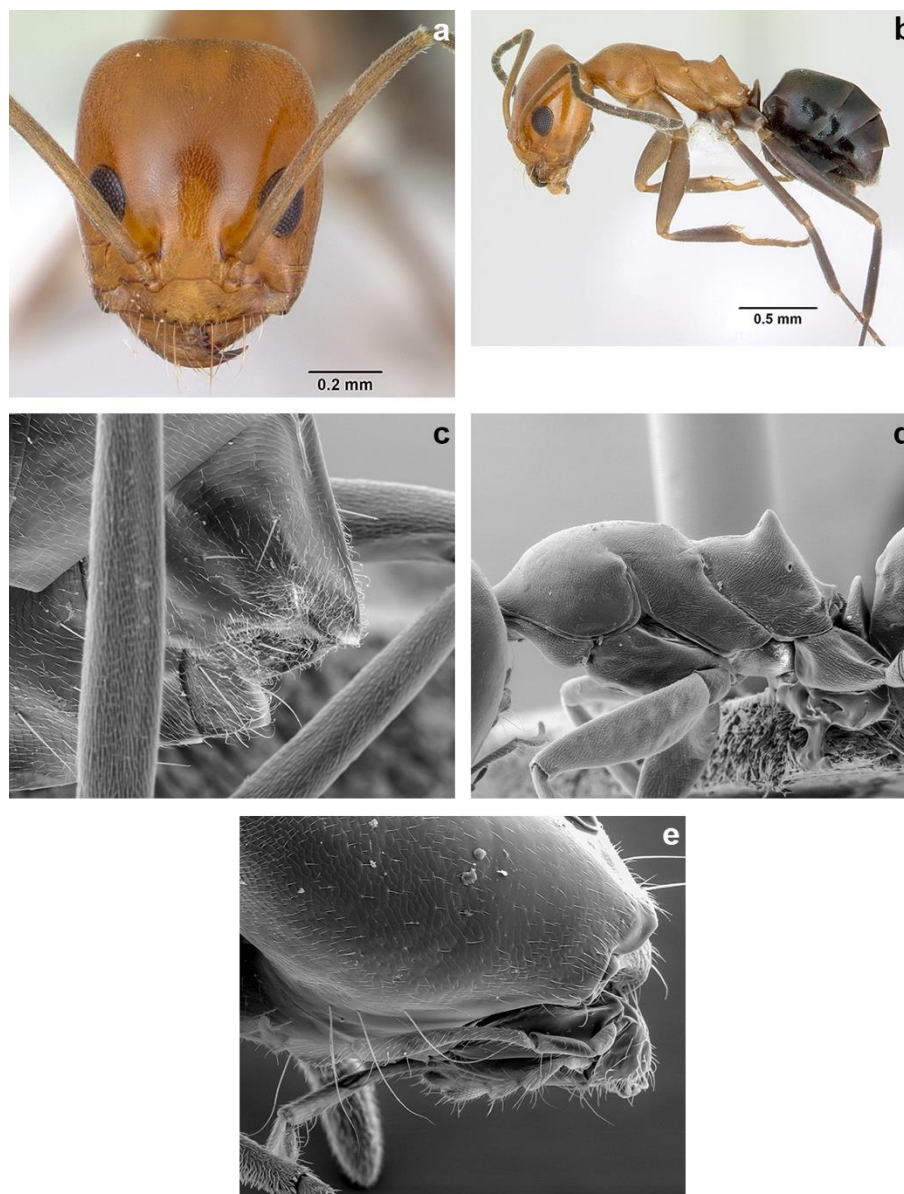


Figure 3. *Dorymyrmex pyramicus albemarlensis* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** apex of abdomen **D** mesosoma in profile **E** maxillary and labial palps.

***Dorymyrmex pyramicus albemarlensis* Wheeler, 1919** (Fig. 3-a, b). In Wheeler (1924) [CAS], Wheeler (1933). Cited as *Conomyrma pyramica albemarlensis* (Linsley & Usinger 1966), *Conomyrma* sp. (Clark et al. 1982) [ICCDRS], *C. pyramica* (Lubin 1983), *C. albemarlensis*, *C. pyramica* (Lubin 1984), *C. albemarlensis* (Lubin 1985), *Conomyrma* sp. (Meier 1994), *Dorymyrmex pyramicus* (Abedrabbo 1994) [ICCDRS] and *C. albemarlensis* (de la Vega 1994). Registered also in Roque-Albelo et al. (2000) [ICCDRS], Herrera & Causton (2010) [ICCDRS], Herrera (2015), Herrera (2021) and Herrera et al. (2020) [ICCDRS, RBINS]. **Taxonomic history:** Kempf (1972), Bolton (1995), Bolton et al. (2006), Bolton (2014).

Galápagos distribution: Endemic: Baltra, Bartolomé, Daphne Mayor, Edén, Española,

Fernandina, Genovesa, Isabela (VA, VD, VW), Marchena, Pinta, Rábida, Santa Cruz, Santa Fé, and Santiago (Herrera et al. 2020).

Genus *Tapinoma* Foerster, 1850

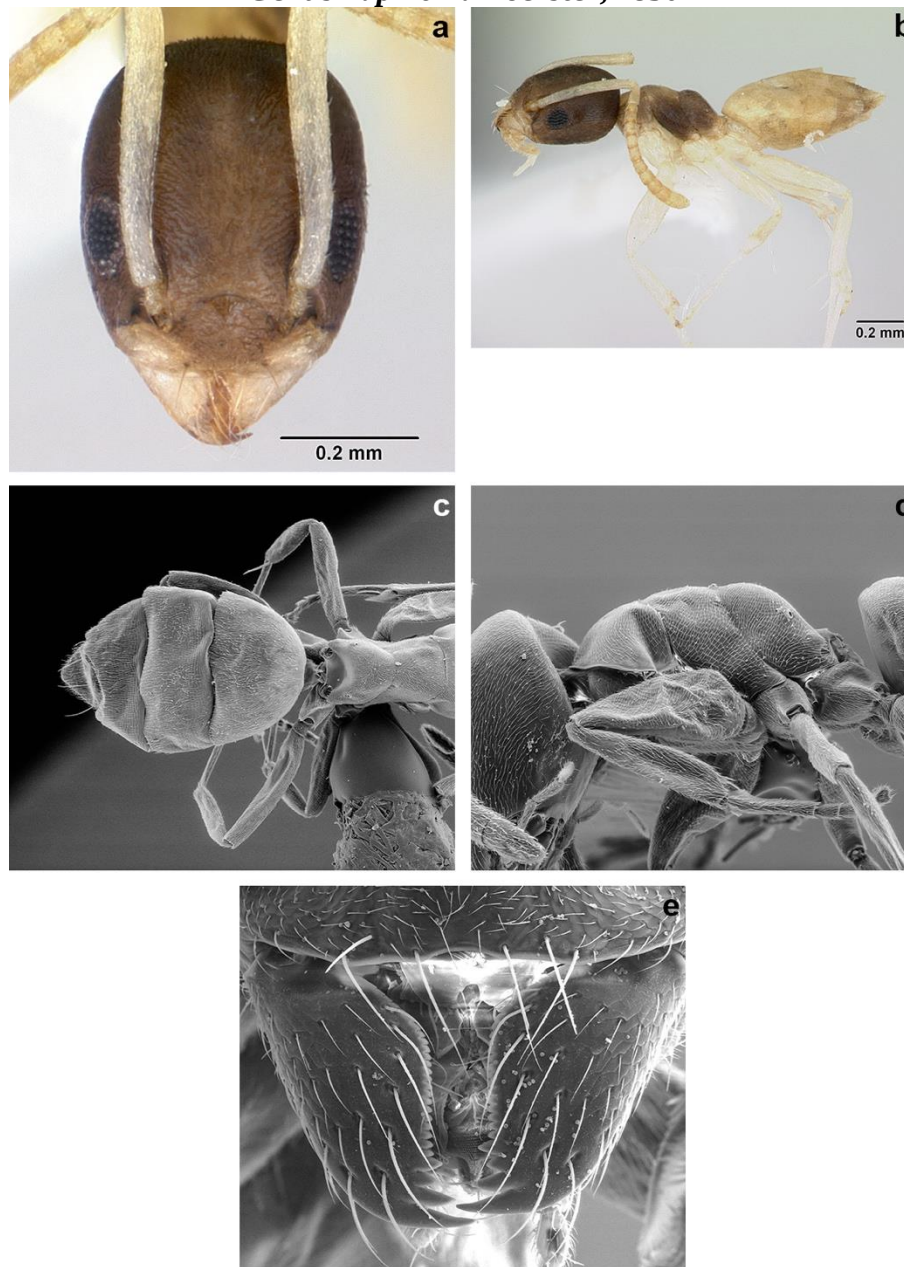


Figure 4. *Tapinoma melanocephalum* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** gaster in dorsal view **D** mesosoma in profile **E** close up mandibles showing dentition.

***Tapinoma melanocephalum* Fabricius, 1793 (Fig. 4-a, b).** First published record Emery (1893), cited also in Wheeler (1919) [CAS], Wheeler (1924), Linsley and Usinger (1966), Clark et al. (1982) [ICCDRS], Lubin (1984) [ICCDRS], McMullen (1986, 1990, 1993), Abedrabbo (1994) [ICCDRS], Brandão & Paiva (1994), de la Vega (1994), Meier (1994)

[ICCDRS], Peck et al. (1998), Pezzatti et al. (1998) [ICCDRS], Roque-Albelo et al. (2000) [ICCDRS], von Aesch & Cherix (2005) [ICCDRS], Boada (2005) [ICCDRS], von Aesch (2006) [ICCDRS], Causton et al. (2006), McMullen (2009), Herrera & Causton (2010) [ICCDRS], McMullen (2012), Chamorro et al. (2012) [ICCDRS], Dekonink et al. (2014) [ICCDRS, RBINS], Wauters et al. (2015) [ICCDRS, RBINS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS, RBINS]. **Taxonomic history:** Kempf (1972), Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution: Invasive: Albany, Baltra, Champion, Española, Fernandina, Floreana, Genovesa, Isabela (CA, SN, VA), Marchena, Pinta, Plaza Sur, Rábida, Santiago, San Cristóbal, Santa Cruz, Seymour Norte and Santa Fé (Herrera et al. 2020). New record: Mariela Mediana Islet.

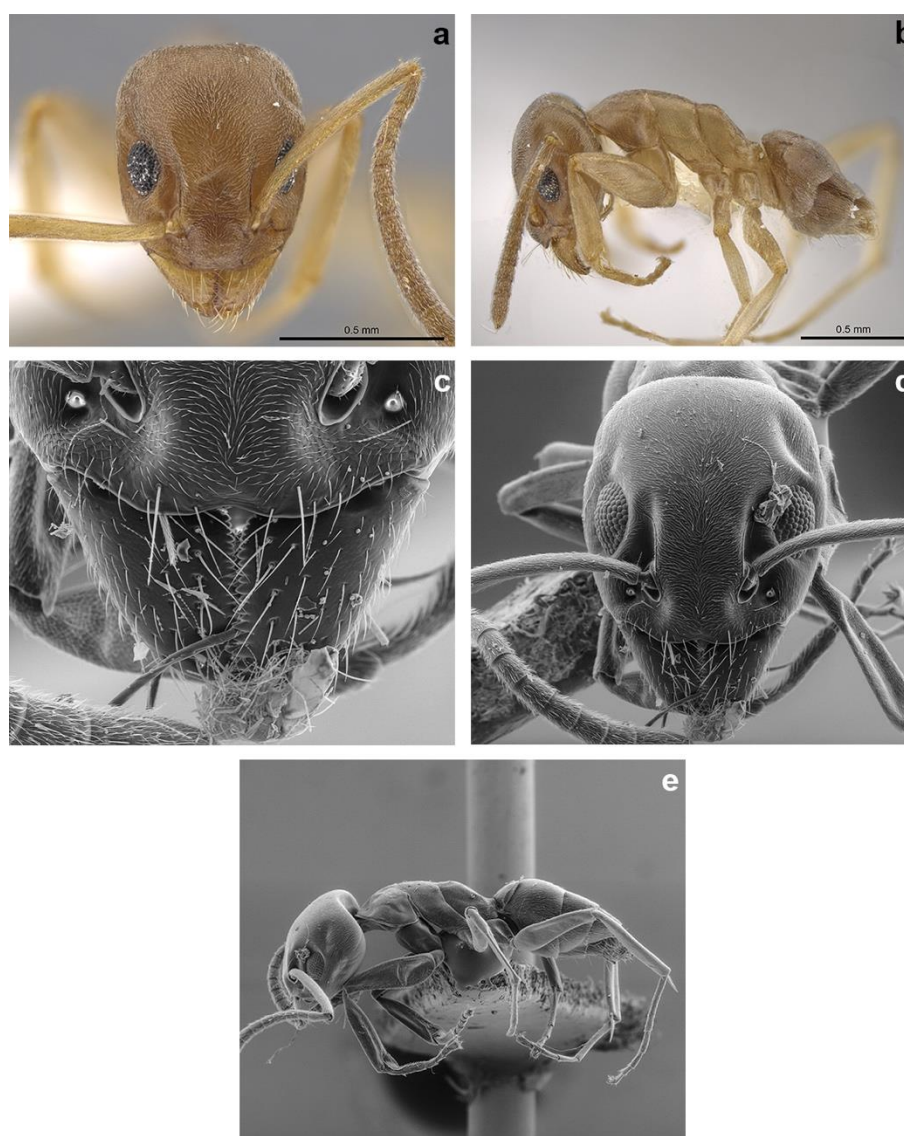


Figure 5. *Tapinoma* sp. hh06 worker micrographs in **A** head in full-face view **B** view in

profile, and SEM images of **C** close up mandibles showing dentition **D** mesosoma in profile **E** view in profile.

***Tapinoma* sp. hh07** (Fig. 5-a, b). In Herrera et al. (2014) [ICCDRS], HERRERA (2015), and HERRERA & al. (2020) [ICCDRS]. **Distribution:** Santa Cruz (Herrera et al. 2014).

Subfamily DORYLINAE
Genus *Cylindromyrmex* Mayr, 1870

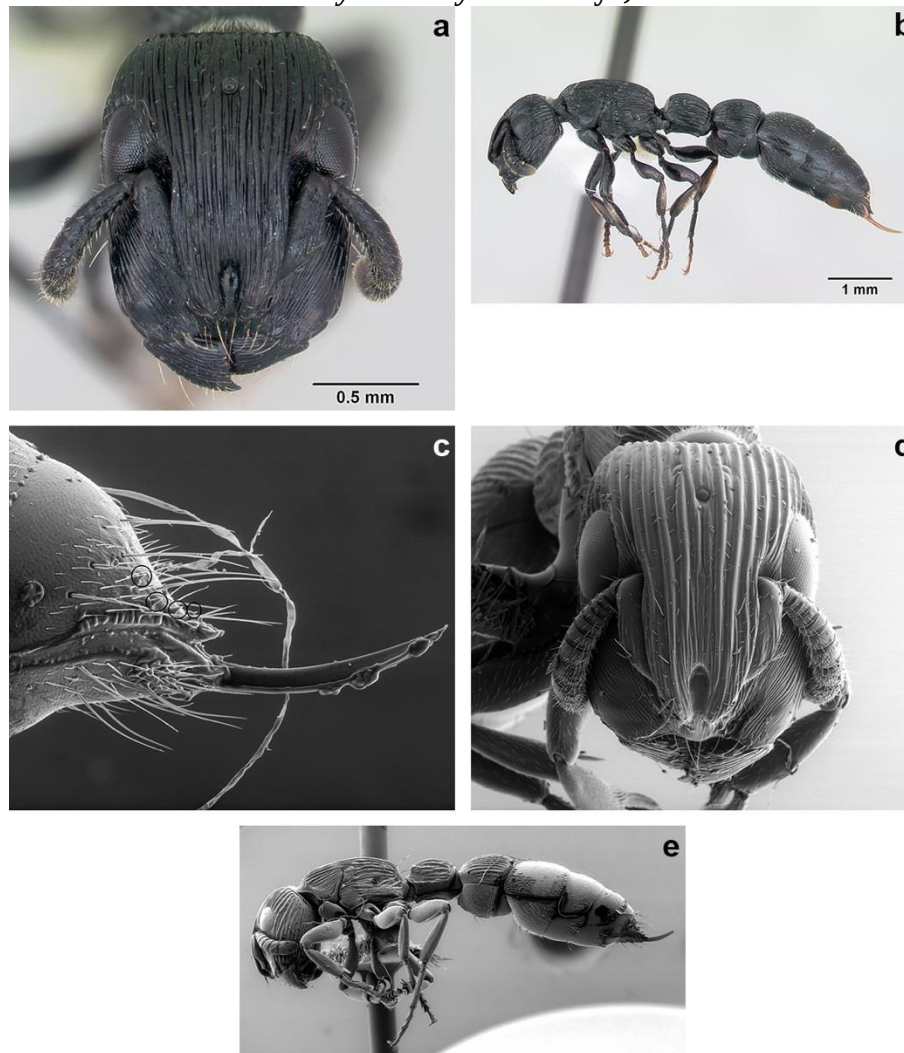


Figure 6. *Cylindromyrmex whymperi* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** stinging apparatus **D** head in full-face view **E** view in profile.

***Cylindromyrmex whymperi* Cameron, 1891** (Fig. 6-a, b) Cited as *Cylindromyrmex striatus* in Wheeler (1919) [CAS]. *Cylindromyrmex williamsi* in Wheeler (1924). *Cylindromyrmex striatus tibialis* in Stitz (1932). *Cylindromyrmex williamsi* in Linsley and Usinger (1966), *Cylindromyrmex* sp. in Silberglied (1972). *Cylindromyrmex striatus* in Lubin (1984), *Cylindromyrmex* sp. in de la Vega (1994). *Cylindromyrmex whymperi* in De Andrade (1998), *Cylindromyrmex striatus* in Causton et al. (2006), *Cylindromyrmex*

whymperi Herrera & Causton (2010) [ICCDRS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Kempf (1972), Bolton (1995), de Andrade (1998), Bolton et al. (2006), Bolton (2014). **Distribution:** Neotropical.

Galápagos distribution: Baltra, Fernandina, Isabela, (VA, VW), Santa Cruz (HERRERA & al. 2020). New record: Santiago Island.

Subfamily FORMICINAE

Key to the genera and species of the subfamily Formicinae

1. Antenna, including scape, with nine segments (Fig. 7-c) (*Brachymyrmex*) *Brachymyrmex heeri* Antenna, including
scape, with more than nine segments (Fig. 10-c) 2
2. Polymorphic, minor workers > than 4 mm (total length); antennal insertions located
distantly from the posterior margin of the clypeus (Fig. 10-d); head in dorsal view with
frontal carinae (Fig. 10-d) 3
(*Camponotus*)..... 3
- Monomorphic, workers of small size, < than 4 mm (total length), with antennal insertions
located near to the posterior margin of the clypeus (Fig. 11-a, c); head in dorsal view
with frontal carinae hardly visible (Fig. 10-
c)..... 5
3. In lateral view, promesonotum and dorsum of propodeum flat; propodeal declivity
angulate (Fig. 10-e); short and erect hairs distributed evenly along the mesosoma;
head, mesosoma and gaster black with antennae and legs reddish (Fig. 10-a,
b)..... *Camponotus planus*
In lateral view, promesonotum and propodeum rounded until the base of the declivity of
propodeum, forming a single convexity (Fig. 8-b, e; 9-b, c); long and erect hairs
distributed unevenly along the mesosoma; ants yellowish (Fig. 8-b; 9-b) 4
4. Longitudinal carina visible in the middle of the clypeus (major workers); head in frontal
view with frontal carinae closing towards the middle of the eyes; mesosoma with more
than 10 erect hairs (Fig. 8-b, e) *Camponotus zonatus*
Longitudinal carina in the middle of clypeus inconspicuous or absent (major workers);
head in frontal view with frontal carinae opening from the base of the fronto-clypeal
suture towards the middle of the eyes; mesosoma with less than 10 erect hairs (Fig. 9-
b, c)..... *Camponotus macilentus*
5. Scape obviously elongate without erect setae and extending at least twice the length of
the head in lateral view (Fig. 12-d); mandibles with five teeth; mesosoma smooth with
absence of appressed hairs (Fig. 12-b, e) (*Paratrechina*)..... *Paratrechina longicornis*
Scape with abundant erect setae and never extending twice the length of the head in lateral
view (Fig. 11-c, d); mandible with 6 to 7 teeth; mesosoma with appressed hairs (Fig.
11-e) (*Nylanderia*)..... 6
6. Head, mesosoma, gaster and legs dark brown with trochanters yellowish; mesopleuron
and metapleuron smooth and shiny (Fig. 11-a, b)..... *Nylanderia steinheili*
Species without the combination of the characteristics described
above..... *Nylanderia* spp.

Genus *Brachymyrmex* Mayr, 1868



Figure 7. *Brachymyrmex heeri* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** Head and antenna in dorsal view **D** head in full-face view **E** view in profile.

***Brachymyrmex heeri* Forel, 1874** (Fig. 7-a, b). First published record in Herrera & Longino (2008) [ICCDRS]. Cited as *Brachymyrmex* sp. in Causton et al. (2006). *Brachymyrmex heeri* in Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2014) [ICCDRS], Wauters et al. (2015) [ICCDRS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014). **Distribution:** Nearctic, Neotropical, and Palearctic. **Galápagos distribution:** Floreana, Isabela (SN, VE), Marchena, San Cristóbal and Santa Cruz (HERRERA & al. 2020)

Genus *Camponotus* Mayr, 1861

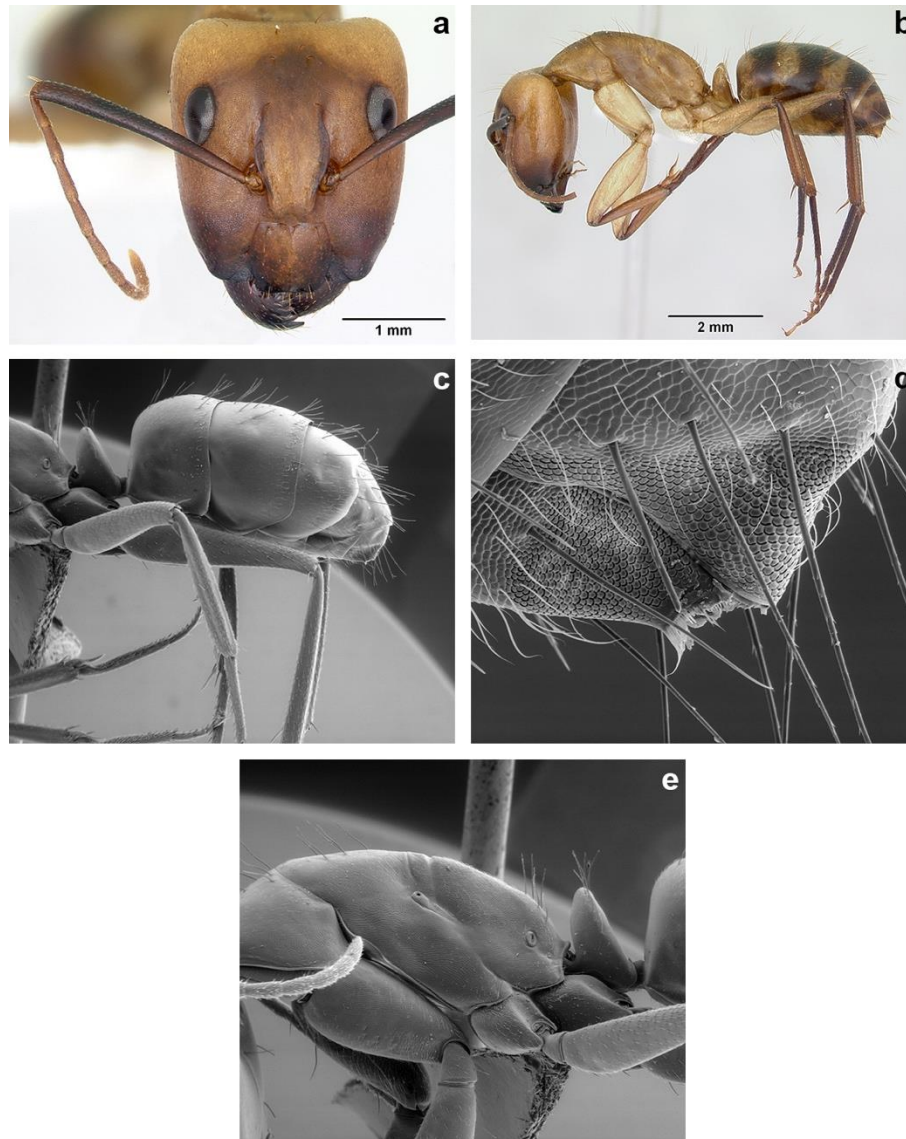


Figure 8. *Camponotus zonatus* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** gaster in profile view **D** close up of acidopore **E** mesosoma in profile.

***Camponotus zonatus* Emery, 1894** (Fig. 8 a, b). First published record (Herrera & Causton 2010) [ICCDRS]. Cited in Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2015) [RBINS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS, RBINS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014). **Distribution:** Neotropical.

Galápagos distribution: Introduced: Bainbridge #1, Bainbridge #3, Bainbridge #4, Bainbridge #5, Bainbridge #6, Baltra, Champion, Cuevas, Daphne Mayor, Eden, Floreana, Genovesa, Isabela (CA, SN, VA, VD, VW), Mao, Marchena, Pinta, Pinzón, Plaza Norte, Plaza Sur, San Cristóbal, Santa Cruz, Santa Fé, Santiago, and Seymour Norte (Herrera et al. 2020).

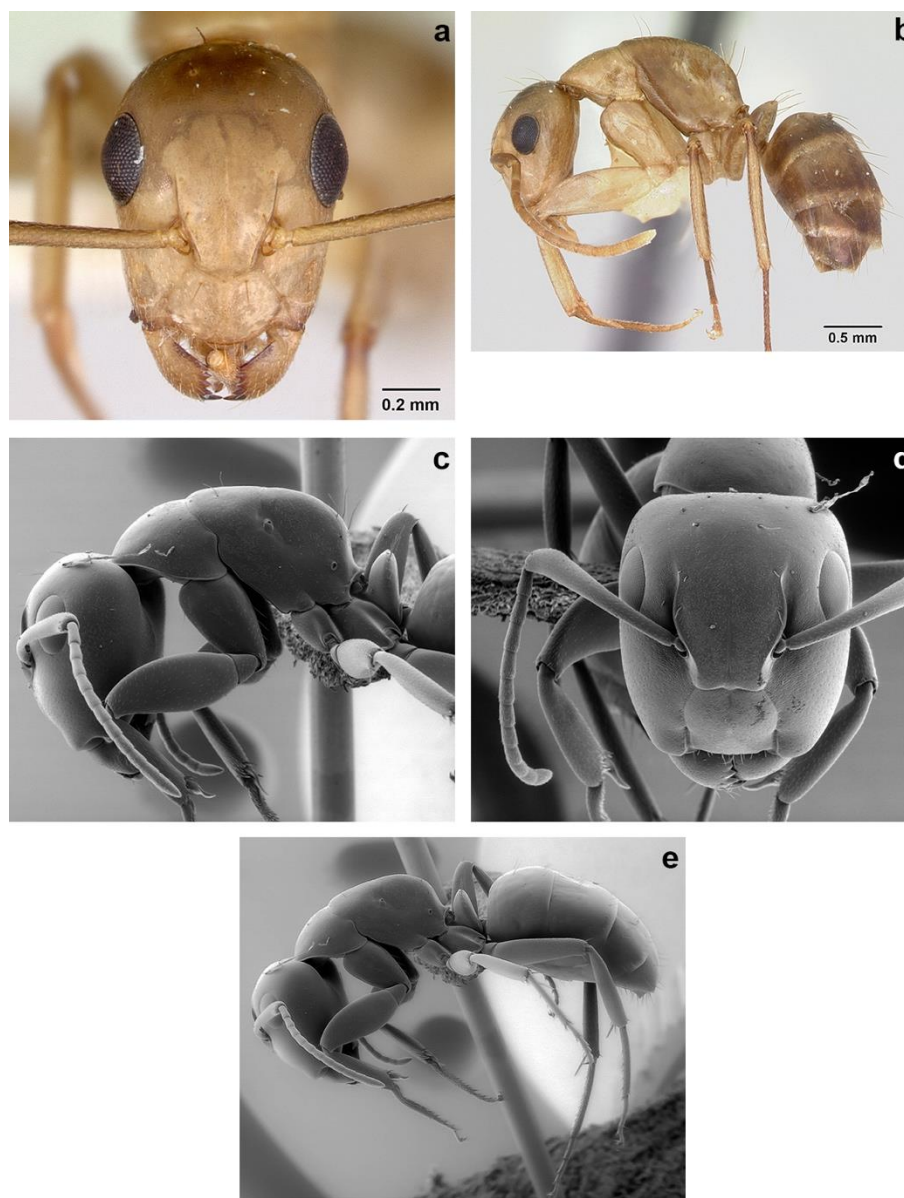


Figure 9. *Camponotus macilentus* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma and head profile view **D** head in full-face view **E** view in profile.

***Camponotus macilentus* Smith, 1877: 83** (Fig. 9-a, b, d, e). Cited as *Camponotus* (*Myrmamblys*) *macilentus* in Wheeler (1919). *Camponotus* (*Pseudocolobopsis*) *macilentus* in Emery (1920). *Camponotus* (*Pseudocolobopsis*) *macilentus macilentus* in Linsley & Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* in Kempf (1972). *Camponotus macilentus* in Clark et al. (1982), Lubin (1983) [ICCDRS], Lubin (1984, 1985), Brandão & Paiva (1994), Meier (1994), Peck (1994b), Bolton (1995), Roque-Albelo et al. (2000) [ICCDRS], Boada (2005) [ICCDRS], McMullen (2011, 2012). Misidentification in Pezzatti et al. (1998) [ICCDRS] and von-Aesch & Cherix (2005, 2006) [ICCDRS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS, RBINS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Baltra, Champion, Española, Fernandina, Floreana, Genovesa, Isabela (SN, VA, VD, VW), Marchena, Pinta, Pinzón, Plaza Norte, Rábida, Santa Cruz, Santa Fé and Santiago, (HERRERA & al. 2020).

***Camponotus macilentus albemarlensis* Wheeler, 1919.** Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *albemarlensis* Wheeler, 1919: 284. *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *albemarlensis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus albemarlensis* in Linsley & Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *albemarlensis* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus albemarlensis* in (Bolton, 1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Isabela Island .

***Camponotus macilentus altinotus* Stitz, 1932.** Cited as *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *altinotus* Stitz, 1932: 370. *Camponotus* (*Pseudocolobopsis*) *macilentus altinotus* in Linsley & Usinger (1966). *Camponotus macilentus* var. *altinotus* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus altinotus* in (Bolton, 1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Known from: Floreana Island (Stitz 1932).

Distribution: Endemic: Floreana Island (Stitz 1932).

***Camponotus macilentus barringtonensis* Wheeler, 1919.** Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *barringtonensis* Wheeler, 1919: 282. *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *barringtonensis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus barringtonensis* in Linsley & Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *barringtonensis* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus barringtonensis* in (Bolton, 1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Santa Fé Island (WHEELER 1919).

***Camponotus macilentus bindloensis* Wheeler, 1919.** Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *bindloensis* Wheeler, 1919: 286. *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *bidloensis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus bindloensis* in Linsley & Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *bindloensis* in Kempf (1972), *Camponotus* (*Pseudocolobopsis*) *macilentus bindloensis* in Bolton (1995). *Camponotus macilentus bindloensis* in Roque-Albelo (2010), Herrera (2015, 2019). **Taxonomic history:** Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Marchena Island (WHEELER 1919).

***Camponotus macilentus castellanus* Wheeler, 1924.** Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *castellanus* Wheeler, 1924: 116. Cited as *Camponotus* (*Pseudocolobopsis*) *macilentus castellanus* in Linsley & Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *castellanus* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus castellanus* Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Genovesa Island (WHEELER 1924).

***Camponotus macilentus duncanensis* Wheeler, 1919.** Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *duncanensis* Wheeler, 1919: 283. *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *duncanensis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus duncanensis* in Linsley & Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *duncanensis* in Kempf (1972). *Camponotus macilentus duncanensis* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Floreana and Pinzón Islands (WHEELER 1919, STITZ 1932).

***Camponotus macilentus hoodensis* Wheeler, 1919.** Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *hoodensis* Wheeler, 1919: 285. Cited as *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *hoodensis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus hoodensis* in Linsley & Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *hoodensis* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus hoodensis* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Española Island (WHEELER 1919).

***Camponotus macilentus jacobensis* Wheeler, 1919.** Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *jacobensis* Wheeler, 1919: 280. *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *jacobensis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus jacobensis* in Linsley & Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *jacobensis* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus jacobensis* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Santiago Island (WHEELER 1919).

***Camponotus macilentus narboroensis* Wheeler, 1919.** Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *narboroensis* Wheeler, 1919: 286. *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *narboroensis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus narboroensis* in Linsley & Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *narboroensis* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus narboroensis* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Fernandina Island (Wheeler 1919, 1933).

***Camponotus macilentus pervicus* Wheeler, 1924.** Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *pervicus* Wheeler, 1924: 115. *Camponotus* (*Pseudocolobopsis*) *macilentus pervicus* in Linsley & Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *pervicus* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus pervicus* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Santa Cruz Island (Wheeler 1924).

***Camponotus macilentus sapphirinus* Wheeler, 1924.** Cited as *Camponotus*

(*Myrmamblys*) *macilentus* var. *sapphirinus* Wheeler, 1924: 114. Cited as *Camponotus* (*Pseudocolobopsis*) *macilentus sapphirinus* in Linsley & Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *sapphirinus* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus sapphirinus* in Bolton (1995), Herrera (2015a, b). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014). **Distribution:** Endemic: Santa Cruz and Baltra Islands (Wheeler 1924).

***Camponotus macilentus vulcanalis* Wheeler, 1919.** Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *vulcanalis* Wheeler, 1919: 284. *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *vulcanalis* in Emery (1925). *Camponotus* (*Pseudocolobopsis*) *macilentus vulcanalis* in Linsley & Usinger (1966). *Camponotus* (*Pseudocolobopsis*) *macilentus* var. *vulcanalis* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus vulcanalis* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014). **Distribution:** Endemic: Isabela Island (Wheeler 1919).

***Camponotus macilentus wollebaeki* Stitz, 1932.** Cited as *Camponotus* (*Myrmamblys*) *macilentus* var. *wollebaeki* Stitz, 1932: 371. *Camponotus* (*Pseudocolobopsis*) *macilentus wollebaeki* in Linsley & Usinger (1966). *Camponotus macilentus* var. *wollebaeki* in Kempf (1972). *Camponotus* (*Pseudocolobopsis*) *macilentus wollebaeki* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014). **Distribution:** Endemic: Floreana Island (Stitz 1932).

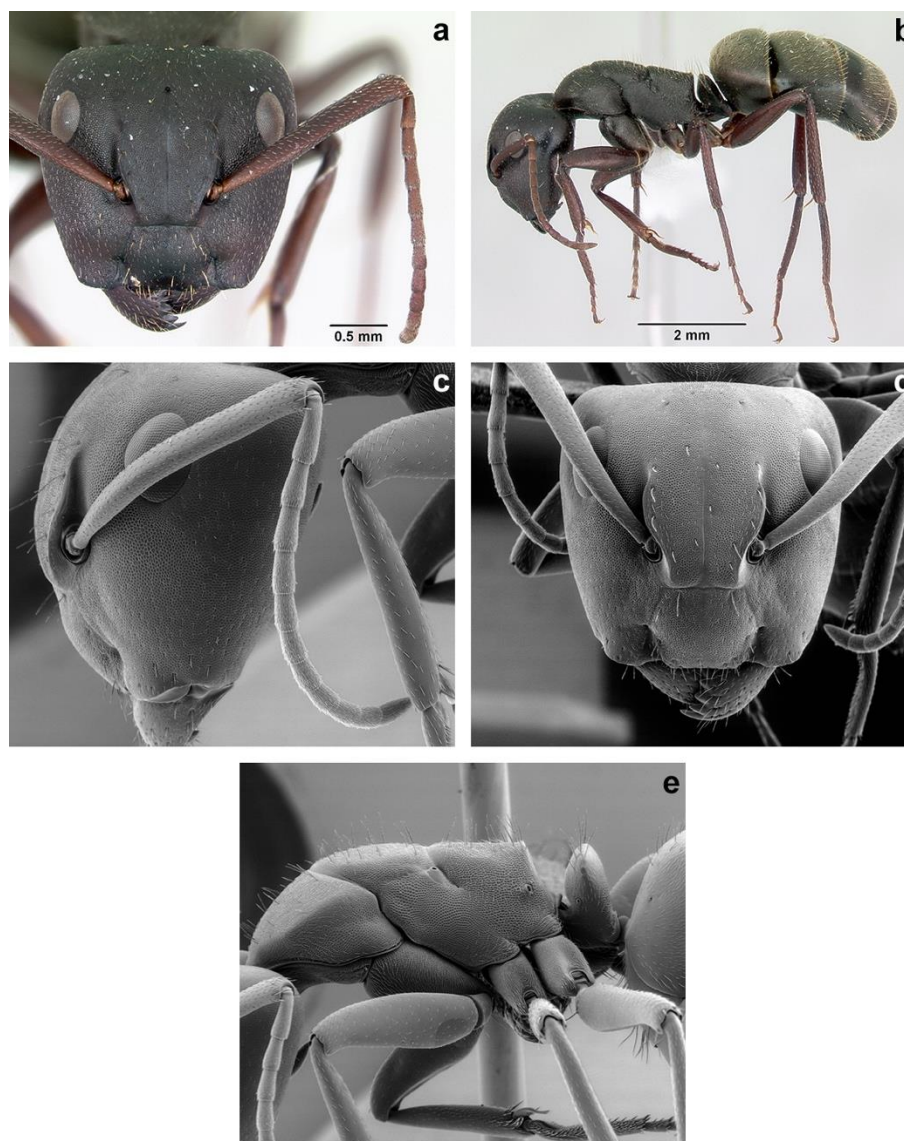


Figure 10. *Camponotus planus* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head profile view **D** head in full-face view **E** mesosoma in profile.

***Camponotus planus* Smith, 1877: 83** (Fig. 10-a, b). Cited as *Camponotus (Myrmorhachis) planus* in Wheeler (1919), Emery (1920). *Camponotus (Myrmocladoecus) planus* in Wheeler (1924), Stitz (1932). *Camponotus (Myrmocladoecus) planus planus* in Linsley & Usinger (1966). *Camponotus (Myrmocladoecus) planus* in Kempf (1972). *Camponotus planus* in Clark et al. (1982) [ICCDRS], Lubin (1983, 1984, 1985) [ICCDRS], McMullen (1993), Brandão & Paiva (1994), de la Vega (1994), Meier (1994) [ICCDRS]. *Camponotus (Myrmocladoecus) planus* in Bolton (1995). *Camponotus planus* in Pezzatti et al. (1998) [ICCDRS], Roque-Albelo et al. (2000) [ICCDRS], von Aesch & Cherix (2005) [ICCDRS], Boada (2005) [ICCDRS], von Aesch (2006) [ICCDRS], Jaramillo et al. (2010), Herrera & Causton (2010) [ICCDRS], Chamorro et al. (2012) [ICCDRS], Herrera (2015, 2019) [ICCDRS] and Wauters (2015) [ICCDRS; RBINS]. **Taxonomic history:** Kempf (1972),

Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Bainbridge #1, Baltra, Bartolomé, Cousin, Fernandina, Floreana, Isabela (CA, SN, VA, VD, VE, VW), Logie, Marchena, Pinzón, Plaza Sur, Rábida, Santiago, San Cristóbal, Santa Cruz, Seymour Norte and Santa Fé (Herrera et al. 2020).

***Camponotus planus fernandinensis* Wheeler, 1919.** Cited as *Camponotus* (*Myrmorhachis*) *planus* var. *fernandinensis* Wheeler, 1919: 296. *Camponotus* (*Myrmocladoecus*) *planus fernandinensis* in Linsley & Usinger (1966). *Camponotus* (*Myrmocladoecus*) *planus* var. *fernandinensis* in Kempf (1972). *Camponotus* (*Myrmocladoecus*) *planus fernandinensis* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Fernandina Island (Wheeler 1919).

***Camponotus planus fidelis* Wheeler, 1919.** Cited as *Camponotus* (*Myrmorhachis*) *planus* var. *fidelis* Wheeler, 1919: 295. *Camponotus* (*Myrmocladoecus*) *planus* var. *fidelis* in Emery (1925). *Camponotus* (*Myrmocladoecus*) *planus fidelis* in Linsley & Usinger (1966). *Camponotus* (*Myrmocladoecus*) *planus* var. *fidelis* in Kempf (1972). *Camponotus* (*Myrmocladoecus*) *planus fidelis* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Santa Fé (Wheeler 1919).

***Camponotus planus hephaestus* Wheeler, 1933.** Cited as *Camponotus* (*Myrmorhachis*) *planus* var. *hephaestus* Wheeler, 1933: 59. *Camponotus* (*Myrmocladoecus*) *planus hephaestus* in Linsley & Usinger (1966). *Camponotus* (*Myrmocladoecus*) *planus* var. *Hephaestus* in Kempf (1972). *Camponotus* (*Myrmocladoecus*) *planus Hephaestus* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Isabela Island (Wheeler 1933).

***Camponotus planus indefessus* Wheeler, 1919.** Cited as *Camponotus* (*Myrmorhachis*) *planus* var. *indefessus* Wheeler, 1919: 294. *Camponotus* (*Myrmocladoecus*) *planus indefessus* in Linsley & Usinger (1966). *Camponotus* (*Myrmocladoecus*) *planus* var. *indefessus* in Kempf (1972). *Camponotus* (*Myrmocladoecus*) *planus indefessus* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Santa Cruz Island (Wheeler 1919).

***Camponotus planus isabelensis* Wheeler, 1919.** Cited as *Camponotus* (*Myrmorhachis*) *planus* var. *isabelensis* Wheeler, 1919: 293. *Camponotus* (*Myrmocladoecus*) *planus isabelensis* in Linsley & Usinger (1966). *Camponotus* (*Myrmocladoecus*) *planus* var. *isabelensis* in Kempf (1972). *Camponotus* (*Myrmocladoecus*) *planus isabelensis* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Isabela Island (Wheeler 1919, 1933).

***Camponotus planus peregrinus* Emery, 1893.** Cited as *Camponotus peregrinus* Emery,

1893: 91. *Camponotus (Myrmorhachis) planus peregrinus* in Wheeler (1919). *Camponotus (Myrmocladoecus) planus* var. *peregrinus* in Wheeler (1924), Stitz (1932). *Camponotus (Myrmocladoecus) planus peregrinus* in Linsley & Usinger (1966). *Camponotus (Myrmocladoecus) planus* var. *peregrinus* in Kempf (1972). *Camponotus (Myrmocladoecus) planus peregrinus* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Floreana and San Cristóbal Island (Wheeler 1919, Stitz 1932, Wheeler 1933).

***Camponotus planus pinzonensis* Wheeler, 1919.** Cited as *Camponotus (Myrmorhachis) planus* var. *pinzonensis* Wheeler, 1919: 297. *Camponotus (Myrmocladoecus) planus* var. *pinzonensis* in Emery (1925). *Camponotus (Myrmocladoecus) planus pinzonensis* in Linsley & Usinger (1966). *Camponotus (Myrmocladoecus) planus* var. *pinzonensis* in Kempf (1972). *Camponotus (Myrmocladoecus) planus pinzonensis* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Pinzón Island (Wheeler 1919).

***Camponotus planus sansalvadorensis* Wheeler, 1924.** Cited as *Camponotus (Myrmorhachis) planus* var. *sansalvadorensis* Wheeler, 1924: 119. Cited as *Camponotus (Myrmocladoecus) planus sansalvadorensis* in Linsley & Usinger (1966). *Camponotus (Myrmocladoecus) planus* var. *sansalvadorensis* in Kempf (1972). *Camponotus (Myrmocladoecus) planus sansalvadorensis* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Santiago Island (Wheeler 1924).

***Camponotus planus santacruzensis* Wheeler, 1919.** Cited as *Camponotus (Myrmorhachis) planus* var. *santacruzensis* Wheeler, 1919: 294. *Camponotus (Myrmocladoecus) planus* var. *santacruzensis* in Wheeler (1924). *Camponotus (Myrmocladoecus) planus santacruzensis* in Linsley & Usinger (1966). *Camponotus (Myrmocladoecus) planus* var. *santacruzensis* in Kempf (1972). *Camponotus (Myrmocladoecus) planus santacruzensis* in Bolton (1995), Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Santa Cruz and Baltra Island (Wheeler 1919, 1924, 1933).

***Camponotus senex* Smith, 1858.** Cited in Smith (1877), Wheeler (1919). Doubtful record for Galapagos (Wheeler 1924). Cited also in Linsley & Usinger (1966), Kempf (1972), Brandão & Paiva (1994) and Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Neotropical.

Galápagos distribution: Uncertain: San Cristóbal Island (Smith 1877).

Genus *Nylanderia* Emery, 1906

***Nylanderia fulva nesiotis* Wheeler, 1919.** Cited as *Prenolepis fulva nesiotis* in Wheeler (1919, 1924, 1933) [CAS]. As *Paratrechina fulva nesiotis* in Linsley & Usinger (1966) and *Nylanderia fulva nesiotis* in Kempf (1972), *Paratrechina nesiotis* in Lubin (1983,

1984, 1985), see also Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Neotropical.

Galápagos distribution: Introduced: Española, Isabela, Santiago, San Cristobal and Santa Cruz (Wheeler 1919, 1924, 1933).

Nylanderia guatemalenis itinerans **Forel, 1901**. Cited as *Prenolepis vividula guatemalensis itinerans* in Wheeler (1919, 1924), *Nylanderia vividula guatemalensis* var. *itinerans* in Wheeler (1933) [CAS], *Paratrechina vividula itinerans* in Linsley & Usinger (1966), *Nylanderia guatemalensis* var. *itinerans* in Kempf (1972), *Paratrechina vividula itinerans* in Brandão & Paiva (1994) and *Paratrechina guatemalensis itinerans* in Pezzatti et al. (1998). See also Herrera (2015, 2019). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Neotropical.

Galápagos distribution: Introduced: Floreana, San Cristobal, Santa Cruz (Wheeler 1919, 1924, 1933).

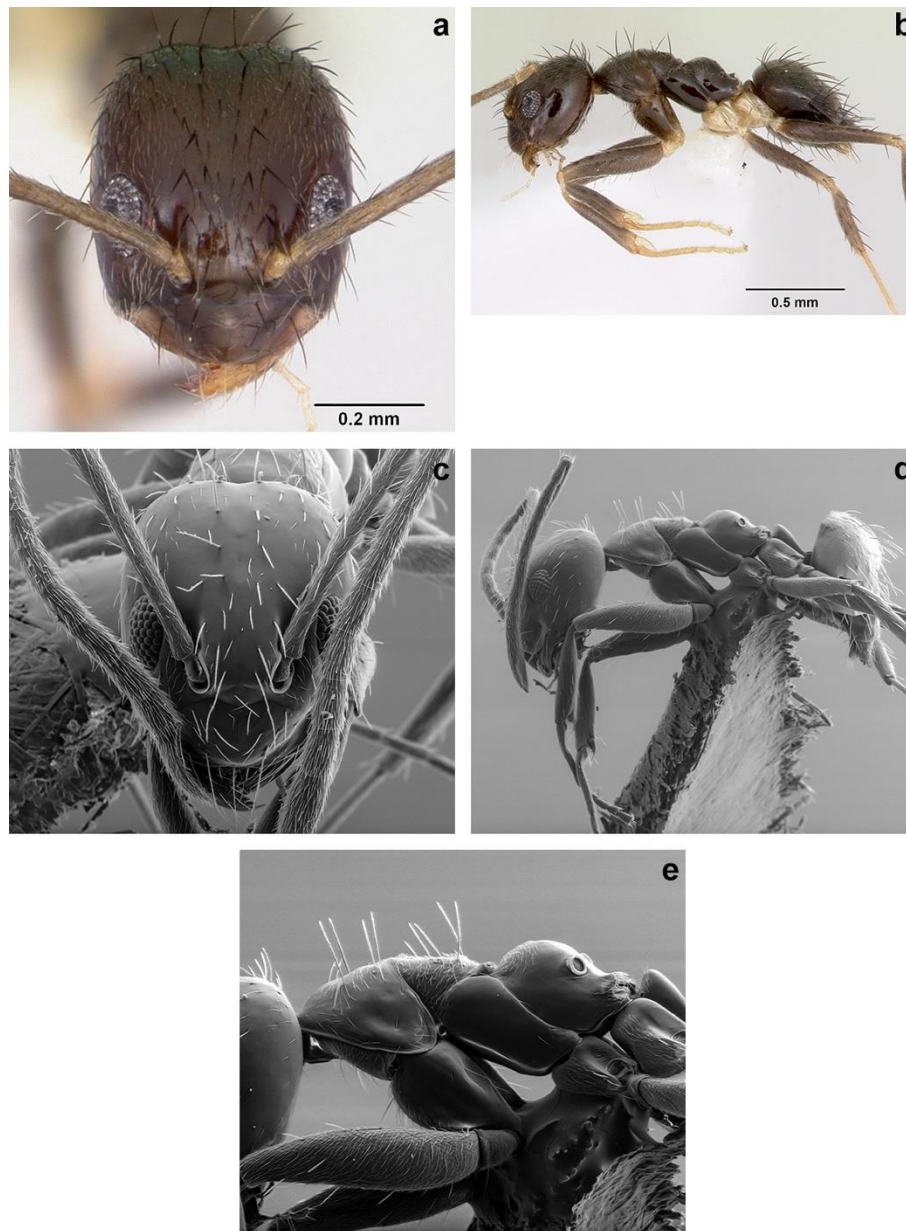


Figure 11. *Nylanderia steinheili* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** view in profile **E** mesosoma in profile.

***Nylanderia steinheili* Forel, 1893** (Fig. 11-a, b). First record in Herrera et al. (2014), cited also in Dekoninck et al. (2014), Herrera (2015a. b), Wauters et al. (2015) [ICCDRS].
Taxonomic history: Kempf (1972), Brandão (1991), Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Malagasy, Nearctic, Neotropical

Galápagos distribution: Introduced: Floreana, Gardner (next to Floreana), Isabela (CA), Pinzón, San Cristóbal and Santa Cruz (Herrera et al. 2014, Herrera et al. 2020) [ICCDRS].
 New record Santiago Island.

***Nylanderia vaga* Forel, 1901.** Cited as *Paratrechina vaga* in Clark et al. (1982), McMullen (1986), McMullen (1990), McMullen (1993), Causton et al. (2006) and McMullen (2007). Cited as possibly *N. vaga* in Pezzatti et al. (1998). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Australasia, Indomalaya, Neotropical, Oceania.

Galápagos distribution: Introduced: Floreana, Santa Cruz and Pinta (Clark et al. 1982, McMullen 1986, McMullen 1990, McMullen 1993, McMullen 2007).

Genus *Paratrechina* Motschoulsky, 1863

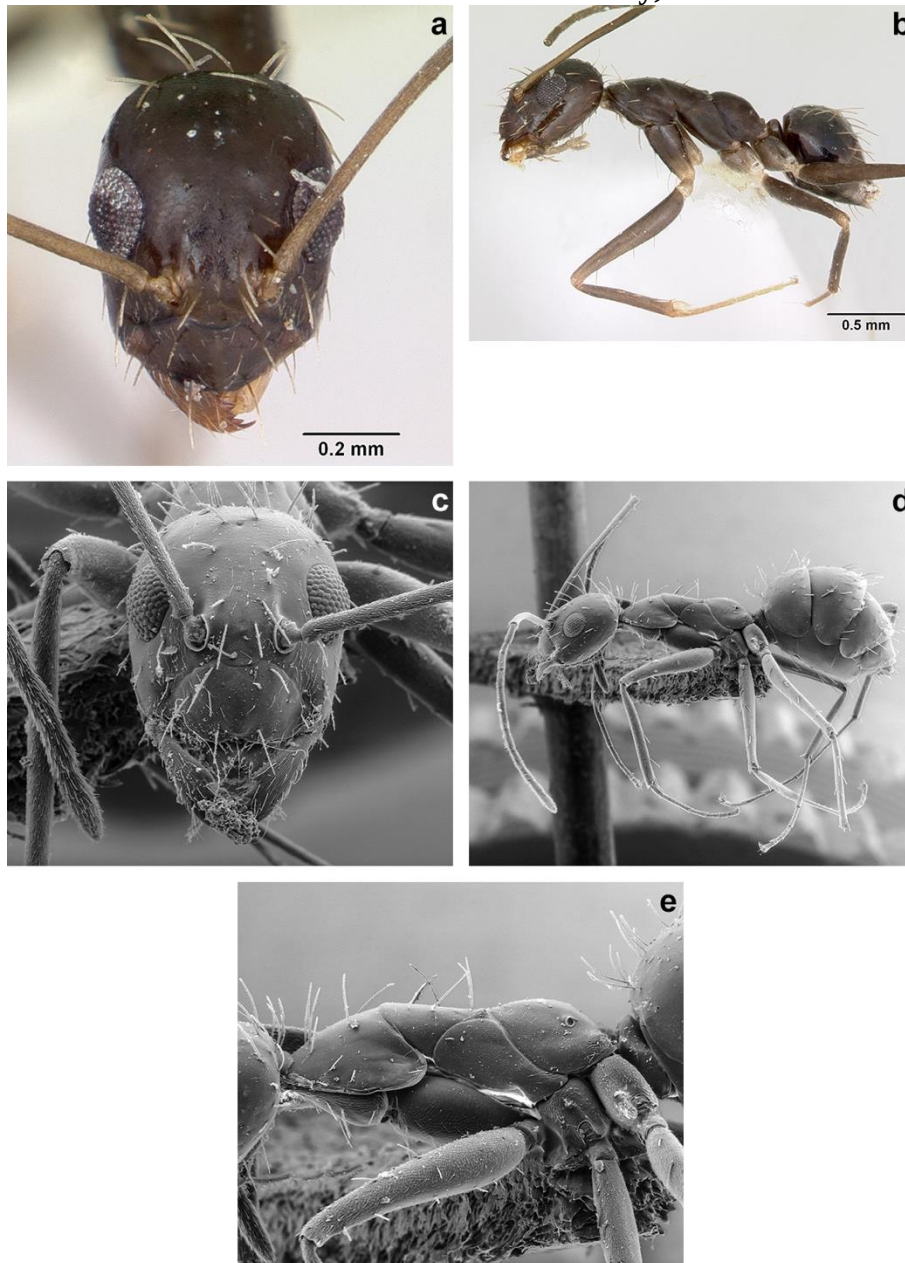


Figure 12. *Nylanderia steinheili* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** view in profile **E** mesosoma in profile.

***Paratrechina longicornis* Latreille, 1802** (Fig. 12-a, b). Cited as *Prenolepis longicornis* (Latreille, 1802) in Wheeler (1919), Wheeler (1924) and Stitz (1932). *Paratrechina longicornis* in Wheeler (1933) [CAS], Kempf (1972), Linsley and Usinger (1966), Lubin (1984) [ICCDRS], McMullen (1986), McMullen (1990), McMullen (1993), Brandão & Paiva (1994), Meier (1994) [ICCDRS], Pezzatti et al. (1998) [ICCDRS], von Aesch & Cherix (2005) [ICCDRS], Causton et al. (2006) [ICCDRS], von Aesch (2006) [ICCDRS]. Also in Herrera & Causton (2010) [ICCDRS]. Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2015) [RBINS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS, RBINS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution: Invasive: Baltra, Bartolomé, Champion, Española, Fernandina, Floreana, Gardner (next to Española), Isabela (SN, VA), Marchena, Pinta, Rábida, Santiago, San Cristóbal, Santa Cruz, Santa Fé and Seymour Norte (Herrera et al. 2020).

Subfamily Myrmicinae

Key to the genera and species of the subfamily Myrmicinae

1. Postpetiole attached to the dorsal surface of the first segment of the gaster (*Crematogaster*) (Fig. 16-c).....***Crematogaster* JTL – 022**
Postpetiole attached on anterior surface of the first segment of the gaster (Fig. 39-c; 13c).....2
2. Antenna with 12 segments, scape included (Fig. 13-d).....3
Antenna with less than 12 segments: scape included (Fig. 17-c; 32c)19
3. Antennal club of two segments (Fig. 13-d); triangular mandible equipped with a tooth at the basal margin; median portion of clypeus bicarinate with two clypeal teeth in the anterior clypeal margin, pointing to the apical margin of the mandibles when these are almost closed (Fig. 13-e). Eye composed of 3 ommatidia (Fig. 13-f) (*Adelomyrmex*).....***Adelomyrmex longinoi***
Antennal club diffuse or with two or three segments (Fig. 41-a, c); Mandible triangular with absence of teeth on the basal margin; no pair of apical teeth at the anterior margin of clypeus (Fig. 41-d).....4
4. Propodeum without spines (Fig. 20-c; 21-f).5
Propodeum armed with spines (Fig. 15-c; 37-c; 36-c).....8
5. Posterior surface of the head and propodeal dorsum transversely striate (Fig. 41-e, f) (*Trichomyrmex*).....***Trichomyrmex destructor***
Posterior surface of the head and propodeal dorsum not transversely striate (Fig. 21-d; 22d); (*Monomorium*).....6
6. Head, mesosoma and gaster smooth and shiny (Fig. 20-a, b, d, e); in lateral view mesosoma with more than four erect setae (Fig. 18-c); bicolored with mesosoma light brown, head and gaster dark brown (Fig. 20-a, b).....***Monomorium floricola***
Head and mesosoma neither smooth nor shiny (Fig. 21-a, c, d, e; 22-c, d, e); in lateral

- view mesosoma with no more than four erect setae (Fig. 21-d), in other way in dorsal and lateral view with appressed hairs (Fig. 22-d,e).....7
7. In lateral or dorsal view, pronotum with a pair of erect setae (Fig. 21-d, e), in lateral view post-petiole almost same size as petiole (Fig. 21-b, f); ant yellowish in its entirety (Fig. 21-b).....***Monomorium pharaonis***
In lateral or dorsal view, pronotum without a pair of erect setae, only appressed pubescence present (Fig. 22-e, d); in lateral view post-petiole slightly dilated, 1.5 bigger than petiole (Fig. 22-b, f); bicolor with head, mesosoma and legs yellow-reddish and gaster dark brown (Fig. 22-b).....***Monomorium sp. nr. pharaonis***
8. Antennal scrobes very well marked, going backwards and above the eyes (Fig. 36-d); frontal carina well differentiated or tenuous extending until or near to the occipital corners (Fig. 40-c) (***Tetramorium***).....9
Antennal scrobes absent (Fig. 14-c; 27c); frontal carinae short and never extending above the eyes (Fig. 12-c; 27d).....13
9. Propodeal spines long, strong and acute (Fig. 36-c; 40-d)10
Propodeal spines short and not acute (Fig. 37-c; 39c)12
10. Sculpture in the cephalic dorsum of the head strigose (Fig. 40-e); body dark brown to black; legs, antennae and mandibles light brown (Fig. 40-a).....***Tetramorium lucayanum***
Sculpture in the cephalic dorsum of the head alveolate or areolate (Fig. 36-e); yellowish and reddish ants (Fig. 36-b; 37b; 38b; 39b).....11
11. Anterior clypeal margin with a distinct median notch or impression; median portion of the clypeus with three longitudinal carinae (Fig. 36-e); head, mesosoma, waist and gaster covered by numerous erect and suberect thick hairs (Fig. 36-b, c, f); bicolored with gaster dark (Fig. 36-b).....***Tetramorium bicarinatum***
Anterior clypeal margin without a median notch or impression (Fig. 38-c); median portion of the clypeus with a central carina weak or discontinuously marked (Fig. 38-c); head, mesosoma, waist and gaster densely covered by a fine and long white pilosity (Fig. 38-d, e, f); entirely reddish (Fig. 38-b).....***Tetramorium lanuginosum***
12. Frontal carinae very well marked (Fig. 39-d); antennal scrobes shallow, broad and conspicuous (Fig. 39-e).....***Tetramorium simillimum***
Frontal carinae not well marked, scrobes vestigial, feebly developed (Fig. 37-d, e); mesosoma with more than 10 erect hairs***Tetramorium caldarium***
13. Head in full-face view and mesosoma in dorsal view strigose (Fig. 27-c, e); mesosoma in lateral view clearly convex, without sutures impressed on the dorsum (Fig. 27-b, e); eyes composed of five ommatidia (Fig. 27-d) (***Rogeria***).....***Rogeria curvipubens***
Head in full-face view and mesosoma in dorsal view with variable sculpturing, but never uniformly strigose; mesosoma with notopropodeal suture present and grooved

- in lateral view (Slightly reduced to absent in *Cardiocondyla minutior*); number of ommatidia variable
.....14
14. Monomorphic worker caste; dorsal view of the head and mesosoma densely foveolate with small appressed hairs (Fig. 14-c, d; 15d, f); promesonotum flat or lightly convex (Fig. 14-e; 15c); anterior margin of clypeus projected over the basal margin of the mandibles (Fig. 15-e); in dorsal view, post-petiole spherical and notably dilated in comparison with petiole (Fig. 14-f) *Cardiocondyla*).....15
- Polymorphic worker caste; dorsal view of the head with the occipital corners smooth and shiny (major workers) (Fig. 26-c); promesonotum convex with long erect hairs in the dorsum (Fig. 24-c); anterior margin of clypeus not projected over the basal margin of the mandibles (Fig. 24-d); Postpetiole never spherical (Fig. 25-c) (*Pheidole*).....16
15. Metanotal groove not impressed on the dorsum of mesosoma (Fig. 15-c, f); head mesosoma and gaster dark brown; propodeal spines short (Fig. 15-c, b).....*Cardiocondyla minutior*
- Metanotal groove impressed on the dorsum of mesosoma (Fig. 14-d, e); mesosoma light brown or orange, contrasting with darker gaster; propodeal spines longer and more acute than above (Fig. 14-e).....*Cardiocondyla emeryi*
16. Major workers orange to reddish; total length ~ 2mm (Fig. 23-b; 26b).....17
- Major workers dark brown to brown; total length ~2.5 mm (Fig. 24-b; 25b)18
17. Major workers: head in frontal view with antennal scrobe weakly developed and alveolate (Fig. 23-d, e); mesosoma in lateral view alveolate (Fig. 23-c, e).....*Pheidole flavens*
- Major workers: head in frontal view with antennal scrobe absent (Fig. 26-a, c, b); mesosoma in lateral view, with the pronotum in major proportion smooth and shiny (Fig. 26-b, d), but rugulose and alveolate between the mesonotum and propodeum (Fig. 26-d).....*Pheidole hh01*
18. Promesonotum in lateral view convex until it reaches the metanotal groove (Fig. 24-c); post-petiole hexagonal in dorsal view exaggeratedly swollen relative to petiole (Fig. 24-e); subpostpetiolar process slightly bulging (Fig. 24-f).....*Pheidole megacephala*
- Promesonotum in lateral view forming two convexities, truncated before reaching the metanotal groove (Fig. 25-d); post-petiole not swollen compared to petiole (Fig. 25-e); subpostpetiolar process absent or reduced (Fig. 25-f).....*Pheidole williamsi*
19. Antenna with ten or 11 segments (Fig. 28-c; 42-c),20
- Antenna with six or less segments (Fig. 32-f), (*Strumigenys*).....24
20. Antenna with ten segments; funiculus with a two-segmented club (Fig. 28-c); antennal scrobes absent (Fig. 29-c); propodeum without spines (Fig. 30-c) (*Solenopsis*)....21
- Antenna with eleven segments (Plat 17c, 42e); funiculus with a diffuse three-segmented club (Fig. 17-c; 42-c) antennal scrobes present (Fig. 18-c; 42e); spines on propodeum present or not (Fig. 19-c; 42d).....27
21. Large (Fig. 28-b), second and usually third segments of funiculus at least 1 ½ times as

- long as broad (Fig. 28-a, c); petiole with thin flange ventrally; color dark brown to black (Fig. 28-b).....***Solenopsis geminata***
 Smaller (Fig. 29-b; 30b; 31b), second and third segments of funiculus only slightly longer than broad, usually broader than long (Fig. 30-d); petiole lacking flange ventrally, reddish color to orange and dark brown (Fig. 29-b; 30b; 31b)22
22. Postpetiole greatly dilated, globose; eye with 15-25 ommatidia (Fig. 29-d, e)..... ***Solenopsis globularia***
 Postpetiole not dilated nor globose (Fig. 31-c); eye with 3-5 ommatidia (Fig. 30-d; 31d).....23
23. In full face view, occipital margin of the head slightly concave (Fig. 30-e); anterior clypeal margin with the median portion concave and oriented onward; frontal lobes longitudinally striated (Fig. 30-e).....***Solenopsis gnoma***
 In full face view, occipital margin of the head relatively straight or more elliptic than concave (Fig. 31-e); anterior clypeal margin with the median portion erect and not oriented onward; frontal lobes smooth and shiny, not striated (Fig. 31-e).....***Solenopsis* sp. hh06 (cf. *S. basalis*)**
24. Mandibles long and straight (Fig. 32-c; 34c).....25
 Mandibles short and in appearance curved, otherwise triangular (Fig. 33-d; 35c).....26
25. Mandibles with a small preapical tooth, without denticles on inner border (Fig. 34-c); head and mesosoma with appressed circular hairs (Fig. 33-e; 34d, e, f).....***Strumigenys louisianae***
 Mandibles armed with small denticles on inner border (Fig. 32-c); head and mesosoma without appressed (spatulate) circular hairs (Fig. 32-d, e).....***Strumigenys eggersi***
26. Triangular mandibles armed with denticles (Fig. 35-a); antenna with six segments, head and mesosoma with few appressed hairs (Fig. 35-d); petiole and post-petiole spongiform tissue (Fig. 35-e).....***Strumigenys membranifera***
 Mandibles in appearance curved and short, armed with an apical fork (Fig. 32-d); antenna with four segments (Fig. 32-c); head and mesosoma with appressed circular hairs (Fig. 32- e); petiole and post-petiole not spongiform tissue.....***Strumigenys emmae***
27. Head in frontal view with the antennal insertions hidden under the frontal lobes, which are exceptionally broad or expanded (Fig. 17-c; 19-a, d); promesonotum tuberculated and propodeum unarmed by spines (Fig. 17-d; 18-c, 19-c); first segment of the gaster covered with appressed hairs (Fig. 18-e, 19e) (Cyphomyrmex).....28
 Head in full face view with the antennal insertions partly visibles (Fig. 42-a); frontal lobes not distended; promesonotum not tuberculated (Fig. 42-d); propodeum armed with a pair of acute spines (Fig. 42-d); first segment of the gaster smooth and shiny with few erect setae (Fig. 42-f) (Wasmannia).....***Wasmannia auropunctata***
28. Pair of tubercles absent in the anterior median region of the pronotum (Fig. 17-e); dark brown (Fig. 17-b).....***Cyphomyrmex nesiotus***

- Pair of tubercles present in the anterior median region of the pronotum (Fig. 18-d; 19e).....29
29. In dorsal view, propodeal declivity with a pair of tubercles located at the level of spiracles (Fig. 19-e, f); black color (Fig. 19-b).....*Cyphomyrmex* sp. **hh04**
- In dorsal view, propodeal declivity without a pair of tubercles situated at level of spiracles (Fig. 18-c, d); head and gaster brown, mesosoma and legs light brown (Fig. 18-b).....*Cyphomyrmex rimosus*

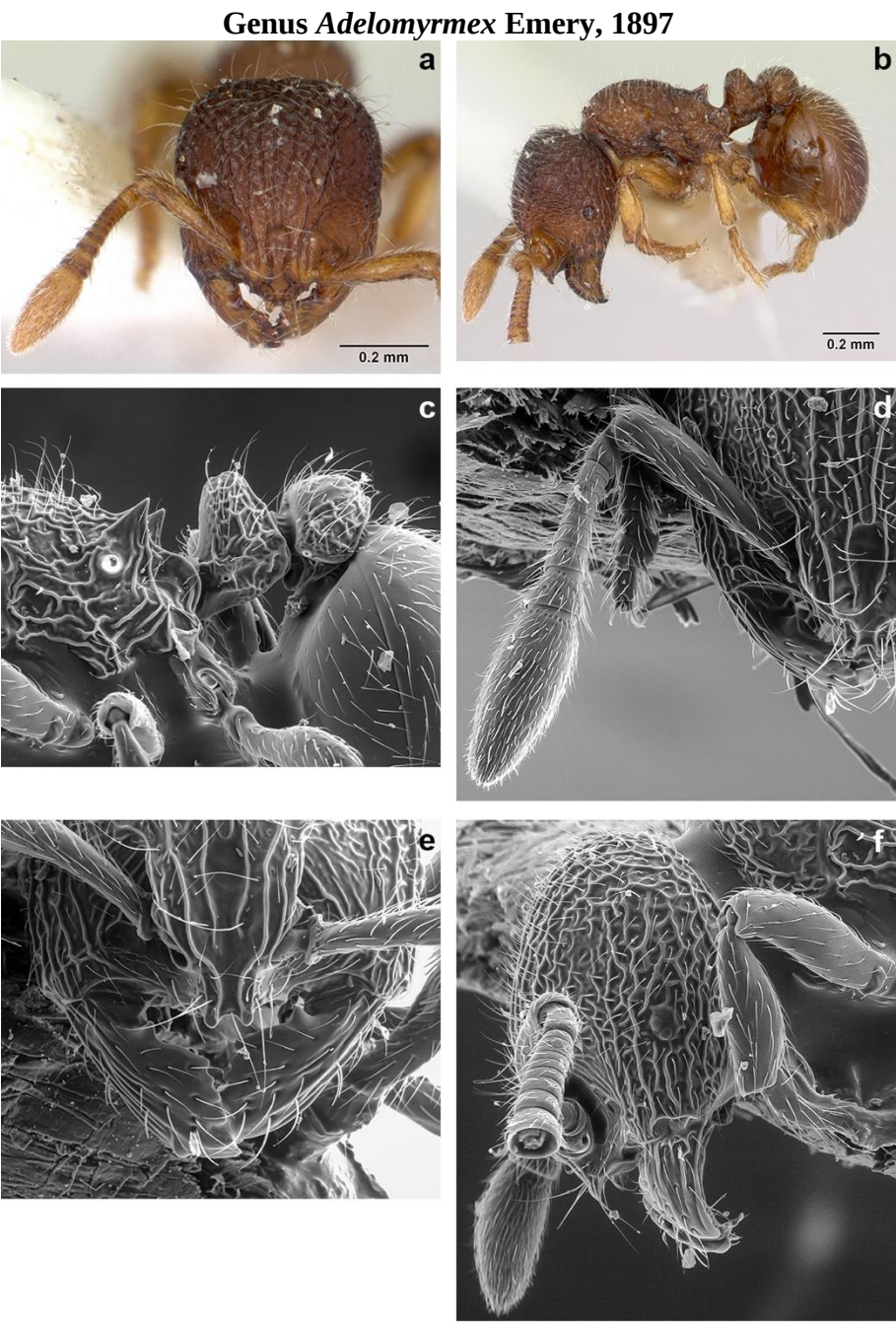


Figure 13. *Adelomyrmex longinoti* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** propodeum, petiole and postpetiole in profile **D**

antennae in front view **E** mandibles in front view **F** head in profile.

***Adelomyrmex longinoi* Fernández, 2003** (Fig. 13-a, b). Misidentification in Herrera & Longino (2008). Cited in Longino (2012) and Herrera (2015, 2019) [ICCDRS].

Taxonomic history: Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Central America

Galápagos distribution: Introduced: Isabela Island (Herrera et al. 2014).

Genus *Cardiocondyla* Emery, 1869

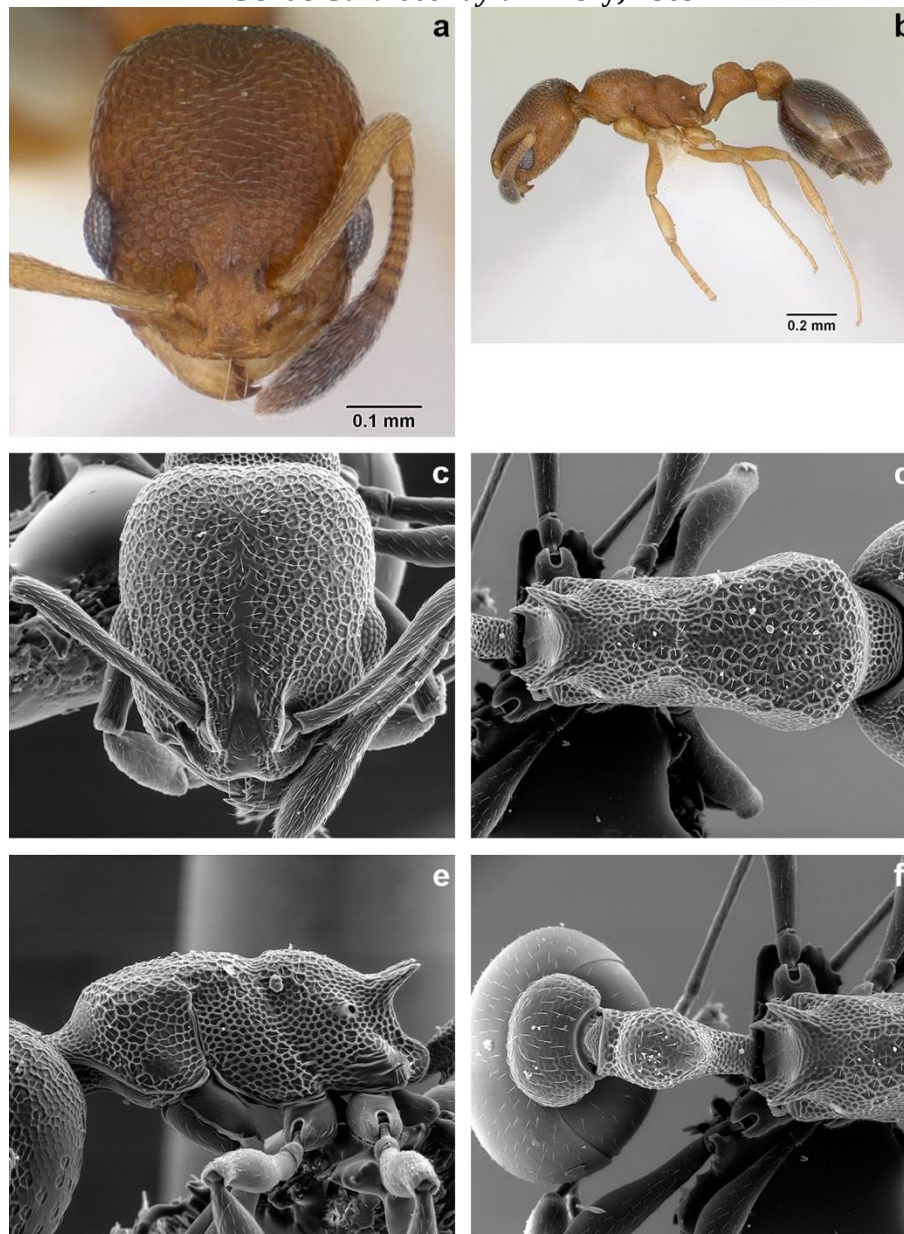


Figure 14. *Cardiocondyla emeryi* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** mesosoma in dorsal view **E** mesosoma in profile **F** propodeum, petiole and postpetiole in dorsal view.

***Cardiocondyla emeryi* Forel, 1881** (Fig. 14-a, b). Cited in Lubin (1984), Lubin (1985), Pezzatti et al. (1998), Roque et al. (2000) [ICCDRS], von Aesch & Cherix (2005), von Aesch (2006) [ICCDRS], Causton et al. (2006), McMullen (2007), Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2015) [RBINS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS; RBINS]. Probably *C. minutor* or *C. emeryi* in Peck (1994a) and Peck (1994b). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014). **Distribution:** Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic. **Galápagos distribution:** Invasive: Albany, Bainbridge #1, Bainbridge #3, Bainbridge #4, Bainbridge #5, Bainbridge #6, Bainbridge #8, Bar, Cousin, Darwin, Eden, Fernandina, Floreana, Gardner (next to Floreana), Genovesa, Gran Felipe, Isabela (CA, SN, VA, VD, VE, VW), Mariela Grande, Mao, Marchena, Pinta, Pinzón, Plaza Sur, Rábida, Santiago, San Cristóbal, Santa Cruz, Seymour Norte, Santa Fé and Wolf (Herrera et al. 2020).

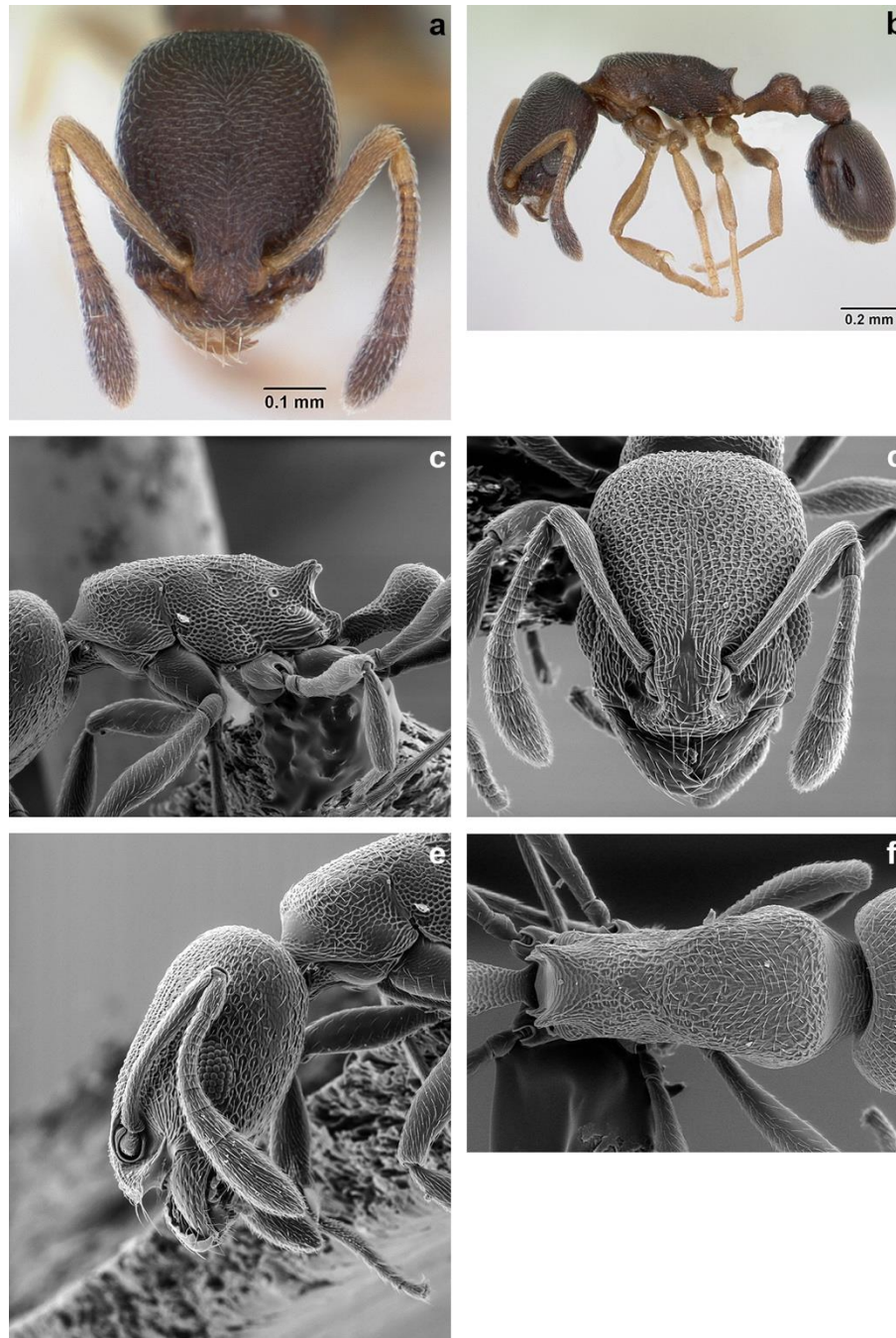


Figure 15. *Cardiocondyla emeryi* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** head in full-face view **E** head in profile **F** mesosoma in dorsal view

***Cardiocondyla minutor* Forel, 1899** (Fig. 15-a, b). Cited as *Cardiocondyla nuda* in Lubin (1984), Lubin (1985), [ICCDRS], Roque-Albelo et al. (2000) [ICCDRS], Pezzatti et al. (1998) [ICCDRS], von Aesch & Cherix (2005), von Aesch (2006) [ICCDRS]. Cited as *C. nuda* in Causton et al. (2006). Probably *C. minutor* in McMullen (1993). *Cardiocondyla minutor* or *C. emeryi* in Peck (1994a, 1994b). *Cardiocondyla minutor* in Wauters et al. (2015), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:**

Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania.

Galápagos distribution: Invasive: Bainbridge #1, Cousin, Daphne Mayor, Darwin, Fernandina, Floreana, Gardner (next to Floreana), Isabela (CA, SN, VA, VD, VE), Mariela Grande, Marchena, Pinta, Santiago, San Cristóbal, Santa Cruz, Santa Fé and Wolf (Herrera et al. 2020).

Genus *Crematogaster* Lund, 1831

***Crematogaster crinosa* Mayr, 1862.** Cited as *Crematogaster (Orthocrema) brevispionsa chatamensis* in Wheeler (1933), Kempf (1972), Linsley & Usinger (1966).

Crematogaster chatamensis in Lubin (1984). *Crematogaster crinosa* in Longino (2003) [CAS], Herrera et al. (2014), Herrera (2015, 2019) and Herrera et al. (2020). Taxonomic history: Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Neotropical.

Galápagos distribution: Uncertain: San Cristóbal (Wheeler 1933).

Genus *Crematogaster* Lund, 1831

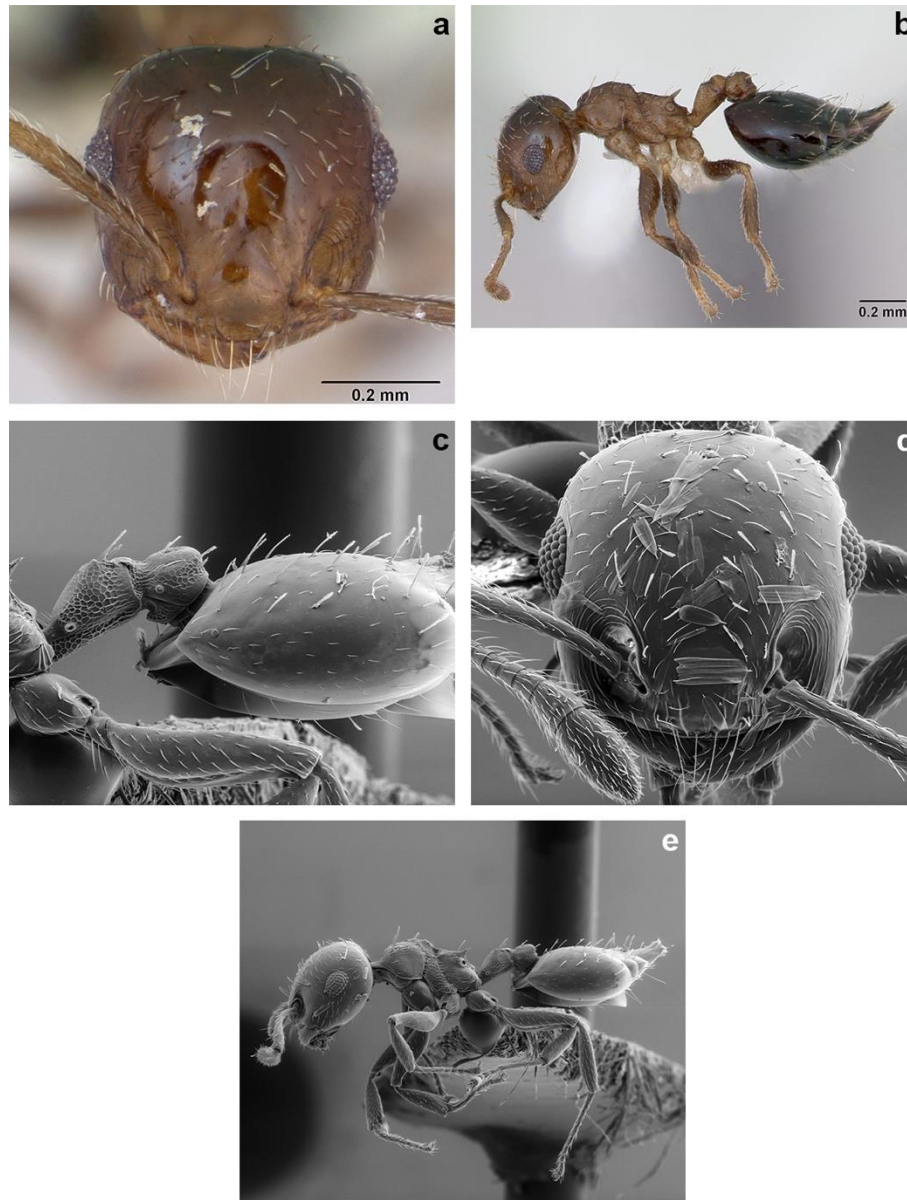


Figure 16. *Crematogaster* JTL-022 worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** petiole and postpetiole in profile **D** head in full-face view **E** view in profile

***Crematogaster* JTL-022** (Fig. 16-a, b). First published record Herrera et al. (2014), cited also in Traveset et al. (2013), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS, JTLC]. **Distribution:** San Cristóbal (Herrera et al. 2014, Herrera et al. 2020). **Distribution:** Introduced: San Cristóbal Island (Herrera et al. 2014, 2020)

Genus *Cyphomyrmex* Mayr, 1862

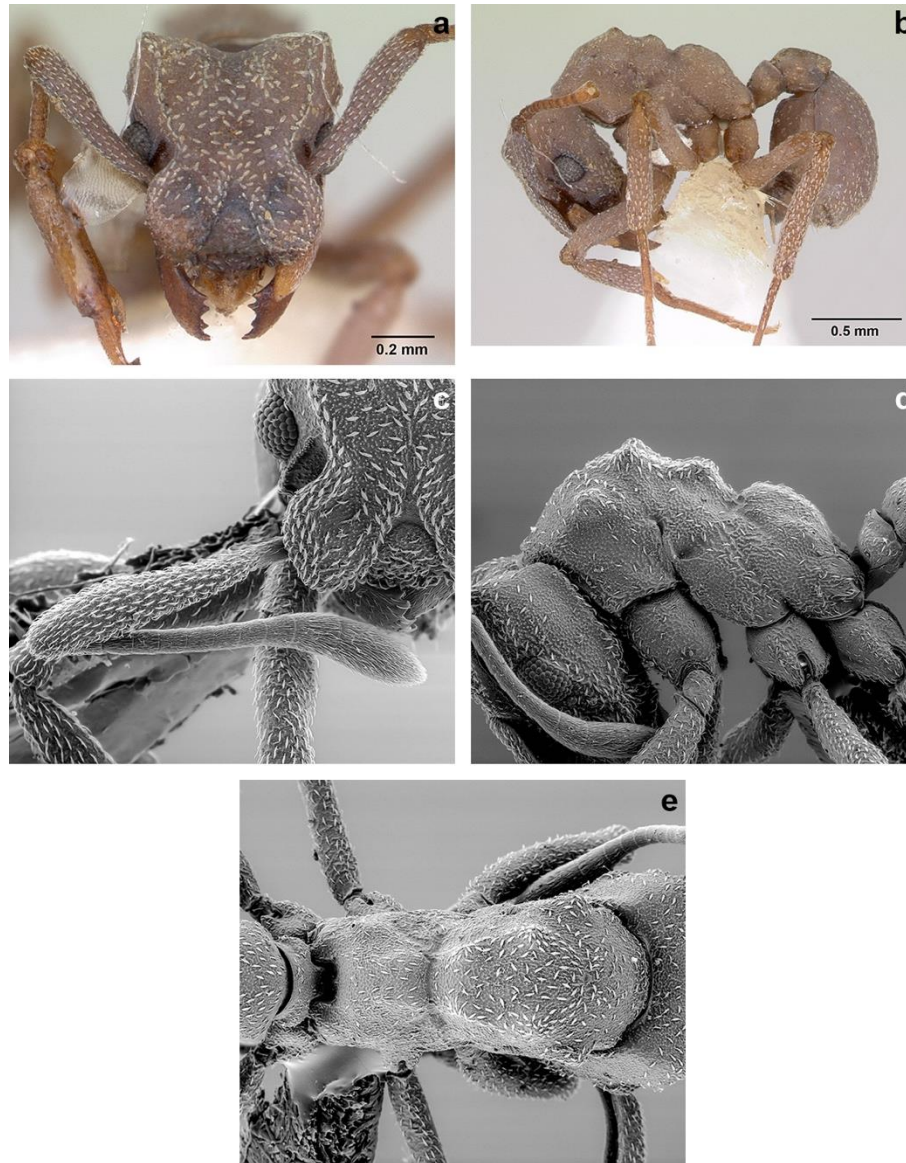


Figure 17. *Cyphomyrmex nesiotus* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** antennae in front view **D** mesosoma in profile **E** mesosoma in dorsal view

***Cyphomyrmex nesiotus* Snelling & Longino, 1992** (Fig. 17-a, b). Cited in In Snelling & Longino (1992), Herrera & Longino (2008), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS, JTLC]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014). **Distribution:** Endemic: Isabela (Snelling & Longino 1992).

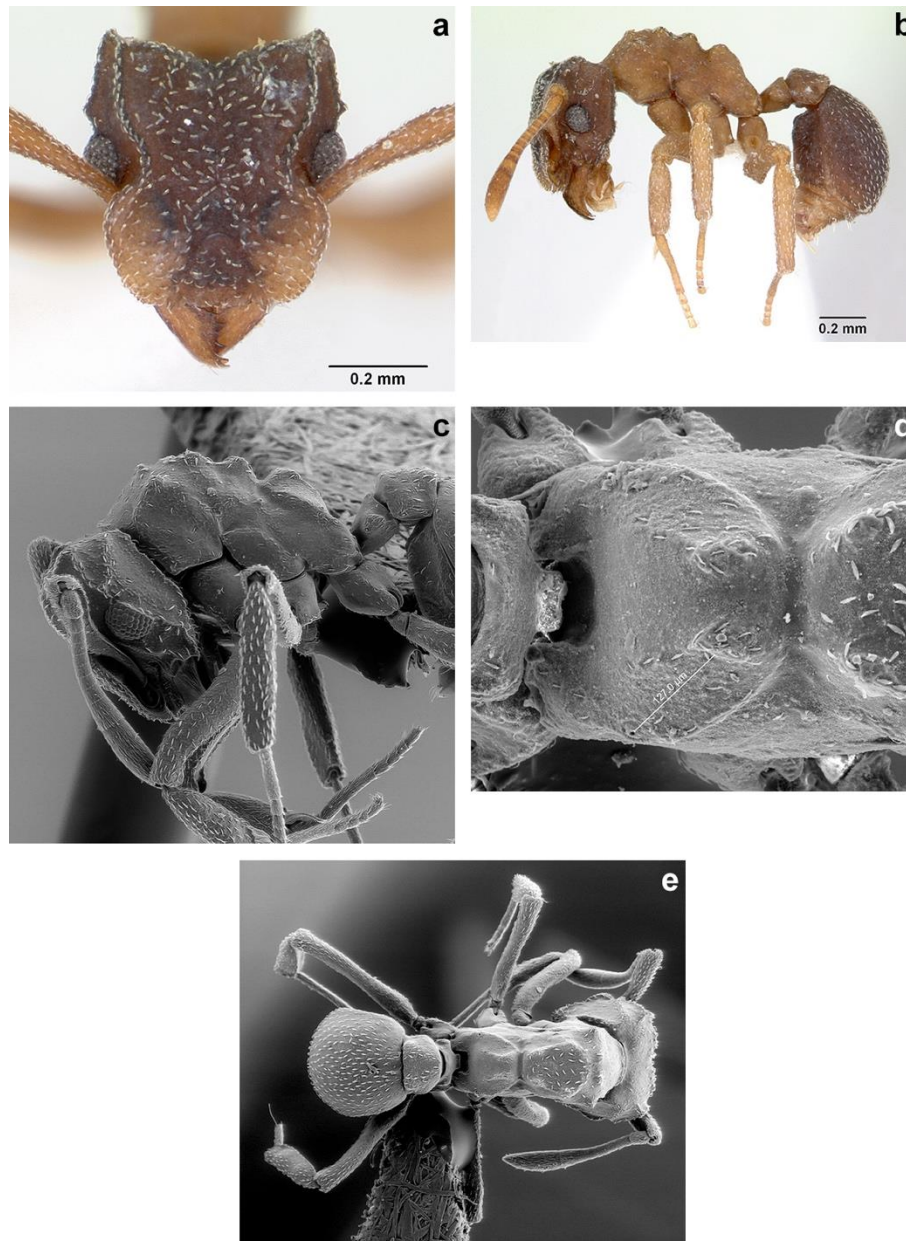


Figure 18. *Cyphomyrmex rimosus* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head and mesosoma in profile **D** propodeum in dorsal view **E** dorsal view

***Cyphomyrmex rimosus* (Spinola, 1851)** (Fig. 18-a, b). First published record Herrera & Longino (2008) [ICCDRS]. Cited also in Dekoninck et al. (2014), Wauters et al. (2015), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. Probably *C. rimosus* in Lubin (1984) and Brandão & Paiva (1994). **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Nearctic and Neotropical.

Galápagos distribution: Introduced: Gardner (next to Floreana), Isabela (SN), San Cristóbal and Santa Cruz (Herrera et al. 2020).

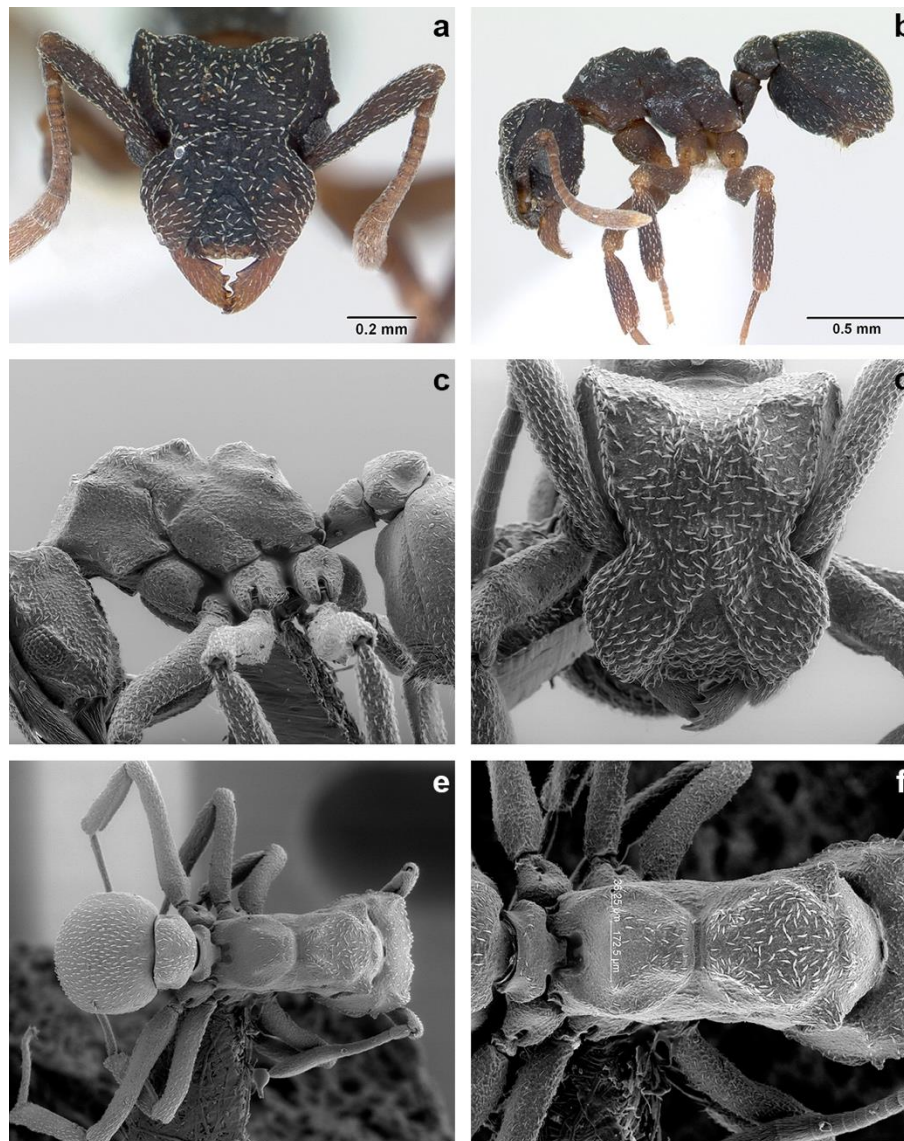


Figure 19. *Cyphomyrmex* sp. hh004 worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** head in full-face view **E** dorsal view **F** mesosoma in dorsal view

***Cyphomyrmex* sp. hh04** (Fig. 19-a, b). First published record as dark form of *C. rimosus* in Herrea & Longino (2008). Cited as *Cyphomyrmex* sp. hh04 in Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS, RBINS].

Distribution: Endemic: Isabela (SN) Pinzón, Santa Cruz (Herrera et al. 2020). New record: Santiago Island.

Genus *Monomorium* Mayr, 1855

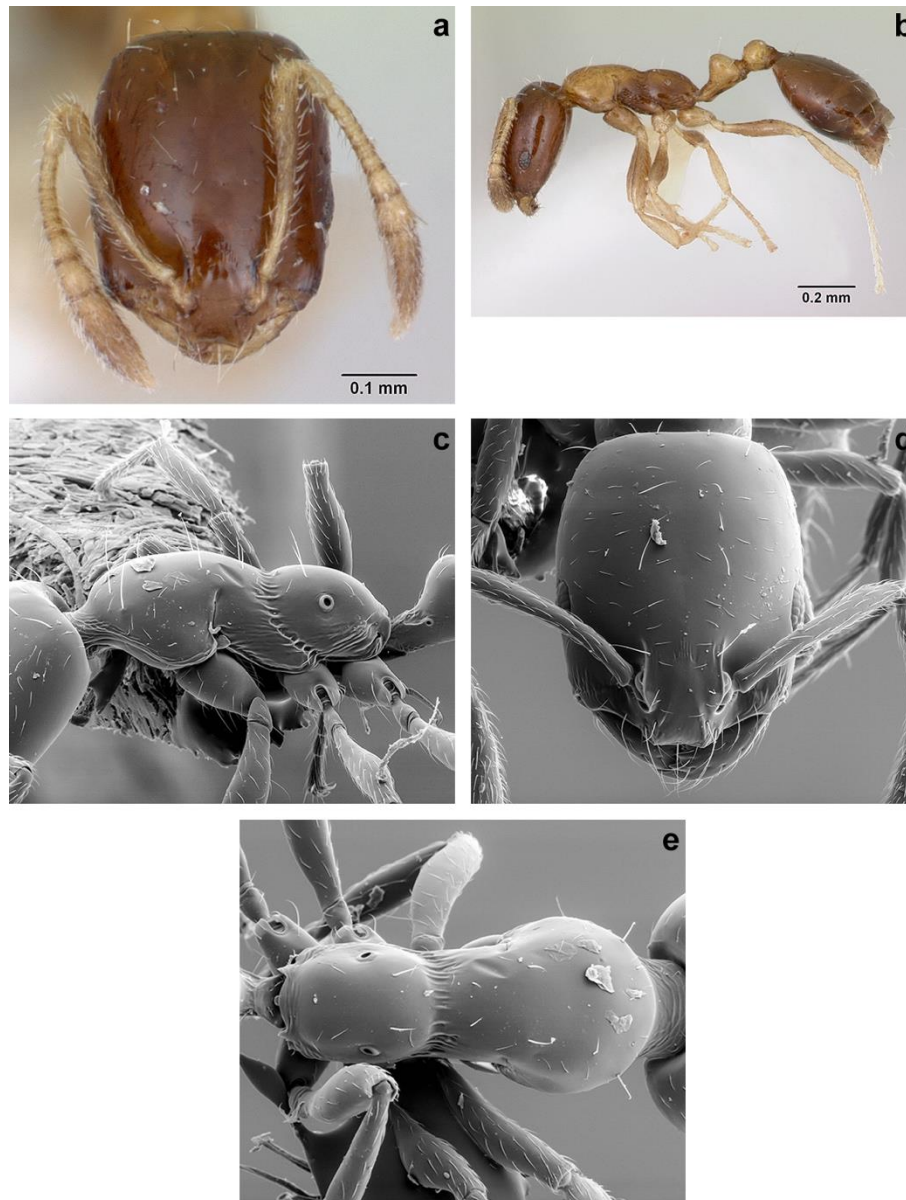


Figure 20. *Monomorium floricola* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** head in full-face view **E** mesosoma in dorsal view

***Monomorium floricola* Jerdon, 1851** (Fig. 20-a, b). Cited as *Monomorium floreanun* in Stitz (1932). *Monomorium floricola* in Linsley & Usinger (1966). *Monomorium floreanun* in Kempf (1972). *Monomorium floricola* in Kempf (1972), Clark et al. (1982), Lubin (1984) [ICCDRS], McMullen (1993), Meier (1994) [ICCDRS], Abedrabbo (1994) [ICCDRS], de la Vega (1994), Peck (1994a), Peck et al. (1998), Pezzatti et al. (1998) [ICCDRS], Roque-Albelo et al. (2000) [ICCDRS], von Aesch & Cherix (2005), Boada (2005) [ICCDRS], von Aesch (2006) [ICCDRS], Causton et al. (2006), Herrera & Causton (2010) [ICCDRS], McMullen (2012), Chamorro et al. (2012) [ICCDRS], Dekoninck et al. (2014) [ICCDRS], Wauters et al. (2015) [RBINS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution: Invasive: Bainbridge #5, Baltra, Bartolomé, Bayas, Bowditch South, Champion, Cousin, Daphne Mayor, Española, Fernandina, Floreana, Gardner (next to Floreana), Genovesa, Isabela (CA, SN, VA, VD), Mariela Grande, Mariela Mediana, Marchena, Pinta, Plaza Norte, Plaza Sur, Rábida, Santiago, San Cristóbal, Santa Cruz, Seymour Norte, Santa Fé (Herrera et al. 2020). New record: Sombrero Chino.

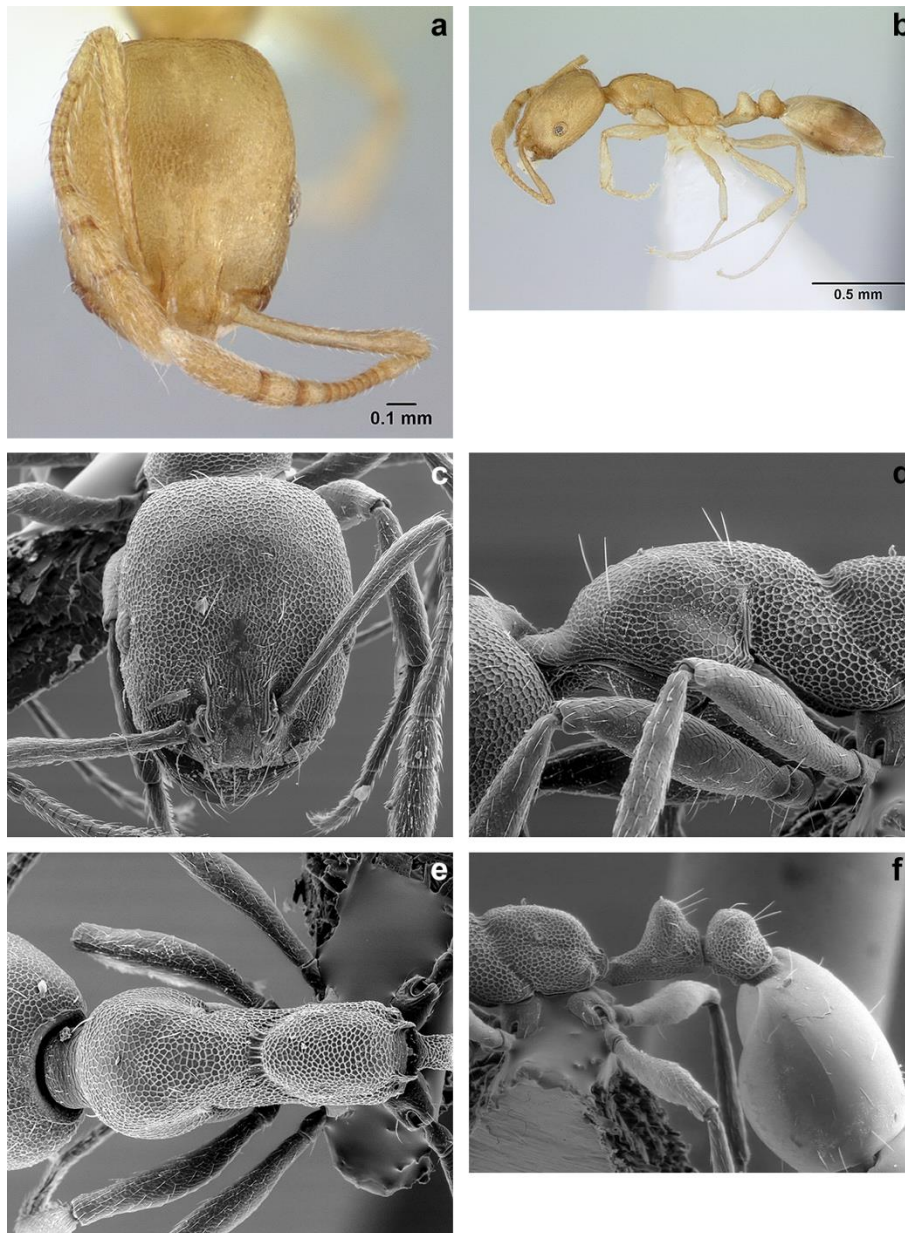


Figure 21. *Monomorium pharaonis* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** mesosoma in profile **E** mesosoma in dorsal view **F** petiole and postpetiole in profile

***Monomorium pharaonis* Linnaeus, 1758** (Fig. 21-a, b). Galapagos first published record

in Wheeler (1919). Cited also in Linsley and Usinger (1966), Kempf (1972), Lubin (1984) [ICCDRS], Brandão & Paiva (1994), Peck et al. (1998), Causton et al. (2006), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution: Invasive: Baltra, Isabela (SN), Pinta and Santa Cruz (Herrera et al. 2020).

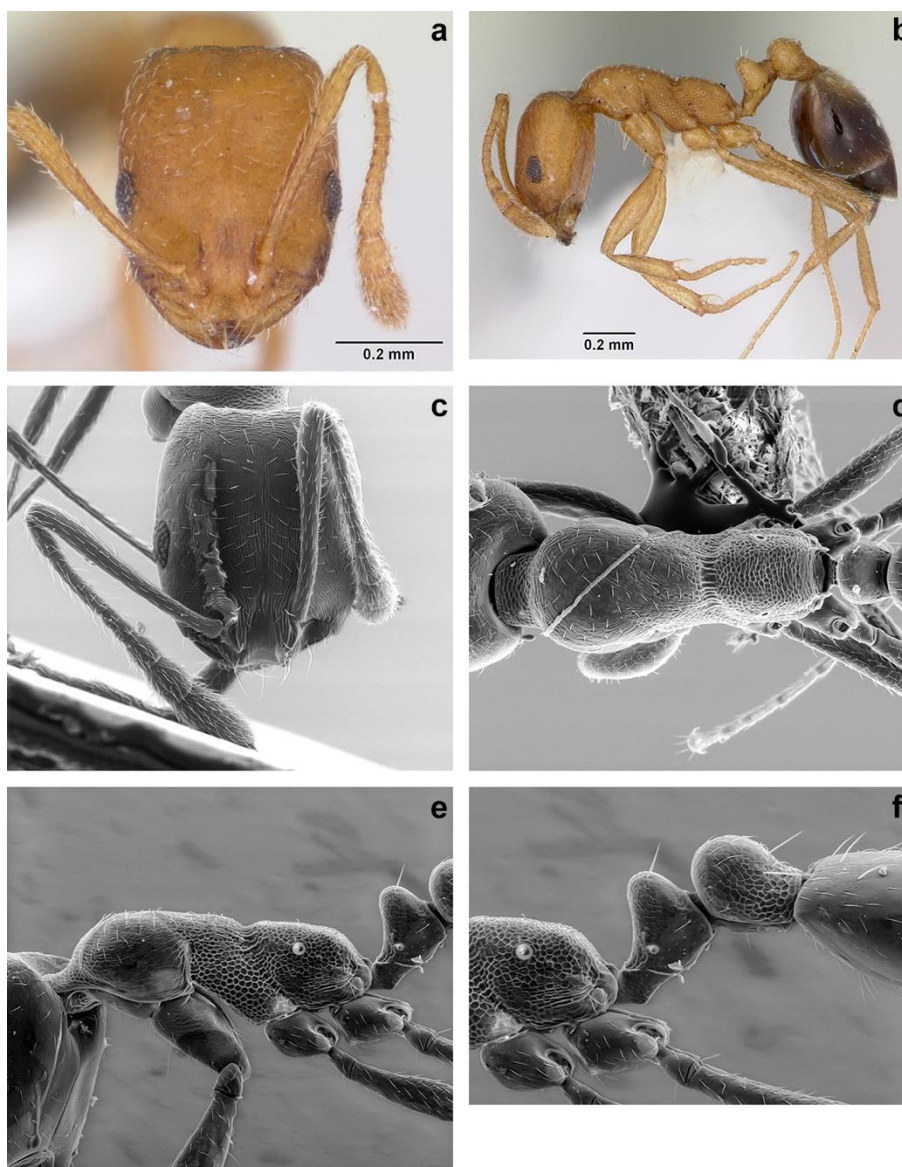


Figure 22. *Monomorium* sp. nr. *pharaonis* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** mesosoma in dorsal view **E** mesosoma in profile **F** petiole and postpetiole in profile

Monomorium* sp. nr. *pharaonis (Fig. 22-a, b). First record in Herrera & Causton (2010) [ICCDRS]. Cited also in Dekoninck et al. (2014) [ICCDRS], Wauters et al. (2015)

[ICCDRS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Distribution:** Baltra, Fernandina, Floreana, Isabela (SN), Marchena, Pinta, San Cristóbal, Santa Cruz and Santa Fé (Herrera et al. 2020).

Genus *Pheidole* Westwood, 1839

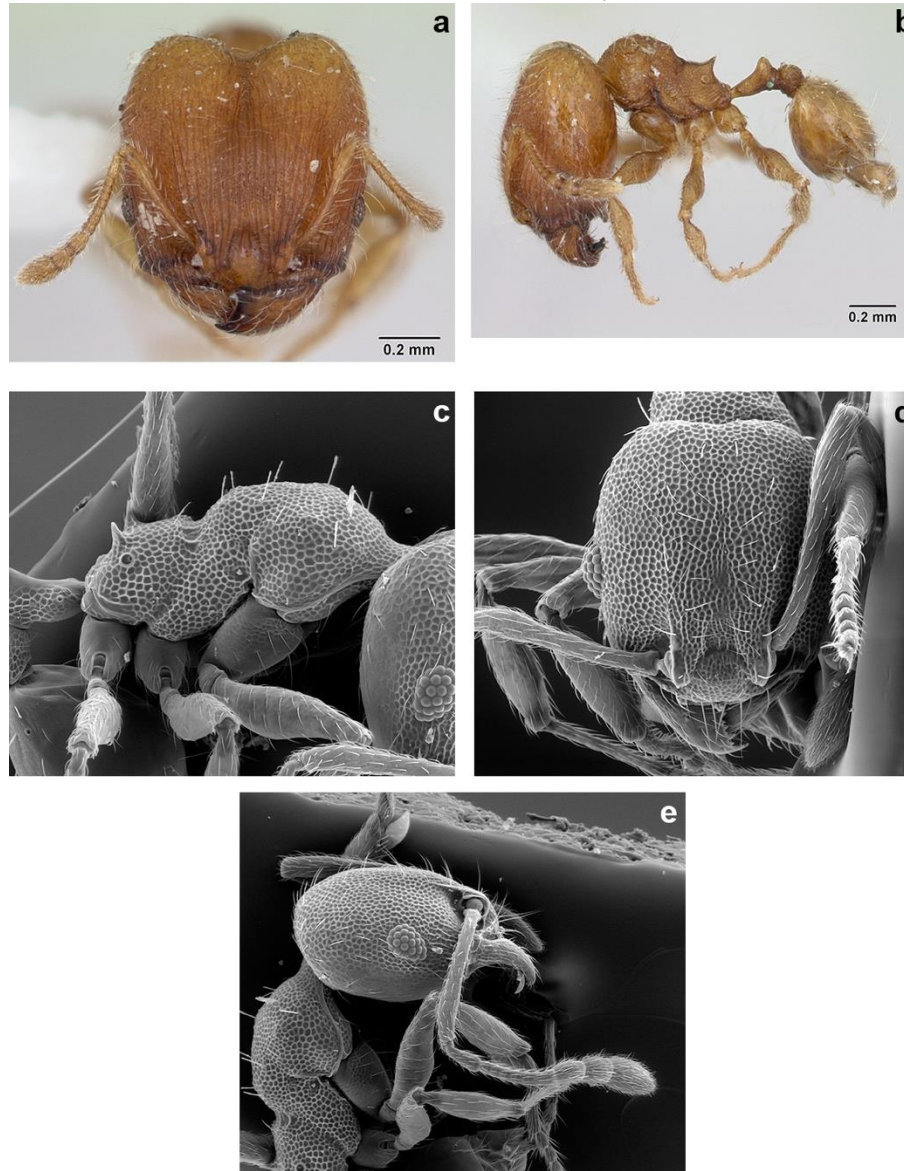


Figure 23. *Pheidole flavens* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** head in full-face view **E** head in profile.

***Pheidole flavens* Roger, 1863** (Major worker: Fig. 23-a, b, f). Cited in Wheeler (1919), Clark et al. (1982), Herrera et al. (2014) [ICCDRS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014). **Distribution:** Neotropical.

Galápagos distribution: Introduced: Isabela (CA, SN, VA, VD, VW), San Cristóbal and

Santa Cruz (Herrera et al. 2020).

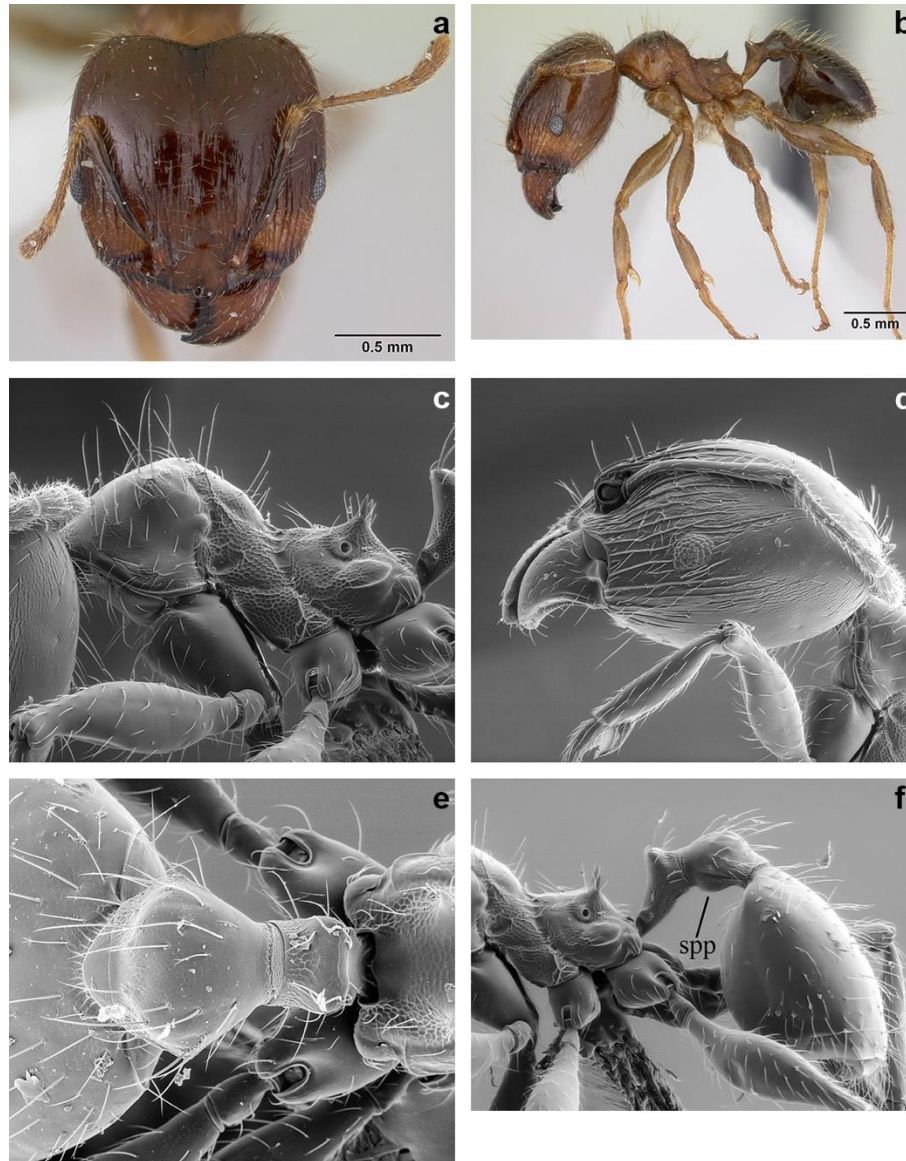


Figure 24. *Pheidole megacephala* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** head in profile **E** petiole and postpetiole in dorsal view **F** petiole and postpetiole in profile (spp = subpetiolar process).

***Pheidole megacephala* Fabricius, 1793** (Fig. 24-a, b). Cited in Herrera et al. (2013) [ICCDRS], Wauters et al. (2015) [RBINS], Herrera (2015, 2019) and Herrera et al. (2020), **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution: Invasive: Isabela (SN), San Cristóbal and Santa Cruz (Herrera et al. 2013).

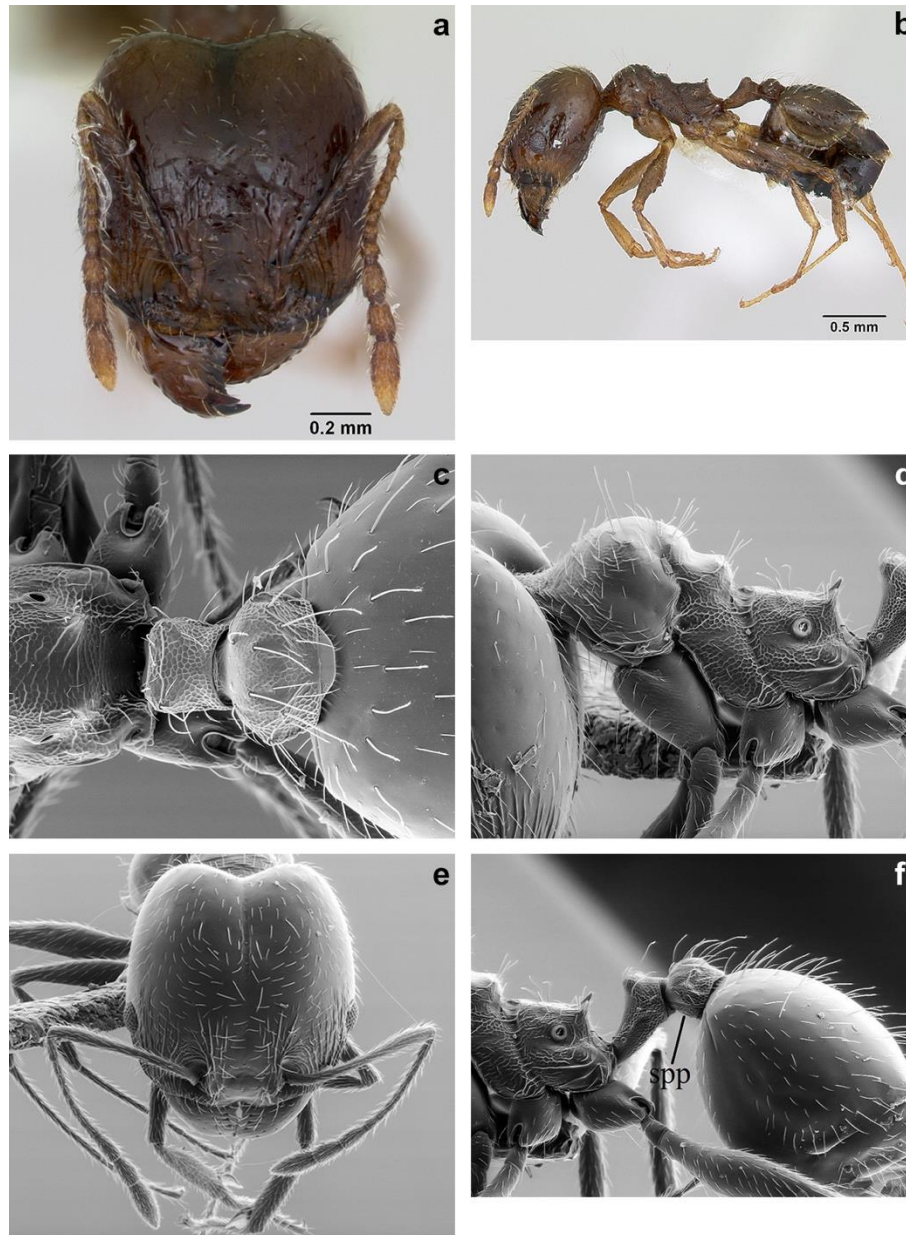


Figure 25. *Pheidole williamsi* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** petiole and postpetiole in profile **D** mesosoma in profile **E** head in profile **F** petiole and postpetiole in profile (spp = subpetiolar process).

***Pheidole williamsi* Wheeler, 1919 [CAS]** (Fig. 25-a, b). Cited as *Pheidole williamsi* in (Wheeler 1919). *Pheidole williamsi* var. *seymourensis* in Wheeler (1924), Linsley & Usinger (1966). *Pheidole williamsi williamsi* in Linsley & Usinger (1966). *Pheidole williamsi* in Clark et al. (1982), Lubin (1984), Lubin (1985), Espadaler (1997), Wilson (2003), Herrera et al. (2014) [ICCDRS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Kempf (1972), Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Albany, Bainbridge #1, Bainbridge #2, Bainbridge #3, Bainbridge #4, Bainbridge #5, Bainbridge #6, Baltra, Bowditch South, Daphne Mayor, Fernandina,

Floreana, Gardner (next To Floreana), Isabela (SN, VA, VD, VW), Mariela Grande, Mariela Mediana, Pinta, Plaza Sur, Rábida, Santiago, San Cristóbal, Santa Cruz, Seymour Norte, Santa Fé and Tortuga (Herrera et al. 2020). New record: Bartolomé and Beagle.

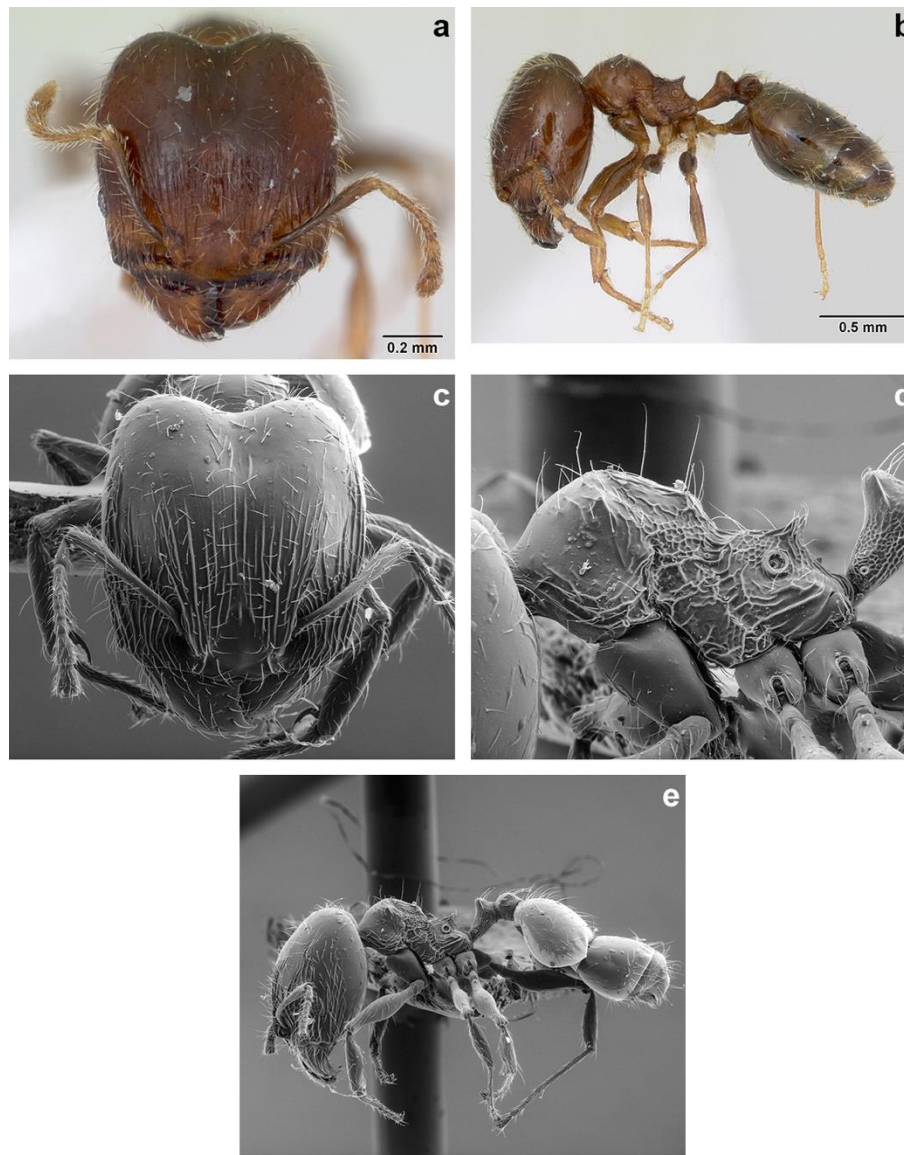


Figure 26. *Pheidole* sp. hh01 worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** mesosoma in profile **E** view in profile

***Pheidole* sp. hh01** (Fig. 26-a, b). In Herrera et al. (2014), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Distribution:** Endemic: Bowditch South, Eden, Floreana, Isabela (CA, SN, VA, VD, VE, VW), Logie, Pinzón, Santiago, San Cristóbal and Santa Cruz (Herrera et al. 2020).

Genus *Rogeria* Emery, 1894

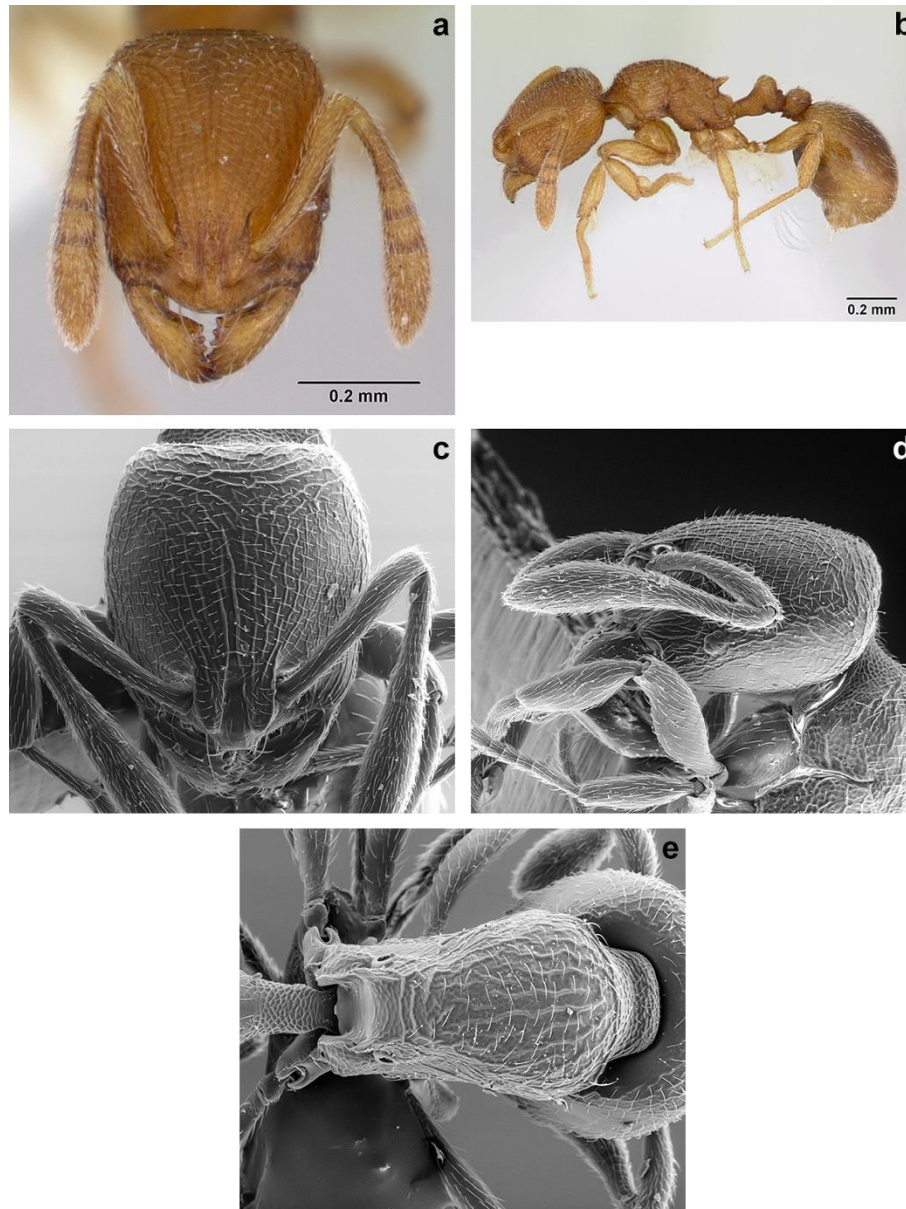


Figure 27. *Rogeria curvipubens* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** head in profile **E** mesosoma in dorsal view

***Rogeria curvipubens* Emery, 1894** (Fig. 27-a, b). Galapagos first published record (Herrera & Longino 2008), cited also in Dekoninck et al. (2014), Wauters et al. (2015), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Neotropical.

Galápagos distribution: Introduced: Isabela (SN), San Cristóbal and Santa Cruz (Herrera et al. 2020).

Genus *Solenopsis* Westwood, 1840

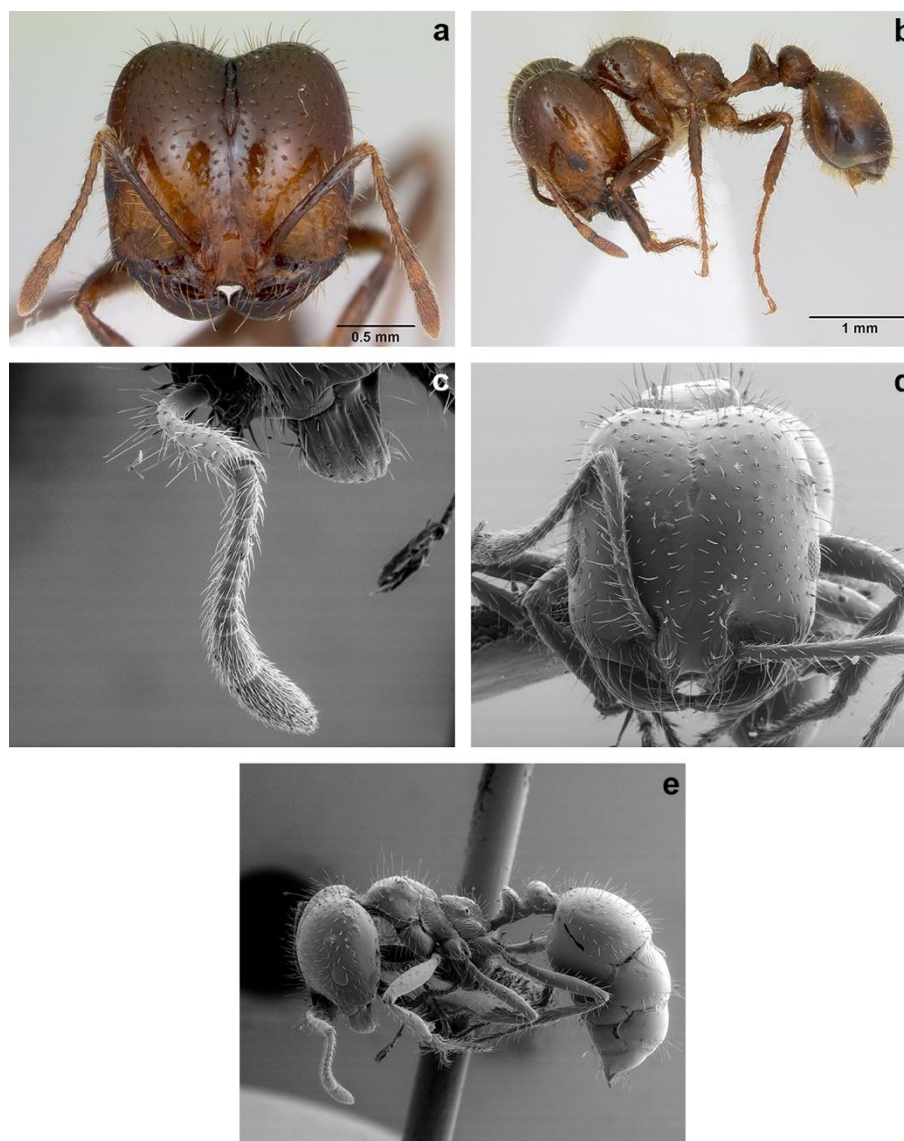


Figure 28. *Solenopsis geminata* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** antennae funiculi in profile **D** head in full-face view **E** view in profile

***Solenopsis geminata* Fabricius, 1804** (Fig. 28-a, b). Cited as *Solenopsis geminata* in Emery (1893). *Solenopsis geminata galapageia* in Wheeler (1919), Linsley and Usinger (1966) and Kempf (1972). *Solenopsis geminata* in Lubin (1984), Williams (1987), Trager (1991), Williams & Whelan (1991), Brandão & Paiva (1994), Meier (1994), de la Vega (1994), Peck et al. (1998), Pezzatti et al. (1998), von Aesch & Cherix (2005) [ICCDRS], Boada (2005) [ICCDRS], von Aesch (2006) [ICCDRS], Causton et al. (2006), Pacheco et al. (2007), Herrera & Causton (2008) [ICCDRS], Herrera & Longino (2008), Herrera & Causton (2010) [ICCDRS], Herrera et al. (2013), Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2014) [RBINS], Wauters et al. (2015), [RBINS] Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Trager (1991), Bolton (1995), Bolton et al. (2006), Bolton (2014). **Distribution:** Afrotropical, Australasia,

Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution: Invasive: Albany, Bainbridge #1, Baltra, Bayas, Champion, Cuevas, Eden, Enderby, Fernandina, Floreana, Gardner (next to Floreana), Isabela (CA, SN, VA), Mariela Grande, Mao, Mariela Mediana, Plaza Sur, Santa Fé, Santiago, San Cristóbal, Santa Cruz and Seymour Norte (Herrera et al. 2020).

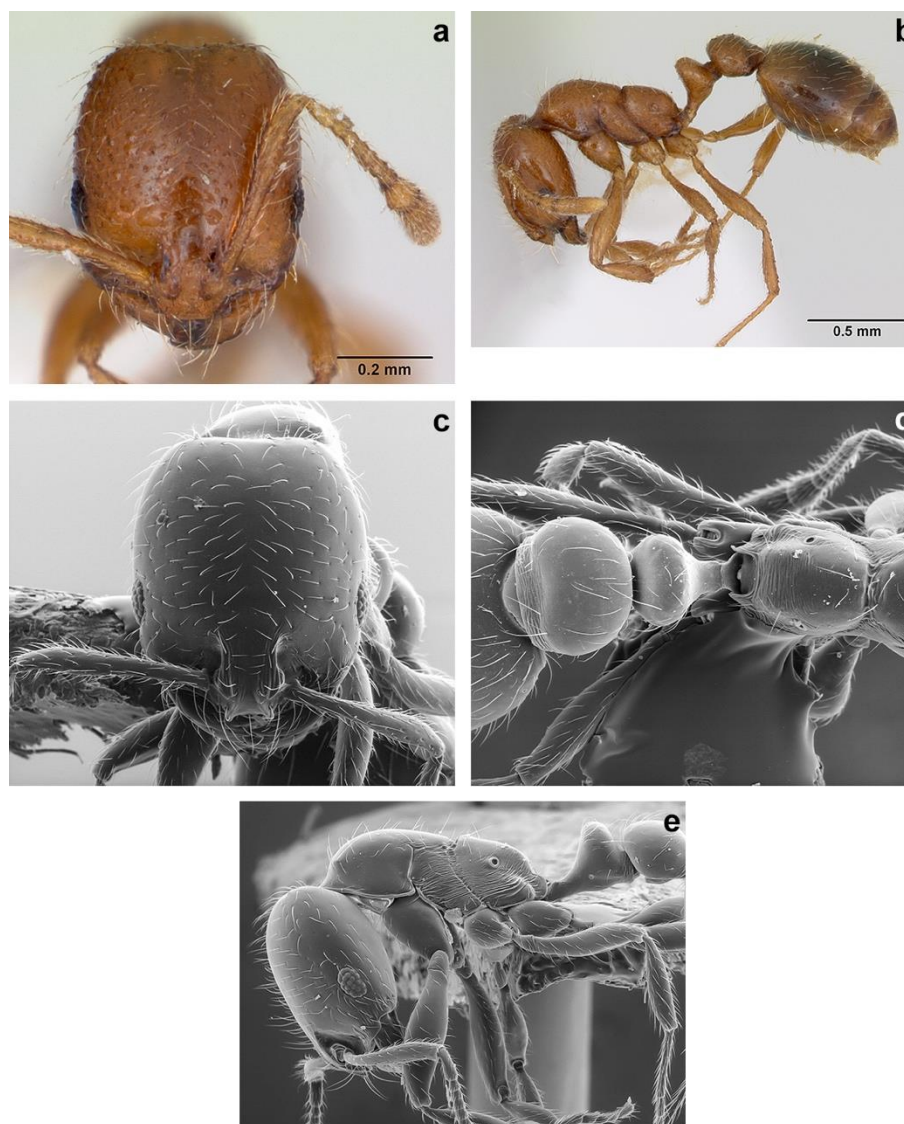


Figure 29. *Solenopsis globularia* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** petiole and postpetiole in dorsal view **E** head and mesosoma in profile

***Solenopsis globularia* Smith, 1858** (Fig. 29-a, b). Cited as *Solenopsis globularia pacifica* in Wheeler (1919, 1924). *Solenopsis globularia pacifica* var *rubida* in Wheeler (1919, 1924), *Solenopsis globularia pacifica* in Linsley & Usinger (1966). *Solenopsis globularia rubida* in Linsley & Usinger (1966). *Solenopsis globularia pacifica* and *Solenopsis globularia pacifica* var *rubida* in Kempf (1972). *Solenopsis globularia* in Clark et al. (1982). *Solenopsis pacifica* in Lubin (1984). *Solenopsis globularia* in Lubin (1985)

[ICCDRS], Meier (1994), Abedrabbo (1994) [ICCDRS], Peck et al. (1998), (Pezzatti et al. (1998), Roque-Albelo et al. (2000) [ICCDRS], von Aesch & Cherix (2005), von Aesch (2006), Causton et al. (2006), Pacheco et al. (2007), Herrera & Causton (2010) [ICCDRS], McMullen (2012), Pacheco & Mackay (2013), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Pacheco & Mackay (2013), Bolton (2014).

Distribution: Afrotropical, Nearctic, Neotropical.

Galápagos distribution: Introduced: Albany, Bainbridge #1, Bainbridge #3, Bainbridge #5, Bainbridge #7, Bainbridge #8, Baltra, Bowditch South, Champion, Daphne Mayor, Darwin, Eden, Enderby, Española, Fernandina, Floreana, Gardner (next to Española), Gardner (next to Floreana) , Genovesa, Isabela (CA, SN, VA, VD, VE, VW), Mariela Grande, Mao, Mariela Pequeña, Marchena, Pinta, Pinzón, Plaza Sur, Rábida, Santiago, San Cristóbal, Santa Cruz, Seymour Norte, Santa Fé, and Tortuga (Herrera et al. 2020). New record in Sombrero Chino.

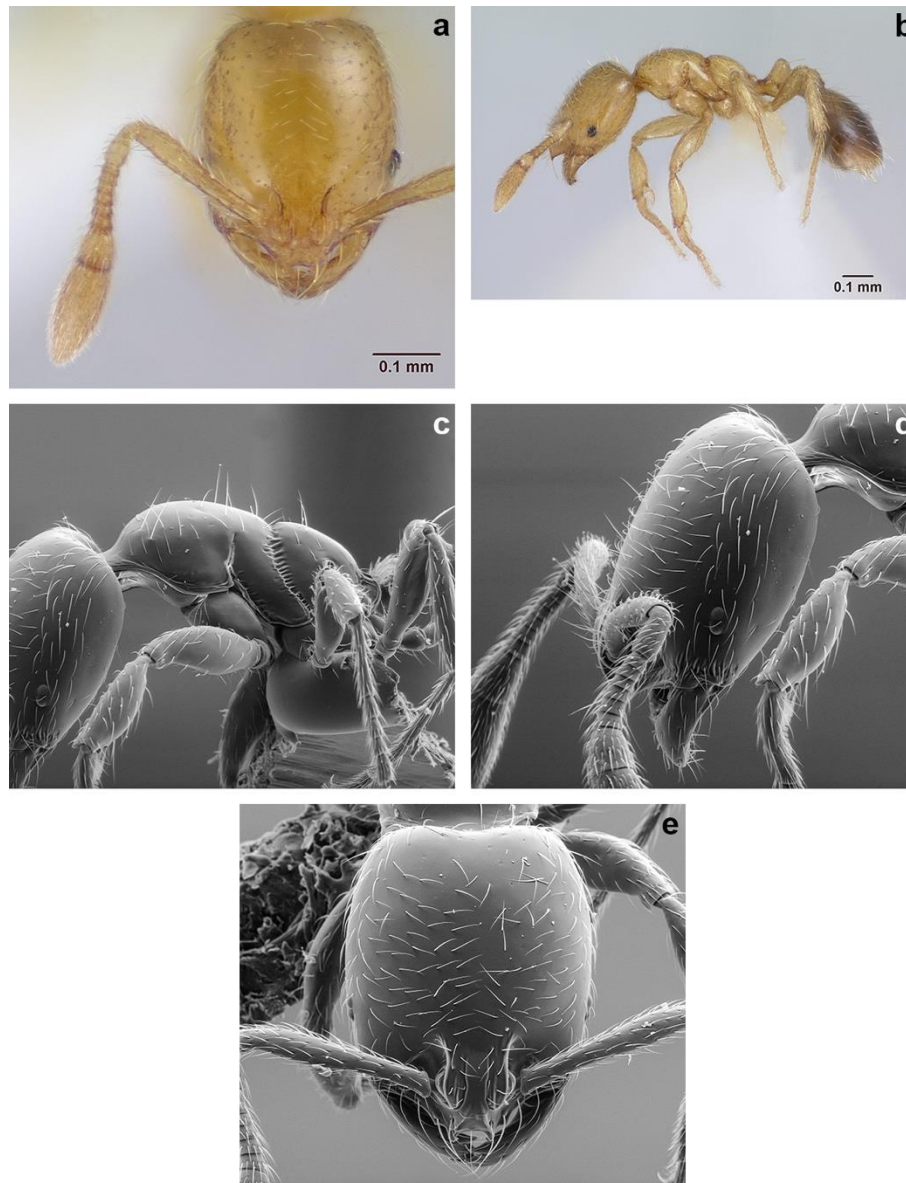


Figure 30. *Solenopsis gnoma* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** head in profile **E** head in full-face view

***Solenopsis gnoma* Pacheco, Herrera & Mackay, 2007** (Fig. 30-a, b). Cited also in Dekoninck et al. (2014), Wauters et al. (2015), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Pacheco & Mackay (2013), Bolton (2014).

Distribution: Endemic: Albany, Bowditch South, Española, Floreana, Isabela (SN, VA, CA), Marchena, San Cristóbal and Santa Cruz (Pacheco et al. 2007, Herrera et al. 2020). New record: Santiago.

***Solenopsis saevissima* Smith, 1855.** Doubtful record for Galapagos (Herrera et al. 2020). Cited in Wheeler (1919, 1924), Linsley & Usinger (1966) and Brandão & Paiva (1994), probably misidentification in Peck et al. (1998). Cited also from literature in Causton et al.

(2006). **Taxonomic history:** (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Nearctic, Neotropical.

Galápagos distribution: Uncertain: Santa Cruz Island (Wheeler 1919, Peck et al. 1998).

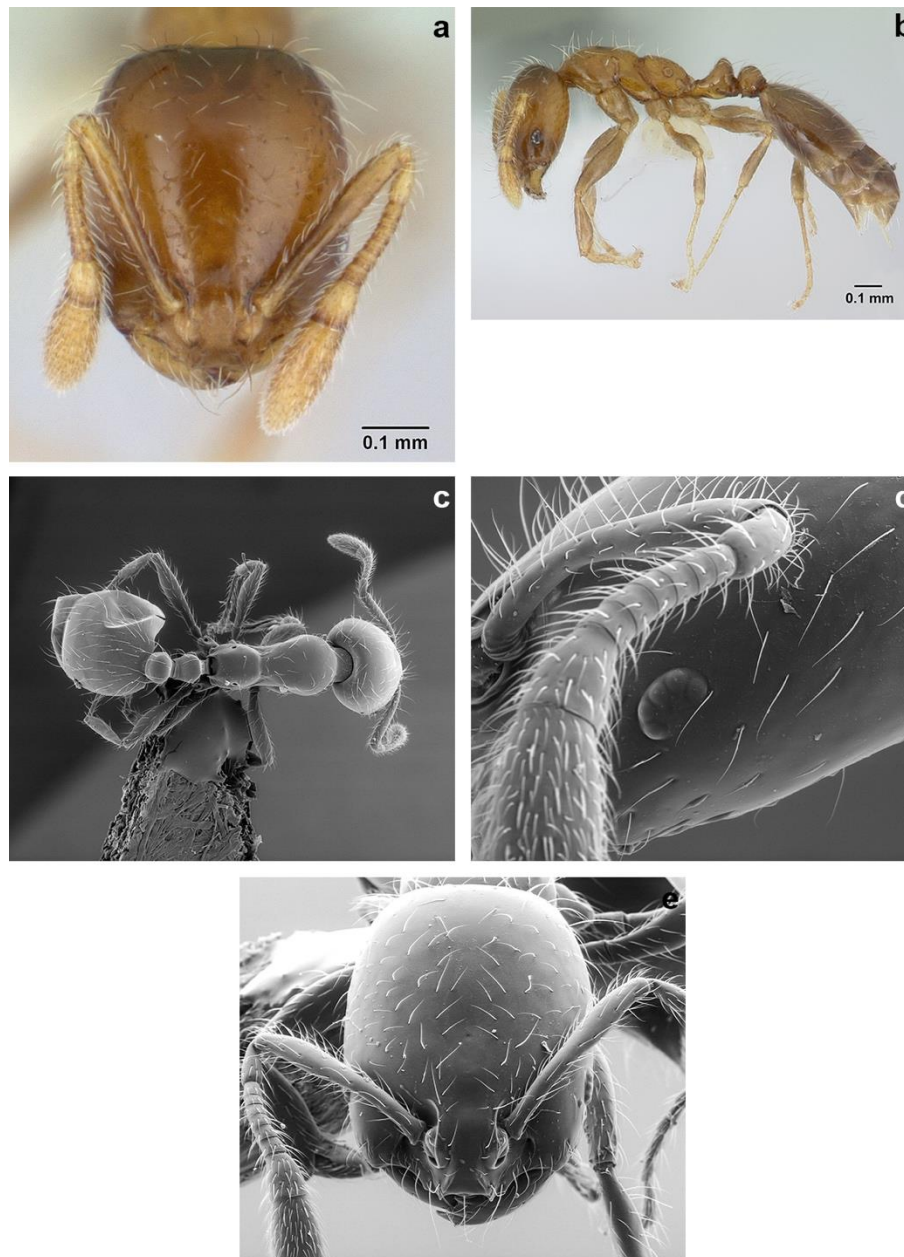


Figure 31. *Solenopsis gnoma* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma in profile **D** head in profile **E** head in full-face view

***Solenopsis* sp. cf. *basalis* (hh06)** (Fig. 31-a, b). First record in Herrera et al. (2014), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Distribution: Endemic: Bainbridge #5, Santa Cruz and Santiago (Herrera et al. 2014).

Genus *Strumigenys* Smith, 1860

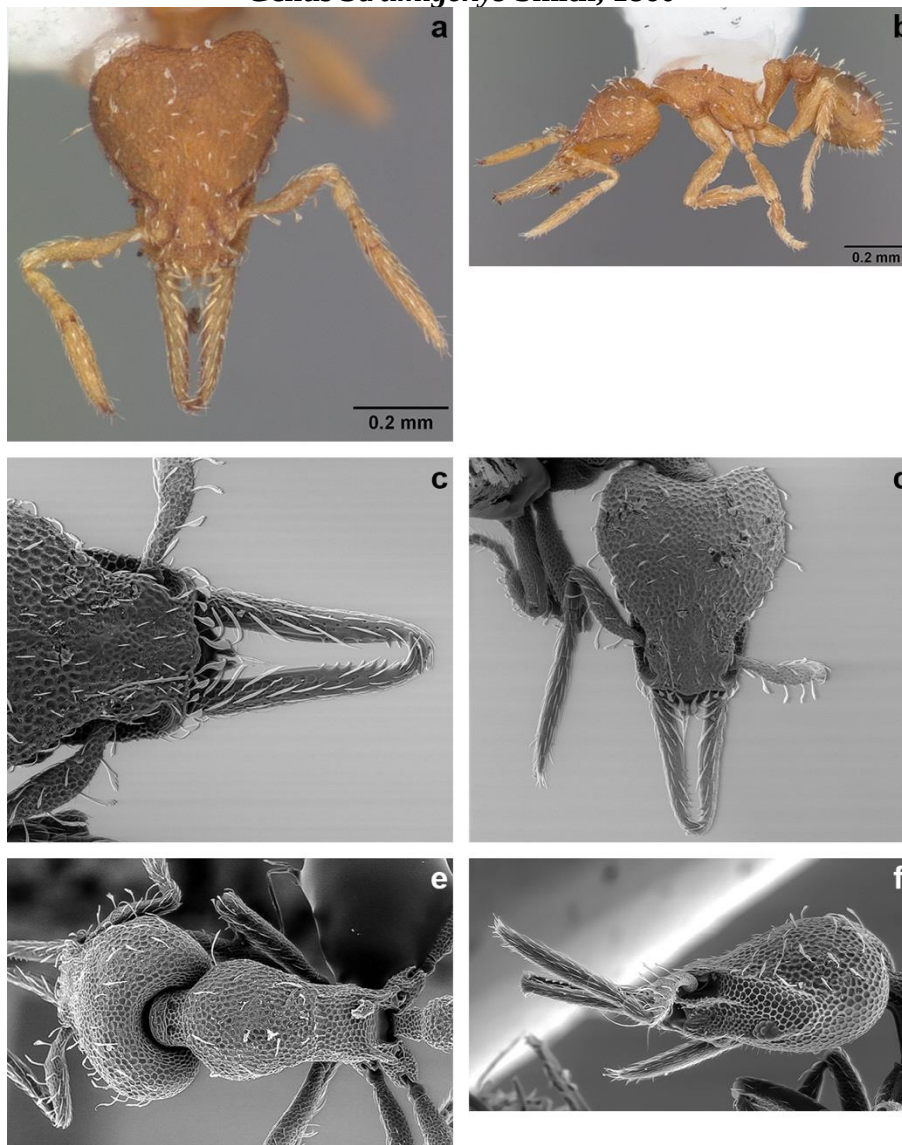


Figure 32. *Strumigenys eggersi* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on mandibles **D** head in full-face view **E** mesosoma in dorsal view **F** head in profile

***Strumigenys eggersi* Emery, 1890** (Fig. 32-a, b). Galapagos first published record in Herrera et al. (2014). Cited also in Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Indomalaya, Nearctic, Neotropical.

Galápagos distribution: Introduced: Santa Cruz (Herrera et al. 2014).

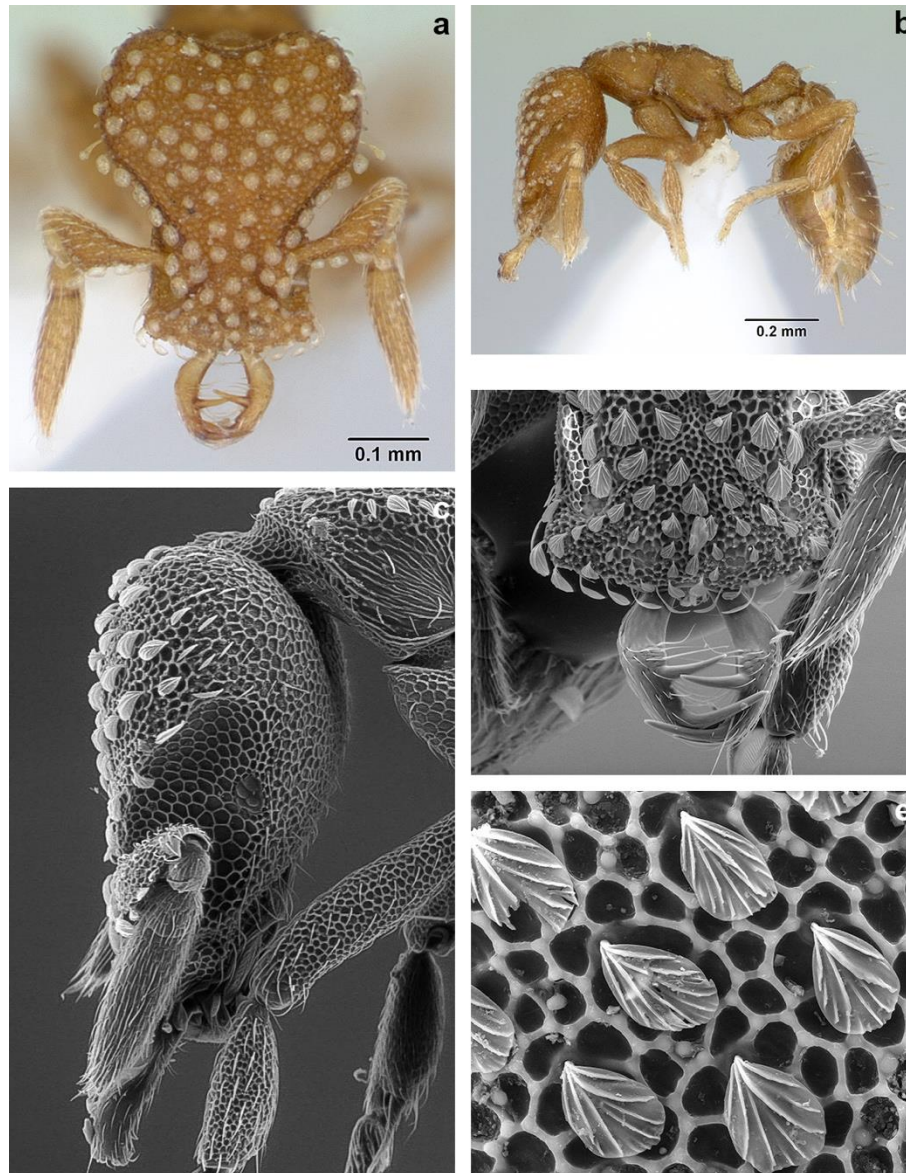


Figure 33. *Strumigenys emmae* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in profile **D** close-up of mandibles **E** close-up of spatulate setae

***Strumigenys emmae* Emery, 1890** (Fig. 33-a, b). Cited as *Quadristuma emmae* in Pezzatti et al. (1998) and Causton et al. (2006). Also in Herrera et al. (2014). Wauters et al. (2015), Herrera et al. 2020) [ICCDRS]. **Taxonomic history:** Kempf (1972), Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution: Introduced: Floreana, Isabela (SN, VA), San Cristóbal and Santa Cruz (Herrera et al. 2020).

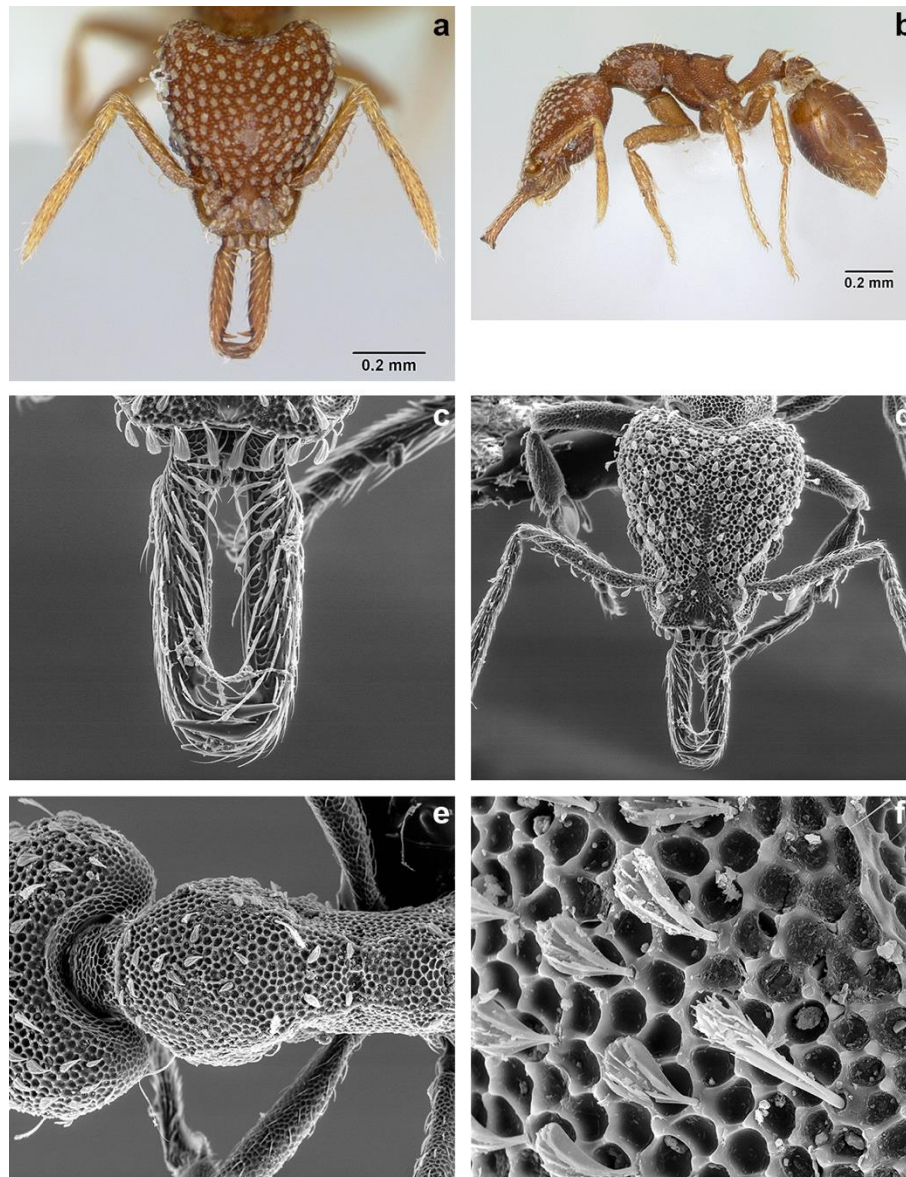


Figure 34. *Strumigenys louisianae* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on mandibles **D** head in full-face view **E** mesosoma in dorsal view **F** close-up on spatulate setae

***Strumigenys louisianae* Roger, 1863** (Fig. 34-a, b). Cited in Lubin (1984), (Pezzatti et al. (1998), von Aesch (2006) [ICCDRS], Causton et al. (2006), Herrera et al. (2014), Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2015), Herrera et al. (2020), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** in Kempf (1972), Brandão (1991), Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Nearctic, Neotropical.

Galápagos distribution: Introduced: Floreana, Isabela (CA, SN, VA), San Cristóbal, Santa Cruz (Herrera et al. 2020). New record: Santiago.

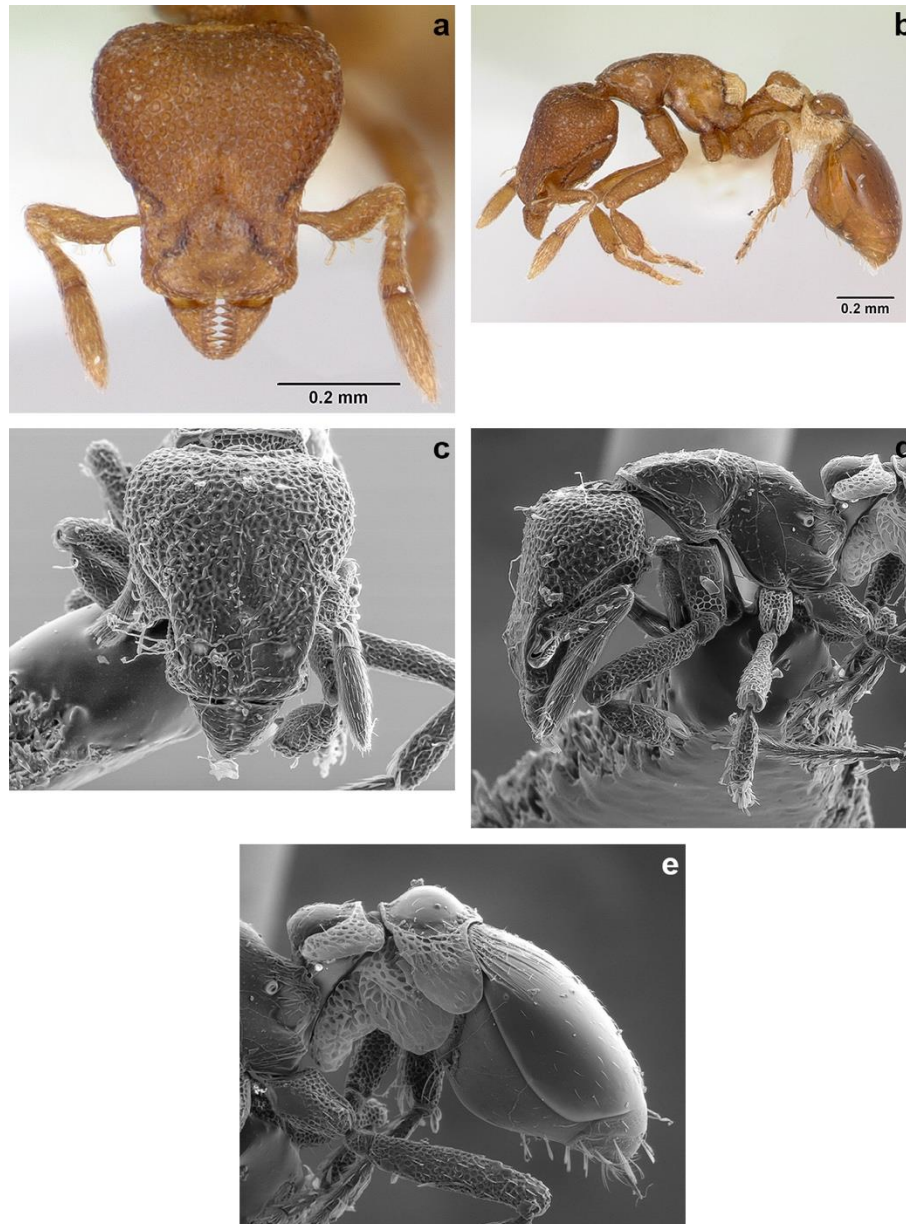


Figure 35. *Strumigenys membranifera* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** head in profile **E** petiole and postpetiole with developed spongiform tissue.

***Strumigenys membranifera* Emery, 1869** (Fig. 35-a, b, c). Galapagos first published record in Herrera et al. (2014). Cited in Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** in Kempf (1972), Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution: Introduced: Isabela (VA, VW) and Santiago (Herrera et al. 2020).

Genus *Tetramorium* Mayr, 1855

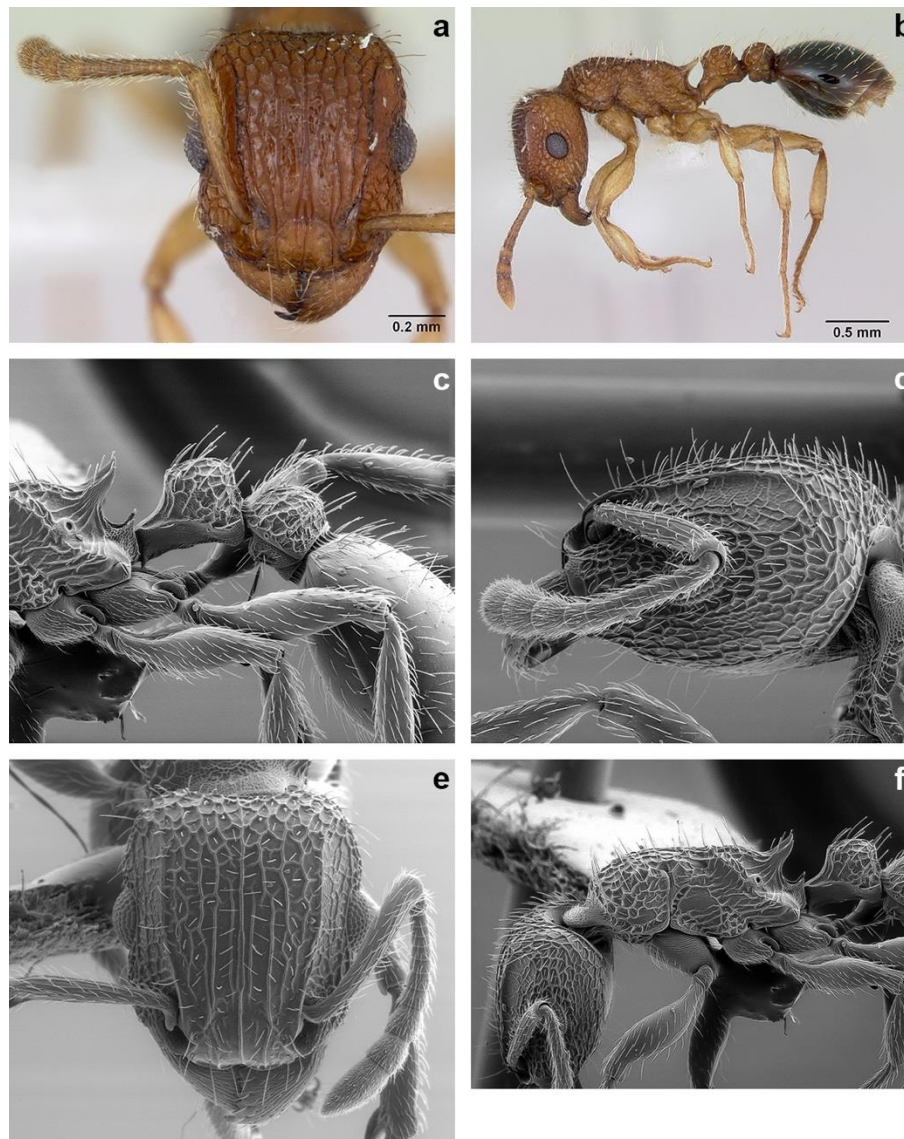


Figure 36. *Tetramorium bicarinatum* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** petiole and postpetiole in profile **D** head in profile **E** head in full-face view **F** mesosoma in profile

***Tetramorium bicarinatum* Nylander, 1846** (Fig. 36-a, b). Cited as *Tetramorium guineense* in Emery (1893), Wheeler (1919) [CAS], Wheeler (1924), Wheeler (1933) [CAS], Linsley & Usinger (1966), Kempf (1972), Clark et al. (1982), Brandão & Paiva (1994). As *T. bicarinaum* in Lubin (1984), Lubin (1985) [QCAZ], Abedrabbo (1994) [ICCDRS], de la Vega (1994), Meier (1994) [ICCDRS], Pezzatti et al. (1998) [ICCDRS], von Aesch & Cherix (2005), von Aesch (2006) [ICCDRS], Causton et al. (2006), Herrera & Causton (2010) [ICCDRS], Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2015) [RBINS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Kempf (1972), Brandão (1991), Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical,

Oceania, Palearctic.

Galápagos distribution: Invasive: Bainbridge #1, Bainbridge #2, Bainbridge #3, Bainbridge #4, Bainbridge #5, Bainbridge #6, Bainbridge #8, Baltra, Bar, Bayas, Caldwell, Daphne Mayor, Española, Fernandina, Floreana, Gardner (next to Floreana), Gardner (next to Española), Genovesa, Guy Fawkes, Isabela (CA, SN, VA, VD, VE, VW), Mariela Grande, Mariela Mediana, Marchena, Pinzón, Plaza Norte, Plaza Sur, Rábida, San Cristóbal, Santa Cruz, Seymour Norte, Santa Fé and Sombrero Chino (Herrera et al. 2020). New record: Beagle #2, Beagle #3 and Santiago Island.

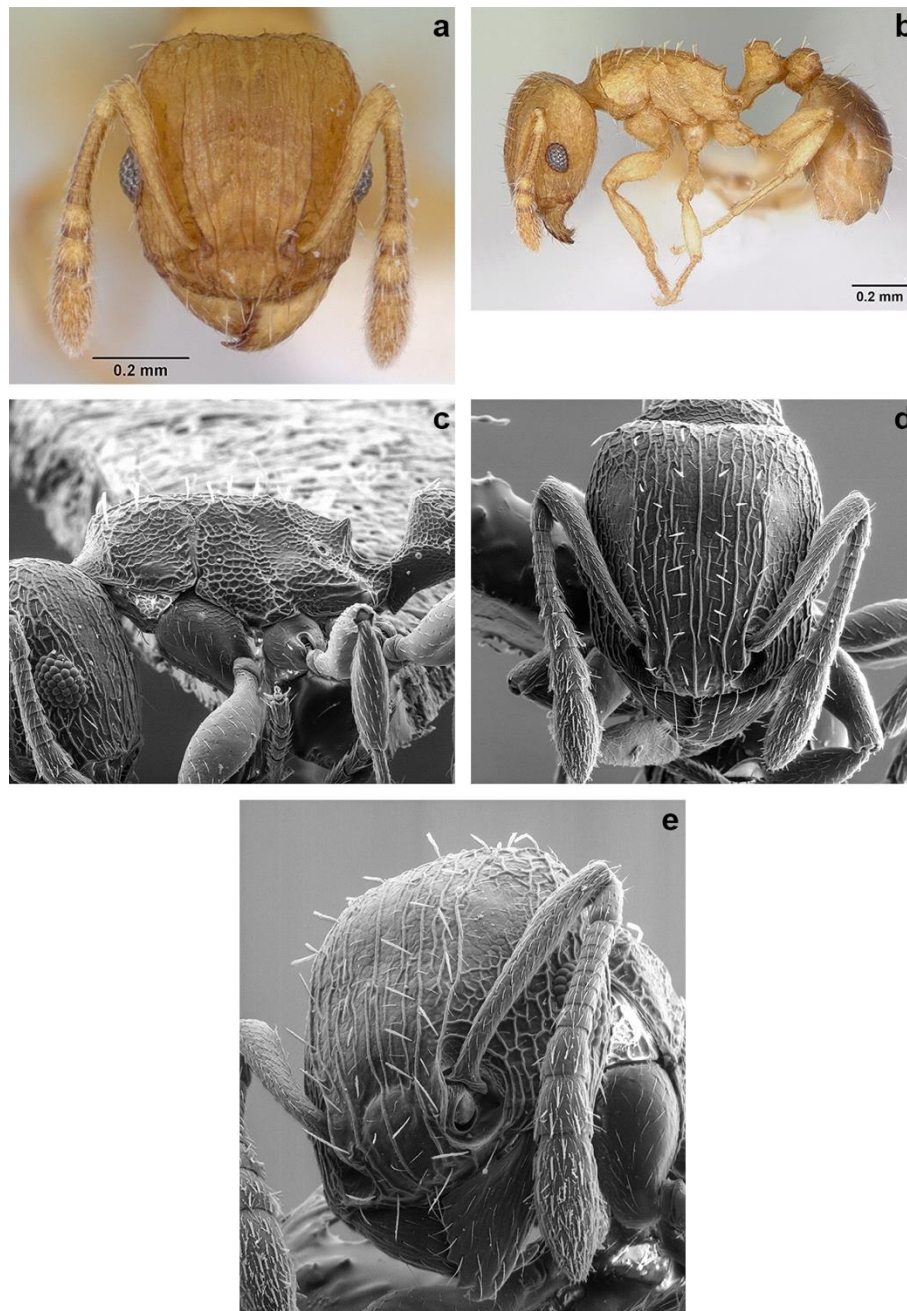


Figure 37. *Tetramorium caldarium* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** mesosoma profile **D** head in full-face view

E close-up on the antennal scrobe

***Tetramorium caldarium* Roger, 1857** (Fig. 37- a, b). Cited in Brandão & Paiva (1994), Meier (1994), Pezzatti et al. (1998), von Aesch & Cherix (2005), von Aesch (2006), Causton et al. (2006), Dekoninck et al. (2014) [RBINS], Wauters et al. (2015) [RBINS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Kempf (1972), Brandão (1991), Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution: Invasive: Floreana and Santa Cruz (Herrera et al. 2020).

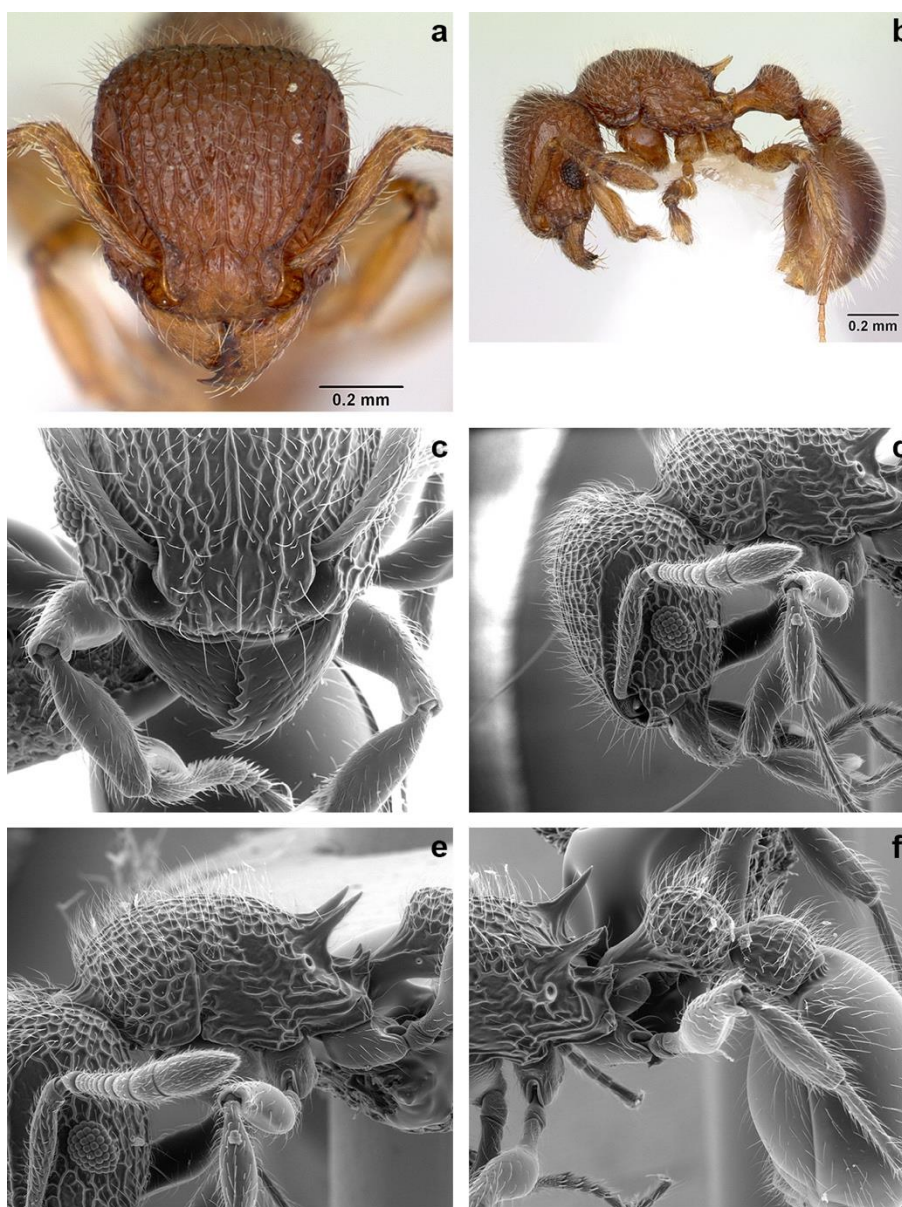


Figure 38. *Tetramorium lanuginosum* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on mandibles and clypeus **D** head in profile **E** mesosoma in profile **F** petiole and postpetiole in profile

***Tetramorium lanuginosum* Mayr, 1870** (Fig. 38-a, b). First published record (Pezzatti et al. (1998) [ICCDRS]. Cited also in Causton et al. (2006), Herrera & Causton (2010) [ICCDRS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** in Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution: Invasive: Bainbridge #3, Bainbridge #8, Baltra, Floreana, Gardner (next to Española), Isabela (VD), Pinzón, Plaza Norte, Plaza Sur, Rábida, San Cristóbal, Santa Cruz, Santa Fé, Seymour Norte, and Wolf (Herrera et al. 2020). New record: Bainbridge #1, Bartolomé, Beagle #2, Beagle #3, Champion, Mao, Marchena, Santiago, Sombrero Chino.

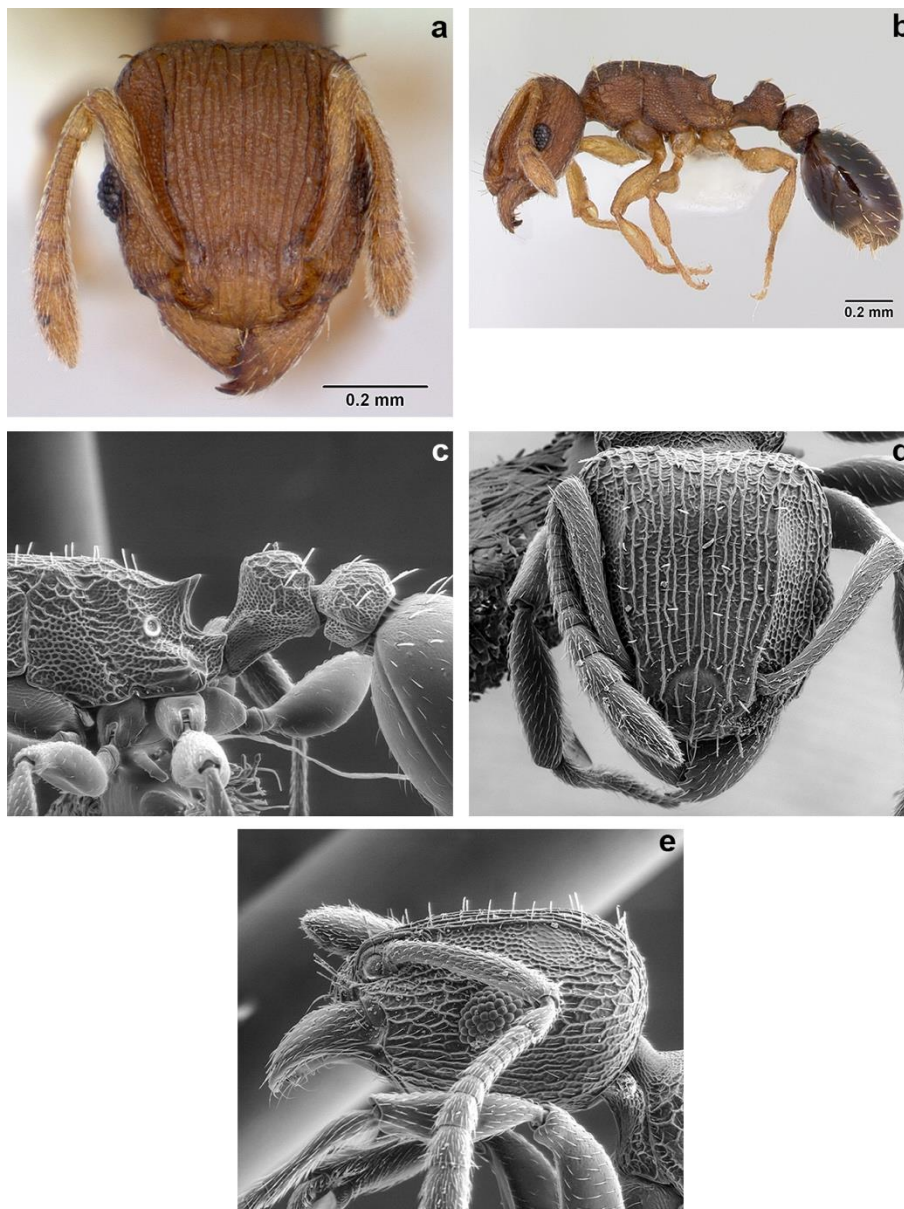


Figure 39. *Tetramorium simillimum* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** petiole and postpetiole in profile **D** head in full-face view **E** head in profile

***Tetramorium simillimum* Smith, 1851** (Fig. 39-a, b). First published record in Wheeler (1919). Cited also in Wheeler (1933), Kempf (1972), Linsley & Usinger (1966), Clark et al. (1982), Lubin (1984), Lubin (1985), Brandão & Paiva (1994), Abedrabbo (1994) [ICCDRS], Peck et al. (1998), (Pezzatti et al. (1998) [ICCDRS], Roque-Albelo et al. (2000) [ICCDRS], von Aesch & Cherix (2005), von Aesch (2006) [ICCDRS], Causton et al. (2006), Herrera & Causton (2010) [ICCDRS], Herrera et al. (2014). Wauters et al. (2015) [RBINS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution: Invasive: Bainbridge #6, Baltra, Bar, Cousin, Daphne Mayor, Floreana, Gardner (next to Floreana), Isabela (SN, VA), Marchena, Mariela Grande, Santiago, San Cristóbal, Santa Cruz and Tortuga (Herrera et al. 2020). New record: Mariela Mediana.

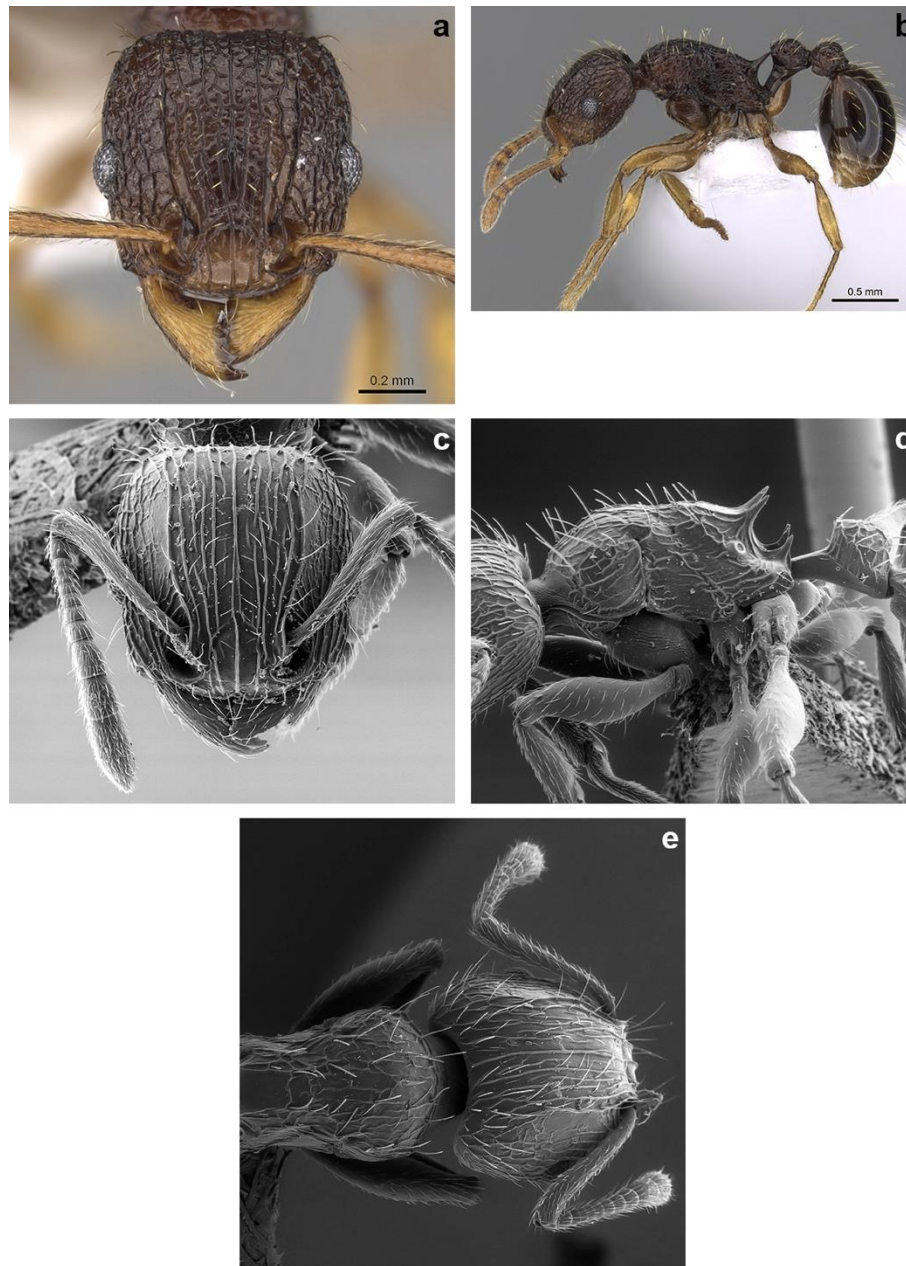


Figure 40. *Tetramorium lucayanum* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** mesosoma in profile **E** head in dorsal view

***Tetramorium lucayanum* Wheeler, 1905** (Fig. 40-a, b). First published record in Herrera et al. (2014), Cited also in Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Taxonomic history: Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Afrotropical, Neotropical, Palearctic.

Galápagos distribution: Introduced: Isabela (CA) (Herrera et al. 2014). New record: Isabela (SN).

Genus *Trichomyrmex* Mayr, 1855

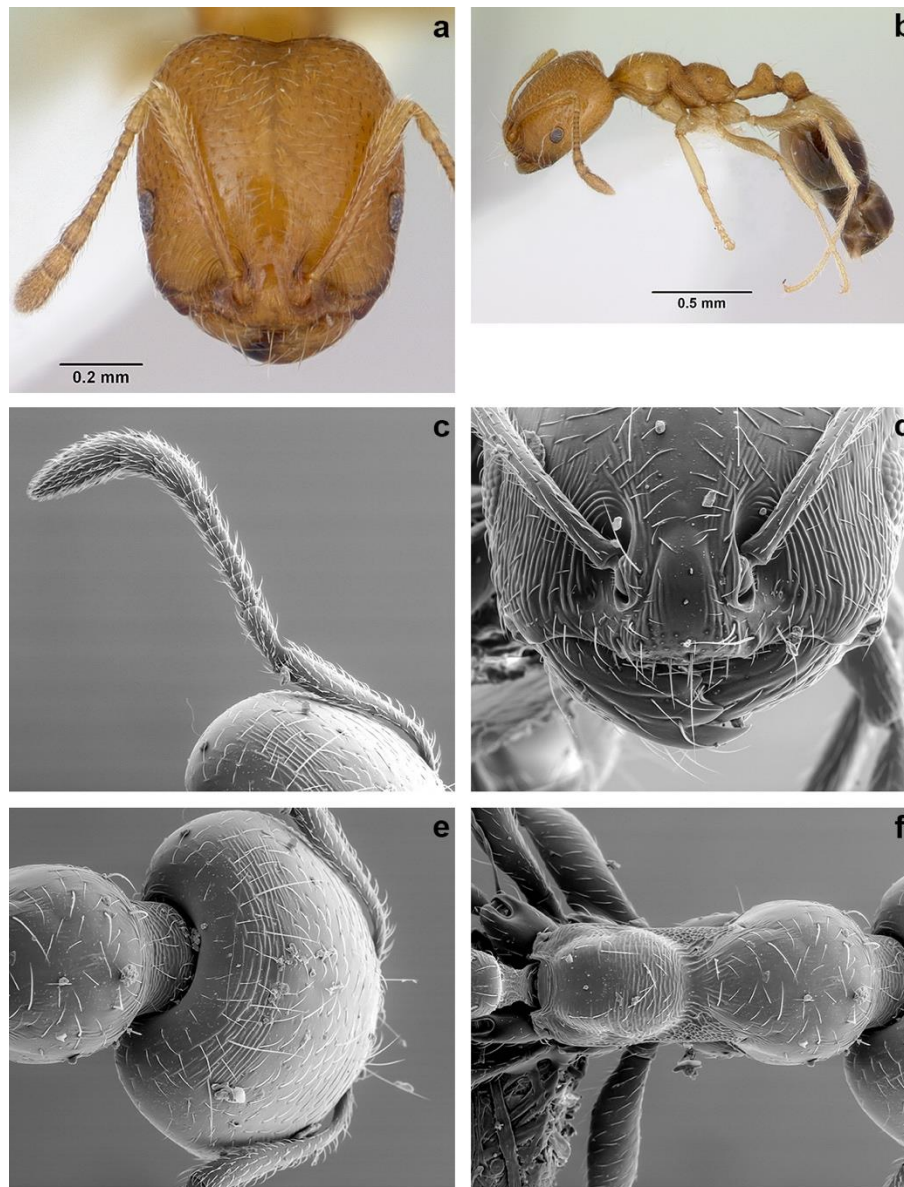


Figure 41. *Trichomyrmex destructor* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on antennae **D** close-up on mandibles **E** head in dorsal view **F** mesosoma in dorsal view

***Trichomyrmex destructor* Jerdon, 1851** (Fig. 41-a, b). Cited as *Monomorium destructor*, in Pezzatti et al. (1998), von Aesch & Cherix (2005), von Aesch (2006), Causton et al. (2006), Herrera & Causton (2010) [ICCDRS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014). **Distribution:** Afrotropical, Australasia, Indomalaya, Malagasy, Nearctic, Neotropical, Oceania, Palearctic. **Galápagos distribution:** Invasive: Baltra, Floreana, Isabela (SN), Santiago (Herrera et al. 2020).

Genus *Wasmannia* Forel, 1893

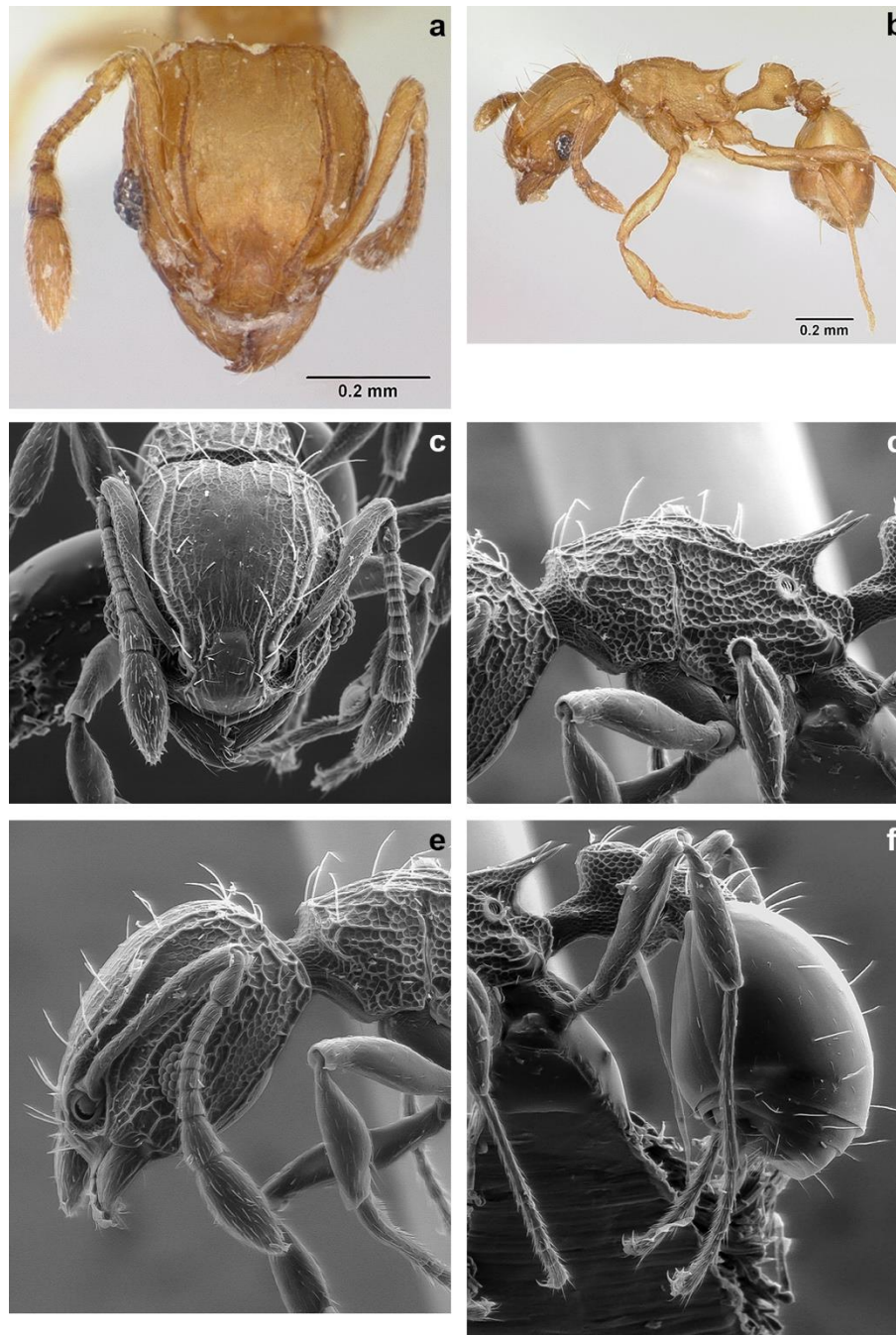


Figure 42. *Wasmannia auropunctata* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in full-face view **D** mesosoma in profile **E** head in profile **F** metasoma in profile

***Wasmannia auropunctata* Roger, 1863** (Fig. 41-a, b). First published record in Silberglied (1972). Cited in Lubin (1983), Lubin (1984) [ICCDRS], Lubin (1985), McMullen (1986), Williams (1987), Ulloa-Chacon et al. (1991), Coppois & Wells (1987), McMullen (1990), Brandão (1991), Williams & Whelan (1992), McMullen (1993), Brandão & Paiva (1994),

Meier (1994), Abedrabbo (1994) [ICCDRS], Ulloa-Chacon & Cherix (1994), de la Vega (1994), Lundh (1998), Peck et al. (1998), (Pezzatti et al. (1998) [ICCDRS], Roque-Albelo et al. (2000) [ICCDRS], Boada (2005) [ICCDRS], Causton et al. (2005) [ICCDRS], von Aesch (2006) [ICCDRS], Causton et al. (2006), McMullen (2007), Herrera & Causton (2008) [ICCDRS], Herrera & Longino (2008), (McMullen (2011), Herrera et al. (2013), Dekoninck et al. (2014) [ICCDRS, RBINS], Wauters et al. (2014) [RBINS], Wauters et al. (2015) [RBINS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Afrotropical, Australasia, Indomalaya, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution: Invasive: Albany, Bainbridge #1, Baltra, Bowditch South, Champion, Cousin, Eden, Española, Floreana, Gran Felipe, Isabela (SN, VA, VD, VE, VW), Mao, Marchena, Pinzón, Rábida, Santiago, San Cristóbal, Santa Cruz, Seymour Norte, Santa Fé and Tortuga (Herrera et al. 2020).

Subfamily Ponerinae

Key to the genera and species of the subfamily Ponerinae

1. Mandible elongate and linear (Fig. 48-c; 49c); petiolar node armed with an apical spine (Fig. 48-d; 49d). (*Odontomachus*).....2
Mandibles not elongate (Fig. 43-d; 46-c; 47-c); petiole not armed with apical spines (Fig. 43-c, b; 46-a, c).....3
2. Ants with the body entirely dark brown (Fig. 48-a, b); long hairs located below the mandibles, running from the base towards the apex (Fig. 48-c); anterior face of the petiole somewhat convex (Fig. 48-d).....*Odontomachus bauri*
Ants somewhat tricolored: head, antennae and legs orangish, mesosoma reddish-brown and gaster dark brown (Fig. 49-a, b); ventral face of mandibles with short hairs running from the base towards the apex (Fig. 49-c); anterior face of the petiole almost right or less convex than before (Fig. 49-d).....*Odontomachus ruginodis*
3. Mandibles falcate with an apical tooth; anterior margin of the clypeus triangular with carina conspicuously or slightly visible in the median portion (Fig. 47-c; 46-c); anterior legs with tarsal claws finely pectinate (Fig. 47-d) (*Leptogenys*).....4
Triangular with dentate mandibles; anterior margin of the clypeus without median carina (Fig. 43-d; 45d); legs with tarsal claws simple (Fig. 43-f) (*Hypoconera*).....5
4. Mandibles with basal margin distant from the anterior margin of clypeus when closed (Fig. 46-a, c); in lateral view, mesosoma with numerous setae and longitudinal striae in the pronotum and propodeum; petiole higher than wide (Fig. 46-d); ants approximately 5mm long; body entirely brown (Fig. 46-a, b).....*Leptogenys santacruzii*
Mandibles with basal margin almost flush with the anterior border of clypeus when closed (Fig. 47-a, c); mesosoma smooth and shiny with scarce setae; petiole elongated in lateral view (Fig. 47-b, e); ants approximately 4 mm long, mandibles, legs and antennae brown (Fig. 47-a, b).....*Leptogenys cf. gorgona*

5. Color dark red brown to black (Fig. 44-a, b); scape of antenna reaching the occipital margin of the head (Fig. 44-a); petiolar node quadrate (Fig. 44-b, c).....*Hypoponera opaciceps*
Color red brown to dark brown (Fig. 43-a, b; 45a, b); scape of antenna never reaching the occipital margin of the head (Fig. 43a, 45e); petiolar node never quadrate.....6
6. Petiole in lateral view relatively coarse with the dorsum somewhat rounded, not totally covered with fine appressed hairs (Fig. 43-c).....*Hypoponera beebei*
Petiole in lateral view somewhat more thick than coarse, with the dorsum somewhat triangular, sometimes covered by many fine appressed hairs (Fig. 45-f).....*Hypoponera opacior*

Genus *Hypoponera* Santschi, 1938

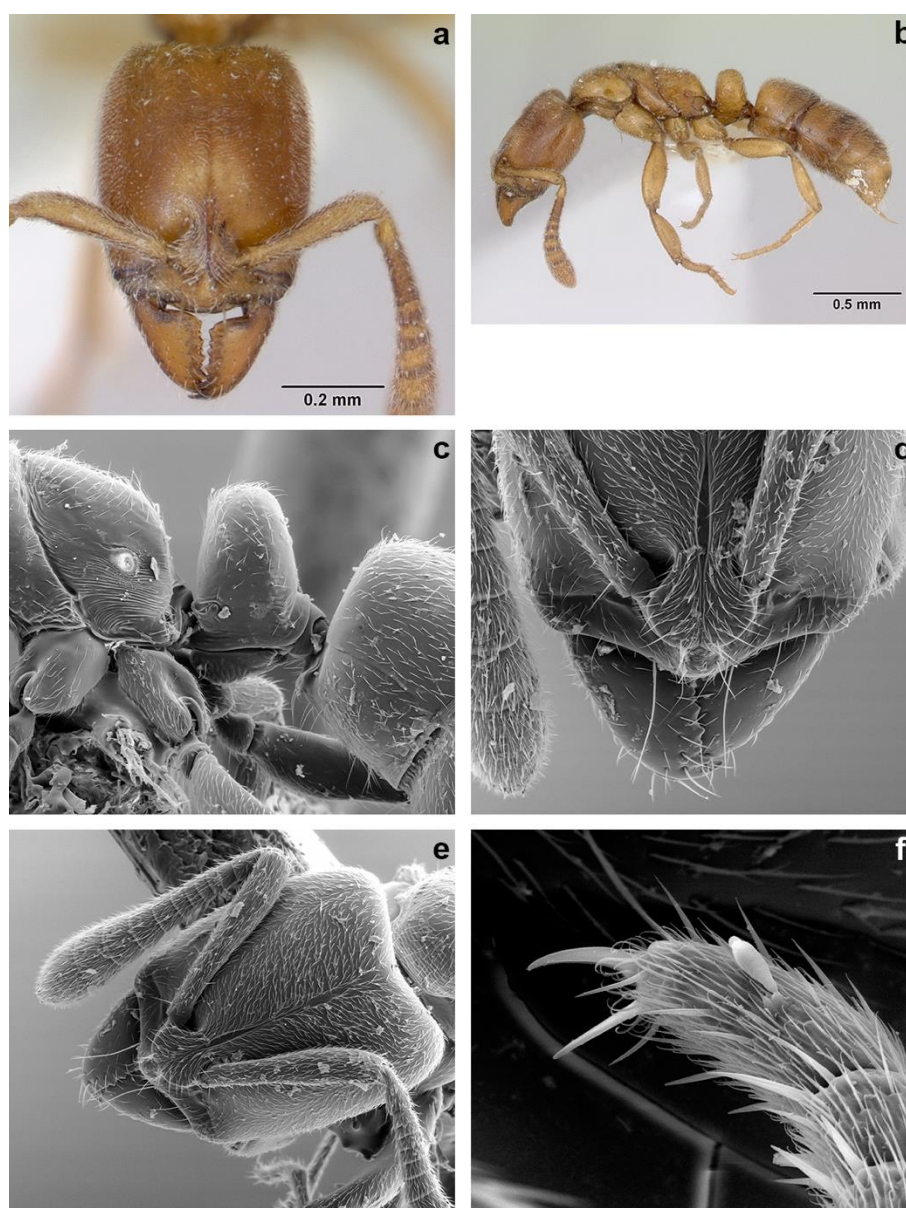


Figure 43. *Hypoponera beebei* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on petiole in profile **D** close-up on mandibles **E** head in full-face view **F** close-up on tarsal claws

***Hypoponera beebei* Wheeler, 1924** (Fig. 43-a, b). Cited as *Ponera beebei* in Wheeler (1924: 107). *Hypoponera beebei* in Linsley and Usinger (1966), Kempf (1972), Lubin (1985), Peck (1994a), Peck (1994b), Roque-Albelo et al. (2000), Wauters et al. (2015), Lubin (1984), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Kempf (1972), Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Endemic: Fernandina, Floreana, Isabela (CA, SN, VA, VW), Marchena, San Cristóbal, Santa Cruz, Seymour Norte and Genovesa (Herrera et al. 2020).

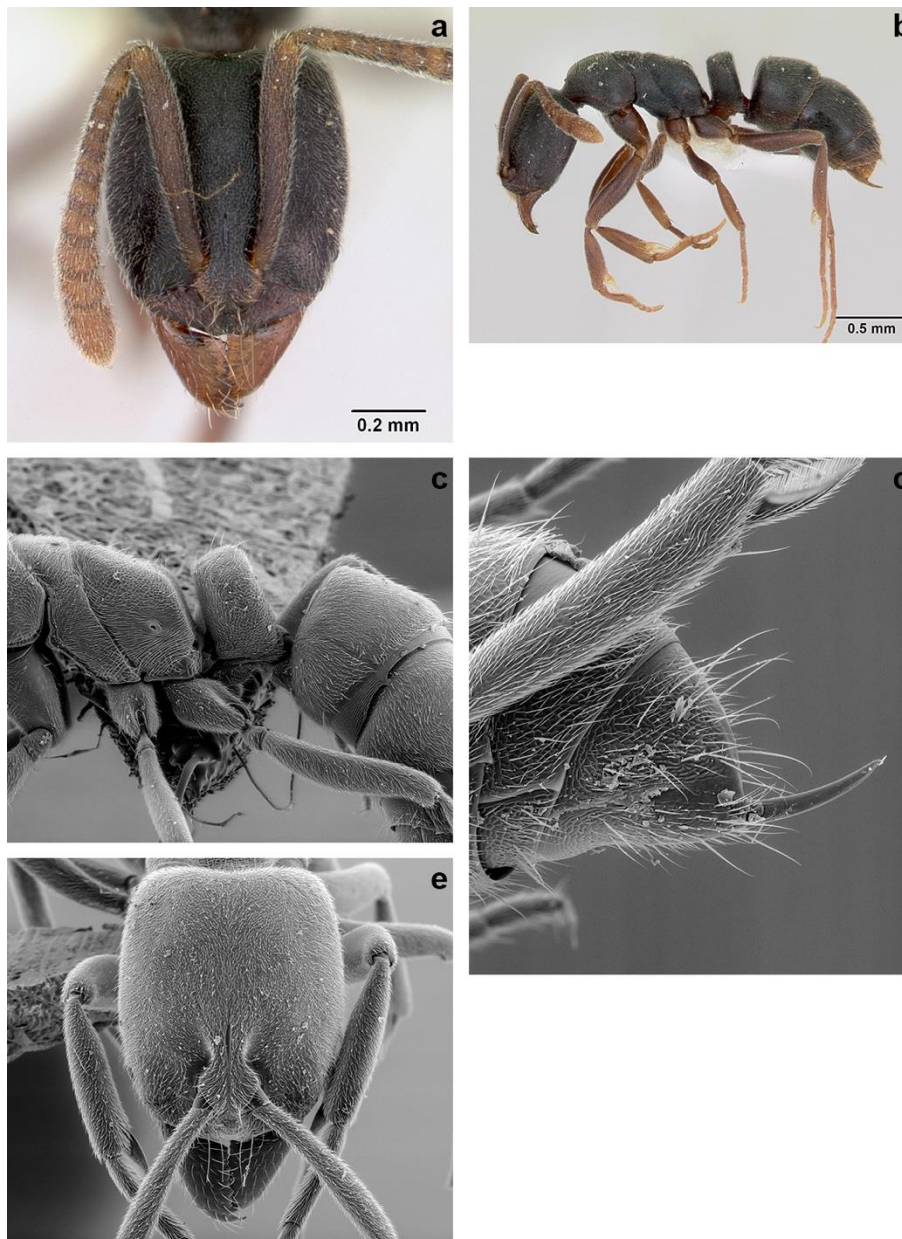


Figure 44. *Hypoponera opaciceps* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on petiole in profile **D** stinging apparatus **E** head in full-face view

***Hypoponera opaciceps* MAYR, 1887** (Fig. 44-a, b). First published record in (Lubin 1983). Cited also in LUBIN (1984), PECK (1994a), PECK (1994b), DEKONINCK & al. (2014), HERRERA (2015), WAUTERS & al. (2016), and HERRERA & al. (2020). **Taxonomic history:** BOLTON (1995), BOLTON & al. (2006), BOLTON (2015).

Distribution: Australasia, Indomalaya, Nearctic, Neotropical, Oceania, Palearctic.

Galápagos distribution: Invasive: Baltra, Fernandina, Floreana, Isabela (CA, SN, VA, VD) Marchena, San Cristóbal, Santa Cruz, and Santiago (HERRERA & al. 2020).

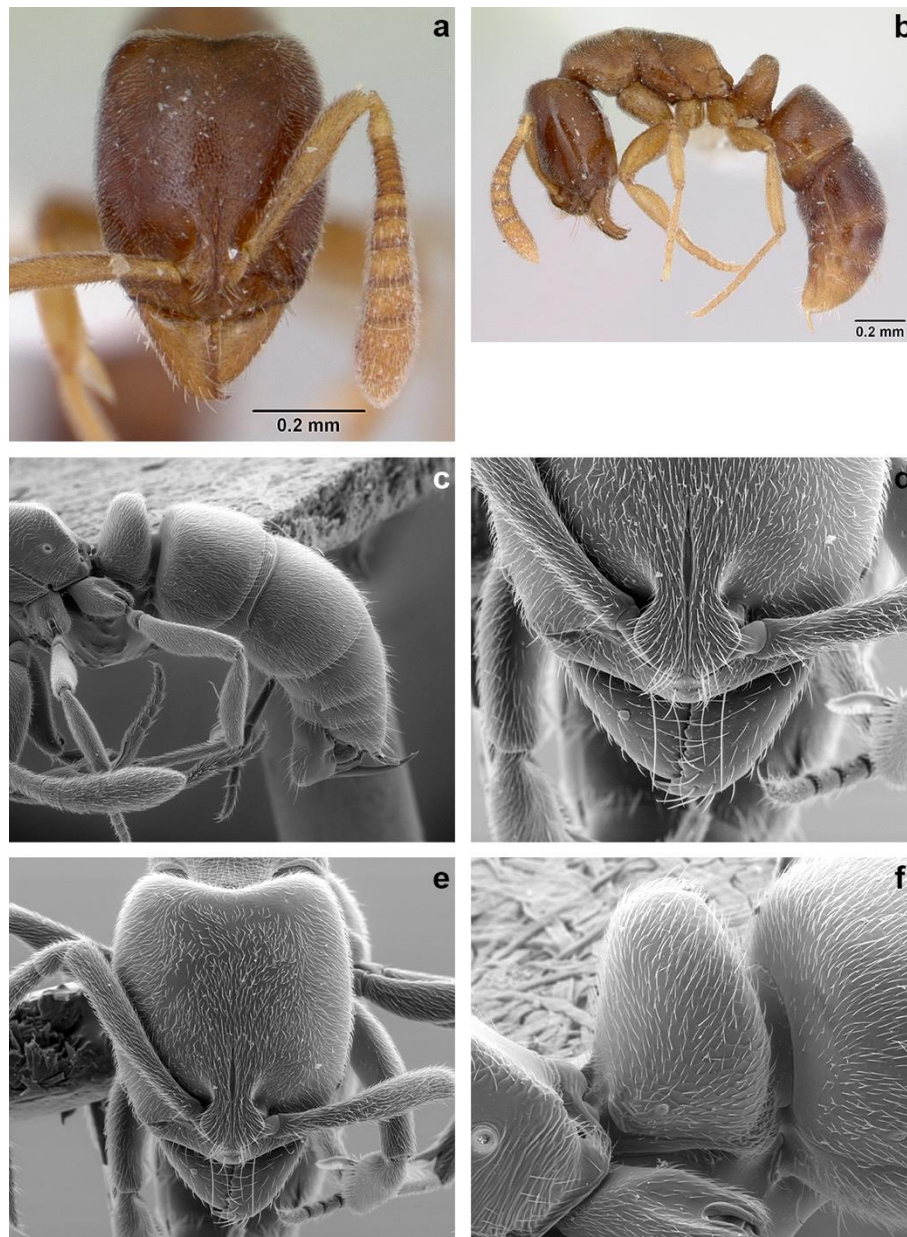


Figure 45. *Hypoponera opacior* worker micrographs in **A** head in full-face view **B** view

in profile, and SEM images of **C** metasoma in profile **D** close-up on mandibles **E** head in full-face view **F** close-up on petiole in profile

***Hypoconera opacior* Forel, 1893** (Fig. 45-a, b). In Herrera et al. (2014), Dekoninck et al. (2014) [RBINS], Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Nearctic, Neotropical.

Galápagos distribution: Introduced: Fernandina, Floreana, Isabela (CA, SN, VA, VD, VW), San Cristóbal and Santa Cruz (Herrera et al. 2014).

Genus *Leptogenys* Roger, 1861

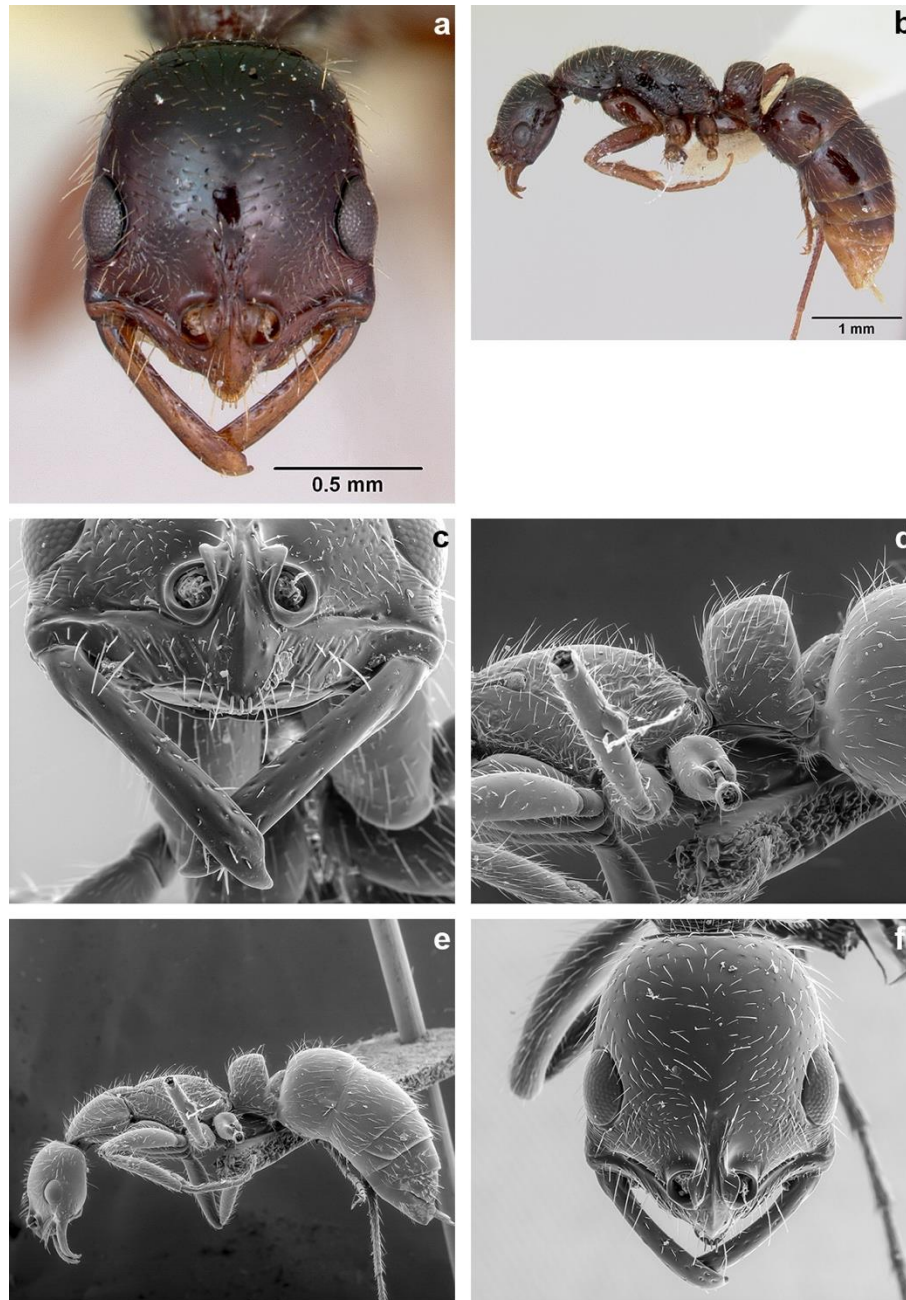


Figure 46. *Leptogenys santacruzii* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on mandibles **D** close-up on petiole in profile **E** view in profile **F** head in full-face view

***Leptogenys santacruzii* Lattke, 2011** (Fig. 46-a, b). Cited in Herrera (2015, 2019) and Herrera et al. (2020) [CAS. ICCDRS]. **Taxonomic history:** Lattke (2011) and Bolton (2014).

Distribution: Endemic: Isabela (VA) and Santa Cruz Islands (Herrera et al. 2020).

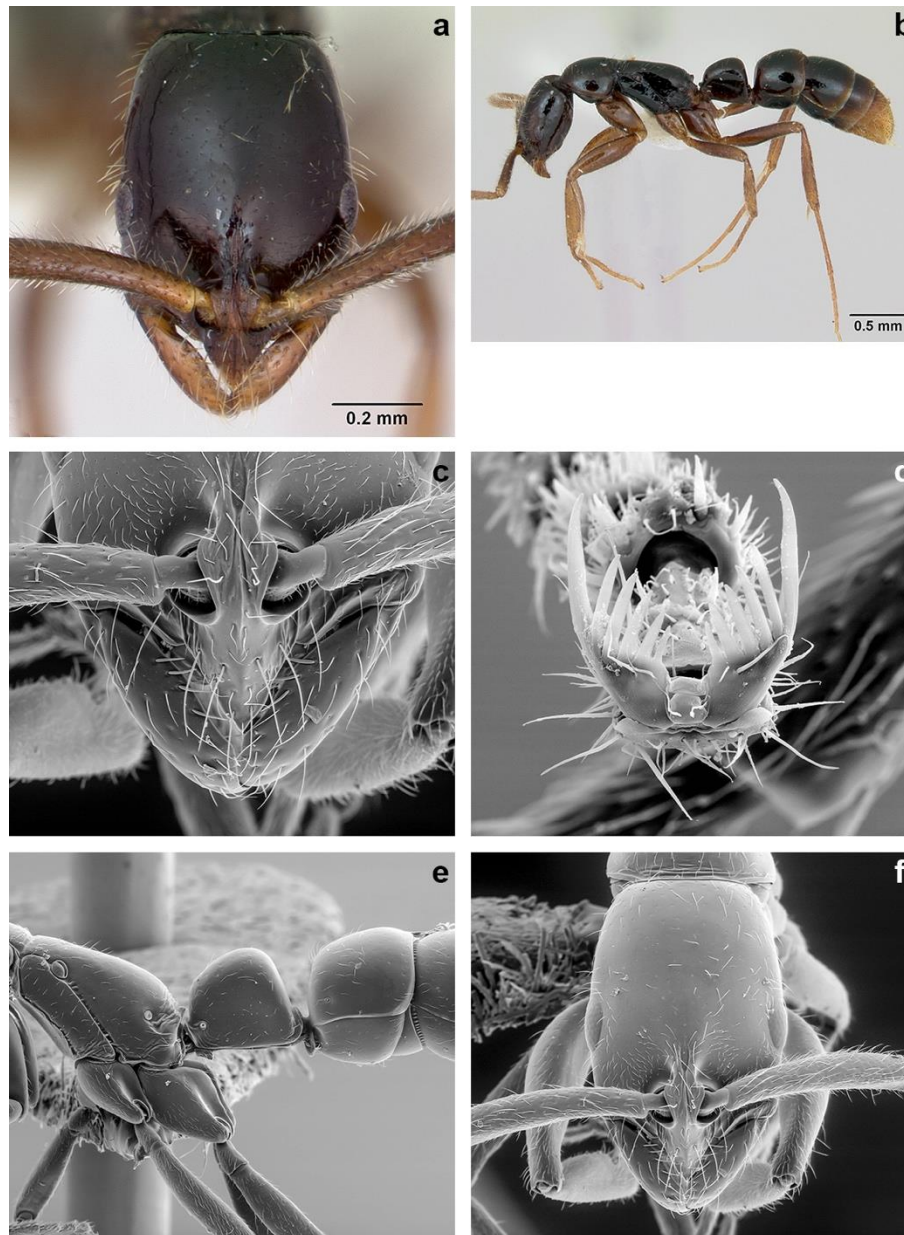


Figure 47. *Leptogenys* sp. cf. *gorgona* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** close-up on clypeus **D** close-up on tarsal claws **E** close-up on petiole in profile **F** head in full-face view

***Leptogenys* sp. cf. *gorgona* (hh03)** (Fig. 47-a, b). Cited in Latke (2011), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS].

Distribution: Endemic: Santa Cruz. New record: Isabela Island (SN).

Genus *Odontomachus* Latreille, 1804

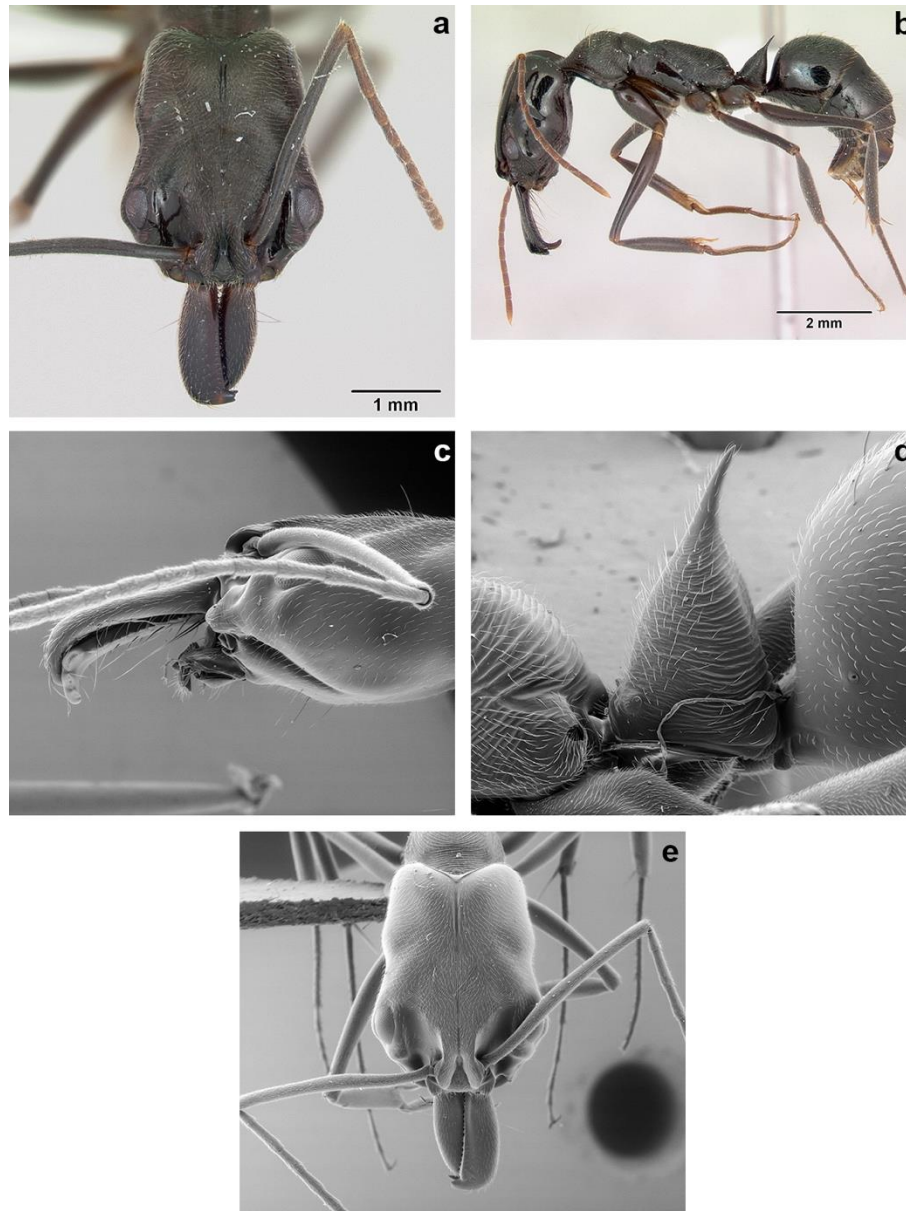


Figure 48. *Odontomachus bauri* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in profile **D** close-up on petiole in profile **E** head in full-face view

***Odontomachus bauri* Emery, 1892** (Fig. 48-a, b). Cited as *O. bauri* in Emery (1893), as *Odontomachus haematoda bauri* in Wheeler (1919) [CAS], Wheeler (1924), Wheeler (1933) [CAS], Kempf (1972) and *Odontomachus haematoda* in Stitz (1932). *Odontomachus bauri* in Pezzatti et al. (1998), von Aesch & Cherix (2005), Linsley & Usinger (1966), Lubin (1984), Brandão (1991), Brandão & Paiva (1994), de la Vega (1994), von Aesch & Cherix (2005), von Aesch (2006) [ICCDRS], Causton et al. (2006), Dekoninck et al. (2014) [RBINS], Wauters et al. (2014), Herrera (2015, 2019) and Herrera et al. (2020) [ICCDRS, ICCDRS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Neotropical.

Galápagos distribution: Introduced: Floreana, Isabela (CA, SN), San Cristóbal and Santa Cruz (Herrera et al. 2020).

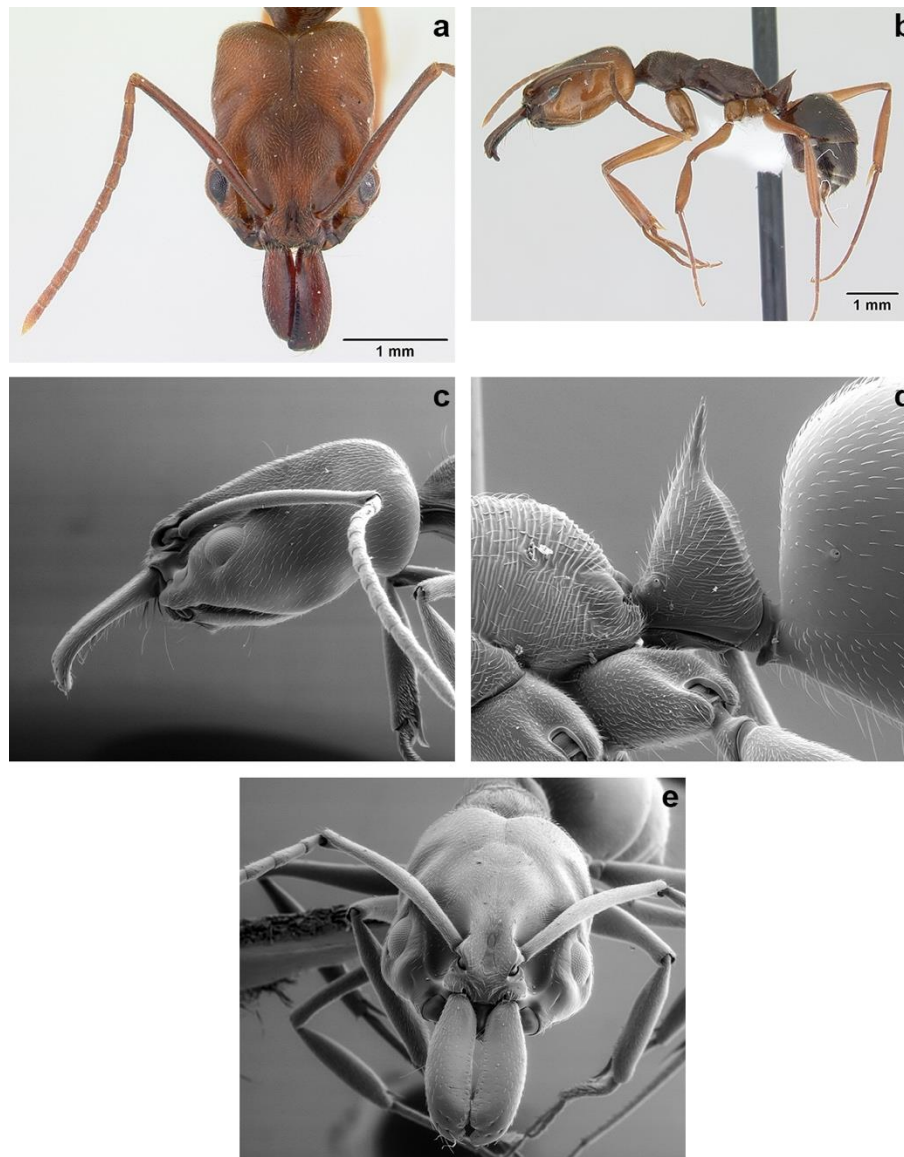


Figure 49. *Odontomachus bauri* worker micrographs in **A** head in full-face view **B** view in profile, and SEM images of **C** head in profile **D** close-up on petiole in profile **E** head in full-face view

***Odontomachus ruginodis* Smith, 1937** (Fig. 49-a, b). First published record in Herrera et al. (2014), see also Herrera (2015, 2019) and (Herrera et al. 2020) [ICCDRS]. **Taxonomic history:** Bolton (1995), Bolton et al. (2006), Bolton (2014).

Distribution: Nearctic, Neotropical.

Galápagos distribution: Introduced: Santa Cruz (Herrera et al. 2014).

DISCUSSION

At least 53 species of ants from 22 genera are now reported from the Galápagos Islands. The number of new species and locality records in the last 15 years combined with the fact that many islands are still highly understudied demonstrates that considerable work still needs to be done to determine and understand the islands' ant diversity.

Of the species recorded in this checklist, there are still dubious records. This is the case for *Camponotus senex*, *Crematogaster crinosa* and *Solenopsis saevissima*. Recent fieldwork and extensive studies and revision of old collections could not confirm their presence in the archipelago. (Wheeler 1924) defined *C. senex* as a species that is unlikely to be present in the Galápagos, while (Trager 1991, Pacheco et al. 2007) do not mention *S. saevissima* as part of the fauna of the archipelago. In the case of *C. crinosa*, these could be specimens from locations outside the islands; they were collected by Mr. Maurice Willows during the Templeton Crocker Expedition (Crocker 1933). Wheeler (1924) cataloged this record as unexpected in Galápagos. These three species have not been included in the keys in this work. Furthermore, the records of *Anoplolepis gracilipes* (Smith, 1857), *Camponotus planatus* Roger, 1863, *Strumigenys godeffroyi* Mayr, 1866 and *Pseudoponera stigma* (Fabricius, 1804) in the Galápagos (McGlynn 1999) are considered doubtful due to potential misidentification or perhaps species that were intercepted in Galápagos and deposited in museums. As such, these species are not included in the species list. Neither is the *Tetramorium pacificum* Mayr, 1870 record (McGlynn 1999), which could be a case of misidentification.

Our studies suggest that the introduced ant *Camponotus conspicuus zonatus* may have been confused with the endemic *C. macilentus*. This confusion is of particular interest regarding ecological studies that have cited the abundance of *C. macilentus*, which is typically more cryptic (McMullen, 2011). Material examined retrospectively by the first author, collected by Pezzatti et al. (1998) as well as von Aesch (2005, 2006), showed that *C. conspicuus zonatus* was collected during these field trips, nevertheless this ant is not mentioned in any of these papers. Some of the records for the subspecies of *Camponotus* are also questioned. Tocora et al., are currently reviewing putative subspecies of *Camponotus macilentus* and *C. planus* in the archipelago, and for now we have only cited the records of Wheeler (1919, 1924, 1933) and Stitz (1932). Lastly, for the genus *Nylanderia* taxonomic and genetic studies are necessary to understand the number of species present and their status in Galápagos.

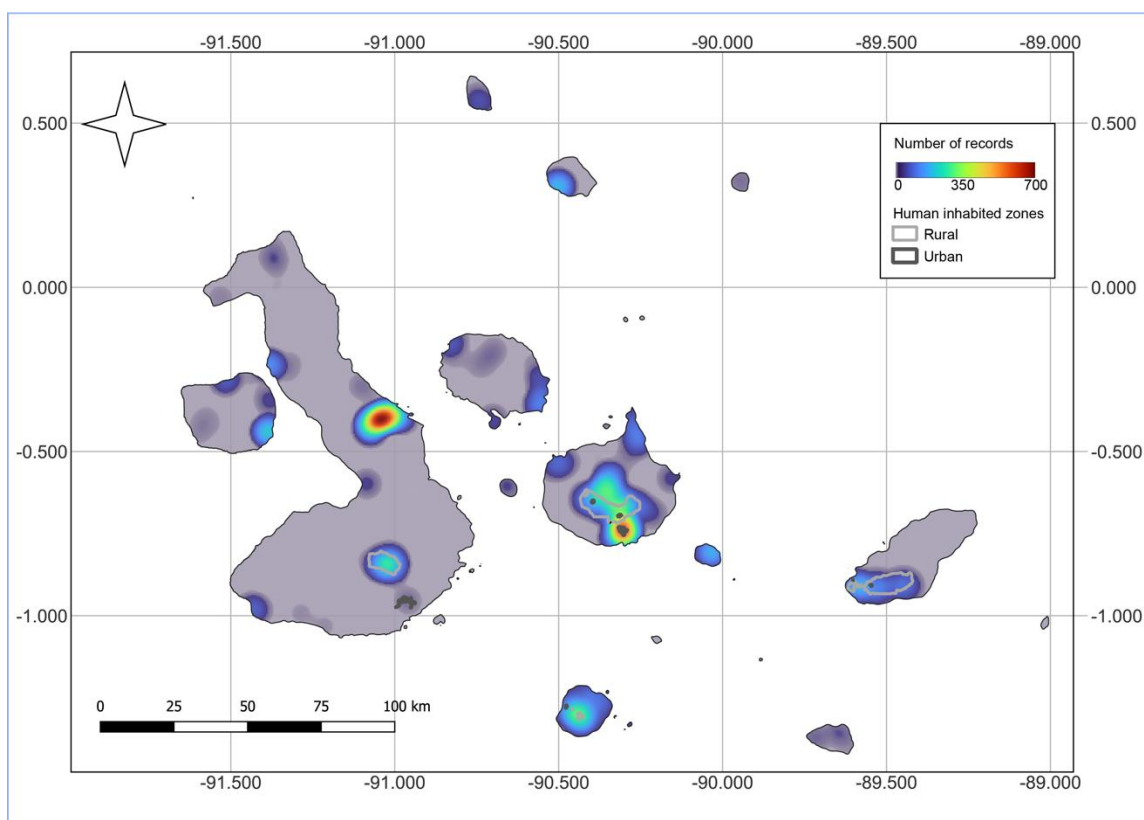


Figure 50. Heatmap highlighting the distribution of ant samples taken from 1963 to 2022. Regions indicated in grey have not been sampled for ants.

Although efforts in the last two decades have substantially increased our knowledge of the ant fauna of the Galápagos, a good portion of the material studied during the last years came from surveys that were not focused on ants. Ants remain poorly studied and systematic sampling of the archipelago is necessary. Apart from Santa Cruz (in 1982, 1984) and Floreana (in 1997 and 2005) (Clark et al 1982, Lubin 1984, Pezzati et al. 1998, von Aesch 2006, Herrera unpublished data), none of the other islands have been sampled extensively (Fig. 50). As a result of this, in 2020, a multi-institutional project was initiated to remedy this and surveys on all islands initiated. Complementary to this, taxonomic material in yet unexplored collections is underway. Revisions of these collections and systematic field surveys will provide much-needed information to understand the role of ant species in ecosystem processes in the Galápagos as well as for prioritizing the management of introduced and invasive species and protecting endemic species.

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