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Review of ants (Hymenoptera: Formicidae) of Crete, with keys to species determination and zoogeographical remarks

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Abstract: We present the first critical review of all Formicidae species found on Crete. Samples were collected from 302 localities, dispersed on the whole island (Prefectures of Chania – 75, Heraklion – 86, Lasithi – 74 and Rethymnon – 67). As a result, we present a detailed catalogue of 100 Cretan ant species, representatives of 6 subfamilies and 28 genera, with keys to their determination. The most diverse genera are *Temnothorax* (17 species), *Camponotus* (11) and *Tetramorium* (9). Additionally, we provide the very first documentation of *Tapinoma festae* male genitalia. All species and keys to their determination are illustrated, short notes on their biology, as well as maps on their distribution on the island, are also given.

Among 18 known endemic species 89% belong to the Myrmicinae subfamily. With 8 endemic species the *Temnothorax* genus is the most diverse in this group. Among all species recorded from Crete we could distinguish 14 chorotypes. The dominant groups are chorotypes of species more or less widely spread in the Mediterranean countries. They represent 59% of known ant fauna of Crete. Among them the dominant are Mediterranean (23%), Aegaean (13%) and NE-Mediterranean (9%). Nevertheless, alarming is also a high percentage of invasive taxa recorded from the island (10%).

Key words: ants, biodiversity, endemic, catalogue, Mediterranean, zoogeography, key to genera, key to species.

Introduction

Papers published by Agosti & Collingwood (1987a,b) can be considered to be the first attempt to catalog ants species from the northeastern part of the Mediterranean Region. In further years their works initiated other, more detailed studies on ants of Bosnia and Herzegovina (Vesnič 2011), Bulgaria (Lapeva-Gjonova *et al.* 2010), Croatia (Bračko

2006), Montenegro (Petrov 2006, Karaman 2011), Macedonia (Karaman 2009, Bračko *et al.* 2014), Serbia (Petrov 2006), Slovenia (Bračko 2007) and Turkey (Kiran & Karaman 2012). Myrmecofauna of Greece is the most intensively studied in this region. Knowledge on Greek ant species diversity and richness was supplemented in last years by series of faunistic (Borowiec & Salata 2012, 2013, 2014a, 2017a, 2017b, 2018a, 2018b, 2018c, 2018d, Bračko *et al.* 2016, Legakis 2011, Salata *et al.* 2019) and taxonomic papers (Boer 2013, Borowiec & Salata 2014b, Csősz *et al.* 2015, 2018, Salata & Borowiec 2015a, 2015b, 2015c, 2016, 2017, 2018, Salata *et al*. 2018a, 2018b, Steiner *et al.* 2018, Wagner *et al.* 2017). In results, Greece, with more than 280 known ant species, is the most species-rich area in the whole Mediterranean Region (Borowiec & Salata 2018a).

Until now, Crete, next to Cyprus, has been one of two large Mediterranean islands that have not been a subject of intensive myrmecological studies. All knowledge of myrmecofauna of this island comes from several faunistic notes and a few papers containing descriptions of new, endemic taxa. These works were published almost entirely before World War II. Consequently, they do not include many taxa that have been divided into groups of species as a result of modern revisions. Based on published data there are 110 ant species known from this island (16 endemics) (Borowiec & Salata 2012, 2013, Csősz *et al.* 2015, Salata & Borowiec 2015a, 2017, 2018, Salata *et al.* 2018a, Salata *et al*. 2018b). However, the presence of some of them is questionable and requires confirmation. Moreover, there are 30 taxa described from Crete (Boer 2013, Csősz *et al.* 2015, Emery 1894a, 1895a, 1906, 1908a, b, Forel 1886, 1889, 1910a, Karavaiev 1912, 1927a, Salata & Borowiec 2015a, 2017, 2018, Salata *et al.* 2018a, b, Santschi 1927a, 1929a) and status of some of them needs to be revised.

The geological history of the island, together with the high level of endemism shown in other invertebrates (Higgins 2009, Triantis & Mylonas 2009), led us to the conclusion that the knowledge of Cretan myrmecofauna is fragmentary and requires detailed study.

Below we present a catalog of ant species known from Crete with comments on their biology and distribution. We also provide keys to determine all species known from the island. Presented results are part of seniors' author Ph.D. dissertation.

History of studies on Cretan Formicidae

Myrmica rubra and *Formica pubescens* are the first ant species recorded from Crete (Lucas 1854, Raulin 1861). Afterward, Forel (1886), listed the other 13 species new for Cretan fauna and, based on material collected from Crete, described a new species – *Camponotus creticus*. The same author, in 1889, noted the other 5 species new for Crete, one of which was new to science – *Aphaenogaster rugosoferruginea*.

5 years later, Emery (1894a) listed 18 ant species known from the island. Four of these were described as new for science (*Aphaenogaster cecconii*, *A. simonellii*, *Camponotus candiotes* and *C. baldaccii* – the latter one under the tetranominal name) and other 7 were recorded for the first time for this island. *Monomorium creticum* is the last species described from Crete in the 19th century (Emery 1895a). Additionally, in the catalogue of Hymenoptera (Dalla Torre 1894), we can find information regarding the first two species described from Crete. Based on literature data, by the end of the 19th century, 32 species of ants were known from the island (Appendix 1).

Because of the complicated geopolitical history of Europe, the 20th century can be divided into two periods. The first one covers publications published until 1939 and the second one concerns papers released after 1983. This division is based on the fact that between 1939 and 1983 Cretan ants were not included in any, known to us, surveys.

The first work that mentions Cretan myrmecofauna was a description of *Cataglyphis cretica*, under tetranominal, unavailable name (Emery 1906). Two other papers (Emery 1908a,b) listed members of *Camponotus* and *Aphaenogaster* described from Crete. In his paper, Emery (1908a) also provided the name of *C. baldaccii* as trinominal, making it available for science. The same author in his next paper (Emery 1908c) described, under unavailable, tetranominal name, *Messor concolor* and for the first time noted *Messor orientalis* from Crete. Two last papers published in 1908 included a checklist of Cretan *Monomorium* and a description of *Epixenus creticus*, species considered as a social parasite of *Monomorium creticum* (Emery 1908d,e).

Forel (1910a) listed in total 16 species from Crete, two of them as new to science (*Epixenus biroi*, *Temnothorax creticus*), 5 species new to Cretan fauna and noted *Cataglyphis cretica* in the trinominal name. In his subsequent paper, he again mentioned the presence of *Camponotus baldaccii* on Crete (Forel 1910b). There were two other publications released between 1910 and 1920. Karavaiev (1912), based on specimens collected on the potatoes field, described *Lepisiota splendens* and Emery (1915a) discussed the distribution of *Aphaenogaster simonellii*.

The twenties of 20th century were rich in reviews, which provided, among other things, distribution data of some species known from Crete (Emery 1921a, 1922, 1924a, 1925a,b, Santschi 1927a). Other publications, published before 1939, were mainly checklists of Cretan ants (Stitz 1928) or myrmecofauna known from surrounding regions (Emery 1921b, Menozzi 1929, Müler 1923, Stitz 1930, 1939). Some of them listed species new to Cretan fauna, such as *Lepisiota syriaca* (Stitz 1928), *Messor aegaeus* (Emery 1921b) and *Crematogaster sordidula flachi* (Müler 1923). There are also two more taxa described from Crete, which names are unavailable: *Crematogaster auberti laestrigon cretica* (Karavaiev 1927a) and *Cataglyphis cursor helenica dorica* (Santschi 1929a). Based on the literature, by 1939, 50 ant species were known from Crete (Appendix 2).

The second period of research on Cretan myrmecofauna was initiated by Legakis (1983). In his work, he stated that, based on literature, there were 45 ant species (7 endemics) known from the island. In the following papers, 11 new for Cretan fauna species were listed by Bolton (1987), Buschinger (1989), Neuenschwander *et al.* (1983) and Radchenko (1997).

Radchenko (1997) is also one of the first, who questioned the presence of some species on the island. He suggested that Cretan populations of species listed as *Monomorium dentigerum* were, in fact, *Monomorium perplexum*. Moreover, Brown & Wilson (1957) considered *Epixenus* as a junior synonym of *Monomorium*. Therefore, they suggested that the two *Epixenus* species known from Crete were described based on ergatoid gynes of *Monomorium creticum*. As a result of this revision *Monomorium creticus* Forel, 1908 became a junior homonym of *Monomorium creticum* Forel, 1895, and *Monomorium biroi* Forel, 1910 became a junior homonym of *Monomorium biroi* Forel, 1907. The homonymy of *Monomorium biroi* was resolved by Bolton (1995). Unfortunately, the homonymy of *Monomorium creticus* stayed unresolved until the end of the 20th century. There were also other Cretan taxa whose status was changed by the end of 20th century: *Camponotus creticus* became a junior synonym of *C. gestroi*, *C. concavus* became a junior synonym of *C. aethiops*, *Crematogaster sordidula flachi* became a junior synonym of *C. sordidula* (Agosti & Collingwood 1987a), *Messor concolor* became a junior synonym of *M. wasmanni* (Collingwood & Agosti 1996) and *Temnothorax creticus* became a junior synonym of *T. exilis* (Baroni Urbani 1971). Agosti & Collingwood (1987a) mistakenly considered *Cataglyphis cretica* as an unavailable name. The status of this species was revised by Agosti (1990). Based on the literature data, there were 57 ant species known from Crete by the end of the 20th century (Appendix 3.).

The 21st century is characterized by a significant progress in the study on Cretan myrmecofauna. Legakis (2011), in his checklist of Greek ants, listed 96 taxa from Crete, 85 of them had valid species status, and 34 were noted for the first time from the island. He also discussed a taxonomical affiliation of some *Camponotus* species listed by Forel (1910a), e.g., *Camponotus sylvaticus dichrous* and *Camponotus rubripes dichrous*. His results were partly repeated by Karaman *et al.* (2011) and Tăuşan & Markó (2011). It is worth mentioning that Legakis' paper was preceded by few other publications providing some valuable data on Cretan biodiversity (Csősz & Schulz 2010, Ionescu-Hirsch 2009, Jucker *et al.* 2008, Seifert 2003, Wetterer *et al.* 2009). In 2010 the junior homonymy of *Monomorium creticus* was finally resolved (Özdikmen 2010).

In their checklists of Greek ants, Borowiec & Salata (2012, 2013) verified data provided by Legakis (2011). In total, they listed 24 species new for Cretan fauna, considered three species (*Camponotus cosensis*, *Cataglyphis creticus*, *Cataglyphis hellenica*) as junior synonyms of another two (*Camponotus sanctus* and *Cataglyphis aenescens*), proposed an incertae sedis status for *Messor meridionalis* and, based on collected material, excluded 11 species from Cretan fauna. Bračko *et al.* (2014) and Ghahari & Collingwood (2013) repeated data performed in these works whereas Sarnat *et al.* (2015) suggested that the presence of *Pheidole megacephala* on Crete could be a result of misidentification of *P. pallidula*. Borowiec (2014), listed two other species new for Cretan fauna: *Lasius psammophilus* and *Prenolepis nitens*.

In the following years 15 other species were described based on material collected from Crete (*Aphaenogaster balcanicoides, Lasius tapinomoides, Oxyopomyrmex laevibus, Temnothorax ariadnae, T. crassistriatus, T. daidalosi, T. ikarosi, T. incompletus, T. minotaurosi, T. proteii, T. variabilis, T. helenae, T. lucidus, T. subtilis, Plagiolepis perperamus*), the first 11 have been considered to be Cretan endemics (Boer 2013, Csősz *et al.* 2015, Salata & Borowiec 2015a, 2018, Salata *et al.* 2018a, Salata *et al.* 2018b). In summary, 110 ant species were known from Crete until the end of 2018 (Appendix 4.).

Crete: the physical background

The Mediterranean basin hosts some of the largest archipelagos in the world, with approximately 12.000 islands and islets (Blondel *et al.* 2010). Due to the geodynamics of the whole region, the majority of these islands (more than 9.800) are located in the eastern Mediterranean area, mainly in the Aegean Sea (Poulakakis *et al.* 2015). The Aegean archipelago is found at the margins of the tectonic plates of Eurasia and Africa, an area that has experienced turbulent geological and climatic changes since the late Tertiary. Crete, the largest Greek island, lays at the southernmost margins of the Aegean archipelago with an area of 8.400 km^2, being the fifth largest island in the Mediterranean world (Vogiatzakis *et al.* 2008). It has been called a ''miniature continent'', due to its long isolation history and the intense tectonic dynamics (Rackham & Moody 1996). The isolation of Crete has begun with the end of Miocene, during the Messinian Salinity Crisis (MSC, 5.96–5.33 Mya), when the Mediterranean Sea dried up (Krijgsman *et al.*, 1999). As most of the Mediterranean islands, Crete was isolated from the rest of the Aegean region by extensive saline deserts and saline/hypersaline lakes. The reopening of the Gibraltar Strait, which ended the MSC, led to the refilling of the Mediterranean basin and caused the permanent isolation of Crete from Anatolia, Peloponnesus and the Cyclades. This fact is also supported by what we know on the faunal evolution of the island: Crete had "balanced/mainland" type of mammal fossil record up to the end of Miocene, but "unbalanced/island" type in Plio-Pleistocene

fossil record (Dermitzakis 1990). During Pliocene, Crete had undergone several events of submersion, losing huge amounts of land, while in Pleistocene was already a remote island with no connections to any mainland on the East, North or West (Poulakakis *et al.* 2015). In Quaternary, Crete and nearby islands (Karpathos and Rhodes) were in 'approximately' the same position as today. And, although in glacial maxima, the seal level was 200 m lower than today (Beerli *et al.* 1996), Crete remained isolated from Cyclades and Peloponnesus, as the Cretan sea is much deeper (Schule 1993). During the latest low stand (21.500 years ago), many near-shore islands were joined with each other and/or with the mainland. At 8.000 years ago, the coastal configuration was almost like that of today (Perissoratis & Conispoliatis 2003).

The Cretan landscape is highly mountainous, defined by large and high mountain ranges crossing from west to east, three of them exceeding 2.000 m of altitude. These mountains create huge regional variations in Crete's Mediterranean climate, with rain-excesses and rain shadows. In general, aridity increases from west to east and from north to south. Annual precipitation ranges from about 240 mm in the south-east to at least 2.000 mm in the high White Mountains range (Lefka Ori) (Grove & Rackham 1993). Temperature on mountains seems to fall at a rate of about 6 °C per 1.000 m (Rackham & Moody 1996). Above 1.600 m most of the precipitation falls as snow that covers the ground from late October until May (or even July, locally on Lefka Ori range). The high mountains are limestone (Vogiatzakis *et al.* 2008). The main island is also surrounded by about 36 larger or smaller offshore islets of various shapes and sizes, diverse geologically and more arid than the mainland Crete (Bergmeier *et al.* 2001).

Phrygana (*sensu* di Castri, 1981), maquis (*Quercus coccifera* mainly), intermediate mosaic formations of both, as well as subalpine shrubs, cover most of the Cretan landscape. Phrygana comprises assemblages of spiny, often aromatic shrubs. Most are short-lived, shallow-rooted, distasteful and resistant to drought and grazing, such as *Calicotome villosa*, *Sarcopoterium spinosum*, *Thymus capitatus* and *Genista acanthoclada*. Traditionally they are considered to be a result of woodland degradation due to grazing and burning (di Castri *et al.* 1981). Pine forests in Central and East Crete (*Pinus brutia*), Cypress forests in West Crete (*Cupressus sempervirens*) and patches of Oak tree forests (*Quercus ithaburensis* & *ilex*) are also found mainly on mountain cliffs. Lowland shrublands present at lower elevations may reach the alpine zones, confirming the weak zonation of vegetation on Crete (Vogiatzakis *et al.* 2008).

Finally, the natural environment of the coasts of Crete falls into two categories. The southern coast of the island is mainly rocky with steep slopes, while the northern coast has extended flat areas with sand or gravel. In the north, the coast is irregular with peninsulas, gulfs, bays, and many small rivers and streams, while the southern coast is straight with the exception of the Gulf of Messara (Legakis *et al.* 1993).

Crete, as most of the other Greek islands has undergone intensive human influence, with a long history of human presence on them (at least 8.000 years, Legakis *et al.* 1993, Poulakakis *et al.* 2015). The present population of approximately 500,000 is mainly active in agriculture and tourism. In the last 20 years, the coast of the island (total length of 1046 km) has received the heaviest brunt of human activity. The increases in tourism, industrialization, and urbanization have pushed many people toward the coastal areas, so today more than 50% of the population of the island lives within a distance of 5 km from the coast. Intensive grazing on the mountains of Crete, one of the oldest human activities on the island, is very common and still highly altering/shaping the Cretan landscape (Kaltsas *et al.* 2013).

Material and methods

The majority of the studied material comes either from fieldwork performed between 2007-2014 or from the collection of the Natural History Museum of Crete. Each locality is shortly described and has assigned a unique code (Appendixes 5. and 6.). Moreover, the project was supplemented by the study on type specimens of taxa known from the north-eastern part of the Mediterranean Region, material deposited in various museums and data available on www.AntWeb.org.

Below, we list all institutions that provided material used in this research:

— Dipartimento di Scienze Agrarie, Università di Bologna, Bologna, Italy;

— Museo Civico di Storia Naturale, Genova, Italy;

— Museum d'Histoire Naturelle, Genève, Switzerland;

— Muséum National d'Histoire Naturelle, Paris, France;

— Naturhistorisches Museum, Basel, Switzerland;

— Schmalhausen Institute of Zoology NAS of Ukraine, Kiev, Ukraine;

— World Museum Liverpool, Great Britain;

— Natural History Museum of Crete, Heraklion, Greece;

— Univerza v Ljubljani, Ljubljana, Slovenia;

— Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław, Poland.

During fieldwork, the main method was direct sampling (hand collecting). Individual specimens and nests were collected on the ground, in leaf litter and rock rubble, under stones and tree trunks. This method was occasionally supplemented by litter sifting and collecting material with an entomological umbrella. All specimens were preserved in 75% EtOH. Samples deposited in the Natural History Museum of Crete were collected by pitfall traps.

Specimens were compared using standard methods of comparative morphology. Photos were taken using a Nikon SMZ 1500 stereomicroscope, Nikon D5200 photo camera, and Helicon Focus software. In "distribution on Crete" sections all data published by Borowiec & Salata (2012, 2013, 2014b), Salata & Borowiec (2015a, 2015b, 2017, 2018a, 2018b) and Salata *et al.* (2018a, 2018b, 2019) is considered as "new records". This data was revealed during senior's author Ph.D. study, and here we provide more detailed descriptions of sampling areas. Thus, those publications are not mentioned in the literature section. Initially, the material was determined based on the keys to Balkan ants (Agosti & Collingwood 1987b). However, due to numerous errors in the species-level keys in the publication mentioned above, its use was discontinued, and the material was determined based on the original descriptions of the species and the available type material.

In some cases, keys available in papers published by Karaman & Aktaç (2013), Boer (2013) and Csősz *et al.* (2015) were used in species delimitation. Also, papers published by the authors of this monograph, which based on the material collected from Crete (Salata & Borowiec 2018, Salata *et al.* 2018a, b) include the same keys to species determination. Keys to genera and subfamilies were constructed partly based on keys presented by Agosti & Collingwood (1987b) and Czechowski *et al.* (2012). Distribution maps were created in DivaGis 7.5 (Hijmans *et al.* 2011). The genera order follows the phylogenetic relations (Schmidt 2013, Ward 2014, Ward *et al.* 2010, 2015, 2016). Within genera, the species are listed alphabetically. Distribution data comes from Catalogue of ants of Europe, the Mediterranean Basin, and adjacent regions (Borowiec 2014).

The zoogeographical division, in the majority, follows the division of chorotypes proposed by Vigna Taglianti *et al.* (1999). Additionally, we implemented the Aegean chorotype described by Fattorini (2000) and Pontic chorotype characterized by Warchałowski (1976) (the latter one with changes). We also propose our definition of the NE-Mediterranean chorotype. The term "chorotype" is used according to its original meaning, clarified by Passalacqua (2015), and defined as a group of species with a similar pattern of distribution. Below we list distinguished chorotypes and provide their descriptions. The descriptions were originally defined in the above-mentioned literature.

1. Chorotypes of species widely spread in the Holarctic Region.

1.1. W-Palearctic: chorotype of species widespread from Europe to the Ural Mountains and SW Asia, south to N Africa and west to Macaronesia.

1.2. Turano-European: chorotype of species widespread in Europe (mainly in southern and central countries), Middle East, Anatolia, Caucasus, Iran and w Turkestan.

1.3. Pontic: chorotype of species widespread in Great Hungarian Plain and lands surrounding Black Sea. Extensions are possible to Anatolia, Aegean Islands and Balkan lowlands.

2. Chorotypes of species more or less widely spread in Europe.

2.1. European: chorotype of species widespread in Europe, with possible extension to Anatolia, Caucasus, Maghreb and Macaronesia.

2.2. S-European: chorotype of species occurring in S Europe, north to the Loire River basin, the Alps and the Carpathian Mountains. Extensions are possible to British Isles and N Caucasus.

3. Chorotypes of species more or less widely spread in the Mediterranean countries.

3.1. Mediterranean: chorotype of species widespread in Mediterranean countries. Some extensions occur west to Macaronesia and to the Atlantic coasts of Europe, south to Sahara, and east to Iran.

3.2. E-Mediterranean: chorotypes of species occurring in the eastern countries of the Mediterranean basin, east of the Italian peninsula and the Gulf of Sirte, east to the Black Sea. Some extensions occur east to Iran and the Middle East, south-west to Sahara.

3.3. NE-Mediterranean: chorotypes of species occurring in the north-eastern Mediterranean countries, east of the Italian peninsula and the Gulf of Sirte, east to the Black Sea, and south to Cyprus and the Taurus Mountains.

3.4. Aegaean: chorotype of species occurring on the Aegaean Islands, Anatolia, and south to Cyprus.

3.5. Mediterraneo-Sindian: chorotype of species widespread in Mediterranean countries and ranging east to the Sind. Usually, the range does not include the inner part of the Arabian desert, and extends eastwards along the Arabian and Iranian coastline.

3.6. Ponto-Mediterranean: chorotypes of species occurring in regions defines as 1.4. and 3.1.

4. Chorotypes of species more or less widely spread in the Palaeotropics and extending into Mediterranean countries.

4.1. Afrotropical: chorotype of species widespread in the Afrotropical region also occurring in Mediterranean countries.

5. Cosmopolitan: species occurring in all the zoogeographical regions.

6. Endemics: species so far known only from Crete.

Synopsis of species of Cretan Formicidae

Family: Formicidae Latreille, 1809
Subfamily: Proceratiinae Emery, 1895

Genus: ***Proceratium*** Roger, 1863

Proceratium melinum (Roger, 1860)

Subfamily: Amblyoponinae Forel, 1893

Genus: ***Stigmatomma*** Roger, 1859

Stigmatomma denticulatum Roger, 1859

Subfamily: Ponerinae Lepeletier de Saint-Fargeau, 1835

Genus: ***Cryptopone*** Emery, 1893

Cryptopone ochracea (Mayr, 1855)

Genus: ***Hypoponera*** Santschi, 1938

Hypoponera eduardi (Forel, 1894)

Subfamily: Dolichoderinae Forel, 1878

Genus: ***Tapinoma*** Foerster, 1850

Tapinoma erraticum (Latreille, 1798)
Tapinoma festae Emery, 1925
Tapinoma simrothi Krausse, 1911

Genus: ***Linepithema*** Mayr, 1866

Linepithema humile (Mayr, 1868)

Subfamily: Formicinae Latreille, 1809

Genus: ***Lasius*** Fabricius, 1804

Lasius bombycina Seifert & Galkowski 2016
Lasius myops Forel, 1894
Lasius illyricus Zimmermann, 1935
Lasius lasioides (Emery, 1869)
Lasius psammophilus Seifert, 1992
Lasius tapinomoides Salata & Borowiec, 2018
Lasius turcicus Santschi, 1921

Genus: ***Nylanderia*** Emery, 1906

Nylanderia jaegerskioeldi (Mayr, 1904)

Genus: ***Formica*** Linnaeus, 1758

Formica cunicularia Latreille, 1798

Genus: ***Cataglyphis*** Foerster, 1850

Cataglyphis cretica (Forel, 1910)
Cataglyphis cf. ***cretica*** sp. 1
Cataglyphis nodus (Brullé, 1833)

Genus: ***Lepisiota*** Santschi, 1926

Lepisiota frauenfeldi (Mayr, 1855)

Lepisiota melas (Emery, 1915)

Lepisiota nigra (Dalla Torre, 1893)

Lepisiota syriaca (André, 1881)

Genus: ***Plagiolepis*** Mayr, 1861

Plagiolepis pallescens Forel, 1889

Plagiolepis perperamus Salata, Borowiec & Radchenko, 2018

Plagiolepis pygmaea (Latreille, 1798)

Genus: ***Acropyga*** Roger, 1862

Acropyga paleartica Menozzi, 1936

Genus: ***Colobopsis*** Mayr, 1861

Colobopsis truncata (Spinola 1808)

Genus: ***Camponotus*** Mayr, 1861

Camponotus aethiops (Latreille, 1798)

Camponotus baldaccii Emery, 1908

Camponotus boghossiani Forel, 1911

Camponotus candiotes Emery, 1894

Camponotus gestroi Emery, 1878

Camponotus jaliensis Dalla Torre, 1893

Camponotus kiesenwetteri (Roger, 1859)

Camponotus lateralis (Olivier 1792)

Camponotus oertzeni Forel, 1889

Camponotus piceus (Leach 1825)

Camponotus rebeccae Forel, 1913

Subfamily: Myrmicinae Lepeletier de Saint-Fargeau, 1835

Genus: ***Aphaenogaster*** Mayr, 1853

Aphaenogaster balcanicoides Boer, 2013

Aphaenogaster cecconii Emery, 1894

Aphaenogaster cf. ***subterranea*** sp. 1

Aphaenogaster rugosoferruginea Forel, 1889

Aphaenogaster simonellii Emery, 1894

Aphaenogaster splendida (Roger, 1859)

Aphaenogaster subterraneoides Emery, 1881

Genus: ***Oxyopomyrmex*** André, 1881

Oxyopomyrmex krueperi Forel, 1911

Oxyopomyrmex laevibus Salata & Borowiec, 2015

Genus: ***Messor*** Forel, 1890

Messor concolor Santschi, 1927
Messor creticus Salata & Borowiec, 2019
Messor hellenius Agosti & Collingwood, 1987
Messor ibericus Santschi, 1931
Messor mcarthuri Steiner *et al.*, 2018
Messor wasmanni Krausse, 1910

Genus ***Stenamma*** Westwood, 1839

Stenamma debile (Foerster, 1850)

Genus: ***Solenopsis*** Westwood, 1840

Solenopsis crivellarii Menozzi, 1936
Solenopsis orbula Emery, 1875

Genus: ***Monomorium*** Mayr, 1855

Monomorium bicolor Emery, 1887
Monomorium creticum Emery, 1895
Monomorium monomorium Bolton, 1987
Monomorium pharaonis (Linnaeus, 1758)
Monomorium subopacum (F. Smith, 1858)

Genus: ***Pheidole*** Westwood, 1839

Pheidole indica Mayr, 1879
Pheidole pallidula (Nylander, 1849)
Pheidole sp. 1

Genus: ***Temnothorax*** Mayr, 1861

Temnothorax ariadnae Csősz, Heinze & Mikó, 2015
Temnothorax crassistriatus Salata, Borowiec & Trichas, 2018
Temnothorax daidalosi Salata, Borowiec & Trichas, 2018
Temnothorax exilis (Emery, 1869)
Temnothorax helenae Csősz, Heinze & Mikó, 2015
Temnothorax ikarosi Salata, Borowiec & Trichas, 2018
Temnothorax incompletus Salata, Borowiec & Trichas, 2018
Temnothorax lucidus Csősz, Heinze & Mikó, 2015
Temnothorax kraussei (Emery, 1915)
Temnothorax minotaurosi Salata, Borowiec & Trichas, 2018
Temnothorax muellerianus (Finzi, 1922)
Temnothorax proteii Salata, Borowiec & Trichas, 2018
Temnothorax recedens (Nylander, 1856)
Temnothorax semiruber (André, 1881)
Temnothorax subtilis Csősz, Heinze & Mikó, 2015
Temnothotax variabilis Salata, Borowiec & Trichas, 2018

Genus: ***Tetramorium*** Mayr, 1855

Tetramorium bicarinatum (Nylander, 1846)

Tetramorium diomedeum Emery, 1908

Tetramorium ferox Ruzsky, 1903

Tetramorium hippocratis Agosti & Collingwood, 1987

Tetramorium immigrans Santschi, 1927

Tetramorium indocile Santschi, 1927

Tetramorium kephalosi Borowiec & Salata, 2017

Tetramorium moravicum Novák & Sadil, 1941

Tetramorium punctatum Santschi, 1927

Genus: ***Strongylognathus*** Mayr, 1853

Strongylognathus huberi dalmaticus Baroni Urbani, 1969

Strongylognathus silvestrii (Menozzi, 1936)

Genus: ***Crematogaster*** Lund, 1831

Crematogaster cf. ***ionia*** sp. 1

Crematogaster ionia Forel, 1911

Crematogaster schmidti (Mayr, 1853)

Crematogaster sordidula (Nylander, 1849)

Genus: ***Trichomyrmex*** Mayr, 1865

Trichomyrmex perplexus (Radchenko, 1997)

Genus: ***Cardiocondyla*** Emery, 1869

Cardiocondyla elegans Emery, 1869

Cardiocondyla mauritanica Forel, 1890

Review and keys to identification of Cretan ants

Family: Formicidae Latreille, 1809

A key to Formicidae subfamilies (worker caste):

1. Pedicel with two, distinct segments (Figs. 159-227) ……..…..……..... **Myrmicinae**.
— Pedicel with one segment (Figs. 102-158) …….....…...…….….. **2**.
2. Sting projected, first gastral segment separated from the second one by a distinct constriction (Figs. 102-105) ..... **3**.
— Sting not projected, first and second gastral segments not separated by a constriction (Figs. 106-158) ….....…… **5**.
3. Tergite of second gastral segment much longer than its sternite, strongly arched, abdominal segments pointed downward (Fig. 102) …….....…….. **Proceratiinae**.
— Tergite of second gastral segment as long as its sternite, never arched, abdominal segments not pointed downward (Figs 103-105) …….....…… **4**.
4. Petiole broadly attached to the first gastral segment, separated from it only by shallow constriction (Fig. 103) ……...……..……. **Amblyoponinae**.

— Petiole narrowly attached to the first gastral segment, separated from gaster by sharp and deep constriction (Figs. 104-105) …....……...…… **Ponerinae**.

5. Apex of gaster with circular nozzle-like acidopore, fringed with setae (Figs. 111-158) …… .....…. **Formicinae**.

— Apex of gaster without acidopore and coronula (Figs. 106-108, 110) …… .....……. **Dolichoderinae**.

A key to genera and species of Proceratiinae, Amblyoponinae and Ponerinae (worker caste):

1. Tergite of second gastral segment much bigger than its sternite, strongly arched, abdominal segments pointed downward (Fig. 102.2) ….....….. ***Proceratium melinum*** (Roger).

— Tergite of second gastral segment as long as its sternite, never arched, abdominal segments not pointed downward (Figs. 103.2., 104.2, 105.2) …….....…… **2**.

2. Petiole broadly attached to the first gastral segment, separated from it only by shallow constriction, lacking a free posterior face (Figs. 103.1-103.2) …… …….....…....…….. ***Stigmatomma denticulatum*** Roger.

— Petiole with well-developed posterior face, narrowly attached to the first gastral segment, separated from gaster by sharp and deep constriction (Figs. 104.1-104.2, 105.1-105.2) …….....……... **3**.

3. Mesotibiae with a row of erected setae on the exterior surface (Fig. 104.3) ....…. ***Crypropone ochracea*** (Mayr).

— Mesotibiae without a row of erected setae on the exterior surface (Fig. 105.3) ....… ***Hypoponera eduardi*** (Forel).

Subfamily: Proceratiinae Emery, 1895

Genus: *Proceratium* Roger, 1863

Proceratium melinum (Roger, 1860)
(Figs 002, 102.1-102.3)

Ponera melina Roger, 1860: 291;
Sysphingta europaea Forel, 1886: clxiii;
Sysphincta europaea subsp. *rossica* Arnol'di, 1930: 144;
Sysphincta fialai Kratochvil, 1944: 54.

Distribution. Albania, Algeria, Austria, Bulgaria, Croatia, Czechia, France (mainland), Greece (Dodecanese, Ionian Is., mainland), Hungary, Israel, Italy (mainland), Macedonia, Malta, Montenegro, Romania, Russia, Serbia, Slovakia, Slovenia, Spain (mainland), Tunisia, Turkey, Ukraine.

Distribution on Crete:

New records: HERM037.

Biology. Cryptic species. Nesting in soil, rotten wood, under deep-set stones and tree branches. Inhabits usually shady forests shade, old moist gardens, or similar habitats that are constantly moist.

Subfamily Amblyoponinae Forel, 1893

Genus: *Stigmatomma* Roger, 1859

Stigmatomma denticulatum Roger, 1859

(Figs 003, 103.1-103.4)

Stigmatomma denticulatum Roger, 1859: 251;
=*Amblyopone gheorghieffi* Forel, 1892: 309;
=*Stigmatomma denticulatum* var. *gracilicornis* Menozzi 1936: 268.

Distribution. Albania, Bulgaria, Croatia, Greece (Aegean Is., Dodecanese, Ionian Is., mainland), Israel, Italy (mainland), Lebanon, Macedonia, Malta, Morocco, Serbia, Spain (mainland), Turkey.

Distribution on Crete:

Literature. Crete: Borowiec 2014: 161.

New records: CHM002.2, RET011.

Biology. Soil species. Single specimens were collected in the vicinity of water source, always below small, flat stones. Colonies monogynous.

Subfamily Ponerinae Lepeletier de Saint-Fargeau, 1835

Genus: *Cryptopone* Emery, 1893

Cryptopone ochracea (Mayr, 1855)
(Figs 004, 104.1-104.4)

Ponera ochracea Mayr, 1855: 390.

Distribution. Bulgaria, Croatia, France (Corsica, mainland), Georgia, Greece (Dodecanese, Crete, mainland), Hungary, Italy (Sicilia, mainland), Portugal, Romania, Russia, Saudi Arabia, Serbia, Slovenia, Spain (Balearic Is., mainland), Switzerland, Turkey, Ukraine.

Distribution on Crete:

Literature. Crete: Borowiec 2014: 70.

New records: HER023, HER034, LAS024, LAS025, LAS028, RET036, RET040.

Biology. Soil species. Single specimens were located below small stones, always in humid localities (vicinity of water sources, tree roots). Colonies monogynous.

Comments. Borowiec & Salata (2013) noted this species as *Cryptopone ochracea* and *Ponera testacea* (misdetermination).

Genus: *Hypoponera* Santschi, 1938

Hypoponera eduardi (Forel, 1894)
(Figs 005, 105.1-105.4)

Ponera eduardi Forel, 1894a: 15;
=*Ponera antipodum* Forel, 1895a: 43;
=*Ponera dideroti* Forel, 1913b: 203;
=*Ponera opaciceps* r. *chilensis* Forel, 1914: 264.

Distribution. Algeria, Azores, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, France (Corsica, mainland), Georgia, Germany, Gibraltar, Greece (Dodecanese, Crete, Aegean Is., Ionian Is., mainland), Israel, Italy (Sardinia, Sicilia, mainland), Lebanon, Macedonia, Malta, Montenegro, Morocco, Oman, Portugal, Russia, Saudi Arabia, Serbia, Slovenia, Spain (Balearic Is., Canary Is., mainland), Syria, Switzerland, Turkey, United Arab Emirates, Yemen.

Distribution on Crete:

Literature. Crete: Borowiec 2014: 82.

New records: CH031, HER025, LAS045, RET043.

Biology. Soil species. Nesting below flat stones, always in humid or wet soil. Colonies polygynous.

Subfamily: Dolichoderinae Forel, 1878

A key to genera and species of Dolichoderinae (worker caste):

1. Petiole with scale, not overlapped by gaster (Fig. 110.2) …… ***Linepithema humile*** (Mayr).
— Petiole without scale, overlapped by gaster (Figs 106.2, 107.2, 108.2) …….. **2**.
2. Notch on anterior clypeal margin shallow and wide (Figs 107.3-107.4) …..... ..... ***T. festae*** (Emery).
— Notch on anterior clypeal margin deep and narrow (Figs 106.3-106.4, 108.3-108.4) …. …..... **3**.
3. Notch maximally twice longer than wide, its sides slightly widening posteriorially (Figs 106.3-106.4), ML<1.16, HL<0.88 ...…..…….…...…. ***T. erraticum*** (Latreille).
—Notch at least twice longer than wide, its sides parallel (Figs 108.3-108.4), ML>1.16, HL>0.88 …….....……... ***T. simrothi*** (Krausse).

Genus *Tapinoma* Foerster, 1850

Key to *Tapinoma* species (male caste):

1. Subgenital plate low, square (Fig. 109.2) ..... ***T. erraticum*** (Latreille).
— Subgenital plate with distinct lobes (Figs 109.4, 109.6) ……....……..…. **2**.
2. Subgenital plate with external edge straight. Stipes narrow, their anterior edge straight and interior edge concave (Fig. 109.6) ….....…….…… ***T. simrothi*** (Krausse).
— Subgenital plate with external edge convex. Stipes wide, their anterior and interior edges convex (Fig. 109.4) ……....…… ***T. festae*** (Emery).

Tapinoma erraticum (Latreille, 1798)
(Figs 006, 106.1-106.4, 109.1-109.2)

Formica erratica Latreille, 1798: 44;
=*Formica caerulescens* Losana, 1834: 314;
=*Formica glabrella* Nylander, 1849: 38;
=*Tapinoma collina* Foerster, 1850a: 43;
=*Tapinoma erraticum* var. *bononiensis* Emery, 1925a: 55;
=*Tapinoma breve* Emery, 1925a: 60;
=*Tapinoma tauridis* Emery, 1925a: 59;
=*Tapinoma erraticum* var. *platyops* Emery, 1925a: 56;
=*Tapinoma tauridis* subsp. *transcaucasica* Karavaiev, 1927b: 337 (= *Tapinoma simrothi* subsp. *karavaievi* var. *transcaucasica* Karavaiev, 1926: 187 unavailable name).

Distribution. Albania, Andorra, Armenia, Austria, Azerbaijan, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czechia, France (Corsica, mainland), Georgia, Germany, Gibraltar, Greece (Dodecanese, Crete, Aegean Is., Ionian Is., mainland), Hungary, Iran, Italy (Sardinia, Sicilia, mainland), Liechtenstein, Luxemburg, Macedonia, Madera, Malta, Moldavia, Monaco, Montenegro, Poland, Portugal, Russia,

Romania, Serbia, Slovakia, Slovenia, Spain (Balearic Is., Canary Is., mainland), Sweden, Switzerland, The Netherlands, Turkey, Ukraine, United Kingdom.

Distribution on Crete:

Literature. Crete: Emery 1894a: 11; Legakis 2011: 23; Borowiec 2014: 167.

New records: CHM009, CHM028, HERM006, LASM006, LASM007, LASM019, RETM013, RETM015, RETM016, RETM018, CH001, CH004, CH019, CH031, CH033, CH034, CH039, CH043, HER012, HER017, HER025, HER033, HER047, LAS003, LAS010, LAS028, LAS029, LAS032, LAS034, LAS037, LAS038, RET006, RET009, RET010, RET021, RET028, RET029, RET039, RET044.

Biology. Species related with open habitats, common in mountains. Nesting in humid soil, under stones, very often in the vicinity of trees and bushes. Colonies polygynous.

Tapinoma festae Emery, 1925
(Figs 007, 107.1-107.4, 109.3-109.4)

Tapinoma simrothi subsp. *festae* Emery, 1925a: 51.

Distribution. Greece (Aegean Is., Crete, Dodecanese, Ionian Is., mainland), Israel, Iran, Syria, Turkey.

Distribution on Crete:

Literature. Crete: Legakis 2011: 23; Borowiec 2014: 167; Borowiec 2014: 168 (as *Tapinoma madeirense*).

New records: CHM004, CHM014, CHM019, HERM003, HERM005, HERM023, HERM026, HERM029, HERM033, LASM006, LASM019, RETM001, RETM016, CH016, HER001, HER009, HER010, HER018, HER019, HER022, HER027, HER045, HER048, LAS015, LAS045, LAS050, LAS054, RET001, RET002, RET006, RET009, RET013, RET021, RET023, RET037, RET038, RET041, RET042, RET044, RET047, RET049.

Biology. Species related with open habitats on lowlands, often meadows surrounding water sources. Common on beaches and dry riverbeds. Colonies polygynous.

Comments. Borowiec & Salata (2012, 2013) noted this species as *T. madeirense* (misdetermination).

Tapinoma simrothi Krausse, 1911
(Figs 008, 108.1-108.4, 109.5-109.6)

Tapinoma erraticum var. *simrothi* Krausse, 1911: 18.

Distribution. Algeria, Cyprus, Egypt, France (mainland), Gibraltar, Greece (Cyclades, Dodecanese, Crete, Ionian Is., mainland), Italy (Sardinia, Sicilia, mainland), Iraq, Israel, Kuwait, Lebanon, Libya, Malta, Montenegro, Morocco, Oman, Portugal, Saudi Arabia, Spain (Balearic Is., mainland), Tunisia, Turkey, United Arab Emirates, Yemen.

Distribution on Crete:

Literature. Crete: Legakis 2011: 24; Borowiec 2014: 169.

New records: HERM015, HER024, HER026, LAS012, LAS035.

Biology. Species related with dry, open habitats. Nests most often in clay soil overgrown by grass. Colonies polygynous.

Genus *Linepithema* Mayr, 1866

Linepithema humile (Mayr, 1868)
(Figs 009, 110.1-110.4)

Hypoclinea humilis Mayr, 1868: 164;
=*Iridomyrmex humilis* subsp. *angulatus* Emery, 1894b: 165;
=*Iridomyrmex humilis* r. *platensis* Forel, 1912: 46;
=*Iridomyrmex humilis* r. *platensis* var. *transiens* Forel, 1913b: 242 unavailable name;
=*Dorymyrmex gallardoi* Brèthes 1914: 95
=*Iridomyrmex humilis* st. *angulata* var. *pertaesta* Santschi, 1916: 390;
=*Iridomyrmex humilis* st. *scotti* Santschi, 1919a: 52;
=*Iridomyrmex humilis* var. *arrogans* Chopard 1921: 237;
=*Iridomyrmex humilis* st. *angulata* var. *pulex* Santschi, 1923b: 68;
=*Iridomyrmex humilis* st. *breviscapa* Santschi, 1929b: 306 (= *Iridiomyrmex humilis* r. *platensis* v. *breviscapa* Forel, 1914: 286 unavailable name).

Distribution. Algeria, Austria, Azores, Belgium, Bulgaria, France (Corsica, mainland), Germany, Gibraltar, Greece (Crete, mainland), Italy (Sicilia, mainland), Iran, Madera, Malta, Monaco, Montenegro, Morocco, Portugal, Poland, Spain (Balearic Is., Canary Is., mainland), Switzerland, The Netherlands, United Arab Emirates, Yemen.

Distribution on Crete:

Literature. Crete: Wetterer *et al.* 2009: 190; Borowiec 2014: 100.

New records: HER016.

Biology. An invasive, synanthrope species. On Crete collected on lawn surrounding a big hotel complex. Numerous specimens observed in the vicinity of litter and dead insects' corpses. Colonies polygynous.

Subfamily Formicinae Latreille, 1809

A key to genera and species of Formicinae (worker caste):

1. Antennal insertions set at a distance from posterior border of clypeus (Figs 131-144, 146-153, 155-158) ..... **2**.
— Antennal insertions set close to posterior border of clypeus (Figs 111-130) …….. **3**.
2. Dimorphic, antennal insertions deep, clypeus relatively narrow. Major workers with head sharply truncated anteriorly, frons and clypeus forming flat rounded plate. (Figs 131-132) …..... ***Colobopsis truncata*** (Spinola).
— Polymorphic, antennal insertions shallow, clypeus relatively wide. Major workers with head never truncated (Figs 133-158) …..... ***Camponotus***.
3. Antennae 11 segmented (Figs 123-130) ……..... **4**.
— Antennae 12 segmented (Figs 111-122) ..……..... **6**.
4. Propodeum bidentate, mesonotum with narrowing in the central part (Figs 123-126) ….. ..... ***Lepisiota***.
— Propodeum unarmed, mesonotum without narrowing in the central part (Figs 127-130) ……..... **5**.
5. Eyes strongly reduced, palpal formula 4/3, head subquadrangular (Fig. 130) …..... ..... ***Acropyga paleartica*** (Menozzi).
— Eyes well developed, palpal formula 6/4, hear oval (Figs 127-129) ……..… ***Plagiolepis***.
6. Propodeal spiracle circular or broadly oval, set close to posterior margin of propodeum, ocelli absent (Figs 111-118) ……..... **7**.

— Propodeal spiracle elongate oval, set in distance to posterior margin of propodeum, ocelli present (Figs 119-122) …….....…….. **8**.

7. Eyes situated at the front of the midlength of the sides of head (Fig. 118) .... ***Nylanderia jaegerskioeldi*** (Mayr).

— Eyes situated distinctly behind the midlength of the sides of head (Figs 111-117) …… …….....…… ***Lasius***.

8. Petiole with thin, narrowing scale (Fig. 119) …….. ***Formica cunicularia*** (Latreille).

— Petiole with thick scale, nodiform or cuneiform (Figs 120-122) ……..... ***Cataglyphis***.

Genus: *Lasius* Fabricius, 1804

A key to *Lasius* species (worker caste):

1. Maxillary palps short, not reaching midpoint between mouth and occipital foramen, body yellow to orange (Fig. 112) …..…….....…… ***L. myops*** Forel.

— Maxillary palps long, distinctly reaching beyond midpoint between mouth and occipital foramen, body brown to black or bicoloured (Figs 111, 113-117) .....…….. **2**.

2. Scape, genae and hind tibiae only with perfectly adpressed pubescence, without setae, occipital margin of head usually with 8 erect setae at most (Fig. 114) …..... ..... ***L. lasioides*** (Emery).

— Scape, genae and hind tibiae often with occasional setae, pubescence not perfectly adpressed, occipital margin of head with more than 8 erect setae (Figs 111, 113, 115-117) ..... **3**.

3. Scape with few (>5) erect setae, body bicoloured, hind tibiae with numerous erect setae, mesosoma brighter than head and gaster (Figs 113) …...……... ***L. illyricus*** Zimmerman.

— Scape without or with maximum 5 erect setae, hind tibiae without or with 1-3 erect setae, setosity from decumbent to suberect, body uniformly coloured or head and mesosoma uniformly coloured, brighter than gaster (Figs 111, 115-117) .....… **4**.

4. Clypeus with dense pubescence, average distance between setae 3.5 times shorter than their length (Fig. 111.3-111.4) ….....…..…… ***L. bombycina*** Seifert & Galkowski.

— Clypeus with sparse pubescence, average distance between setae equal or longer than a half of their length (Figs 115.3-115.4, 116.3-116.4, 117.3-117.4) ……... **5**.

5. Workers small, ML 0.726-0.827, mesosoma with very shallow metanotal groove, apical part of scape with suberect to erect setae (Fig. 116) .... ***L. tapinomoides*** Salata & Borowiec.

— Workers large, ML 0.935-1.18, metanotal groove distinct, scape apex without suberect to erect setae (Figs 115, 117) ...….....…… **6**.

6. Metanotal groove relatively shallow, propodeal dorsum flattened, hind tibia without suberect setae (Fig. 117) ……....……. ***L. turcicus*** Santschi.

— Metanotal groove deeper and sharp, propodeal dorsum convex, hind tibia with few suberect setae (Fig. 115) …….....……. ***L. psammophilus*** Santschi.

Lasius bombycina Seifert & Galkowski, 2016
(Figs 010, 111.1-111.4)

Lasius bombycina Seifert & Galkowski, 2016: 56.

Distribution. Austria, Bulgaria, Greece (mainland), Hungary, Slovakia, Turkey.

Distribution on Crete:

Literature. Borowiec 2014: 89 (as *L. paralienus*).

New records: CHM003, CHM026, CHM029, CHM030, HERM012, LASM006, RETM018, CH032, CH033, CH036, CH044, HER048, LAS023, LAS029, LAS039, RET004, RET010, RET014, RET028, RET029, RET040, RET042, RET046.

Biology. Species associated with open habitats and groves. On Crete collected always in the vicinity of water sources or in mountains. Nesting in soil, under stones overgrown by grass or herbs. Colonies monogynous.

Comments. Borowiec & Salata (2012) noted this species as *L. paralienus*. With high probability most Balkan records of *L. niger*, published before the revision of *Lasius* s. str. (Seifert 1992), refer to *L. bombycina*.

Lasius myops Forel, 1894
(Figs 011, 112.1-112.4)

Lasius flavus r. *myops* Forel, 1894a: 12;
=*Lasius myops flavoides* Forel, 1894a: 12;
=*Formicina flava* var. *flavomyops* Emery, 1916: 241.

Distribution. Algeria, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, France (Corsica, mainland), Georgia, Germany, Hungary, Italy (Sicilia, mainland), Macedonia, Montenegro, Morocco, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain (mainland), Switzerland, The Netherlands, Ukraine, Turkey.

Distribution on Crete:

New records: CHM002.1.

Biology. Soil species. Most often inhabiting sunny open habitats or forest edges. Nesting under stones or dead wood. Colonies monogynous.

Lasius illyricus Zimmermann, 1935
(Figs 012, 113.1-113.5)

Lasius alienus subsp. *illyricus* Zimmermann, 1935: 50.

Distribution. Croatia, Greece (Ionian Is., mainland), Macedonia, Montenegro, Ukraine.

Distribution on Crete:

New records: LASM007, LAS032.

Biology. Species specific for open, dry habitats or edges of dry, deciduous forests. Specimens were located on the fruit trees growing on the Limnakarou Plateau.

Lasius lasioides (Emery, 1869)
(Figs 013, 114.1-114.4)

Prenolepis lasioides Emery, 1869: 6;
=*Prenolepis fusculus* Emery, 1869: 8;
=*Lasius fumatus* Emery, 1869: 26;
=*Lasius alienus* var. *barbarus* Santschi, 1931: 11.

Distribution. Albania, Algeria, Croatia, Egypt, France (mainland), Greece (Dodecanese, Crete, Aegean Is., Ionian Is., mainland), Georgia, Iran, Israel, Italy (mainland, Sardinia, Sicilia), Macedonia, Malta, Montenegro, Morocco, Portugal, Serbia, Slovenia, Spain (Balearic Is., mainland), Tunisia, Turkey.

Distribution on Crete:

Literature. Crete: Legakis 2011: 27; Borowiec 2014: 89.

New records: CHM023, RETM011, CH005, CH009, CH011, CH017, CH030, CH030, CH031, CH032, CH035, CH036, CH038, CH039, CH040, HER011, HER019, HER021, HER025, HER031, HER034, HER036, HER047, LAS011, LAS014, LAS016, LAS018, LAS021, LAS028, LAS030, LAS032, LAS033, LAS034, LAS036, LAS038, LAS043, LAS048, LAS051, LAS053, RET007, RET012, RET020, RET021, RET023, RET028, RET029, RET032, RET035, RET036, RET040, RET044, RET047, RET049.

Biology. Common species on Crete. Located in various habitats: dry, open meadows, phryganas, and deciduous forests. Nests always in soil, usually under stones, close to trees or bushes. Colonies monogynous.

Lasius psammophilus Seifert, 1992
(Figs 014, 115.1-115.4)

Lasius (*Lasius*) *psammophilus* Seifert, 1992: 15

Distribution. Austria, Belgium, Bulgaria, Croatia, Czechia, Denmark, Estonia, France (Corsica, mainland), Finland, Greece (Crete), Germany, Hungary, Italy (mainland), Norway, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Sweden, Switzerland, The Netherlands, Turkey, Ukraine, United Kingdom.

Distribution on Crete:

Literature. Crete: Borowiec 2014: 89.

New records: HERM014, LASM005, HER001, LAS036, RET013, RET016, RET035, RET038, RET040.

Biology. Species recorded from humid, open habitats e.g. riverbeds, sandy banks of water sources. Nesting under medium-sized stones. Colonies monogynous.

Lasius tapinomoides Salata & Borowiec, 2018
(Figs 015, 116.1-116.4)

Lasius tapinomoides Salata & Borowiec, 2018: 142, figs.1-7 (w.q.)

Distribution. Greece: Crete – endemic species.

Distribution on Crete:

New records: CH035, LAS014, RET011, RET019, RET027, RET032, RET038, RET040.

Biology. Species inhabiting moist, dark deciduous forests, which are most often located in stream valleys. Nesting in wet soil, under shallow and small rocks. Nests, most often, located in the vicinity of water sources. Colonies monogynous.

Lasius turcicus Santschi, 1921
(Figs 016, 117.1-117.4)

Lasius niger st. *turcica* Santschi, 1921a: 115.

Distribution. Bulgaria, Georgia, Greece (Dodecanese, Crete, Aegean Is., mainland), Iran, Russia, Syria, Turkey.

Distribution on Crete:

Literature. Crete: Borowiec 2014: 92.

New records: CHM001, HERM003, HERM006, LASM002, LASM006, LASM007, RETM004, RETM006, RETM009, RETM018, CH017, CH022, CH027, CH031, CH036, HER001, HER002, HER007, HER021, HER025, HER033, HER038, HER042, HER047, LAS011, LAS015, LAS017, LAS028, LAS045, RET005, RET012, RET015, RET021, RET022, RET033, RET035, RET039, RET043, RET047.

Biology. On Crete species related with forests and humid open habitats. Nesting in soil, usually below stones overgrown by grass. Colonies monogynous.

Genus: *Nylanderia* Emery, 1906

Nylanderia jaegerskioeldi (Mayr, 1904)
(Figs 017, 118.1-118.4)

Prenolepis jaegerskioeldi Mayr, 1904: 8;
=*Prenolepis traegaordhi* Forel, 1904a: 14;
=*Prenolepis* (*Nylanderia*) *jaegerskioeldi* var. *borcardi* Santschi, 1908: 533;
=*Prenolepis* (*Nylanderia*) *weissi* Santschi, 1911: 210;
=*Prenolepis* (*Nylanderia*) *jaegerskioeldi* var. *zelotypa* Santschi, 1915: 264;
=*Paratrechina weissi nimba* Bernard, 1953: 258.

Distribution. Algeria, Cyprus, Egypt, Greece (Dodecanese), Iraq, Iran, Israel, Jordan, Lebanon, Libya, Malta, Morocco, Oman, Portugal, Saudi Arabia, Spain (Balearic Is., mainland), Syria, Turkey, United Arab Emirates, Yemen.

Distribution on Crete:

New records: HER018.

Biology. An invasive and synanthrope species. On Crete, a single colony was found in the lawn surrounding a shopping centre. The nest was located under a large concrete slab, in a very sunny place.

Genus *Formica* Linnaeus, 1758

Formica cunicularia Latreille, 1798
(Figs 018, 119.1-119.5)

Formica cunicularia Latreille, 1798: 40;
=*Formica glebaria* Nylander, 1846a: 917;
=*Formica fusca* var. *fuscorufibarbis* Forel, 1874: 54;
=*Formica rufibarbis* var. *glauca* Ruzsky, 1896: 70;
=*Formica fusca* var. *rubescens* Forel, 1904b: 423;
=*Formica rufibarbis* subsp. *volgensis* Ruzsky, 1914: 323;
=*Formica* (*Serviformica*) *rufibarbis* var. *katuniensis* Ruzsky, 1915: 13;
=*Formica rufibarbis natio montana* Kuznetsov-Ugamsky, 1923: 245;
=*Formica* (*Serviformica*) *rufibarbis* st. *montivaga* Santschi, 1928: 45 (=*Formica rufibarbis natio montana* Kuznetsov-Ugamsky, 1923: 245 not *Formica subpolita* var. *montana* Wheeler, 1910: 571);
=*Formica rufibarbis* var. *montaniformis* Kuznetsov-Ugamsky, 1929: 39;
=*Formica cunicularia fuscoides* Dlussky, 1967: 74.

Distribution. Albania, Andorra, Armenia, Austria, Belarus, Belgium, Bulgaria, Croatia, Czechia, Denmark, France (Corsica, mainland), Germany, Greece (Crete, Aegean Is., mainland), Georgia, Hungary, Iran, Italy (Sardinia, Sicilia, mainland), Latvia,

Lithuania, Luxemburg, Macedonia, Moldavia, Montenegro, Morocco, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain (mainland), Switzerland, Sweden, The Netherlands, Turkey, Ukraine, United Kingdom.

Distribution on Crete:

Literature. Borowiec 2014: 73.

New records: LASM006, LASM007, LAS032.

Biology. Numerous colonies were located in the orchard grooving on the Limnakarou Plateau. Numerous specimens were observed on trees and grass. Nests always below small stones. Colonies polygynous.

Genus: *Cataglyphis* Foerster, 1850

A key to *Cataglyphis* species (worker caste):

1. Body bicoloured. Head and mesosoma red to brick-red, gaster black. Petiole low, nodiform (Fig. 122) …….....……..…..…….. ***C. nodus*** (Brullé).
— Body uniformly coloured. Petiole higher, squamiform (Figs 120-121) …….....…… **2**.
2. Gaster, occipital margin of head and scapes without erect setae (Fig. 120) ...….....
.....…... ***C. cretica*** (Forel).
— Gaster, occipital margin of head and scapes with erect setae (Fig. 121) .....
..... ***C.*** cf. ***cretica*** sp. 1.

Cataglyphis cretica (Forel, 1910)
(Figs 019, 120.1-120.4)

Myrmecocystus cursor var. *cretica* Forel, 1910a: 23 (= *Myrmecocystus cursor aenescens* var. *cretica* Emery 1906: 48, unavailable name);
=*Cataglyphis* (*Momocombus*) *cursor* st. *helenica* var. *dorica* Santschi, 1929a: 35 (unavailable name).

Distribution. Greece, Crete – endemic species.

Distribution on Crete:

Literature. Crete: Forel 1910a: 23 (as *Myrmecocystus cursor* v. *cretica*); Emery 1906: 174 (as *Myrmecocystus cursor aenescens* v. *cretica*); Emery 1925b: 263 (as *Cataglyphis cursor* subsp. *hellenica* var. *cretica*); Legakis 2011: 34.

New records: LASM017, LASM019, CHM002.2, CHM010, CHM017, CHM029, CHM030, HERM006, HERM022, HERM015, CH034, HER006, HER02, HER028, LAS003, LAS016, LAS021, LAS022, RET004, RET021, RET037, RET039.

Biology. Species most often inhabiting dry, sunny and sandy areas (e.g. dirty roads). Only two colonies were located in coniferous forest, where nests were placed on a sunny area in rocky debris (LAS021, LAS022). Colonies monogynous.

***Cataglyphis* cf. *cretica* sp. 1.**
(Figs 020, 121.1-121.4)

Distribution. Greece, Crete - endemic species (?).

Distribution on Crete:

New records: CHM024, HER012, LASM007, RETM015, HER034, LAS034, RET030.

Biology. Alpine species. Collected on dry, sandy or clay, open habitats. Nest always on sunny places, below flat, medium-size rocks. Colonies monogynous.

Comments. Alpine populations of *Cataglyphis cretica* differ from lowland ones by presence of few erect setae on scape, gaster and occipital margin of head. It distinguishes them from *C. cretica* and *C. aenescens*. From *C. cursor* (Fonscolombe, 1846) they differ in less decumbent gaster pilosity (<5 erect setae) and lack of erect setae on gena; from *C. piliscapa* (Forel, 1901) and *C. italica* (Emery, 1906) they differ in dull body surface and lack of erect setae on gena. Moreover, it's the only known from this region species with concave apical surface of petiole. Its proper description will be performed in the revision of Greek *Cataglyphis*.

Cataglyphis nodus (Brullé, 1833)
(Figs 021, 122.1-122.4)

Formica nodus Brullé, 1833: 326;
=*Myrmecocystus viaticus* var. *orientalis* Forel, 1895b: 228;
=*Cataglyphis bicolor* var. *rufiventris* Emery, 1925b: 265;
=*Cataglyphis bicolor* st. *nodus* var. *assyria* Santschi, 1929a: 44 unavailable name;
=*Cataglyphis bicolor* st. *nodus* var. *drusa* Santschi, 1929a: 44 unavailable name;
=*Cataglyphis* (*Cataglyphis*) *bicolor* st. *nodus* var. *helladica* Santschi, 1934: 281 unavailable name;
=*Cataglyphis nodus* subsp. *causcasicola* Arnol'di, 1964: 1803;
=*Cataglyphis nodus* subsp. *mesasiatica* Arnol'di, 1964: 1803.

Distribution. Albania, Algeria, Bulgaria, Croatia, Cyprus, Egypt, Georgia, Greece (Dodecanese, Crete, Dodecanese, Aegean Is., Ionian Is., mainland), Hungary, Iraq, Iran, Israel, Jordan, Lebanon, Libya, Macedonia, Montenegro, Romania, Saudi Arabia, Serbia, Slovakia, Syria, Turkey, United Arab Emirates.

Distribution on Crete:

Literature. Crete: Legakis 2011: 34; Borowiec 2014: 58.

Biology. Species associated with, open, dry and sandy habitats. Nesting very often on dirty roads or sand dunes. Colonies monogynous.

Comments. Its presence on Crete is doubtful as this island exceed beyond its distribution range. Nevertheless, it could be unintentionally introduced by human. Therefore, its temporal colonies could occur in the vicinity of human settlements.

Genus *Lepisiota* Santschi, 1926

A key to *Lepisiota* species (worker caste):

1. Body uniformly, dark coloured (Fig. 125) …….....……. ***L. nigra*** (Dalla Torre).
— Body bicoloured (Figs 123-124, 126) …….. **2**.
2. Body black to dark brown, only mesonotum red, in some specimens red colouration covers partly pronotum (Fig. 124) …..…….. ***L. melas*** (Emery).
— Mesosoma and head mainly or entirely reddish (Figs 123, 126) ……...…….. **3**.
3. Dorsal surface of promesonotum with less than two erect setae (Fig. 123) ....…… ***L. frauenfeldi*** (Mayr).
— Dorsal surface of promesonotum with at least 5 erect setae (Fig. 126) …..... .....…. ***L. syriaca*** (Ruzsky).

Lepisiota frauenfeldi (Mayr, 1855)
(Figs 022, 123.1-123.4)

Hypoclinea frauenfeldi Mayr, 1855: 378;
=*Acantholepis frauenfeldi* st. *integra* var. *minima* Santschi, 1917a: 44 unavailable name;
=*Acantholepis frauenfeldi* var. *azerbeidzhanica* Karavaiev, 1932: 250.

Distribution. Albania, Algeria, Azerbaijan, Bulgaria, Croatia, Cyprus, Egypt, Greece (Aegean Is., Crete, Cyclades, Dodecanese, Ionian Is., mainland), Italy (mainland, Sicilia), Iraq, Iran, Israel, Jordan, Lebanon, Libya, Macedonia, Montenegro, Morocco, Portugal, Saudi Arabia, Serbia, Spain (Balearic Is., mainland), Tunisia, Turkey, Yemen.

Distribution on Crete:

Literature. Crete: Forel 1886: CLXVII (as *Acantholepis Frauenfeldi*); Forel 1889: 256 (as *Acantholepis frauenfeldi* Mayr, 1855); Emery 1894a: 11 (as *Acantholepis Frauenfeldi*); Forel 1910a: 23 (as *Acantholepis Frauenfeldi*); Emery 1925b: 25 (as *Acantholepis frauenfeldi*); Finzi 1930a: 316 (as *Acantholepis frauenfeldi*); Finzi 1939: 157 (as *Acantholepis frauenfeldi*); Legakis 2011: 24; Borowiec 2014: 95.

New records: HERM014, LASM010, CH020, CH022, CH039, HER019, RET040, RET047.

Biology. Species associated with open, dry habitats. Common in parks and green areas of human settlements. Nesting in sunny areas, usually below rocks. Colonies polygynous.

Comments. Borowiec & Salata (2012), based on data provided in keys to Balkan ants (Agosti & Collingwood 1987b), confused *L. frauenfeldi* with *L. melas*. An examination of type specimens allowed a proper interpretation of both taxa.

Lepisiota melas (Emery, 1915)
(Figs 023, 124.1-124.4)

Acantholepis frauenfeldi var. *melas* Emery, 1915a: 3.

Distribution. Greece (Aegean Is., Dodecanese, Crete, Cyclades, Ionian Is., mainland), Italy (mainland), Iran, Serbia, Turkey.

Distribution on Crete:

Literature. Crete: Legakis 2011: 24; Borowiec 2014: 94.

New records: CHM007, CHM008, CHM015, CHM016, CHM028, HERM005, HERM010, HERM021.2, HERM022, HERM025, LASM005, LASM012, RETM008, RETM014, CH011, CH019, CH031, CH034, CH036, CH037, CH039, HER034, HER037, LAS026, RET007, RET021, RET037, RET038, RET041.

Biology. Species associated with open habitats, both dry and humid. Nests under flat, not overgrown by vegetation rocks or in rock rubble. Colonies polygynous.

Comments. See comments in *L. frauenfeldi*.

Lepisiota nigra (Dalla Torre, 1893)
(Figs 024, 125.1-125.4)

Acantholepis frauenfeldi var. *nigra* Dalla Torre, 1893: 171.
= *Acantholepis frauenfeldi* var. *splendens* Karavaiev, 1912: 586.

Distribution. Croatia, Bosnia and Herzegovina, Egypt, Greece (Aegean Is., Crete, Cyclades, Dodecanese, mainland), Italy (Sicilia, mainland), Iran, Libya, Macedonia, Montenegro, Oman, Serbia, United Arab Emirates.

Distribution on Crete:

Literature. Crete: Emery 1925b: 25 (as *Acantholepis frauenfeldi* var. *splendens*); Legakis 2011: 24; Legakis 2011: 25 (as *Lepisiota splendens*); Borowiec 2014: 95; Borowiec 2014: 96 (as *Lepisiota splendens*). Chania Prov.: Neuenschwander *et al.* 1983: 26 – Stylos (as *Acantholepis nigra*); Karavaiev 1912: 586 – beach and potatoes field, Chania vic. (as *Acantholepis frauenfeldi* v. *splendens*).

New records: CHM002.2, CHM009, CHM011, CHM012, CHM013, CHM017, CHM019, CHM023, HERM002, HERM004, HERM005, HERM006, HERM007, HERM009, HERM013, HERM014, HERM018, HERM019, HERM027, HERM028, HERM029, HERM030, HERM036, LASM001, LASM003, LASM004, LASM005, LASM006, LASM015, LASM016, LASM017, RETM008, RETM010, RETM012, RETM013, RETM016, CH007, CH009, CH010, CH013, CH015, CH016, CH019, CH022, CH023, CH028, CH029, CH030, CH033, CH034, CH036, CH038, CH040, CH041, CH042, HER001, HER002, HER004, HER005, HER006, HER008, HER010, HER011, HER012, HER013, HER017, HER019, HER020, HER028, HER032, HER033, HER035, HER036, HER037, HER039, HER040, HER041, HER042, HER043, HER044, HER046, HER048, LAS001, LAS004, LAS005, LAS006, LAS007, LAS008, LAS009, LAS010, LAS016, LAS017, LAS019, LAS024, LAS025, LAS027, LAS031, LAS036, LAS037, LAS038, LAS040, LAS045, LAS046, LAS050, LAS051, LAS053, LAS054, RET003, RET010, RET012, RET013, RET014, RET017, RET020, RET021, RET022, RET023, RET024, RET025, RET027, RET028, RET031, RET032, RET033, RET035, RET036, RET040, RET042, RET043, RET045, RET047, RET049.

Biology. Most common *Lepisiota* species on Crete. Inhabiting dry and humid open habitats, green urban areas and forests edges. Nesting always on sunny places, under flat rocks. Colonies polygynous.

Lepisiota syriaca (André, 1881)
(Figs 025, 126.1-126.4)

Acantholepis frauenfeldi var. *syriaca* André, 1881: 61.

Distribution. Egypt, Greece (Crete), Israel, Libya, Lebanon, Syria, Turkey.

Distribution on Crete:

Literature. Crete: Legakis 2011: 25. Rethymnon Prov.: Stitz 1928: 90 – Melidhoni, VI 1926 (as *Acantholepis frauenfeldi* v. *syriaca*).

New records: CH022, CH027.

Biology. Tramp species. Inhabiting dry, warm and sunny localities. On Crete noted from urban areas and anthropogenic environments. Nesting in sunny areas, below flat, big stones. Specimens were collected on pavements and stones surrounding a nest entrance.

Comments. Borowiec & Salata (2012) noted this species as *L. dolabellae* (misdetermination).

Genus *Plagiolepis* Mayr, 1861

A key to *Plagiolepis* species (worker caste):

1. Funiculus segments 2 and 3 quadrate, subequal, each shorter than 4th one (Fig. 129) …… …….....….. ***P. pygmaea*** (Latreille).

— Funiculus segment 2 transverse or quadrate, shorter than subequal segments 3 and 4 (Figs 127-128) ….....… **2**.

2. Gaster with dense setosity, the distance between setae shorter than 1/3 of their length (Figs 128.1-128.2) …..…….. ***P. perperamus*** Salata, Borowiec & Radchenko.
— Gaster with sparse setosity, the distance between setae even or longer that half of their length (Figs 127.1-127.2) ……...……..…….. ***P. pallescens*** Forel.

Plagiolepis pallescens Forel, 1889
(Figs 026, 127.1-127.4)

Plagiolepis pygmaea var. *pallescens* Forel, 1889: 265;
=*Plagiolepis maura* var. *taurica* Santschi, 1920: 171;
=*Plagiolepis vindobonensis* Lomnicki, 1925: 77;
=*Plagiolepis* (*Plagiolepis*) *satunini* Karavaiev, 1931: 314.

Distribution. Due to long period of misinterpretation of this species its real distribution range is uncertain. We have its confirmed localities from Austria, Bulgaria, Greece, Turkey and Ukraine. Based on locus typicus of its type specimens and type material of its subspecies it is a Turano-Mediterranean species.

Distribution on Crete.

Literature. Crete: Legakis 2011: 25 (as *Plagiolepis vindobonensis*); Borowiec 2014: 147.

New records: HERM005, CHM011, HERM007, HERM030, LASM005, LASM006, LASM010, HER017, LAS006, LAS026, LAS032, LAS036, LAS042, LAS043, RET047.

Biology. Species associated with fry habitats overgrown by macchia or single trees. Nesting always in soil, most often under small stones. Colonies polygynous.

Comments. Until recently *P. pallescens* was misinterpreted. For the first time this subject was raised by Bračko *et al.* (2016) and finally solved by Salata *et al.* (2018a).

Plagiolepis perperamus Salata, Borowiec & Radchenko, 2018
(Figs 027, 128.1-128.4)

Plagiolepis perperamus Salata, Borowiec & Radchenko, 2018: 816, figs 12-15.

Distribution. Greece (Aegean Is., Crete, Cyclades, Dodecanese, Ionian Is., mainland), Turkey.

Distribution on Crete:

Literature. Crete: Legakis 2011: 25 (as *P. pallescens*); Borowiec 2014: 146 (as *P. pallescens*).

New records: HERM006, HERM027, HERM028, LASM019, CH001, CH013, CH023, CH027, CH029, HER004, LAS039, RET007, RET010, RET014, RET017, RET019, RET020, RET021, RET023, RET026, RET027, RET028, RET033, RET035, RET036, RET040, RET041, RET042.

Biology. Species inhabiting humid areas overgrown by macchia or deciduous forests. Nests always in soil, usually below rocks. Colonies polygynous.

Comments. Because of data provided by Radchenko (1996a) *P. perperamus* was for a long time confused with *P. pallescens*. For more details, see Salata *et al*. (2018a).

Plagiolepis pygmaea (Latreille, 1798)
(Figs 028, 129.1-129.4)

Formica pygmaea Latreille, 1798: 45;
=*Micromyrma dufourii* Perris, 1878: 382;
=*Plagiolepis pygmaea* var. *obscuriscapus* Santschi, 1923a: 137.

Distribution. Albania, Algeria, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Egypt, France (Corsica, mainland), Germany, Gibraltar, Georgia, Greece (Aegean Is., Crete, Cyclades, Dodecanese, Ionian Is., mainland), Hungary, Israel, Italy (Sardinia, Sicilia, mainland), Iraq, Iran, Jordan, Lebanon, Luxemburg, Macedonia, Malta, Montenegro, Morocco, Portugal, Romania, Saudi Arabia, Serbia, Slovakia, Slovenia, Syria, Switzerland, Spain (Balearic Is., Canary Is., mainland), The Netherlands, Tunisia, Turkey, Ukraine, Yemen.

Distribution on Crete:

Literature. Crete: Forel 1886: CLXVII; Forel 1889: 256; Emery 1894a: 11; Forel 1910a: 23; Legakis 2011: 25; Borowiec 2014: 146. Chania Prov.: Neuenschwander *et al.* 1983: 26 – Stylos.

New records: CHM002.2, CHM008, CHM011, CHM015, CHM016, CHM023, CHM024, CHM028, HERM003, HERM004, HERM009, HERM018, HERM021, HERM021.1, HERM025, HERM029, HERM033, LASM005, LASM006, LASM011, LASM014, LASM015, LASM018, LASM019, RETM004, RETM006, RETM008, RETM009, RETM013, RETM014, RETM015, CH001, CH009, CH015, CH023, CH027, CH031, CH032, CH038, CH039, CH040, HER003, HER005, HER006, HER009, HER018, HER020, HER022, HER025, HER027, HER030, HER034, HER036, HER039, HER040, HER043, HER044, HER046, LAS004, LAS005, LAS006, LAS007, LAS010, LAS011, LAS013, LAS015, LAS017, LAS023, LAS028, LAS034, LAS035, LAS037, LAS038, LAS040, LAS044, LAS050, LAS051, RET013, RET022, RET022.

Biology. Common species on area overgrown by macchia and forests. Nesting always in soil, most often under rocks. Colonies polygynous.

Genus: *Acropyga* Roger, 1862

Acropyga paleartica Menozzi, 1936
(Figs 029, 130.1-130.3)
Acropyga (*Rhizomyrma*) *paleartica* Menozzi, 1936: 298.

Distribution. Greece: Dodecanese, Crete.

Distribution on Crete:

Literature. Crete: Legakis 2011: 26.

New records: CHM007, CHM014, LASM011, LASM017, HER036.

Biology. Soil species. 4 workers were caught in humid soil, under a big rock partly overgrown by an olive tree. The rock was located at the dry riverbank that was surrounded by phrygana.

Comments. Genus *Acropyga* comprises ca. 40 species and is distributed mainly in subtropical and tropical zones. *Acropyga paleartica* is the only member of this genus in the Palearctic Region and its distribution is strongly separated from other members of this genus. It could imply that this species in not native the Palearctic and was spread in Greece by human.

Genus *Colobopsis* Mayr, 1861

Colobopsis truncata (Spinola 1808)
(Figs 030, 131.1-131.4, 132.1-132.4)

Formica truncata Spinola 1808: 244;
=*Formica fuscipes* Mayr, 1853b: 280.

Distribution. Albania, Algeria, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czechia, Denmark, France (Corsica, mainland), Germany, Greece (Aegean Is., Crete, Ionian Isl.), Hungary, Spain, Israel, Italy (Sardinia, Sicilia, mainland), Macedonia, Malta, Montenegro, Morocco, Poland, Portugal, Russia, Romania, Serbia, Slovakia, Slovenia, Spain (mainland), Switzerland, Tunisia, Turkey, Ukraine.

Distribution on Crete:

Literature. Crete: Forel 1886: CLXVII; Legakis 2011: 33 (as *Camponotus truncatus*); Borowiec 2014: 44 (as *C. truncatus*).

New records: HERM014, CH035, CH039, HER19, HER040, HER047, LAS046.

Biology. Obligatory dendrophile, associated with deciduous single trees (most often oaks) and forest. Nesting in dead, dry and sun exposed parts of trees.

Genus *Camponotus* Mayr, 1861

A key to *Camponotus* species (worker caste):

1. Metanotal groove absent, mesosoma dorsum convex (Figs 133.2, 134.2, 135.2, 136.2, 143.2, 144.2, 145.1-145.2, 152.2, 153.2, 154.3) ……..……. **2**.
— Metanotal groove present, sometimes shallow (Figs 137.2, 138.2, 139.2, 140.2, 141.2, 142.2, 146.2, 147.2, 148.2, 149.2, 150.2, 151.2, 155.2, 156.2, 157.2) ….…….…… **5**.
2. Genae without erect setae (Figs 135.3, 136.3) ….....…..... ***C. baldaccii*** Emery.
— Genae with erect setae (Figs 133.3, 134.3, 143.3, 144.3, 152.3, 153.3) ….....…… **3**.
3. Tibiae and femora ventrally without a row of bristles (Figs 143.2, 144.2, 145.1-145.2) …….....……... ***C. jaliensis*** Dalla Torre.
— Tibiae and femora ventrally with a row of bristles (Figs 133.2, 134.2, 152.2, 153.2, 154.3) …….....…… **4**.
4. The last row of adjacent setae on gaster tergites short, not reaching their posterior edges (Figs 154.1) …….....……. ***C. oertzeni*** Forel.
— The last row of adjacent setae on gaster tergites long, reaching beyond their posterior edges (Figs 154.2) …….....…….… ***C. aethiops*** (Latreille).
5. Metanotal groove shallow, propodeum not saddle-form (Figs 141.2, 142.2) ……...…… …….....…....…… ***C. gestroi*** Emery.
— Metanotal groove deep, propodeum saddle-form (Figs 137.2, 138.2, 139.2, 140.2, 146.2, 147.2, 148.2, 149.2, 150.2, 151.2, 155.2, 156.2, 157.2) ……...…….. **6**.
6. Body dull (Figs 137-138, 146, 147) ……...…….…. **7**.
— Body smooth and shiny (Figs 139-140, 148-151, 155-157) ….…… **8**.
7. Base of scape without a horizontal lobe, propodeal dorsum posteriorly without or with very poorly developed, blunt teeth (Figs 137.1-137.3, 138.1-138.3) … ***C. boghossiani*** Forel.
— Base of scape with a horizontal lobe, propodeal dorsum posteriorly with short, blunt teeth (Figs 146.1-146.3, 147.1-147.3) …….....…… ***C. kiesenwetteri*** (Roger).
8. Dorsum of propodeum with erect to suberect setae on the whole surface (Figs 139.2, 140.2, 155.2, 156.2) ….....…. **9**.

— Dorsum of propodeum with erect to suberect setae only on its posterior edge (Figs 148.2, 149.2, 150.2, 151.2, 157.2, 158.2) …….....……..……..….. **11**.
9. Base of scape without a horizontal lobe (Figs 139.3, 140.3) ……..… ***C. candiotes*** Emery.
— Base of scape with a horizontal lobe (Figs 150.3, 151.3, 155.3, 156.3) ..... **10**.
10. Whole body uniformly black, occurs in open habitats (Figs 155-156). ....…. ***C. piceus*** (Leach).
— Whole body never uniformly black, occurs in habitats overgrown by trees (Figs 150-151). …….....……..... ***C. lateralis*** (Olivier).
11. Propodeum narrow and high, with convex dorsal surface, promesonotum convex, gaster with sparse microreticulation (Figs 148.1-148.2, 149.1-149.2) ..… ***C. lateralis*** (Olivier).
— Propodeum wide and low, with flat dorsal surface, promesonotum slightly convex, gaster with dense microreticulation (Figs 157.1-157.2, 158.1-158.2) ……... ***C. rebeccae*** Forel.

Camponotus aethiops (Latreille, 1798)
(Figs 031, 133.1-133.4, 134.1-134.4, 154.2)

Formica aethiops Latreille, 1798: 35;
=*Formica marginata* Latreille, 1798: 35;
=*Formica angustata* Latreille, 1798: 34;
=*Formica nigrata* Nylander, 1849: 35;
=*Camponotus sylvaticus* var. *sylvaticoaethiops* Forel, 1874: 39;
=*Camponotus marginatus* var. *hyalinipennis* Costa 1884: 56;
=*Camponotus aethiops* var. *concava* Dalla Torre, 1893: 221 (= *Camponotus rubripes* r. *aethiops* v. *concavus* Forel, 1889: 263 unavailable name);
=*Camponotus aethiops* var. *sylvaticoides* Dalla Torre, 1893: 221 (= *Camponotus maculatus* r. *aethiops* var. *sylvaticoides* Forel, 1892: 306 unavailable name);
=*Camponotus* (*Tanaemyrmex*) *aethiops* var. *glaber* Emery, 1925b: 97 (= *Camponotus maculatus aethiops* var. *glaber* Ruzsky, 1905: 213 unavailable name);
=*Camponotus* (*Tanaemyrmex*) *maculatus* subsp. *aethiops* var. *clara* Karavaiev, 1926: 190 unavailable name.

Distribution. Albania, Andorra, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czechia, France (Corsica, mainland), Georgia, Germany, Gibraltar, Greece (Aegean Is., Crete, Cyclades, Dodecanese, Ionian Is., mainland), Hungary, Iraq, Iran, Israel, Italy (mainland, Sardinia, Sicily), Lebanon, Macedonia, Malta, Montenegro, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain (mainland), Switzerland, Syria, Turkey, Ukraine.

Distribution on Crete:

Literature. Crete: Forel 1886: CLXVII (as *Camponotus sylvaticus* st. *aethiops*); Forel 1910a: 23 (as *Camponotus maculatus* subsp. *aethiops*); Emery 1894a: 9 (as *Camponotus maculatus aethiops* v. *concavus*); Legakis 2011: 28; Legakis 2011: 29 (as *Camponotus concavus*). Chania Prov.: Stitz 1928: 91 – Moni Governeto, V 1926.

New records: CHM003, CHM015, CHM017, CHM019, CHM024, CHM026, CHM028, CHM030, HERM008, HERM009, HERM010, HERM018, HERM022, HERM026, LASM005, LASM006, LASM007, LASM008, LASM010, LASM012, LASM013, LASM016, LASM019, LASM020, RETM001, RETM004, RETM006, RETM007, RET008, RET016, CH011, CH019, CH033, CH034, CH039, HER012, HER013, HER014, HER032, HER034, HER035, HER047, LAS001, LAS002, LAS003,

LAS004, LAS015, LAS021, LAS023, LAS028, LAS032, LAS034, LAS049, LAS054, RET014, RET016, RET021, RET023, RET028, RET039, RET046.

Biology. Species associated with open habitats, both dry and humid. On lowlands nesting under stones in the vicinity of trees or bushes, on uplands nests most often below flat stones and sometimes in the clumps of grass. Colonies polygynous.

Camponotus baldaccii Emery, 1908
(Figs 032, 135.1-135.4, 136.1-136.4)

Camponotus maculatus subsp. *baldaccii* Emery, 1908a: 198 (= *Camponotus maculatus* ssp. *dichrous* var. *baldaccii* Emery, 1894a: 9 unavailable name).

Distribution. Greece (Aegean Is., Crete, Dodecanese, mainland), Turkey.

Distribution on Crete:

Literature. Crete: Forel 1886: CLXI (as *Camponotus rubripes* r. *dichrous*), CLXVII (as *Camponotus sylvaticus* v. *dichrous*); Forel 1889: 255 (as *Camponotus rubripes* r. *cognatus* v. *maculato–dichrous*); Emery 1894a: 9 (as *Camponotus maculatus dichrous* v. *Baldaccii*); Emery 1908a: 198 (as *Camponotus maculatus baldaccii*); Forel 1910b: 24 (as *Camponotus sylvaticus* v. *Dichrous* = *maculatus* subsp. *Baldaccii*); Emery 1925b: 100 (as *Camponotus sylvaticus* subsp. *baldaccii*); Menozzi 1929: 146 (as *Camponotus silvaticus baldaccii*); Karaman *et al.* 2011: 189; Legakis 2011: 28; Ghahari & Collingwood 2013: 157; Borowiec 2014: 27. Chania Prov.: Stitz 1928: 91 – Phurnes (Fournes), VI 1926; Moni Governeto, V 192 6 (as *Camponotus sylvaticus* v. *baldaccii*).

New records: CHM002.2. CHM007, CHM008, CHM010, CHM012, CHM013, CH014, CHM015, CHM016, CHM020, CHM023, CHM024 HERM001, HERM003, HERM004, HERM007, HERM009, HERM010, HERM011, HERM013, HERM014, HERM015, HERM017, HERM019, HERM020, HERM021.1, HERM024, HERM025, HERM027, HERM028, HERM029, HERM030, HERM032, HERM036, LASM001, LASM004, LASM005, LASM006, LASM009, LASM010, LASM011, LASM012, LASM014, LASM015, LASM016, LASM017, LASM019, LASM020, RETM001, RETM006, RETM008, RETM010, RETM014, RETM017, CH004, CH005, CH009, CH011, CH013, CH015, CH030, CH031, CH032, CH036, CH038, CH039, CH040, HER003, HER004, HER005, HER006, HER008, HER009, HER010, HER013, HER014, HER017, HER027, HER029, HER030, HER033, HER037, HER039, HER40, HER042, HER044, HER046, HER048, LAS004, LAS005, LAS006, LAS007, LAS008, LAS009, LAS010, LAS011, LAS013, LAS015, LAS020, LAS022, LAS023, LAS024, LAS025, LAS026, LAS030, LAS031, LAS036, LAS037, LAS038, LAS041, LAS044, LAS046, LAS049, LAS050, LAS053, LAS054, RET001, RET007, RET010, RET014, RET015, RET017, RET019, RET021, RET022, RET023, RET029, RET032, RET033, RET035, RET040, RET047.

Biology. Species associated with open, most often humid and shadowy habitats. Nesting in soil, below sun-exposed rocks. Colonies polygynous.

Comments. Borowiec & Salata (2012) cited this species under its junior synonym name: *C. concavus*.

Camponotus boghossiani Forel, 1911
(Figs 033, 137.1-137.4, 138.1-138.4)

Camponotus boghossiani Forel, 1911a: 357;
=*Camponotus boghossiani* var. *stenotica* Emery, 1915b: 7 (= *Camponotus kiesenwetteri* r. *angustatus* Forel, 1889: 261 not *Camponotus angustata* Mayr, 1870: 942).

Distribution. Greece (Dodecanese, Crete, Aegean Is), Turkey.

Distribution on Crete:

Literature. Crete: Emery 1925b: 121 (as *Camponotus boghossiani* var. *stenotica*); Legakis 2011: 33 (as *Camponotus stenoticus*).

New records: HER036.

Biology. Biology poorly known. Specimens were collected from a rock overgrown by phrygana. Probably, as rest of members of the *C. kiesenwetteri* group nesting in soil.

Camponotus candiotes Emery, 1894
(Figs 034, 139.1-139.4, 140.1-140.4)
Camponotus lateralis var. *candiotes* Emery, 1894a: 10.

Distribution. Greece (Aegean Is., Crete, Dodecanese, Ionian Is.), Turkey.

Distribution on Crete:

Literature. Crete: Emery 1894a: 10 (as *Camponotus lateralis* v. *candiotes*); Emery 1925b: 120 (as *Camponotus lateralis* var. *candiotes*); Menozzi 1929: 146 (as *Camponotus piceus* var. *candiotes*); Karaman *et al*. 2011: 187; Legakis 2011: 29; Borowiec 2014: 28.

New records: CHM023, CHM027, CHM028, CHM029, HERM012, HERM014, HERM024, HERM026, LASM013, RETM003, RETM006, RETM009, RETM016, CH004, CH005, CH016, CH017, CH020, CH023, CH035, CH037, CH043, HER002, HER014, HER017, HER021, HER029, HER031, HER038, HER047, HER048, LAS011, LAS014, LAS17, LAS023, LAS028, LAS30, LAS031, LAS033, LAS039, LAS045, LAS046, LAS048, LAS049, LAS051, LAS053, RET001, RET005, RET007, RET008, RET010, RET011, RET012, RET020, RET023, RET027, RET028, RET029, RET032, RET033, RET035, RET036, RET040, RET041, RET043, RET046, RET049.

Biology. Species associated with humid, shadowy areas overgrown by trees or bushes. Nests always in humid soil, under stones. Workers were collected from trees branches, soil and bushes. Colonies monogynous.

Camponotus gestroi Emery, 1878
(Figs 035, 141.1-141.4, 142.1-142.4)
Camponotus gestroi Emery, 1878: 44;
Camponotus gestroi st. *creticus* Forel, 1886: clix.

Distribution. Albania, Algeria, Bulgaria, Cyprus, France (mainland, Corsica), Greece (Aegean Is., Crete, Cyclades, Dodecanese, Ionian Is., mainland), Gibraltar, Iraq, Iran, Israel, Italy (mainland, Sardinia, Sicily), Lebanon, Macedonia, Montenegro, Morocco, Portugal, Serbia, Slovenia, Spain (mainland), Turkey.

Distribution on Crete:

Literature. Crete: Forel 1886: CLIX (as *Camponotus Gestroi* st. *creticus*); Dalla Torre 1893: 227; Forel 1910a: 23 (as *Camponotus Gestroi* subsp. *creticus*); Emery 1894a: 10 (as *Camponotus Gestroi* v. *creticus*); Finzi 1939: 160 (as *Camponotus gestroi* subsp.

creticus); Menozzi 1929: 146 (as *Camponotus gestroi* v. *creticus*); Finzi 1930a: 318 (as *Camponotus gestroi* subsp. *creticus*); Legakis 2011: 29. Chania Prov.: Neuenschwander *et al*. 1983: 26 – Stylos (as *Camponotus gestroix* (sic!) v. *creticus*).

New records: CHM016, CHM019, CHM023, LASM005, LASM009, LASM015, HERM002, HERM005, HERM007, HERM018, HERM029, HERM033, RETM014, RETM017, CH004, CH005, CH006, CH011, CH013, CH028, CH030, CH033, CH035, CH036, CH043, LAS001, LAS010, LAS013, LAS014, LAS015, LAS018, LAS019, LAS023, LAS024, LAS025, LAS027, LAS031, LAS038, LAS041, LAS042, LAS044, LAS046, LAS049, LAS051, LAS052, LAS053, CH001, CH007, CH020, CH023, CH025, HER002, HER003, HER004, HER005, HER009, HER010, HER013, HER017, HER025, HER027, HER030, HER031, HER032, HER033, HER037, HER041, HER042, HER043, HER044, HER048, RET003, RET008, RET010, RET012, RET014, RET019, RET020, RET021, RET022, RET029, RET031, RET035, RET036, RET039, RET040, RET043, RET044, RET047.

Biology. Species associated with open habitats. Nesting in soil, under stones overgrown by herbs or grass. Colonies monogynous.

Camponotus jaliensis Dalla Torre, 1893
(Figs 036, 143.1-143.4, 144.1-144.4, 145.1-145.2)

Camponotus oertzeni var. *jaliensis* Dalla Torre, 1893: 246 (= *Camponotus rubripes* r. *oertzeni* var. *jaliensis* Forel, 1889: 264 unavailable name).

Distribution. Cyprus, Greece (Aegean Is., Crete, Dodecanese, mainland), Israel, Turkey.

Distribution on Crete:

Literature. Legakis 2011: 30; Borowiec 2014: 34.

New records: CHM002.1, CHM007, CHM016, HERM001, HERM004, HERM010, HERM017, HERM024, LASM002, LASM011, LAS017, LAS018, RETM008, RETM012, RETM018, CH016, CH030, HER012, HER036, HER037, HER038, LAS006, LAS009, LAS011, LAS037, RET014, RET019, RET021, RET032, RET033, RET044.

Biology. Species associated with open habitats. Nesting in soil, most often under stones overgrown by grass or bushes. Colonies monogynous.

Camponotus kiesenwetteri (Roger, 1859)
(Figs 037, 146.1-146.4, 147.1-147.4)

Formica (*Hypoclinea*) *kiesenwetteri* Roger, 1859: 241.

Distribution. Cyprus, Greece (Cyclades, Dodecanese, Crete, Aegean Is., Ionian Is., mainland), Turkey.

Distribution on Crete:

Literature. Crete: Emery 1894a: 10; Forel 1910a: 23; Karaman *et al.* 2011: 189; Legakis 2011: 31; Borowiec 2014: 35.

New records: CHM002.2, CHM003, CHM005, CHM006, CHM007, CHM009, CHM011, CHM013, CHM014, CHM018, CHM019, CHM023, CHM024, CHM025, CHM028, HERM007, HERM012, HERM019, HERM022, HERM025, LASM001, LASM002, LASM006, LASM010, LASM011, LASM017, LASM020, RETM005, RETM007,

RETM009, RETM011, CH005, CH007, CH009, CH011, CH013, CH016, CH027, CH029, CH030, CH031, CH032, CH034, CH036, CH037, CH038, CH039, CH040, HER012, HER014, HER025, HER034, HER036, HER037, HER038, HER043, HER047, LAS005, LAS009, LAS013, LAS016, LAS018, LAS019, LAS020, LAS022, LAS023, LAS024, LAS030, LAS033, LAS037, LAS038, LAS042, LAS044, LAS046, LAS050, LAS051, RET005, RET007, RET010, RET012, RET014, RET017, RET020, RET021, RET023, RET028, RET029, RET031, RET032, RET033, RET035, RET036, RET037, RET039, RET040, RET042, RET043, RET047.

Biology. Species associated with areas overgrown by bushes or macchia. Nesting in soil, between roots or under stones. Colonies monogynous.

Camponotus lateralis (Olivier 1792)
(Figs 038, 148.1-148.4, 149.1-149.4, 150.1-150.4, 151.1-151.4)

Formica lateralis Olivier 1792: 497;
=*Formica bicolor* Latreille, 1798: 43 not *Formica bicolor* Fabricius, 1793: 351;
=*Formica melanogastes* Latreille, 1802: 171;
=*Formica axillaris* Spinola 1808: 243;
=*Formica pallidinervis* Brullé 1833: 326;
=*Formica hemipsila* Foerster 1850b: 492;
=*Camponotus* (*Myrmentoma*) *lateralis* subsp. *armouri* Wheeler, 1926: 5;
=*Camponotus* (*Myrmentoma*) *lateralis* var. *balearis* Santschi, 1929c: 164 (= *Camponotus* (*Myrmetoma*) *lateralis* st. *spissinodis* var. *balearis* Santschi, 1925: 360 unavailable name);
=*Camponotus* (*Orthonotomyrmex*) *kosswigi* Donisthorpe, 1950: 68.

Distribution. Albania, Algeria, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, France (Corsica, mainland), Georgia, Germany, Gibraltar, Greece (Aegean Is., Cyclades, Dodecanese, Ionian Isl), Hungary, Israel, Italy (Sardinia, Sicilia, mainland), Lebanon, Macedonia, Malta, Monaco, Montenegro, Morocco, Poland, Portugal, Russia, Romania, Serbia, Slovakia, Slovenia, Spain (Balearic Is., mainland), Switzerland, Syria, Tunisia, Turkey, Ukraine.

Distribution on Crete:

Literature. Crete: Legakis 2011: 31; Borowiec 2014: 35. Chania Prov.: Ionescu–Hirsch 2009: 81 – Elos, 19 VII 1981. Lasithi Prov.: Forel 1889: 256 – Lasithi Plateau.

New records: HERM001, HERM003, HERM006, HERM035, CH002, CH005, CH017, CH020, CH021, CH023, CH026, CH030, CH035, CH036, CH037, CH039, CH040, CH043, HER002, HER038, LAS008, LAS009, LAS011, LAS014, LAS018, LAS039, LAS053, RET001, RET004, RET006, RET011, RET012, RET015, RET020, RET021, RET027, RET035, RET040, RET043, RET048.

Biology. Species associated with humid areas overgrown by trees (forests, city green areas, orchards). Nesting in soil or dead wood. Very often co-occurs with *Crematogaster ionia*. Colonies polygynous.

Comments. Borowiec & Salata (2012) noted this species under *C. lateralis*, *C.* cf. *lateralis* sp. 1 and *C.* cf. *lateralis* sp. 2. It's the only known species with very wide range of setosity shape and density. Next to typical forms, with sparse and adpressed setosity on scapes and propodeum, occur specimens with dense and erect setosity. Our observations suggest that both of these forms inhabit the same localities but we have never collected a mixed nest sample.

Camponotus oertzeni Forel, 1889
(Figs 039, 152.1-152.4, 153.1-153.4, 154.1, 154.3)

Camponotus rubripes r. *oertzeni* Forel, 1889: 263;
=*Camponotus oertzeni* var. *andrius* Dalla Torre, 1893: 246 (= *Camponotus rubripes* r. *oertzeni* var. *andrius* Forel, 1889: 265 unavailable name).
=*Camponotus maculatus* subsp. *oertzeni* var. *pericles* Forel, 1911b: 290, unavailable name;
=*Camponotus karawajewi* Radchenko, 1996b: 1201 (= *Camponotus* (*Tanaemyrmex*) *maculatus* subsp. *aethiops* var. *clara* Karavaiev, 1926: 190, unavailable name).

Distribution. Greece (Dodecanese, Aegean Is., Ionian Is., mainland), Iran, Montenegro, Serbia, Turkey.

Distribution on Crete:

Literature. Crete: Legakis 2011: 28 (as *Camponotus andrius*); Borowiec 2014: 26 (as *Camponotus andrius*).

New records: CH011, HER013, HER047, LAS049.

Biology. Species associated with open and semi open habitats. Nesting under stones overgrown by herbs or grass. Colonies monogynous.

Camponotus piceus (Leach 1825)
(Figs 040, 155.1-155.4, 156.1-156.4)

Formica picea Leach 1825: 292;
=*Formica merula* Losana 1834: 313;
=*Formica foveolata* Mayr, 1853b: 277;
=*Camponotus ebeninus* Emery, 1869: 2;
=*Camponotus* (*Myrmentoma*) *lateralis* var. *ebneri* Finzi, 1930b: 24.

Distribution. Albania, Andorra, Azerbaijan, Austria, Belgium, Bulgaria, Croatia, Czechia, France (mainland, Corsica), Germany, Greece (Cyclades, Dodecanese, Ionian Is., mainland), Hungary, Italy (Sardinia, Sicilia, mainland), Iran, Lebanon, Macedonia, Malta, Montenegro, Poland, Portugal, Russia, Romania, Serbia, Slovenia, Slovakia, Spain (Balearic Is., mainland), Switzerland, Syria, Turkey, Ukraine.

Distribution on Crete:

Literature. Crete: Forel 1886: CLXVII (as *Camponotus lateralis* v. *foveolatus*); Legakis 2011: 32; Borowiec 2014: 39.

New records: HERM018, HERM033, LASM006, LASM019, RETM002, RETM014, CH033, HER009, LAS032, LAS034, LAS054, RET023, RET039, RET041.

Biology. Species associated with open, alpine habitats (pastures, meadows). Nesting in humid soil, under stones or in clumps of grass. Colonies monogynous.

Camponotus rebeccae Forel, 1913
(Figs 041, 157.1-157.4, 158.1-158.4)

Camponotus (*Orthonotomyrmex*) *lateralis* var. *rebeccae* Forel, 1913a: 436.

Distribution. Greece (Crete), Iran, Israel, Lebanon, Syria, Turkey.

Distribution on Crete:

New records: CH005, CH037, RET032.

Biology. Biology poorly known. Specimens were found in material collected from bushes and herbs surrounding water sources.

Subfamily Myrmicinae Lepeletier de Saint-Fargeau, 1835

A key to genera and species of Myrmicinae (worker caste):

1. Postpetiole attached to dorsum of first gaster segment, petiole without node (Figs 220-223) ……. ***Crematogaster***.
— Postpetiole attached to anterior part of first gaster segment, petiole with node (Figs 159-220, 224-227) ……. **2**.
2. Antennae 10-segmented, with conspicuous 2-segmented apical club (Figs 177-178) …. ……. ***Solenopsis***.
—Antennae 11- or 12-segmented, apical club absent or conspicuous 3- or more segmented (Figs 159-176, 179-219, 224-227) ……. **3**.
3. Eyes big, longitudinal, narrowing downwards, anterior margin of eye situated very close to insertion of mandible (Figs 166-167) ……. ***Oxyopomyrmex***.
—Eyes small, oval, anterior margin of eye situated far from insertion of mandible (Figs 159-165, 168-176, 179-219, 224-227) ……. **4**.
4. Mandibles falcate narrowing to apex, without masticatory margin and teeth (Figs 218-219) ……. ***Strongylognathus***.
— Mandibles wide, triangular, masticatory margin distinct, usually with teeth (Figs 159-165, 168-176, 179-217, 224-227) ……. **5**.
5. Posterior edge of clypeus raised into sharp ridge in front of antennal insertions (Figs 209-217) ……. ***Tetramorium***.
— Posterior edge of clypeus not raised into sharp ridge in front of antennal insertions (Figs 159-165, 168-176, 179-208, 224-227) ……. **6**.
6. Apical club 3-segmented (Figs 179-208, 226-227) ……. **7**.
— Apical club absent or 4-segmented (Figs 159-165, 168-176, 224-225) ……. **10.**
7. Propodeum unarmed (Figs 179-183) ……. ***Monomorium***.
— Propodeum armed, with teeth or spines (Figs 184-208, 226-227) ……. **8**.
8. Species dimorphic, head of major workers wider than mesosoma length (Figs 184-189) ……. ***Pheidole***.
— Species monomorphic, head of workers always shorter than mesosoma length (Figs 190-208, 226-227) ……. **9**.
9. Mesosoma devoided of setosity, postpetiole wider than long (in dorsal view) (Figs 226-227) ……. ***Cardiocondyla***.
— Mesosoma with setosity, postpetiole slightly wider than long (in dorsal view) (Figs 190-208) ……. ***Temnothorax***.
10. Genus monomorphic, propodeum with teeth or spines (Figs 159-165, 176) ……. **11**.
— Genus polymorphic, propodeum unarmed or with low, wide lobes (Figs 168-175, 224-225) ……. **12**.
11. Clypeus with pair of longitudinal carinae, promesonotum flat or slightly convex (Fig. 176) ……. ***Stenamma***.
— Clypeus without carinae or with more than 1 pair, promesonotum convex (Figs 159-165) ……. ***Aphaenogaster***.
12. Metanotal groove present, propodeum rounded, unarmed (Figs 224-225) ……. ***Trichomyrmex perplexus*** (Radchenko).
— Metanotal groove absent, propodeum flat with low lobes (Figs 168-175) ……. ***Messor***.

Genus: ***Aphaenogaster*** Mayr, 1853

A key to *Aphaenogaster* species (worker caste):

1. Head strongly narrowed posteriad, with a narrow neck margined by a high and sharp collar (Figs 160.1-160.2) ……...…...…… ***A. cecconii*** Emery.
— Head elongately oval or quadrate, without narrow neck, lacking high and sharp collar (Figs 159.1-159.2, 161.1-161.2, 162.1-162.3, 163.1-163.2, 164.1-164.2, 165.1-165.2) …… **2**.
2. Second funicle segment quadrate, 3rd twice longer than wide, scape never reaching beyond occipital margin (Figs 161.3-161.4, 165.3-165.4) …..…… **3**.
— All funicle segments longer than wide, scape reaching well beyond occipital margin (Figs 159.3-159.4, 162.3-162.4, 163.3-163.4, 164.3-164.4) ….....……..**4**.
3. Frons sides with dense, thin, interrupted longitudinal striation (Figs 161.3-161.4) ……..... .....……... ***A.*** cf. ***subterranea*** sp. 1.
— Frons on the whole surface smooth and shiny (Figs 165.3-165.4) …… …….....….. ***A. subterraneoides*** Emery.
4. Base of the first gaster tergite with longitudinal wrinkles, body dark brown to black (Figs 159.1, 163.1) .....… **5**.
— Base of the first gaster tergite without longitudinal wrinkles, body yellow to pale brown (Figs 162.1, 164.1) ..... **6**.
5. Body black, promesonotum arched, its dorsum with erect setae at least 1.5 times longer than setae on propodeum (Figs 163.2) ….....……..…….. ***A. simonellii*** Emery.
— Body brown, promesonotum slightly convex, mesosoma dorsum with erect setae of even length (Figs 159.2) ….……...…… ***A. balcanicoides*** Boer.
6. Body yellow, frons with sparse, interrupted and longitudinal striation, pronotum smooth and shiny (Figs 164.1-164.2) .....… ***A. splendida*** (Roger).
— Body orange to pale brown, frons with sparse reticulation, pronotum with irregular reticulation (Figs 162.1-162.2) ….....……..……..… ***A. rugosoferruginea*** Forel.

Aphaenogaster balcanicoides Boer, 2013
(Figs 042, 159.1-159.4)
Aphaenogaster balcanicoides Boer, 2013: 68.

Distribution. Greece, Crete – endemic species.

Distribution on Crete:

Literature. Crete, Chania Prov.: Boer 2013: 68 (K[h]alives, IX 1990).

Biology. Unknown.

Aphaenogaster cecconii Emery, 1894
(Figs 043, 160.1-160.4)
Aphaenogaster (*Ischnomyrmex*) *cecconii* Emery, 1894a: 7.

Distribution. Greece, Crete - endemic species

Distribution on Crete:

Literature. Crete: Emery 1921a: 64; Legakis 2011: 6; Borowiec 2014: 10. Chania Prov.: Emery 1894a: 7, Emery 1908b: 313 - Kisamo (Kissamos); Stitz 1928: 90 - Akrotiri, Kumaro cave.

New records: CHM018, CH007, CH008, CH011, CH016, CH030, CH033, CH039, LAS010, LAS011, LAS013, LAS024, LAS031, LAS037, LAS047, LAS049, LAS052, RET011, RET012, RET014, RET017, RET024, RET027, RET032, RET035, RET038, RET049.

Biology. Nesting in rock crevices in gorges and caves entrances, sometimes workers were collected from ancient, stone constructions. Most often inhabiting shadowy and humid localities.

***Aphaenogaster* cf. *subterranea* sp. 1**
(Figs 044, 161.1-161.4)

Distribution. Greece, Crete - endemic species.

Distribution on Crete:

New records: CHM021, RET032.

Biology. Nesting always below flat rocks overgrown by deciduous trees, located in the vicinity of water sources.

Comments. The only Cretan representative of the *A. subterranea* group. Its proper description will be provided in the revision of the Mediterranean taxa related with *A. subterranea*.

Aphaenogaster rugosoferruginea Forel, 1889
(Figs 045, 162.1-162.4)

Aphaenogaster splendida r. *rugosoferruginea* Forel, 1889: 260.

Distribution. Greece: Aegean Is., Crete.

Distribution on Crete:

Literature. Crete: Dalla Torre 1893: 104; Emery 1921a: 60 (as *Aphaenogaster splendida* subsp. *rugoso–ferruginea*); Finzi 1939: 154 (as *Aphaenogaster splendida* v. *rugoso–ferruginea*); Legakis 2011:7; Borowiec 2014: 17. Lasithi Prov.: Forel 1889: 257, 260 – Lasithi Plateau (as *Aphaenogaster splendida* r. *rugoso–ferruginea*); Emery 1908b: 326 – Lasithi Plateau (as *Aphaenogaster splendida rugoso–ferruginea*).

New records: CHM002.2, CHM003, CHM019, CHM023, CHM029, HERM017, HERM022, HERM030, HERM035, LASM001, LASM002, LASM010, LASM017, RETM005, RETM008, RETM011, RETM012, RETM014, CHO31, CH035, CH039, CH040, HER002, HER0029, HER030, HER031, LAS014, LAS023, LAS030, LAS033, LAS046, LAS048, RET007, RET011, RET012, RET014, RET015, RET016, RET020, RET021, RET022, RET024, RET027, RET029, RET033, RET037, RET040, RET047, RET049.

Biology. Nests always below medium-size rocks, in deciduous forests or orchards. Species associated with woody habitats. Colonies monogynous.

Aphaenogaster simonellii Emery, 1894
(Figs 046, 163.1-163.4)

Aphaenogaster testaceopilosa var. *simonellii* Emery, 1894a: 8.

Distribution. Greece: Crete, Karpathos.

Distribution on Crete:

Literature. Crete: Emery 1894a: 8 (as *Aphaenogaster testaceo–pilosa* v. *Simonellii*); Forel 1910a: 23 (as *Aphaenogaster testaceo–pilosa* v. *Simonellii*); Emery 1915a: 257 (as *Aphaenogaster testaceo–pilosa simonellii*); Emery 1921a: 63 (as *Aphaenogaster testaceopilosa* subsp. *simonellii*); Stitz 1928: 90 (as *Aphaenogaster testaceo–pilosa* v. *simonellii*); Menozzi 1929: 145 (as *Aphaenogaster testaceo–pilosa simonellii*); Legakis 2011:8; Borowiec 2014: 18. Heraklion Prov.: Boer 2013: 83 – N Kastelli, V 2008; Anno Viannos, V 2008; Perama, I 2000; Archanes, I 2000; Phaestos, 26 IV1973; Heraklion, IV 1988; Heraklion, IV 1990; Kato Gouves, 26 VII 2006; Malia, I 2000. Lasithi Prov.: Boer 2013: 83 – Kato Metohi, V 2008; Kavousi, V 2008. Chania Prov.: Neuenschwander *et al.* 1983: 26 – Stylos.

New records: CHM006, CHM007, CHM015, CHM016, CHM0017, CHM019, CHM023, CHM027, CHM028, CHM029, CHM030, HERM001, HERM002, HERM003, HERM004, HERM005, HERM007, HERM008, HERM009, HERM010, HERM011, HERM013, HERM014, HERM017, HERM018, HERM020, HERM021.2, HERM023, HERM024, HERM025, HERM026, HERM027, HERM029, HERM030, HERM032, HERM034, HERM035, HERM036, LASM001, LASM004, LASM014, LASM015, LASM017, LASM018, LASM019, RETM001, RETM003, RETM004, RETM005, RETM006, RETM008, RETM009, RETM012, RETM013, RETM014, RETM017, CH002, CH004, CH005, CH007,CH009, CH013, CH014, CH015, CH016, CH027, CH029, CH031, CH032, CH033, CH034, CH035, CH036, CH037, CH038, CH039, CH040, CH042, CH043, HER002, HER003, HER005, HER006, HER007, HER008, HER009, HER011, GER012, HER014, HER017, HER020, HER024, HER027, HER029, HER030, HER032, HER034, HER035, HER037, HER038, HER039, HER040, HER041, HER042, HER043, HER044, HER046, HER048, LES001, LAS002, LAS004, LAS006, LAS008, LAS009, LAS011, LAS013, LAS015, LAS016, LAS019, LAS020, LAS023, LAS024, LAS025, LAS026, LAS027, LAS029, LAS030, LAS032, LAS033, LAS034, LAS035, LAS037, LAS040, LAS041, LAS042, LAS043, LAS045, LAS046, LAS047, LAS049, LAS053, LAS054, RET001, RET003, RET005, RET006, RET010, RET011, RET012, RET014, RET015, RET018, RET019, RET020, RET021, RET022, RET024, RET025, RET027, RET028, RET031, RET032, RET033, RET035, RET036, RET037, RET039, RET040, RET043, RET047, RET049.

Biology. Nesting always in dry soil, below rocks, very often overgrown by herbs or grass. Species associated with open, sunny habitats.

Aphaenogaster splendida (Roger, 1859)
(Figs 047, 164.1-164.4)

Atta splendida Roger, 1859: 257.

Distribution. Algeria, Croatia, Egypt, France (mainland), Greece (Aegean Is., mainland), Iran, Israel, Italy (mainland, Sicily), Lebanon, Libya, Macedonia, Malta, Morocco, Russia (Caucasus), Serbia, Spain (mainland), Tunisia, Turkey.

Distribution on Crete:

New data: HERM028.

Biology. Unknown.

Aphaenogaster subterraneoides Emery, 1881
(Figs 048, 165.1-165.4)

Aphaenogaster pallida var. *subterraneoides* Emery, 1881: 534;
=*Aphaenogaster pallida cyprusiotes* Emery, 1908c: 329.

Distribution. Algeria, Bosnia and Herzegovina, Croatia, Cyprus, Greece (Crete, Cyclades, Dodecanese, Ionian Is., mainland), Italy, Macedonia, Montenegro, Morocco, Russia (Kuakas), Serbia, Spain, Turkey, Ukraine.

Distribution on Crete:

New records: CHM016, CHM019, CHM030, HERM001, HERM007, HERM008, HERM013, HERM014, LASM004, LASM005, LASM011, LASM014, LASM015, LASM017, RETM002, RETM009, RETM018, CH008, CH024, CH032, CH033,

HER005, HER012, HER025, HER030, HER037, HER047, LAS009, LAS010, LAS011, LAS013, LAS017, LAS024, LAS025, LAS037, LAS038, LAS051, LAS053, RET014, RET016, RET022, RET023, RET049.

Biology. Nests always in humid soil, most often under medium-size rocks. Workers were found also in the soil below deciduous trees or in pastures.

Comments. Borowiec & Salata (2012) noted this species as *A. lesbica*.

Genus *Oxyopomyrmex* André, 1881

A key to *Oxyopomyrmex* species (worker caste):

1. In profile, a border between dorsal and posterior surfaces of the promesonotum sharply curved, gena always with fine longitudinal striae, dorsal surface of propodeum rugulose to finely rugulose, never smooth, with or without striation, lateral surfaces of mesonotum punctate with longitudinal striation on the posterior edge (Fig. 166) ..... ……..... ***O. krueperi*** Forel.

— In profile, a border between dorsal and posterior surfaces of the promesonotum never sharply curved, gena without longitudinal striae, microreticulate, centre of propodeum smooth and shiny, lateral surfaces of mesonotum with gently reticulation (Fig. 167) ……..... ***O. laevibus*** Salata & Borowiec.

Oxyopomyrmex krueperi Forel, 1911
(Figs 049, 166.1-166.4)

Oxyopomyrmex krueperi Forel, 1911a: 344;
=*Oxyopomyrmex lagoi* Menozzi, 1936: 278, fig. 7 (w.).

Distribution. Bulgaria, Greece (Dodecanese, mainland), Iran (East Azerbaijan Province), Macedonia, Turkey.

New records: RET014.

Biology. Rare species, associated with open and arid habitats (phryganas). Nesting under stones, in sunny localities. Colonies monogynous.

Oxyopomyrmex laevibus Salata & Borowiec, 2015
(Figs 050, 167.1-167.4)

Oxyopomyrmex laevibus Salata & Borowiec, 2015a: 22, figs. 19-21, 76 (w.).

Distribution. Greece, Crete – endemic species.

Distribution on Crete:

New records: CH027.

Biology. Biology poorly known. Specimens were collected by sweep net in arid littoral habitat, located on a small peninsula close to the sea. The peninsula was vegetated by pine grove and Mediterranean scrubland.

Comments. Borowiec & Salata (2012, 2013) noted this species as *O. krueperi* and *O. santschii*, the most recent review (Salata & Borowiec 2015) revealed that specimens collected in the vicinity of Chania represent a distinct species.

Genus: *Messor* Forel, 1890

A key to *Messor* species known from Crete (worker caste):

1. At least posterior part of frons with dense, thin and longitudinal striation (Figs 170-173) ……..…….....……..… **2**.
— Whole head smooth and shiny, only the area close to frontal carina with a few longitudinal striae (Figs 168-169, 174-175) …….....…...…….. **4**.
2. Ventral surface of head capsule with long, J-shaped psammophores (170.2, 173.1) …….. ***M. hellenius*** Agosti & Collingwood.
— Ventral surface of head capsule with short, straight, erect setae (Figs 171.2, 172.2, 173.2) …….....…… **3**.
3. Average head width: 2.725 ± 0.5, average mesosoma length: 2.886 ± 0.4 (Fig. 172); surface of body including petiole and postpetiole with regular costate. Gyne bigger than the biggest soldiers ….….....……. ***M. mcarthuri*** Steiner *et al*.
— Average head width: 1.851 ± 0.5, average mesosoma length: 2.251 ± 0.3 (Figs 171, 173.2); surface of body with less regular costate. Gyne smaller or the same size as the biggest soldiers …….....……. ***M. ibericus*** Santschi.
4. First gaster tergite with more than 5 erect setae (Figs 169.2) .... ***M. creticus*** Salata & Borowiec.
— First gaster tergite without or with maximum 3 erect setae (Figs 168.2, 174.2, 175.2) … **5**.
5. Gaster with dense, slight microreticulation, matt. Major workers often almost completely black (Figs 168.1-168.2) ..... ***M. concolor*** Santschi.
— Gaster with diffused microreticulation, appears mostly shiny. Major workers always distinctly bicolours (Figs 174.1-174.2, 175.2) ….....……..... ***M. wasmanni*** Krausse.

Messor concolor Santschi, 1927
(Figs 051, 168.1-168.4)

Messor semirufus var. *concolor* Santschi, 1927a: 229 (= *Messor barbarus semirufus* var. *concolor* Emery, 1908c: 448 unavailable name).

Distribution. Greece, Crete – probably endemic species.

Distribution on Crete:

Literature. Crete: Emery 1908c: 448 (as *Messor barbarus semirufus* var. *concolor*); Emery 1921a: 72 (as *Messor barbarus semirufa* v. *concolor*); Santschi 1927a: 229 (as *Messor semirufus* var. *concolor*); Menozzi 1929: 146 (as *Messor semirufus* v. *concolor*).

New records: CH016.

Biology. Biology poorly known. Workers were collected in the dry riverbed located in a gorge. The area was overgrown by phrygana.

Comments. Most recent data confirms certain presence of this species on Crete. However, taxon was also recorded from Bulgaria, former Yugoslavia, Turkey, Syria and Lebanon (Salata & Borowiec 2019). Due to long-lasting misinterpretation of features considered as specific for this species all literature records are dubious. Therefore, based on collected evidences, we consider *M. concolor* as a Cretan endemic species.

Messor creticus Salata & Borowiec, 2019
(Figs 052, 169.1-169.4)

Messor creticus Salata & Borowiec, 2019: 58.

Distribution. Greece, Crete – endemic species.

Distribution on Crete:

New records: LASM006, CH032, CH033, HER034, HER035, LAS003, RET030, RET039.

Biology. Alpine species, collected only on areas located above 1000 m a.s.l. Nesting under stones, on pastures or meadows. Colonies monogynous.

Comments. Borowiec & Salata (2012) noted this species as *Messor caducus*.

Messor hellenius Agosti & Collingwood, 1987
(Figs 053, 170.1-170.4, 173.1)

Messor hellenius Agosti & Collingwood 1987a: 54 (= *Messor barbarus* st. *varrialei* var. *hellenius* Santschi, 1926a: 290 unavailable name).

Distribution. Greece (Aegean Is., Cyclades, mainland), Turkey.

Distribution on Crete:

New records: LAS032.

Biology. On Crete, species collected from montane zone. Collected on a dirty road and rocks overgrown by phrygana. Nesting in soil.

Messor ibericus Santschi, 1931
(Figs 054, 171.1-171.4, 173.2)

Messor structor var. *ibericus* Santschi, 1931a: 4 (w.m.);
=*Messor structor* subsp. *novaki* Finzi, 1929: 92 (w.).

Distribution. Bulgaria, Croatia, Germany, Greece (Cyclades, Dodecanese, Crete, Aegean Is., Ionian Is., mainland), Italy (mainland), Romania, Slovenia, Spain (Balearic Is., mainland), Switzerland.

Distribution on Crete:

Literature. Crete: Forel 1886: CLXVIII (as *Aphaenogaster structor*); Emery 1894a: 11 (as *Aphaenogaster* (*Messor*) *structor*); Legakis 2011: 11 (as *M. structor*); Borowiec 2014: 112 (as *M. structor*). Chania Prov.: Stitz 1928: 90 – Akrotiri, V 1926 (as *Messor barbarus* v. *structor*). Rethymnon Prov.: Stitz 1928: 90 – Melidhoni, VI 1926 (as *Messor barbarus* v. *structor*).

New records: CHM011, CHM013, CHM020, CHM023, CHM025, HERM003, HERM005, HERM016, HERM023, HERM026, HERM027, HERM030, LASM006, LASM017, LASM019, RETM014, CH001, CH007, CH008, CH011, CH016, CH019, CH027, CH029, CH030, CH035, CH039, RET014, RET015, RET018, RET019, RET020, RET021, RET022, RET024, RET025, RET028, RET040, RET041, RET042, RET043, RET047, HER002, HER003, HER007, HER010, HER020, HER034, HER041, LAS036, LAS045, LAS054.

Biology. Species common on Crete. Associated with arid and humid open habitats. Nests always in soil, very often under areas overgrown by phrygana. Colonies polygynous.

Comments. Based on data provided by Steiner *et al*. (2018) all Cretan samples of specimens previously determined as *M. structor* should be assigned to *M. ibericus*.

Messor mcarthuri Steiner *et al.*, 2018
(Figs 055, 172.1-172.4)

Messor mcarthuri Steiner *et al.*, 2018: 401, figs. 2, 5ae, be, ce, de, ee (w.q.)

Distribution. Greece (Aegean Is., Cyclades, Dodecanese, Ionian Is., mainland), Turkey.

Distribution on Crete:

Literature. Crete: Emery 1908c: 456 (as *Messor barbarus structor* var. *orientalis*); Emery 1921a: 73 (as *Messor barbarus* subsp. *semirufa* var. o*rientalis*); Emery 1921b: 211 (as *Messor barbarus structor* var. *aegaea*); Finzi 1939: 155 (as *Messor structor* v. *aegaea* Emery, 1921); Legakis 2011: 9 (as *Messor aegaeus*); Legakis 2011: 11; Legakis 2011: 11 (as *Messor orientalis*); Borowiec 2014: 110; Borowiec 2014: 110 (as *Messor orientalis*).

New records: CHM019, HERM029, LASM004, LASM014, LASM019, RETM017, CH004, CH011, CH016, CH019, CH031, CH032, HER004, HER005, HER006, HER009, HER012, HER017, HER024, HER025, HER031, HER033, HER036, HER037, HER040, HER042, HER043, HER047, HER048, LAS003, LAS004, LAS005, LAS006, LAS009, LAS010, LAS011, LAS013, LAS015, LAS017, LAS023, LAS024, LAS027, LAS029, LAS035, LAS037, LAS039, LAS040, LAS043, LAS044, LAS046, LAS049, RET003, RET008, RET010, RET013, RET014, RET015, RET017, RET027, RET029, RET031, RET032, RET035, RET036, RET037, RET045, RET047.

Biology. Species very common on Crete. Associated with open habitats, most often arid but sometimes species was noted in humid areas as well. Nesting under stones, most often in the vicinity of deciduous trees or bushes. Colonies polygynous.

Comments. In the light of most recent revision of the *M. structor* group (Steiner *et al*. 2018) there are only two its members known from the island: *M. ibericus* and *M. mcarthuri*. Based on the fresh material and available museum collection we decided to assign all literature records of *M. orientalis* and *M. aegaeus* to *M. mcarthuri*. Both of those species were considered as taxa that have workers and gynes bigger than typical forms of *M. structor*. Moreover, characteristic of *M. mcarthuri* is conspecific with investigated by us Cretan samples of *Messor* with big soldiers.

Messor wasmanni Krausse, 1910
(Figs 056, 174.1-174.4, 175.1-175.2)

Messor barbarus subsp. *wasmanni* Krausse, 1910: 524.

Distribution. Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, France (Corsica), Greece (Cyclades, Dodecanese, Crete, Aegean Is., Ionian Is., mainland), Italy (Sardinia, Sicilia), Lebanon, Oman, Serbia, Slovenia, Syria, Tunisia.

Distribution on Crete:

Literature. Crete: Emery 1894a: 11 (as *Aphaenogaster* (*Messor*) *barbara* var. *meridionalis*); Finzi 1930a: 312 (as *Messor semirufus* v. *wasmanni*); Legakis 2011: 12; Borowiec 2014: 114.

New records: CHM001, CHM003, CHM006, CHM008, CHM014, CHM015, CHM016, CHM022, CHM023, CHM028, CHM029, HERM001, HERM002, HERM004, HERM005, HERM006, HERM007, HERM009, HERM010, HERM013, HERM015, HERM018, HERM021.2, HERM023, HERM027, HERM030, HERM032, HERM034, HERM036, LASM005, LASM006, LASM007, LASM008, LASM009, LASM010, LASM014, LASM015, LASM016, RETM001, RETM005, RETM008, RETM009, RETM012, RETM014, RETM016, RETM017, RETM018, CH003, CH007, CH008, CH009, CH011, CH012, CH015, CH016, CH019, CH023, CH027, CH028, CH038,

CH039, CH040, CH042, HER003, HER004, HER006, HER007, HER008, HER010, HER011, HER013, HER019, HER024, HER026, HER027, HER029, HER030, HER032, HER036, HER037, HER038, HER039, HER040, HER042, HER043, HER044, LAS001, LAS005, LAS006, LAS007, LAS008, LAS010, LAS012, LAS013, LAS014, LAS015, LAS016, LAS017, LAS020, LAS023, LAS024, LAS025, LAS026, LAS027, LAS031, LAS032, LAS035, LAS036, LAS037, LAS038, LAS041, LAS046, LAS050, LAS054, RET003, RET005, RET006, RET008, RET010, RET011, RET012, RET014, RET015, RET017, RET019, RET020, RET021, RET022, RET024, RET027, RET028, RET030, RET031, RET032, RET033, RET037, RET040, RET041, RET042, RET043, RET047, RET049.

Biology. Very common on Crete. Associated with open habitats, natural and anthropogenic. Nesting in soil, most often under stones. Colonies polygynous.

Genus *Stenamma* Westwood, 1839

Stenamma debile (Foerster, 1850)
(Figs 057, 176.1-176.4)

Myrmica debilis Förster, 1850a: 52;
=*Myrmica minkii* Förster 1850a: 63;
=*Stenamma golosejevi* Karavaiev, 1926: 68;
=*Stenamma ucrainicum* Arnol'di, 1928: 209;
=*Stenamma westwoodi* subsp. *polonicum* Begdon, 1932: 118.

Distribution. Austria, Belgium, Bosnia and Herzegovina, Britain, Bulgaria, Croatia, Czechia, Greece (Cyclades, Ionian Is., mainland), Denmark, France (Corsica, mainland), Germany, Hungary, Ireland, Italy (mainland, Sardinia, Sicily), Luxembourg, Macedonia, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain (mainland), Sweden, Switzerland, Turkey, Ukraine.

Distribution on Crete:

Literature. Crete: Legakis 2011: 12; Borowiec 2014: 128.

New records: CHM028, RETM002, RETM003, RETM011, RETM018.

Biology. Species associated with humid deciduous forests, most often oaks. Nesting in soil, under stones, moss or dead wood. Colonies monogynous.

Genus: *Solenopsis* Westwood, 1840

A key to *Solenopsis* species known from Crete (worker caste):

1. Head capsule in frontal view long and rectangular, in lateral view flattened (Fig. 178). HI: 81.0 ± 2.9 ……..……. ***S. orbula*** Emery.
— Head capsule in frontal and lateral view oval (Fig. 177). HI: 75.0 ± 1.6 ….....
.....…… ***S. crivellarii*** Menozzi.

Solenopsis crivellarii Menozzi, 1936
(Figs 058, 177.1-177.4)

Solenopsis crivellarii Menozzi, 1936: 284.

Distribution. Greece: Dodecanese, Crete.

New records: CH033, CH039, LAS002, LAS027, LAS032, LAS034, LAS054, RET004, RET007, RET021, RET023, RET028, RET030, RET033, RET039, RET046.

Biology. Species associated with deciduous forests and humid montane meadows. Nesting

always below rocks overgrown by grass or herbs. Colonies very often located in the vicinity of nests of *Camponotus* species. Colonies monogynous.

Solenopsis orbula Emery, 1875
(Figs 059, 178.1-178.4)

Solenopsis (*Diplorhoptrum*) *orbula* Emery, 1875a: 74 (w.).

Distribution. Albania, Croatia, France (mainland, Corsica), Egypt, Greece (Crete, Ionian Is., mainland), Italy (mainland, Sardinia, Sicily), Spain (mainland), Syria, Turkey.

Literature. Crete: Borowiec 2014: 159.

New records: CH013, CH032, CH039, HER037, LAS013, RET028, RET049.

Biology. Rare species associated with humid areas overgrown by bushes or deciduous trees. Nesting under stones. Colonies monogynous.

Comments. Borowiec & Salata (2012) noted this species as *S. wolfi* (misdetermination).

Genus *Monomorium* Mayr, 1855

A key to *Monomorium* species known from Crete (worker caste):

1. First segment of antennal club shorter than the second one and both together not longer than the third segment (Figs 181.4, 182.4) ……..…….…. **2**.
— First and second segments of antennal club subequal, together longer than the third segment (Figs 179.4, 180.4, 183.4) …….....……. **3**.
2. Whole body black, shiny (Fig. 181) …….....…. ***M. monomorium*** Bolton.
— Body matt, yellow, only gaster black (Fig. 182) .....… ***M. pharaonis*** (Linnaeus).
3. Body smooth and shiny (Fig. 180) ……..……...……...……. ***M. creticum*** Emery.
— Body with well developed sculpture, matt (Figs 179, 183) ..……...……. **4**.
4. Head and mesosoma uniformly coloured, from orange to brick-red, gaster black (Fig. 179) …….…….....……. ***M. bicolor*** Emery.
— Whole body uniformly dark coloured, sometimes head and mesosoma brighter than gaster, but then never with uniformly colouration (Fig. 183) ……. ***M. subopacum*** (F. Smith).

Monomorium bicolor Emery, 1887
(Figs 060, 179.1-179.4)

Monomorium bicolor Emery, 1877a: 368;
=*Monomorium bicolor* var. *coerulescens* Santschi, 1912: 148;
=*Monomorium bicolor* var. *rufibasis* Santschi, 1914: 353;
=*Monomorium* (*Xeromyrmex*) *bicolor* var. *aequatoriale* Santschi, 1926b: 240;
=*Monomorium* (*Xeromyrmex*) *bicolor* var. *tropicale* Santschi, 1926b: 240;
=*Monomorium* (*Xeromyrmex*) *bicolor* var. *uelense* Santschi, 1926b: 239.

Distribution. Cyprus, Egypt, Iran, Israel, Libya, Oman, Saudi Arabia, United Arab Emirates.

Distribution on Crete:

New records: HER005, HER019, HER026, HER042, LAS040.

Biology. An invasive species. On Crete associated with sandy and arid, open habitats. Collected on beaches and their surroundings. Nesting under rocks or in shells of dead snails, on sunny localities. Workers performed highest activity for few hours after sundown. Colonies polygynous.

Monomorium creticum Emery, 1895
(Figs 061, 180.1-180.4)

Monomorium abeillei var. *creticum* Emery, 1895a: 66 [298];
=*Epixenus creticus* Emery, 1908d: 558;
=*Epixenus biroi* Forel, 1910c: 21 not *Monomorium biroi* Forel, 1907a: 19;
=*Monomorium biroianum* Bolton, 1995: 260 (= *Monomorium biroi* (Forel, 1910c: 21) not *Monomorium biroi* Forel, 1907a: 19);
=*Monomorium pseudoepixenus* Özdikmen 2010: 991 (= *Monomorium creticum* (Emery, 1908d: 558) not *Monomorium abeillei* var. *creticum* Emery, 1895a: 66).

Distribution. Greece, Crete – endemic species.

Distribution on Crete:

Literature. Crete: Emery 1908d: 558 (as *Epixenus creticus*); Emery 1908e: 679; Forel 1910a: 21 (as *Epixenus Biroi*); Forel 1910a: 23; Emery 1922: 178 (as *Monomorium salomonis* subsp. *cretica*); Emery 1922: 185 (as *Epxenus biroi* and *Epixenus* (?) *creticus*); Legakis 2011:14; Borowiec 2014: 117. Chania Prov.: Emery, 1895a: 66 – Omalos, Catavotri (as *Monomorium abeillei* v. *creticum*); Karavaiev 1927a: 107 – Chania, 11 III 1910.

New records: CHM011, CHM015, CHM016, CHM017, CHM025, CHM026, CHM028, CHM029, HERM005, HERM007, HERM012, HERM013, HERM014, HERM018, HERM019, HERM022, HERM023, HERM024, HERM025, HERM026, HERM027, HERM029, HERM031, HERM033, HERM036, LASM006, LASM007, LASM015, LASM017, LASM019, RETM001, RETM005, RETM006, RETM013, RETM016, RETM017, CH004, CH005, CH009, CH019, CH023, CH027, CH028, CH031, CH033, CH034, CH038, CH039, CH043, HER006, HER009, HER010, HER030, HER034, HER035, HER037, HER039, HER043, HER048, LAS001, LAS004, LAS011, LAS021, LAS022, LAS023, LAS032, LAS034, LAS045, LAS046, LAS048, LAS050, LAS054, RET004, RET007, RET015, RET016, RET021, RET022, RET028, RET029, RET030, RET031, RET039, RET043.

Biology. Very common on Crete. Occurs in natural and anthropogenic environments. Associated with open, sunny habitats. Nesting in soil or rock rubble. Colonies polygynous.

Monomorium monomorium Bolton, 1987
(Figs 062, 181.1-181.4)

Monomorium monomorium Bolton, 1987: 287 (= *Monomorium minutum* Mayr, 1855: 453, not *Monomorium minutum* (Jerdon 1851: 105)).

Distribution. Albania, Algeria, Austria, Bosnia and Herzegovina, Croatia, Lebanon, Montenegro, France (mainland), Greece (Crete, Aegean Is., Ionian Is., mainland), Italy (Sicilia, mainland), Morocco, Serbia, Slovenia, Spain (Canary Is., mainland), Syria, Turkey.

Distribution on Crete:

Literature. Crete: Legakis 2011: 15; Borowiec 2014: 122.

New records: CHM001, HERM014, CH005, CH017.

Biology. Synanthrope species. Very common on humid areas overgrown by deciduous

trees and macchia. Nesting in sandy soil (dirty roads) or in rock rumble. Colonies monogynous.

Monomorium pharaonis (Linnaeus, 1758)
(Figs 063, 182.1-182.4)

Formica pharaonis Linnaeus, 1758: 580;
=*Formica antiguensis* Fabricius, 1793: 357;
=*Myrmica domestica* Shuckard 1838: 627;
=*Atta minuta* Jerdon 1851: 105;
=*Myrmica vastator* Smith, 1857: 71;
=*Myrmica contigua* Smith, 1858: 125;
=*Myrmica fragilis* Smith, 1858: 124.

Distribution. Algeria, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Egypt, France (mainland), Germany, Great Britain, Greece (Cyclades, Dodecanese, Crete, Ionian Is., mainland), Hungary, Iraq, Iran, Ireland, Israel, Italy (Sardinia, Sicilia, mainland), Latvia, Lebanon, Libya, Macedonia, Madera, Montenegro, Morocco, Poland, Portugal, Russia, Romania, Saudi Arabia, Serbia, Slovakia, Slovenia, Spain (Balearic Is., Canary Is., mainland), Sweden, Switzerland, The Netherlands, Turkey.

Distribution on Crete:

Literature. Crete: Bolton 1987: 356; Wetterer 2010: 120; Tăuşan & Markó 2011: 24; Legakis 2011: 15; Borowiec 2014: 124.

Biology. An invasive species. Strongly associated with human settlements. Its presence on Crete is possible in greenhouses or banana plantations. Colonies polygynous.

Monomorium subopacum (F. Smith, 1858)
(Figs 64, 183.1-183.4)

Myrmica subopaca Smith, 1858: 127
=*Myrmica glyciphila* Smith, 1858: 125;
=*Monomorium mediterraneum* Mayr, 1861: 72;
=*Monomorium salomonis* st. *subopacum* var. *senegalensis* Santschi, 1913: 306, unavailable name;
=*Paraphacota cabrerae* Santschi, 1919b: 405;
=*Paraphacota surcoufi* Santschi, 1919c: 90;
=*Paraphacota cabrerae* st. *obscuripes* Santschi, 1921a: 424;
=*Monomorium salomonis* subsp. *subopacum* var. *claveaui* Emery, 1922: 178, unavailable name;
=*Monomorium* (*Xeromyrmex*) *salomonis* subsp. *subopacum* var. *santschiellum* Wheeler, 1922: 872, unavailable name;
=*Monomorium* (*Xeromyrmex*) *subopacum* var. *intermedium* Santschi, 1927b: 242;
=*Monomorium* (*Xeromyrmex*) *subopacum* var. *liberta* Santschi, 1927b: 243 (= *Monomorium* (*Xeromyrmex*) *salomonis subopacum* var. *liberta* Santschi, 1921b: 170, unavailable name);
=*Monomorium* (*Xeromyrmex*) *subopacum* var. *apuleii* Santschi, 1927b: 243;
=*Monomorium* (*Xeromyrmex*) *subopacum* var. *ebraicum* Menozzi, 1933: 62;
=*Monomorium* (*Xeromyrmex*) *subopacum* var. *adoneum* Santschi, 1936: 41 (= *Monomorium* (*Xeromyrmex*) *subopacum* var. *adoneum* Santschi, 1934: 277, nomen nudum);
=*Monomorium* (*Xeromyrmex*) *subopacum* subsp. *italica* Baroni Urbani, 1964: 154.

Distribution. Algeria, Egypt, Georgia, Greece (Cyclades, Crete, Aegean Isl.), Iraq, Iran, Israel, Italy (Sardinia, Sicilia, mainland), Lebanon, Libya, Madera, Malta, Morocco, Oman, Portugal, Saudi Arabia, Serbia, Spain (Balearic Is., Canary Isl.), Syria, Tunisia, Turkey, United Arab Emirates, Yemen.

Distribution on Crete:

Literature. Crete: Forel 1910a: 23(as *Monomorium Salomonis* subsp. *subopacum*); Legakis 2011: 15; Legakis 2011: 15 (as *Monomorium phoenicum* – misdetermination); Borowiec 2014: 126.

New records: HERM022, CH015, CH027, HER001, HER005, HER019, HER026, HER042, HER045.

Biology. An invasive species known from anthropogenic sites and natural localities. Associated with open, arid and sunny habitats. Nests below flat stones, in rock rumble or in dry litter. Workers caught on the soil or rocks surrounding a nest entrance. Active during the day, especially during highest temperature period. Colonies polygynous.

Genus *Pheidole* Westwood, 1839

A key to *Pheidole* species known from Crete (worker caste):

1. Promesonotal process well-developed (Figs 184.2, 185.2) ……..……. ***P. indica*** Mayr.
— Promesonotal process absent (186.2, 187.2, 188.2, 189.2) ….....…..…. **2**.
2. Major workers with sparse reticulation on the head surface above eyes, occipital edge deeply concave, minor workers with lateral surfaces of mesonotum and propodeum at least partly smooth and shiny (Figs 188, 189) …….……... ***P.*** sp 1
— Major workers with smooth head surface above eyes, occipital edge slightly concave, minor workers with lateral surfaces of mesonotum and propodeum reticulate or punctate (186, 187) ….....….. ***P. pallidula*** (Nylander).

Pheidole indica Mayr, 1879
(Figs 065, 184.1-184.4, 185.1-185.4)

Pheidole indica Mayr 1879: 679 (s.w.q.);
= *Pheidole javana* r. *jubilans* var. *formosae* Forel 1912: 60 unavailable name;
=*Pheidole striativentris* Mayr 1879: 678 (s.);
=*Pheidole teneriffana* Forel 1893: 465 (s.w.);
=*Pheidole voeltzkowii* Forel 1894b: 227 (s.w.m.);
=*Pheidole indica* r. *himalayana* Forel 1902: 185 (s.), 199 (w.);
=*Pheidole indica* r. *rotschana* Forel 1902: 185 (s.), 199 (w.m.);
=*Pheidole teneriffana* subsp. *taina* Aguayo 1932: 219 (s.).

Distribution. Cyprus, Egypt, Greece (Cyclades, Dodecanese, Aegean Is., Ionian Is., mainland), Iran, Israel, Italy (Sicilia), Lebanon, Malta, Oman, Portugal, Saudi Arabia, Spain (Balearic Is., Canary Is., mainland), Syria, Turkey, United Arab Emirates, Yemen.

Distribution on Crete:

Literature. Crete: Legakis 2011: 12 (as *Pheidole teneriffana*); Borowiec 2014: 144 (as *P. teneriffana*).

New records: HERM014, CH015, CH027, HER019, HER022, RET035.

Biology. An invasive species, strongly associated with human settlements. Nesting in sunny and dry areas, most often under stones. Colonies monogynous.

Comments. Borowiec & Salata (2013) noted this species also as *P. megacephala* (misdetermination). Borowiec & Salata (2012, 2013) noted this species under its junior synonym: *P. teneriffana*.

Pheidole pallidula (Nylander, 1849) sensu lato
(Figs 066, 186.1-186.4, 187.1-187.4)

Myrmica pallidula Nylander, 1849: 42;
=*Oecophthora subdentata* Mayr, 1853a: 145;
=*Pheidole pallidula* var. *arenarum* Ruzsky, 1905: 647;
=*Pheidole pallidula* var. *tristis* Forel, 1907b: 204;
=*Pheidole symbiotica Wasmann,* 1909: 693;
=*Pheidole pallidula* var. *emeryi* Krausse 1912: 169;
=*Pheidole pallidula* var. *cicatricosa* Stitz, 1917: 340;
=*Pheidole pallidula* var. *inermis* Stitz, 1917: 340;
=*Pheidole pallidula* subsp. *orientalis* Müller, 1923: 69 (= *Pheidole pallidula* ssp. *arenarum* var. *orientalis* Emery, 1915c: 230, unavailable name);
=*Xenoaphaenogaster inquilina* Baroni Urbani, 1964: 50, not *inquilina* Wheeler, 1903: 664.

Distribution. Based on data provided by Seifert (2016) a range of distribution of this species has to be revised. In our monograph we considered all collected samples as *P. pallidula* sensu lato, which has Euro-Mediterranean distribution.

Distribution on Crete:

Literature. Crete: Emery 1894a: 11; Legakis 2011: 12; Borowiec 2014: 143; Damnoni (Seifert 2016).

New records: CHM002.2, CHM003, CHM007, CHM009, CHM010, CHM014, CHM016, CHM017, CHM019, CHM023, CHM026, CHM028, CHM029, HERM001, HERM005, HERM006, HERM008, HERM009, HERM010, HERM011, HERM012, HERM014, HERM015, HERM017, HERM019, HERM021.2, HERM022, HERM023, HERM025, HERM027, HERM028, HERM029, HERM030, HERM031, HERM032, HERM035, HERM036, LASM001, LASM002, LASM005, LASM006, LASM010, LASM011, LASM014, LASM015, LASM017, RETM003, RETM006, RETM008, RETM009, RETM012, RETM013, RETM014, RETM017, CH004, CH005, CH008, CH011, CH016, CH017, CH019, CH022, CH029, CH036, CH039, CH040, CH042, HER003, HER004, HER007, HER011, HER012, HER014, HER017, HER020, HER024, HER025, HER026, HER027, HER028, HER029, HER030, HER031, HER034, HER035, HER040, HER042, HER044, HER046, HER047, HER048, LAS004, LAS005, LAS006, LAS007, LAS009, LAS010, LAS011, LAS013, LAS015, LAS017, LAS022, LAS023, LAS024, LAS025, LAS027, LAS028, LAS031, LAS036, LAS037, LAS039, LAS040, LAS041, LAS044, LAS046, LAS049, LAS050, LAS052, LAS054, RET001, RET003, RET005, RET008, RET010, RET011, RET012, RET014, RET015, RET017, RET019, RET020, RET021, RET023, RET024, RET027, RET028, RET029, RET030, RET031, RET033, RET035, RET036, RET038, RET039, RET040, RET041, RET047, RET049.

Biology. One of the most common Cretan species. Associated with natural and anthropogenic environments. Most often noted from arid, open habitats, macchia and sunny areas of riverbanks. Nesting under stones, in sunny localities. Colonies monogynous and polygynous.

Comments. Based on recent revision of European and Mediterranean populations of *P. pallidula* (Seifert 2016), there are 4 species known from this area. Cretan samples (Damnoni) were classified as *P. koshewnikowi* Ruzsky, 1905, former junior synonym of *P. pallidula*. Nevertheless, methodology used in this revision and interpretation of achieved results raised some doubts in myrmecological society. Thus, we consider all Cretan populations as *P. pallidula* defined before this revision.

***Pheidole* sp. 1**
(Figs 067, 188.1-188.4, 189.1-189.4)

Distribution. Greece, Crete.

Distribution on Crete:

New records: HER005.

Biology. Biology poorly known. Several workers were collected on sandy soil in the olive orchard, close to a dry riverbed. The collecting area was placed in the agriculture territories, with dominant of olive orchards and bananas plantations.

Comments. Based on the collecting locality we can assume that *P*. sp. 1 is not native to Cretan fauna. It could be transported to Gortys by *sirókos* [σιρόκος] winds that transport big amounts of sand and debris from Libya. We cannot exclude also a possibility that this species was transported to Crete by human. So far there are 1004 described species within the *Pheidole* genus. The African fauna is poorly studied, and none of African *Pheidole* species is conspecific with specimens collected on Crete. Therefore, its proper determination requires more detailed study.

Genus *Temnothorax* Mayr, 1861

A key to *Temnothorax* species known from Crete (worker caste):

1. Petiole and postpetiole with lobe- or teeth-shape projections (Figs 198.2, 200.2), social parasite of ***Temnothorax*** species ……....……... **2**.
— Petiole and postpetiole without lobe- or teeth-shape projections (Figs 190-197, 199, 201-208), nonparasitic species ……..... **3**.
2. Antennae 11-segmented (Fig. 198.4), petiole and postpetiole with lobe-like projections (Fig. 198.2), body with well-developed sculpture (Fig. 198) ..... ***T. kraussei*** (Emery)*.
— Antennae 12-segmented (Fig. 200.4), petiole and postpetiole with teeth-like projections (Fig. 200.2), body sculpture reduced, on head almost absent (Fig. 200)…… …….....…… ***T. muellerianus*** (Finzi).
3. Metanotal groove present (Figs 190.2, 194.2, 197.2, 203.2, 204.2, 206.2) ……...….. **4**.
— Metanotal groove absent (Figs 191.2, 192.2, 193.2, 195.2, 196.2, 199.2, 201.2, 206.2, 207.2) …….....…..… **9**.
4. Whole body shining with reduced sculpture, head on almost entire surface smooth, eyes big (Figs 203, 205.1) ……...….....…… ***T. recedens*** (Nylander).
— Entire body surface covered with well-developed sculpture, at most frons with reduced sculpture, eyes small (Figs 190, 194, 197, 204, 206) ..... **5**.
5. Petiole low, convex, with long peduncle, propodeal spines long, thin (Fig. 204.2). Head and mesosoma strongly sculptured (Fig. 204). Large species, ML above 0.920 …… …….....…...…… ***T. semiruber*** (André).
— Petiole high, with short or moderate peduncle, propodeal spines short or moderate (Figs 190.2, 194.2, 197.2, 206.2). Head and mesosoma finely sculptured (Figs 190, 194, 197, 206). Small species, ML below 0.850 …….....…….….. **6**.
6. Frons on the whole surface sculptured (Figs 190.3-190.4, 194.3-194.4) ….....… **7**.
— Frons at least in central part smooth and shiny (Figs 197.3, 206.3-206.4) ……..... **8**.
7. Head mostly rugoso-reticulate, longitudinal striation, if occurs, limited to outer edges of frons (Figs 190.3-190.4)..….....….. ***T. ariadnae*** Csősz, Heinze & Mikó.
— Longitudinal striation occurs on the whole head surface, rugoso-reticulate area limited to the centre of frons (Figs 194.3-194.4) .....… ***T. helenae*** Csősz, Heinze & Mikó.

8. Propodeal spines longer (Fig. 197.2), frons smooth and shiny on the almost whole surface (Fig. 197.3) ……..... ***T. lucidus*** Csősz, Heinze & Mikó.
— Propodeal spines shorter (Fig. 206.2), smooth area limited to the frons centre (Figs 206.3-206.4) ……...……..... ***T. subtilis*** Csősz, Heinze & Mikó.
9. Antennae, head and mesosoma uniformly yellow (Figs 196, 207-208) .....……**10**.
— Antennae, head and mesosoma with another colouration (Figs 191, 192, 193, 195, 199, 201-202) ….....…… **11**.
10. Transverse band on the first tergite of gaster interrupted (Fig. 196.5), propodeal spines short and triangular (Fig. 196.2) ..... ***T. incompletus*** Salata, Borowiec & Trichas.
— Transverse band on the first tergite of gaster never interrupted (Figs 207.1-.207.2, 208.1-208.2), propodeal spines thin and long (Figs 207.2, 208.2) ....……. ***T. variabilis*** Salata, Borowiec & Trichas.
11. Whole body uniformly dark brown, head on the whole surface with dense and thick reticulation (Figs 192, 202.1) …… ***T. daidalosi*** Salata, Borowiec & Trichas.
— Body not uniformly coloured, if uniformly coloured then at least head covered with sculpture different than only reticulation (Figs 191, 193, 195, 199, 201, 202.2) .....…….. **12**.
12. Head with reduced sculpture, at least frons centre smooth and shiny (Figs 193.3-193.4, 199.3-199.4) ……..... **13**.
— Whole head surface covered with dense or sparse but always visible sculpture (Figs 191.3-191.4, 195.3-195.4, 201.3-201.4) …….....…….…….…… **14**.
13. Mesosoma shiny, covered with only sparse, longitudinal striation (Figs 199.1-199.2) ……..... ***T. minotaurosi*** Salata, Borowiec & Trichas.
— Mesosoma at least at its lateral surfaces with sculpture different that longitudinal striation, its dorsal surface partly smooth (Figs 193.1-193.2) ..... ***T. exilis*** (Emery).
14. Head, mesosoma, petiole and postpetiole with strong longitudinal striation, petiole node low and convex (Fig. 191)….....…….. ***T. crassistriatus*** Salata, Borowiec & Trichas.
— Head, mesosoma, petiole and postpetiole with sculpture different than longitudinal striation, petiole node never low and convex (Figs 195, 201, 202.2) .....…. **15**.
15. Body colouration never uniform, longitudinal striation on head limited to frons, propodeal spines long, on the top slightly curved downward (Figs 201, 202.2) …… ***T. proteii*** Salata, Borowiec & Trichas.
— Body uniformly dark brown, longitudinal striation on the whole head surface, propodeal spines short, triangular or long and straight (Fig. 195) ……..……...……...… ***T. ikarosi*** Salata, Borowiec & Trichas.

*All known Cretan samples of *T. kraussei* are lacking the worker caste. In the key we mentioned features characteristic for other Mediterranean populations of this species, which usually have the worker caste present, but strongly reduced.

Temnothorax ariadnae Csősz, Heinze & Mikó, 2015
(Figs 068, 190.1-190.4)

Temnothorax ariadnae Csősz, Heinze & Mikó, 2015: 42.

Distribution. Greece, Crete – endemic species.

Distribution on Crete:

Literature. Rethymnon Prov.: Csősz, Heinze & Mikó, 2015: Table 1. – vic. Gerakari, 35 km SE Rethymno, 700 m a.s.l., 35.2142N/24.605E, 24.04.2011.

New records: RET004, RET011, RET012, RET016, RET019, RET027, RET028, RET029, RET042, RET043, RET047.

Biology. Diurnal species. Common in deciduous forests, especially in these dominated by oaks. Nesting under stones or in the litter, usually in shady localities, close to streams or in humid soil. Colonies monogynous.

Temnothorax crassistriatus Salata, Borowiec & Trichas, 2018
(Figs 069, 191.1-191.4)

Temnothorax crassistriatus Salata, Borowiec & Trichas, 2018: 773 (figs 6-10).

Distribution. Greece, Crete – endemic species.

Distribution on Crete:

New records: LAS010, LAS23, LAS032.

Biology. Diurnal species. Species inhabiting deciduous bushes, forests edges or phrygana. Workers were collected in litter or on rocks.

Temnothorax daidalosi Salata, Borowiec & Trichas, 2018
(Figs 070, 192.1-192.4, 202.1)

Temnothorax daidalosi Salata, Borowiec & Trichas, 2018: 775 (figs 11-15, 61).

Distribution. Greece, Crete – endemic species.

Distribution on Crete:

New records: CH004, CH005, CH020, CH023, CH039, HER017, LAS014, RET011, RET014, RET027, RET029, RET033, RET041, RET043, RET045.

Biology. On lowlands species related with forests and humid phrygana. On mountain zone prefers open and humid habitats. Most numerous samples were recorded on flat rocks partly overgrown by phrygana.

Temnothorax exilis (Emery, 1869)
(Figs 071, 193.1-193.4)

Leptothorax exilis Emery, 1869: 15;
=*Leptothorax exilis* subsp. *creticus* Forel, 1910a: 23;
=*Leptothorax exilis* var. *darii* Forel, 1911a: 334;
=*Leptothorax tuberum ruficornis* Emery, 1914: 157;
=*Leptothorax exilis* var. *specularis* Emery, 1916: 174 (= *Leptothorax tuberum* ssp. *exilis* var. *specularis* Emery, 1898 unavailable name).
=*Leptothorax exilis* var. *boccaris* Santschi, 1923c: 331;
=*Leptothorax exilis* var. *nitidulus* Santschi, 1923c: 331 (= *Leptothorax tuberum obscurior nitidulus* Forel, 1894a: 39; unavailable name).

Distribution. Croatia, France (Corsica, mainland), Georgia, Greece (Aegean Is., Crete, Dodecanese, Ionian Is., mainland), Italy (mainland, Sardinia, Sicily), Macedonia, Malta, Montenegro, Serbia, Slovenia, Spain (mainland), Tunisia, Turkey.

Distribution on Crete:

Literature. Crete: Forel 1910a: 23 (as *Leptothorax exilis* subsp. *creticus*); Emery 1924a: 254 (as *Leptothorax exilis* subsp. *cretica*); Legakis 2011: 17; Legakis 2011: 17 (as *Temnothorax creticus*); Borowiec 2014: 177.

New records: CH001, CH018, CH023, CH025, CH027, CH029, CH034, CH040, HER002, HER009, HER017, HER026, HER039, LAS005, LAS006, LAS008, LAS010, LAS012, LAS019, LAS032, LAS035, LAS037, LAS049, LAS052, RET013.

Biology. Species related with open, dry habitats. Usually overgrown by phrygana. Nests in soil, most often under medium size rocks of in rock cleavages, always in sunny localities. Colonies monogynous or polygynous.

Temnothorax helenae Csősz, Heinze & Mikó, 2015
(Figs 072, 194.1-194.4)

Temnothorax helenae Csősz, Heinze & Mikó, 2015: 45.

Distribution. Bulgaria, Greece (Crete, mainland), Turkey.

Distribution on Crete:

Literature. Chania Prov.: Csősz, Heinze & Mikó, 2015: Table 1. – Anisarkis, vic. Kandanos, 35 km SW Chania, 500 m a.s.l., 35.3279N/23.7420E, 1992 r., Rethymnon Prov.: Csősz, Heinze & Mikó, 2015: Table 1. – vic. Katofigi, 5 km N Ano Vianos, 600 m a.s.l., 35.0922N/25.4165E, 17.04.2011 r.

New records: CHM021.

Biology. Species inhabiting oak forests. Nests in litter or galls. Workers were collected in litter or on rocks. Colonies monogynous.

Temnothorax ikarosi Salata, Borowiec & Trichas, 2018
(Figs 073, 195.1-195.4)

Temnothorax ikarosi Salata, Borowiec & Trichas, 2018: 781 (figs 26-30).

Distribution. Greece, Crete.

New records: LAS032.

Biology. Biology poorly known. A single worker was collected on a wall of shelter. The wall was overgrown by a blackberry bush. The shelter was placed at the orchard edges on mountain plateau (1750 m a.s.l.).

Temnothorax incompletus Salata, Borowiec & Trichas, 2018
(Figs 074, 196.1-196.5)

Temnothorax incompletus Salata, Borowiec & Trichas, 2018: 783 (figs 31-36).

Distribution. Greece, Crete – endemic species.

Distribution on Crete:

New records: LASM018, RET047.

Biology. The single worker was collected on litter in area overgrown by macchia.

Temnothorax lucidus Csősz, Heinze & Mikó, 2015
(Figs 075, 197.1-197.3)

Temnothorax lucidus Csősz, Heinze & Mikó, 2015: 20.

Distribution. Greece (Crete), Turkey.

Distribution on Crete:

Literature. Rethymnon Prov.: Csősz, Heinze & Mikó, 2015: Table 1. – Nida Plateau, Skinakas Mts., 15 km S Anogia, 35.2093N/24.8946E, 1500-1700 m a.s.l., 20.04.2011 r.; Nida Plateau, 4-7 km N Anogia, 35.2499N/24.8946E, 1200-1400 m a.s.l., 23.04.2011 r. Lasithi Prov.: Csősz, Heinze & Mikó, 2015: Table 1. – Lasithi Plateau, 16 km S Malia, 35.1625N/25.4560E, 1000 m a.s.l., 18.04.2011 r.

Biology. High-mountain species. Biology unknown.

Temnothorax kraussei (Emery, 1915)
(Figs 076, 198.1-198.4)

=*Epimyrma kraussei* Emery, 1915a: 262;
=*Temnothorax kraussei* (Emery, 1915) (homonym *Temnothorax kraussei* (Emery, 1916));
=*Epimyrma foreli* Menozzi, 1921: 29;
=*Epimyrma vandeli* Santschi, 1927c: 126.

Distribution. Algeria, Croatia, France (Corsica, mainland), Greece (Crete, mainland), Gibraltar, Italy (mainland, Sardinia), Morocco, Serbia, Slovenia, Spain (mainland), Switzerland, Turkey.

Distribution on Crete:

Literature. Crete: Legakis 2011: 17 (as *Epimyrma kraussei*); Borowiec 2014: 137 (as *Myrmoxenus kraussei*). Heraklion Prov.: Buschinger 1989: 71 – Panagia, SE Heraklion, 350 m a.s.l., 1 IV 1988; Panagia, SE Heraklion, 350 m a.s.l., 6 IV 1988 (as *Epimyrma kraussei*). Lasithi Prov.: Buschinger 1989: 71 – Lasithi Plateau, Kronos cave, 1000 m a.s.l., 15 IV 1988 (as *Epimyrma kraussei*). Rethymnon Prov.: Buschinger 1989: 71 – Anogia – Ideon, Andron cave, 1100 m a.s.l. 9 IV 1988 (as *Epimyrma kraussei*).

Biology. Social parasite of *Temnothorax* species. On Crete collected in nests of *T. recedens*.

Comments. All 3 samples described by Buschinger (1989) were lacking the worker caste. Because we are not certain if this feature is stable for the whole Cretan population we included this species in the key to the worker caste. In the photographic documentation we used a specimen of this species collected in Spain.

Temnothorax minotaurosi Salata, Borowiec & Trichas, 2018
(Figs 077, 199.1-199.4)

Temnothorax minotaurosi Salata, Borowiec & Trichas, 2018: 785 (figs 46-50).

Distribution. Greece, Crete – endemic species.

Distribution on Crete:

New records: CH004, CH016.

Biology. Species inhabiting humid areas overgrown by bushes, usually close to water source. Workers collected on rocks partly covered by vegetation.

Temnothorax muellerianus (Finzi, 1922)
(Figs 078, 200.1.-200.4)

Leptothorax (*Temnothorax*) *muellerianus* Finzi, 1922: 118;
=*Chalepoxenus gribodoi* Menozzi, 1923: 257;
=*Chalepoxenus insubricus* Kutter, 1950: 337;
=*Chalepoxenus siciliensis* Kutter, 1973: 278.

Distribution. Bulgaria, Croatia, Cyprus, France (mainland), Greece (Crete, mainland), Italy (Sicilia, mainland), Portugal, Serbia, Slovenia, Spain (mainland), Switzerland, Turkey.

Distribution on Crete:

Literature. Crete: Legakis 2011: 16 (as *Chalepoxenus muellerianus*); Borowiec 2014: 63 (as *Chalepoxenus muellerianus*); Salata & Borowiec 2015b: 144. Chania Prov.: Buschinger & Douves 1993: 187, near Chania. Rethymnon Prov.: Buschinger & Douves 1993: 187, between Anogia and Ideon Andron.

New records: LAS012, LAS035.

Biology. Social parasite of *Temnothorax* species. On Crete collected from nests of *T. exilis.* When uncovered both gyne and workers were hiding in soil. Whereas host species workers were trying to hide pulpas and eggs. Infected nests were located in very dry and sunny localities.

Temnothorax proteii Salata, Borowiec & Trichas, 2018
(079, 201.1-201.4, 202.2)

Temnothorax proteii Salata, Borowiec & Trichas, 2018: 788 (figs 56-60, 62).

Distribution. Greece, Crete – endemic species.

Distribution on Crete:

New records: CH005, CH013, CH023, CH025, CH031, CH037, CH039, CH043, CH044, HER002, HER003, HER038, HER048, LAS010, LAS014, LAS053, RET004, RET007, RET009, RET010, RET011, RET012, RET014, RET015, RET016, RET021, RET027, RET028, RET031, RET033, RET040, RET041, RET043, RET046.

Biology. Workers were reported in material collected on the entomological umbrella. Species inhabiting blackberry bushes growing along the roads, deciduous forests, macchia and bushes overgrowing banks of streams or rivers. Nests have never been found. Probably nesting in dry branches or galls.

Temnothorax recedens (Nylander, 1856)
(Figs 080, 203.1-203.4, 205.1)

Myrmica recedens Nylander, 1856: 94;
=*Leptothorax* (*Temnothorax*) *mordax* Santschi, 1919b: 242;
=*Leptothorax* (*Temnothorax*) *pictus* Emery, 1924b: 166;
=*Leptothorax* (*Temnothorax*) *recedens* var. *barbarus* Santschi, 1939: 76;
=*Leptothorax* (*Temnothorax*) *ergatogyna* Bernard, 1950: 17.

Distribution. Albania, Bulgaria, Croatia, Cyprus, France (Corsica, mainland), Georgia, Gibraltar, Greece, Israel, Italy (mainland, Sardinia, Sicily), Lebanon, Macedonia, Malta, Montenegro, Morocco, Portugal, Serbia, Slovenia, Spain (Baleares, mainland), Switzerland, Tunisia, Turkey, Ukraine.

Distribution on Crete:

Literature. Crete: Legakis 2011: 19; Borowiec 2014: 187. Heraklion Prov.: Buschinger 1989: 71 – Panagia, SE Heraklion, 350 m a.s.l., 1 IV 1988; Panagia, SE Heraklion, 350 m a.s.l., 6 IV 1988 (as *Leptothorax* (*Temnothorax*) *recedens*). Lasithi Prov.: Buschinger 1989: 71 – Lasithi Plateau, Kronos cave, 1000 m, 15 IV 1988 (as *Leptothorax* (*Temnothorax*) *recedens*). Rethymnon Prov.: Buschinger 1989: 71 – Anogia – Ideon, Andron cave, 1100 m a.s.l., 9 IV 1988 (as *Leptothorax* (*Temnothorax*) *recedens*).

New records: CHM017, CHM021, HERM001, LASM012, LASM015, RETM010, RETM014, CH011, CH016, CH022, CH039, CH040, HER005, HER007, HER025, HER031, HER035, HER036, HER048, LAS018, LAS030, LAS037, LAS045, LAS048, RET007, RET014, RET019, RET020, RET022, RET024, RET028, RET033, RET040, RET042, RET043, RET047.

Biology. Species with very wide habitat preferences. Collected in deciduous forests, bushes growing along water sources, phrygana and in mountains. Nests most often in soil, sometimes under stones or in rocks crevices. Workers collected in litter or on rocks. Colonies polygynous.

Temnothorax semiruber (André, 1881)
(Figs 081, 204.1-204.4, 205.2)

Leptothorax rottenbergi var. *semiruber* André, 1881: 72;
=*Leptothorax rottenbergi* var. *balcanica* Santschi, 1909: 474;
=*Leptothorax rottenbergi* var. *jesus* Forel, 1913a: 432;
=*Leptothorax rottenbergi* st. *semiruber* var. *galatica* Santschi, 1921a: 111 unavailable name.

Distribution. Bulgaria, Israel, Lebanon, Macedonia, Serbia, Turkey.

Distribution on Crete:

Literature. Crete: Legakis 2011: 19; Borowiec 2014: 189.

New records: HERM026, LASM006, RETM016, CH032, CH033, LAS002, RET030, RET039.

Biology. Alpine species. The nests were found in rock crevices, under rocky vegetation and in rock dirt, always in sunlit positions. Workers were caught within a maximum of 50 cm from the nest.

Temnothorax subtilis Csősz, Heinze & Mikó, 2015
(Figs 082, 206.1-206.4)

Temnothorax subtilis Csősz, Heinze & Mikó, 2015: 24.

Distribution. Greece (Crete), Turkey.

Distribution on Crete:

Literature. Chania Prov.: Csősz, Heinze & Mikó, 2015: Table 1. – Pilion, 39.3967N, 23.0619E, 1000-1400 m a.s.l., 39.3967N/23.0619E, 14.05.1996 r. Rethymnon Prov.: Csősz, Heinze & Mikó, 2015: Table 1. – 1 km E Kardaki, 35.2077N/24.6298E, 600 m a.s.l., 1992 r.; Zaros, 48 km SE Rethymno, 35.1326N/24.9072E, 400 m a.s.l., 1992r.

Biology. Mountain species. Workers collected in shady gorges or on rocks covered with moss.

Temnothorax variabilis Salata, Borowiec & Trichas, 2018
(Figs 083, 207.1-207.4, 208.1-208.4)

Temnothorax variabilis Salata, Borowiec & Trichas, 2018: 798 (figs 80-88).

Distribution. Greece, Crete – endemic species.

Distribution on Crete:

New records: CH005, CH025, CH030, CH039, CH040, HER018, LAS053, RET007, RET011, RET012, RET014, RET016, RET027, RET029.

Biology. Species rare. Most often collected from dry, open areas. Specimens observed in material collected on entomological umbrella. A few workers were collected from litter in deciduous forests.

Genus *Tetramorium* Mayr, 1855

A key to *Tetramorium* species known from Crete (worker caste):

1. Head and mesosoma red to brick-red, gaster black, frontal carinae reaching occipital margin of head, propodeal spines long, thin, head sculpture well developed (Fig. 209) …..…..……. ***T. bicarinatum*** (Nylander).
— Whole body uniformly coloured, never red or brick-red, frontal carinae short, propodeal spines short, triangular, head sculpture weak, reduced or absent (Figs 209-217) …….. **2**.
2. Base of first gaster tergite with longitudinal wrinkles, petiole and postpetiole on the whole surface reticulate with punctation (Figs 216.1-216.2) … ***T. moravicum*** Novák & Sadil.
— Base of first gaster tergite without longitudinal wrinkles, dorsum of petiole and postpetiole with reduced or absent sculpture (Figs 210.1-210.2, 211.1-211.2, 212.1-212.2, 213.1-213.2, 214.1-214.2, 215.1-215.2, 217.1-217.2) …….....……...…….. **3**.
3. Whole head with sculpture, sometimes genae and occiput with sculpture reduced, in lateral view dorsum of head capsule convex (Figs 210-211, 213-214) …… **4**.
— At least genae and occiput smooth and shiny, if genae with striation then dorsum of head capsule, in lateral view, flat (Figs 212, 215, 217) …..... **6**.
4. Genae and occiput with sculpture reduced (Fig. 210) ..... ***T. diomedeum*** Emery.
— Head with uniformly dense sculpture (Figs 211, 213-214) ……... **5**.
5. Propodeal spines placed low, their tips not reaching above petiole dorsum, dorsum of petiole and postpetiole with reduced but still present sculpture (Figs 211.1-211.2). Gynes with postpetiole at least twice wider than long …….. ***T. ferox*** Ruzsky.
— Propodeal spines placed high, their tips reach above petiole dorsum, dorsum of petiole and postpetiole with central parts smooth and shiny (Figs 213.1-213.2, 214.1-214.2). Gynes with postpetiole slightly wider than long. …...…….. **6**.
6. Lateral sides of head above eyes with reduced or absent longitudinal striation, areas between striae with microreticulation (Fig. 213), arid montane meadows …..... ..... ***T. indocile*** Santschi.
— Lateral sides of head on the whole surface with well-developed longitudinal striae, surface between striae most often smooth (Fig. 214), anthropogenic habitats or humid deciduous forests …..... ***T. immigrans*** Santschi.
7. Head sculpture reduced, longitudinal striation covers posterior part of frons (Fig. 217) ……...…….....……. ***T. punctatum*** Santschi.
— Head sculpture stronger, longitudinal striation covers at least posterior part of genae and malar area (Figs 212, 215) ..….....….. **8**.
8. Body colouration dark brown to black (Fig. 212); propodeal spines large and placed closer to the top of mesosoma (Fig. 212.2) …..…….. ***T. hippocratis*** Agosti & Collingwood.
— Body colouration yellowish brown to brown (Fig. 215), propodeal spines small and placed lower (Fig. 215.2). ……...…….. ***T. kephalosi*** Salata & Borowiec.

Tetramorium bicarinatum (Nylander, 1846)
(Figs 084, 209.1-209.4)

Myrmica bicarinata Nylander, 1846b: 1061;
=*Myrmica cariniceps* Guérin 1852: 79;

=*Myrmica kollari* Mayr, 1853b: 283;
=*Myrmica modesta* Smith, 1860: 108;
=*Myrmica reticulata* Smith, 1862: 33.

Distribution. Algeria, Austria, Belgium, Denmark, Egypt, France (mainland), Germany, Hungary, Israel, Italy, Malta, Morocco, Portugal, Saudi Arabia, Switzerland, The Netherlands, Turkey, United Arab Emirates, Yemen.

Distribution on Crete:

New records: HER015.

Biology. An invasive species, a nest was located in a dry, partly barkless branch of mulberry tree, in a city park in Irakleio. Workers foraged towards the top of the tree, probably to feed on mature mulberries. It was the only ant species found on this tree, no workers were found on the soil.

Tetramorium diomedeum Emery, 1908
(Figs 085, 210.1-210.4)

Tetramorium caespitum var. *diomedea* Emery, 1908f: 24;
=*Tetramorium caespitum* var. *bariensis* Forel, 1911a: 331;
=*Tetramorium ferox* var. *laevior* Menozzi, 1936: 292 (= *Tetramorium caespitum* subsp. *ferox* var. *laevior* Forel, 1911a: 333, unavailable name).

Distribution. Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Montenegro, Greece (Crete, Aegean Is., Ionian Is., mainland), Italy, Serbia, Turkey.

Distribution on Crete:

Literature. Crete: Borowiec 2014: 197. Chania Prov.: Csősz & Schulz 2010: 17 – 3 km SWW Omalo, 1400–1600 m a.s.l., 4 V 1992; 1 km S Anisraki k. Kandanos 700 m a.s.l., 4 V1992. Heraklion Prov.: Csősz & Schulz 2010: 17 – 2km N Zaros, 400–500m a.s.l., 25 IV 1992; gorge w Zaros , 400 m a.s.l., 4 V 1992. Rethymnon Prov.: Csősz & Schulz 2010: 17 – Melambes, 600–700 m a.s.l., 4 V 1992.

New records: CHM011, CHM014, CHM015, HERM013, HERM019, HERM027, HERM033, HERM036, LASM014, RETM009, RETM017, CH002, CH004, CH007, CH009, CH019, CH038, CH039, CH040, HER011, HER012, HER033, HER037, LAS017, LAS030, LAS043, LAS046, LAS054, RET001, RET007, RET007, RET011, RET014, RET019, RET021, RET028, RET029, RET033, RET035, RET039, RET047.

Biology. Species associated with open habitats e.g. phryganas. Nesting in soil, most often under stones overgrown by vegetation. Colonies monogynous.

Tetramorium ferox Ruzsky, 1903
(Figs 086, 211.1-211.4)

Tetramorium caespitum var. *ferox* Ruzsky, 1903: 309;
=*Tetramorium configis* Radchenko & Arakelian, 1990: 374;
=*Tetramorium perspicax* Radchenko, 1992: 56 (= *Tetramorium caespitum* st. *ferox* var. *perspicax* Santschi, 1921a: 111 unavailable name);
=*Tetramorium* (*Lobomyrmex*) *ferox* subsp. *silhavyi* Ruzsky, 1903: 309.

Distribution. Armenia, Austria, Bulgaria, Croatia, Czechia, France (Corsica), Georgia, Greece (Cyclades, Dodecanese, Ionian Is., mainland), Hungary, Iran, Italy (Sardinia, Sicilia, mainland), Macedonia, Montenegro, Russia, Romania, Serbia, Slovakia, Turkey, Ukraine.

Distribution on Crete:

New records: RET034.

Biology. Species associated with open, rocky areas. Nesting in soil, most often under stones.

Tetramorium hippocratis Agosti & Collingwood, 1987
(Figs 087, 212.1-212.4)

Tetramorium hippocratis Agosti & Collingwood, 1987a: 56 (= *Tetramorium caespitum semilaeve* var. *hippocratis* Emery, 1921c: 217, unavailable name).

Distribution. Greece (Crete), Turkey.

Distribution on Crete:

Literature. Crete: Legakis 2011: 21; Borowiec 2014: 199.

New records: HER026.

Biology. Species associated with open, arid habitats. Nesting in dry and sandy soil. Colonies monogynous and polygynous.

Tetramorium indocile Santschi, 1927
(Figs 088, 213.1-213.4)

Tetramorium caespitum var. *indocile* Santschi, 1927d: 53;
=*Tetramorium semilaeve* var. *kutteri* Santschi, 1927d: 57.

Distribution. Armenia, Bosnia and Herzegovina, France, Hungary, Italy, Russia, Spain, Switzerland.

Distribution on Crete:

New records: HERM014, CH023, CH033, CH035, CH039, HER005, HER006, HER007, HER009, HER010, HER013, HER019, HER025, HER030, HER039, HER043, HER046, HER048, LAS003, LAS005, LAS012, LAS014, LAS028, LAS029, LAS039, LAS041, LAS047, LAS048, LAS052, LAS053, RET001, RET007, RET009, RET010, RET011, RET013, RET014, RET021, RET029, RET032, RET033, RET035, RET037, RET040, RET042, RET043, RET044, RET048.

Biology. Species associated with open, arid habitats. On Crete occurs on uplands, montane meadows and fields. Nesting under stones, in sunny localities.

Tetramorium immigrans Santschi, 1924
(Figs 089, 214.1-214.4)

Tetramorium caespitum var. *immigrans* Santschi, 1927d: 54.

Distribution. Armenia, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, France, Germany, Gibraltar, Greece, Hungary, Italy, Macedonia, Montenegro, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Switzerland, Turkey.

New records: CHO27, RET027.

Biology. Species associated with anthropogenic environments, nesting under pavements or rocks, on sunny and arid localities. Once specimens were collected from archaeological site, on thumbs overgrown by herbs, in humid area.

Tetramorium kephalosi Salata & Borowiec, 2017
(Figs 090, 215.1-215.5)

Tetramorium kephalosi Salata & Borowiec, 2017: 290.

Distribution. Balkans, Greece (Cyclades, Dodecanese, Aegean Is., Ionian Is., mainland), Turkey.

Distribution on Crete:

Literature. Crete: Legakis 2011: 22 (as *Tetramorium semilaeve*); Borowiec 2014: 203 (as *T. semilaeve*).

New records: CHM025, HERM015, CH001, CH002, CH009, CH013, CH019, CH031, CH032, CH034, CH038, CH039, HER004, HER024, HER029, HER034, HER039, HER047, LAS002, LAS010, LAS015, LAS016, LAS017, LAS021, LAS032, LAS034, LAS036, LAS037, LAS038, LAS046, LAS049, LAS051, LAS054, RET013, RET015, RET023, RET030, RET032, RET033, RET038, RET039, RET043, RET045, RET047.

Biology. Species associated with open habitats, most often phryganas. Nesting in soil, under stones overgrown by herbs or grass. Colonies monogynous and polygynous.

Tetramorium moravicum Novák & Sadil, 1941
(Figs 091, 216.1-216.4)

Tetramorium moravicum Novák & Sadil, 1941: 86;
=*Tetramorium rhenanum* Schulz, 1996: 391.

Distribution. Bulgaria, Croatia, Czechia, France (mainland), Greece (mainland), Georgia, Germany, Hungary, Italy (mainland), Romania, Serbia, Slovakia, Turkey, Ukraine.

Distribution on Crete:

New records: HER046, LAS028.

Biology. Species associated with open habitats. On Crete collected in the vicinity of dry riverbed and at the edge of olive orchard. Nesting in soil, under stones. Colonies monogynous.

Tetramorium punctatum Santschi, 1927
(Figs 092, 217.1-217.4)

Tetramorium semilaeve var. *punctatum* Santschi, 1927d: 55;
=*Tetramorium semilaeve* var. *lipareum* Santschi, 1927d: 55.

Distribution. Greece (Aegean Isl.), Italy (Calabria and Sicilia).

Distribution on Crete:

New records: HERM009, HERM010, HERM011, HERM030, LASM005, LASM006, LASM011, RETM008, RETM014, RETM016, CH004, CH008, CH016, HER004, HER012, HER020, HER035, LAS001, LAS007, LAS013, LAS020, LAS025, LAS026, LAS028, LAS031, LAS044, LAS046, LAS053, RET001, RET010, RET014, RET014, RET017, RET019, RET021, RET023, RET028, RET029, RET030, RET031, RET040, RET042, RET042, RET043.

Biology. Species associated with open and arid environments, most often phryganas. Nesting in soil, under stones. Colonies polygynous.

Comments. Borowiec & Salata (2012) noted this species as *T. lucidulum* (misdetermination). Morphological differences between gynes from Cretan population and these known from Italy raised some doubts concerning their conspecificity.

Genus *Strongylognathus* Mayr, 1853

A key to *Strongylognathus* species known from Crete (worker caste):

1. Lateral sides of head with longitudinal striation, mesonotum dorsum with gentle sculpture (Fig. 218) ..... ***S. huberi dalmaticus*** Baroni Urbani.
— Lateral sides of head and mesonotum dorsum smooth and shiny (Fig. 219) …..... ..... ***S. silvestrii*** (Menozzi).

Strongylognathus huberi dalmaticus Baroni Urbani, 1969
(Figs 093, 218.1-218.4)

Strongylognathus dalmaticus Baroni Urbani, 1969: 154.

Distribution. Bosnia and Herzegovina, Croatia, Greece (Ionian Isl.), Serbia.

Distribution on Crete:

Literature. Crete: Borowiec 2014: 163 (as *Strongylognathus huberi*)

New records: CH033.

Biology. Social parasite of *Tetramorium* species. On Crete noted in nest of *T. indocile*. The area was overgrown by phrygana.

Strongylognathus silvestrii (Menozzi, 1936)
(Figs 094, 219.1-219.4)

Strongylognathus silvestrii Menozzi, 1936: 292.

Distribution. Greece (Dodecanese, Crete, mainland), Turkey.

Distribution on Crete:

Literature. Crete: Buschinger 1989: 66 (as *Strongylognathus* cf. *insularis*); Legakis 2011: 20 (as *Strongylognathus* cf. *insularis*); Borowiec 2014: 164.

New records: RET014.

Biology. Social parasite of *Tetramorium* species. On Crete noted in nest of *Tetramorium diomedeum*.

Comments. Borowiec & Salata (2012) noted this species as *Strongylognathus* cf. *insularis*.

Genus *Crematogaster* Lund, 1831

A key to *Crematogaster* species known from Crete (worker caste):

1. Petiole subquadrate in dorsal view, sides almost parallel, antennal club two-segmented (Fig. 223) ……...…….…….. ***C. sordidula*** (Nylander).
— Petiole trapezoidal in dorsal view, narrowing from front to rear, antennal club three-segmented (Figs 220-222) ..... **2**.
2. Head and mesosoma uniformly coloured, red to brick-red (Fig. 222) .... ***C. schmidti*** (Mayr).
— Head and mesosoma with different colouration (Figs 220-221) ……...…. **3**.
3. Whole body dark, black to dark brown, postero-lateral side of promesonotum sharply curved (Fig. 220), MW 0.681 ± 0.03, humid and shadowy habitats …… …….....…...…… ***C.*** cf. ***ionia*** sp. 1.
— Body brown, postero-lateral side of promesonotum convex or angulate (Fig. 221), MW 0.594 ± 0.056, arid and sunny woody areas …….…. ***C. ionia*** Forel.

***Crematogaster* cf. *ionia* sp. 1**
(095, 220.1-220.4)

Distribution. Greece: Crete – endemic species.

Distribution on Crete:

New records: CH011, CH013, CH016, CH035, CH036, CH039, CH040, HER048, RET009, RET019, RET021, RET022, RET024, RET027, RET033, RET040, RET047, RET048.

Biology. Species associated with humid and shadowy areas, most often noted on mountain gorges overgrown by deciduous trees. Nesting preferences unknown.

Comments. During our study we could divide one morphotype closely related with *C. ionia*. Its specimens were characterized by darker body colouration and more sharply shaped postero-lateral side of promesonotum. They also inhabit shady, moisture localities. Its proper description will be provided in the revision of the Mediterranean taxa related with *C. ionia*.

Crematogaster ionia Forel, 1911
(Figs 096, 221.1-221.4)

Crematogaster scutellaris var. *ionia* Forel, 1911a: 340.

Distribution. Croatia, Lebanon, Montenegro, Greece (Cyclades, Dodecanese, Crete, Aegean Is., Ionian Is., mainland), Israel, Jordan, Macedonia, Serbia, Syria, Turkey.

Distribution on Crete:

Literature. Crete: Legakis 2011: 13; Borowiec 2014: 66.

New records: CHM001, CHM004, CHM019, CHM021, CHM023, HERM012, HERM016, HERM022, HERM035, LASM008, LASM019, RETM002, RETM003, RETM004, RETM010, RETM011, RETM014, CH004, CH005, CH007, CH017, CH023, CH029, CH031, CH035, CH037, CH043, HER002, HER003, HER006, HER007, HER019, HER02, HER031, HER043, HER048, LAS009, LAS011, LAS029, LAS030, LAS033, LAS033, LAS038, LAS039, LAS042, LAS045, LAS046, LAS048, RET001, RET004, RET008, RET011, RET012, RET015, RET018, RET020, RET028, RET038, RET029, RET036.

Biology. Dendrophile. Most often recorded from single deciduous trees or fig-trees. Nesting in dead parts of trees or in wooden constructions. Very often co-occur with *Camponotus lateralis* and *Colobopsis truncatus*.

Crematogaster schmidti (Mayr, 1853)
(Figs 097, 222.1-222.4)

Acrocoelia schmidti Mayr, 1853b: 149;
=*Crematogaster scutellaris* var. *christowitchii* Forel, 1892: 316;
=*Crematogaster scutellaris* var. *medispina* Forel, 1905: 178;
=*Crematogaster auberti* subsp. *karawaewi* Ruzsky, 1905: 497;
=*Crematogaster scutellaris* subsp. *schmidti* var. *hybrida* Emery, 1916: 157, unavailable name.

Distribution. Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Georgia, Greece (Cyclades, Crete, Aegean Is., Ionian Is., mainland), Hungary, Iran, Italy (mainland), Macedonia, Montenegro, Romania, Serbia, Slovenia, Syria, Turkey, Ukraine.

Distribution on Crete:

Literature. Crete: Legakis 2011: 13; Borowiec 2014: 68.

New records: HER019.

Biology. Dendrophile. Most often recorded from deciduous trees. Nesting in dead parts of trees. Very often co-occur with *Camponotus lateralis* and *Colobopsis truncatus*.

Comments. Its occurrence in natural habitats on Crete in very doubtful. Crete is located beyond the range of occurrence of *C. schmidti* and the only known locality on this island is located in city park in Heraklion. Probably its temporal colonies maintain in human settlements.

Crematogaster sordidula (Nylander, 1849)
(098, 223.1-223.4)

Myrmica sordidula Nylander, 1849: 44;
=*Acrocoelia mayri* Mayr, 1853*a:* 114;
=*Crematogaster sordidula* var. *flachii* Forel, 1895b: 229;
=*Crematogaster sordidula* var. *caspica* Emery, 1912: 670;
=*Orthocrema esterelana* Bernard, 1978: 43.

Distribution. Albania, Algeria, Azerbaijan, Bulgaria, Croatia, Cyprus, France (mainland), Georgia, Germany, Gibraltar, Greece (Cyclades, Dodecanese, Aegean Is., Ionian Is., mainland), Hungary, Iraq, Iran Israel, Italy (Sicilia, mainland), Lebanon, Macedonia, Montenegro, Morocco, Portugal, Russia, Romania, Serbia, Slovenia, Spain (Balearic Is., mainland), Switzerland, Syria, Tunisia, Turkey.

Distribution on Crete:

Literature. Crete: Forel 1886: CLXVI, CLXVIII; Müller 1923: 76 (as *Crematogaster sordidula* v. *flachi*); Legakis 2011: 13 (as *Crematogaster flachi*) Legakis 2011: 14; Borowiec 2014: 69. Chania Prov.: Stitz 1928: 90 – Kladyssos n. Perivolii, V 1926 (as *Crematogaster sordidula* v. *flachii*); Neuenschwander *et al.* 1983: 26 – Stylos. Lasithi Prov.: Forel 1889: 257 – Lasithi Plateau.

New records: CHM002.2, CHM007, CHM011, CHM016, CHM017, CHM023, CHM026, CHM028, HERM001, HERM004, HERM005, HERM007, HERM008, HERM010, HERM011, HERM012, HERM013, HERM021.2, HERM022, HERM024, HERM027, HERM029, HERM031, HERM034, HERM036, LASM001, LASM002, LASM004, LASM005, LASM006, LASM011, LASM012, LASM014, LASM015, LASM017, LASM018, LASM019, RETM002, RETM004, RETM006, RETM007, RETM008, RETM009, RETM011, RETM012, RETM014, RETM016, RETM017, CH001, CH004, CH007, CH008, CH011, CH013, CH016, CH019, CH027, CH034, CH036, CH039, HER002, HER003, HER010, HER013, HER014, HER024, HER027, HER029, HER032, HER033, HER036, HER037, HER038, HER039, HER040, HER041, HER042, HER043, HER044, HER048, LAS001, LAS002, LAS006, LAS008, LAS009, LAS010, LAS011, LAS012, LAS013, LAS014, LAS015, LAS017, LAS022, LAS023, LAS024, LAS025, LAS026, LAS029, LAS030, LAS031, LAS036, LAS038, LAS041, LAS042, LAS044, LAS045, LAS046, LAS047, LAS049, LAS050, LAS051, LAS052, LAS053, LAS054, RET005, RET007, RET010, RET012, RET014, RET015, RET017, RET019, RET020, RET021, RET022, RET023, RET024, RET030, RET031, RET032, RET033, RET035, RET036, RET039, RET043, RET049.

Biology. Common species in natural and anthropogenic environments. Strongly associated with trees and bushes, noted also from open habitats. Nesting in soil, most often under stones. Colonies monogynous.

Genus *Trichomyrmex* Mayr, 1865

Trichomyrmex perplexus (Radchenko, 1997)
(099, 224.1-224.4, 225.1-225.4)

Monomorium perplexum Radchenko, 1997: 213.

Distribution. Armenia, Cyprus, Greece (Cyclades, Dodecanese, Crete), Jordan, Syria, Turkey, United Arab Emirates.

Distribution on Crete:

Literature. Crete: Legakis 2011: 15 (as *Monomorium perplexum*); Borowiec 2014: 123 (as *Monomorium perplexum*). Rethymnon Prov.: Radchenko 1997*:* 213 – Amari, 4 V 1906 (as *Monomorium perplexum*). Heraklion Prov.: Radchenko 1997*:* 213 – Heraklion, 12 V 1906 (as *Monomorium perplexum*).

New records: RETM014, CH011, CH027, CH028, RET003, RET035, RET037, RET047, CH015, LAS010, LAS011, LAS012.

Biology. Species associated with arid and sunny areas, e.g. dry riverbeds, dirty roads, beaches. Nesting in soil, nest entrances invisible during day, rebuilded after sunset.

Comments. All records of *Monomorium dentigerum* from Balkans refer to *Trichomyrmex perplexus*.

Genus *Cardiocondyla* Emery, 1869

A key to *Cardiocondyla* species known from Crete:

1. Petiole wider than long, postpetiole wide, kidney-shaped, metanotal groove deep (Figs 226.1-226.2) …….……..….....…… ***C. elegans*** Emery.

— Petiole as wide as long, postpetiole wide, oval, metanotal groove shallow or absent (Figs 227.1-227.2) …….……. ***C. mauritanica*** Forel.

Cardiocondyla elegans Emery, 1869
(Figs 100, 226.1-226.4)

Cardiocondyla elegans Emery, 1869a: 21;
=*Cardiocondyla elegans* r. *santschii* Forel, 1905: 174;
=*Cardiocondyla elegans* var. *dalmatica* Soudek 1925: 34;
=*Cardiocondyla elegans* subsp. *schkaffi* Arnol'di, 1933: 599;
=*Cardiocondyla elegans* subsp. *caucasica* Arnol'di, 1948: 211, *nomen nudum*;
=*Cardiocondyla provincialis* Bernard, 1956: 303;
=*Xenometra gallica* Bernard, 1957: 101.

Distribution. Bulgaria, Croatia, Cyprus, Egypt, France (mainland), Georgia, Greece (Dodecanese, Crete, Ionian Is., mainland), Hungary, Iran, Israel, Italy (mainland), Montenegro, Romania, Serbia, Slovenia, Spain, Turkey, Ukraine.

Distribution on Crete:

Literature. Crete: Forel 1910a: 23 (as *Cardiocondyla elegans* v. *Santschii*); Legakis 2011: 16; Borowiec 2014: 46. Chania Prov.: Seifert 2003: 225 – Chania, 2 km W, V 1992. Heraklion Prov.: Seifert 2003: 225 – Herakleion, 15 V 1906.

New records: HER005, HER006, HER022, RET013.

Biology. Invasive species, occurs on sunny, arid and sandy areas. Nesting under flat stones overgrown by vegetation. Colonies polygynous.

Cardiocondyla mauritanica Forel, 1890
(Figs 101, 227.1-227.4)

Cardiocondyla nuda var. *mauritanica* Forel, 1890: 75;
=*Cardiocondyla ectopia* Snelling 1974: 76;
=*Leptothorax caparica* Henin, Paiva & Collingwood 2001: 163.

Distribution. Abu Dhabi, Cyprus, Egypt, Greece (Cyclades, Crete), Iraq, Iran, Israel, Italy (Sardinia, Sicilia, mainland), Jordan, Libya, Malta, Morocco, Oman, Portugal, Spain (Canary Is., mainland), Tunisia, Turkey, Ukraine, United Arab Emirates, Yemen.

Distribution on Crete:

Literature. Crete: Legakis 2011: 16; Borowiec 2014: 47. Heraklion Prov.: Seifert 2003: 248 – Prov. Heraklion, IV 1990; Zaros, V 1992. Chania Prov.: Seifert 2003: 248 – Georgioupoli, Kavros, 27 VIII 1994.

New records: CH021, CH027, LAS036, RET040.

Biology. An invasive species, associated with humid areas. Nesting under flat stones, on sunny localities in the vicinity of water sources. Colonies polygynous.

Taxa described from Crete

Aphaenogaster balcanicoides Boer, 2013

Aphaenogaster balcanicoides Boer, 2013: 68, Figs 11, 34, 35 (w.).
Status: valid.
Range: Greece: Crete – endemic species.

Aphaenogaster cecconii Emery, 1894

Aphaenogaster (*Ischnomyrmex*) *cecconii* Emery, 1894: 7.
Status: valid.
Range: Greece: Crete – endemic species.

Aphaenogaster rugosoferruginea Forel, 1889

Aphaenogaster splendida r. *rugosoferruginea* Forel, 1889: 260.
Status: valid.
Range: Greece: Crete – endemic species.

Aphaenogaster simonellii Emery, 1894

Aphaenogaster testaceopilosa var. *simonellii* Emery, 1894: 8.
Status: valid.
Range: Greece: Crete and Karpathos.

Camponotus baldaccii Emery, 1908

Camponotus maculatus subsp. *baldaccii* Emery, 1908a: 198 (s.w.).
Status: valid.
Range: Greece: Crete, Dodecanese, East Aegean Islands, mainland (Sterea Ellas).

Camponotus candiotes Emery, 1894

Camponotus lateralis var. *candiotes* Emery, 1894: 10 (w.).
Status: valid.
Range. Eastern Mediterranean.

Camponotus gestroi creticus Forel, 1886
Camponotus Gestroi st. *Creticus* Forel, 1886: clix, fig. 1 (w.).
Status: junior synonym of *Camponotus gestroi* Emery, 1898.

Crematogaster auberti laestrigon cretica Karavaiev, 1927
Crematogaster (*Acrocoelia*) *auberti* subsp. *laestrigon* var. *cretica* Karavaiev, 1927: 106, fig. 2 (w.).
Status: unavailable name.

Cataglyphis cretica (Forel, 1910)
Myrmecocystus (*Cataglyphis*) *cursor* var. *cretica* Forel, 1910: 23 (w.m.).
Status: valid.
Range: Greece: Crete – endemic species.

Cataglyphis cursor helenica dorica Santschi, 1929
Cataglyphis cursor st. *helenica* var. *dorica* Santschi, 1929: 35 (w.).
Status: unavailable name.

Epixenus creticus (Emery, 1908)
Epixenus creticus Emery, 1908g: 558, fig. 5 (m.).
Status: junior synonym of *Monomorium creticum*.

Epixenus biroi Forel, 1910
Epixenus biroi Forel, 1910: 21.
Status: junior synonym of *Monomorium creticum*.

Lasius tapinomoides Salata & Borowiec, 2018
Lasius tapinomoides Salata & Borowiec, 2018: 142, figs 1–7 (w.q.).
Status: valid.
Range: Greece: Crete – endemic species.

Lepisiota frauenfeldi splendens (Karavaiev, 1912)
Acantholepis Frauenfeldi var. *splendens* Karavaiev, 1912b: 586 (w.q.).
Status: junior synonym of *L. nigra* (Dalla Torre, 1893).

Messor concolor Santschi, 1927
Messor semirufus var. *concolor* Santschi, 1927d: 229 (s.w.m.)
First available use of *Messor barbarus semirufus concolor* Emery, 1908: 448, unavailable name.
Status: valid.
Range: Greece: Crete – endemic species (?).

Messor creticus Salata & Borowiec, 2019
Messor creticus Salata & Borowiec, 2019: 58.
Status: valid.
Range: Greece: Crete – endemic species.

Monomorium creticum Emery, 1895

Monomorium Abeillei var. *creticum* Emery, 1895: 66 (w.).
Status: valid.
Range: Greece: Crete – endemic species.

Oxyopomyrmex laevibus Salata & Borowiec, 2015
Oxyopomyrmex laevibus Salata & Borowiec, 2015a: 22, Figs 19–21, 76 (w.).
Status: valid.
Range: Greece: Crete – endemic species.

Plagiolepis perperamus Salata, Borowiec & Radchenko, 2018
Plagiolepis perperamus Salata, Borowiec & Radchenko, 2018: 816, figs 12–15.
Status: valid.
Distribution. Greece: Aegean Is., Crete, Cyclades, Dodecanese, Ionian Is., mainland; Turkey.

Temnothorax ariadnae Csősz, Heinze & Mikó, 2015
Temnothorax ariadnae Csősz, Heinze & Mikó, 2015: 42, Figs 25A–C (w.).
Status: valid.
Range: Greece: Crete – endemic species.

Temnothorax crassistriatus Salata, Borowiec & Trichas, 2018
Temnothorax crassistriatus Salata, Borowiec & Trichas, 2018: 773 (figs 6-10).
Status: valid.
Distribution. Greece: Crete – endemic species.

Temnothorax daidalosi Salata, Borowiec & Trichas, 2018
Temnothorax daidalosi Salata, Borowiec & Trichas, 2018: 775 (figs 11-15, 61).
Status: valid.
Distribution. Greece: Crete – endemic species.

Temnothorax exilis creticus (Forel, 1910)
Leptothorax exilis subsp. *creticus* Forel, 1910: 23 (w.q.).
Status: junior synonym of *Temnothorax exilis* Emery, 1896.

Temnothorax helenae Csősz, Heinze & Miko, 2015
Temnothorax helenae Csősz, Heinze & Mikó, 2015: 45, Figs. 26A–C (w.).
Status: valid.
Range: Bulgaria; Greece: Crete, mainland; Turkey.

Temnothorax ikarosi Salata, Borowiec & Trichas, 2018
Temnothorax ikarosi Salata, Borowiec & Trichas, 2018: 781 (figs 26-30)
Status: valid.
Distribution. Greece: Crete – endemic species.

Temnothorax incompletus Salata, Borowiec & Trichas, 2018
Temnothorax incompletus Salata, Borowiec & Trichas, 2018: 783 (figs 31-36)
Status: valid.
Distribution. Greece: Crete – endemic species.

Temnothorax lucidus Csősz, Heinze & Mikó, 2015
Temnothorax lucidus Csősz, Heinze & Mikó, 2015: 20, Figs. 10A–C (w.).
Status: valid.
Range: Greece: Crete; Turkey.

Temnothorax minotaurosi Salata, Borowiec & Trichas, 2018
Temnothorax minotaurosi Salata, Borowiec & Trichas, 2018: 785 (figs 46-50).
Status: valid.
Distribution. Greece: Crete – endemic species.

Temnothorax proteii Salata, Borowiec & Trichas, 2018
Temnothorax proteii Salata, Borowiec & Trichas, 2018: 788 (figs 56-60, 62).
Status: valid.
Distribution. Greece: Crete – endemic species.

Temnothorax subtilis Csősz, Heinze & Mikó, 2015
Temnothorax subtilis Csősz, Heinze & Mikó, 2015: 26, Figs. 12A–C (w.).
Status: valid.
Range: Greece: Crete, mainland; Turkey.

Temnothorax variabilis Salata, Borowiec & Trichas, 2018
Temnothorax variabilis Salata, Borowiec & Trichas, 2018: 798 (figs 80-88).
Status: valid.
Distribution. Greece: Crete – endemic species.

Species excluded from Crete

Aphaenogaster balcanica (Emery, 1898)
Stenamma (*Aphaenogaster*) *testaceopilosa* var. *balcanica* Emery, 1898: 136.

Literature. Crete: Legakis 2011: 6; Legakis 2011:7 (as *Aphaenogaster ionia*); Borowiec & Salata 2012: 465 (as *Aphaenogaster ionia*).

Comments. Based on recent revision of the *A. testaceopilosa* group (Boer 2013) presence of *A. balcanica* on Crete is impossible. For the first time, its presence on the island noted Legakis (2011), probably as a result of the misdetermination of *A. simonellii* specimens.

Aphaenogaster lesbica Forel, 1913
Aphaenogaster pallida var. *lesbica* Forel, 1913a: 429.

Literature. Crete: Legakis 2011:7.

Comments. Based on misleading information provided by Agosti & Collingwood (1987b) this species for a long time was confused with *A. subterraneoides*. Study on type specimens and collected material allowed to determine a real range of distribution of *A. lesbica* and exclude the possibility of its presence on the island. All records *A. lesbica* from Crete refer to *A. subterraneoides*.

Aphaenogaster testaceopilosa (Lucas, 1849)
Myrmica testaceopilosa Lucas, 1849: 301.

Literature. Crete: Forel 1889: 257.

Comments. This species was noted from Crete before descriptions of Greek members of the *A. testaceopilosa* group (Forel 1889). With a high possibility, this record can be assigned to *A. simonellii*.

Camponotus vagus (Scopoli, 1763)

Formica vaga Scopoli, 1763: 312.

Literature. Crete: Lucas 1854: 491 – Meghalo–Kastron (as *Formica pubescens*); Raulin 1861: 685 – Meghalo–Kastron (as *Formica pubescens*).

Comments. Crete is located beyond the distribution range of this species. Moreover, there are no habitats that suit its preferences. Meghalo Kastron, the locality from which *C. vagus* was noted, is a Turkish name of the Heraklion city. With no doubts, this place is lacking necessary environmental conditions that would allow hosting *C. vagus*. Based on the fact that in 1870 most of Mediterranean *Camponotus* species were yet undescribed it's impossible to assign this record to particular species.

Camponotus aegaeus Emery, 1915

Camponotus (*Orthonotomyrmex*) *libanicus* var. *aegaea* Emery, 1915b: 4.

Literature. Crete: Karaman *et al*. 2011: 185; Legakis 2011: 28; Borowiec & Salata 2012: 470.

Comments. Species recorded from Crete by Legakis (2011). Personal communication with the author of this publication and study on material deposited in the Natural History Museum of Athens allowed determining that this record based on misdetermination of specimens from the *C. boghossiani–kiesenwetteri* complex.

Camponotus honaziensis Karaman & Aktaç, 2013

Camponotus (*Myrmentoma*) *honaziensis* Karaman & Aktaç, 2013: 46.

Literature. Crete: Borowiec & Salata 2013: 251; Borowiec 2014: 33.

Comments. Specimens recorded by Borowiec & Salata (2013) as *C. honaziensis* represent densely setose specimens of *C. lateralis*.

Camponotus cecconii Emery, 1908

Camponotus maculatus subsp. *cecconii* Emery, 1908a: 198.

Literature. Crete: Forel 1910a: 23 (as *Camponotus maculatus* subsp. *cecconii* Emery, 1908); Legakis 2011: 29; Borowiec & Salata 2012: 473.

Comments. An investigation of material collected from the eastern part of the Mediterranean region allowed us to determine that the real distribution range of *C. cecconii* is limited to Cyprus. Records of *C. cecconii* from Greece refer to other members of the *C. cecconii* group.

Camponotus sanctus Forel, 1904

Camponotus maculatus r. *sanctus* Forel, 1904c: 18.

Literature. Karaman *et al*. 2011: 191; Legakis 2011: 29 (as *Camponotus cosensis*); Legakis 2011: 32; Borowiec & Salata 2012: 481; Borowiec 2014: 41.

Comments. There are no specimens that confirm the presence of this species on Crete. With high possibility specimens of *C. baldaccii* that lost setae on the ventral surface of the head capsule were wrongly determined as *C. sanctus*.

Camponotus sylvaticus (Olivier 1792)

Formica sylvatica Olivier 1792: 491.

Literature. Crete: Forel 1886: CLXVII (as *Camponotus sylvaticus v. dichrous*); Legakis 2011: 33; Borowiec & Salata 2012: 482.

Comments. Recorded from Crete as *C. sylvaticus* var. *dichrous* (Forel 1886). In the 19th century, several species from the *baldaccii–maculatus–sylvaticus–thoracicus* complex could be recorded under the name provided by Forel. Thus this record can cause some obstacles in interpretation. Legakis (2011), citing Forel, ignored the subspecies level and placed it as *C. sylvaticus*. This information was copied in the following publications. Material collected on Crete allowed us to determine that this record refers to *C. baldaccii*, the only know from the island member of this complex.

Camponotus thales Forel, 1910

Camponotus maculatus subsp. *thales* Forel, 1910d: 453.

Literature. Crete: Legakis 2011: 33; Borowiec & Salata 2012: 482.

Comments. Species known from Saudi Arabia. For the first time recorded from Crete by Legakis (2011). Personal communication with the author allowed determining that this record refers to *C. baldaccii*.

Cardiocondyla nigra Forel, 1905

Cardiocondyla batesii var. *nigra* Forel, 1905: 174

Literature. Crete: Legakis 2011: 16; Borowiec & Salata 2012: 485; Borowiec 2014: 47.

Comments. No evidence confirms its presence on Crete. For the first time recorded from the island by Legakis (2011). After personal communication with the author, we decided to exclude this species from a checklist of Cretan Formicidae.

Cataglyphis aenescens (Nylander, 1849)

Formica aenescens Nylander, 1849: 37.

Literature. Crete: Legakis 2011: 33; Borowiec & Salata: 486 (as *Cataglyphis hellenica*); Borowiec 2014: 50

Comments. All Cretan records of *C. aenescens* refer to *C. cretica*.

Cataglyphis albicans (Roger, 1859)

Formica albicans Roger, 1859: 235.

Literature. Crete: Borowiec & Salata 2012: 486; Borowiec 2014: 51

Comments. Species recorded from Crete by Borowiec & Salata (2012) and Borowiec (2014) based on data provided in Fauna Europea. However, there are no publications that confirm its presence on Crete. Therefore, we decided to remove it from the Cretan checklist.

Cataglyphis cursor (Fonscolombe, 1846)

Formica cursor Fonscolombe, 1846: 41.

Literature. Crete: Emery 1894: 11 (as *Myrmecocystus cursor*); Forel 1886: CLXVII (as *Myrmecocystus cursor*); Legakis 2011: 34; Borowiec & Salata 2012: 486.

Comments. Emery (1894) and Forel (1886) noted *C. cursor* from the island before the description of *C. cretica* – endemic Cretan species of the *C. cursor* group. Legakis, citing those two publications, considered *C. cursor* as native for Crete. This information was repeated in further publications. Based on the collected material occurrence of *C. cursor* in this region is impossible and all its records should be assigned to *C. cretica*.

Cataglyphis viatica (Fabricius, 1787)

Formica viatica Fabricius, 1787: 308.

Literature. Crete: Forel 1889: 256 (as *Myrmecocystus viaticus*).

Comments. *Cataglyphis viatica* is native to the Maghreb, and its occurrence in Crete is doubtful. With high possibility, this record refers to *C. nodus* – the only known from Greece member of the *C. viaticus* group.

Crematogaster auberti Emery, 1869

Crematogaster auberti Emery, 1869: 23.

Literature. Crete: Emery 1894: 11; Legakis 2011: 13; Borowiec & Salata 2012: 488; Borowiec 2014: 64.

Comments. Emery (1894) recorded this species from Crete before the description of *C. ionia* and *C. schmidti* – members of the *C. scutellaris* group known from this region. Legakis (2011), citing Emery, considered *C. auberti* as native to Crete. This information was repeated in further publications. Based on the collected material, a species mentioned by Emery refers to members of the *C. ionia-schmidti* complex.

Crematogaster scutellaris (Olivier, 1792)

Formica scutellaris Olivier 1792: 497.

Literature. Crete: Forel 1886: CLXVIII; Legakis 2011: 14; Borowiec & Salata 2012: 490; Borowiec 2014: 68.

Comments. Forel (1886) recorded this species from Crete before the description of *C. ionia* and *C. schmidti* – members of the *C. scutellaris* group known from this region. Legakis (2011), citing Forel, considered *C. scutellaris* as native to Crete. This information was repeated in further publications. Based on the collected material, a species mentioned by Forel refers to members of the *C. ionia-schmidti* complex.

Lasius alienus (Foerster, 1850)

Formica aliena Foerster 1850a: 36.

Literature. Crete: Forel 1889: 256 (as *Lasius niger* r. *alienus*); Emery 1894: 11; Forel 1910a: 23 (as *Lasius niger* subsp. *alienus*); Legakis 2011: 26; Borowiec & Salata 2012: 498; Borowiec 2014: 83.

Comments. This record (Forel 1889) should be considered as a confirmation of the presence of species from the *L. alienus* group on the island. Most recent data (Seifert 1992) allows to state that Crete is placed beyond the occurrence range of *L. alienus*. Legakis (2011), citing Forel, considered it as native to Crete. This information was repeated in further publications.

Lasius brunneus (Latreille, 1798)

Formica brunnea Latreille, 1798: 41.

Literature. Crete: Legakis 2011: 26; Borowiec & Salata 2012: 498; Borowiec 2014: 84. Chania Prov.: Neuenschwander *et al*. 1983: 26 – Stylos.

Comments. Most recent data (Seifert 1992) allows to state that Crete is beyond the occurrence range of *L. brunneus*. Based on the collected material this species is replaced on Crete by *L. lasioides*.

Lasius niger (Linnaeus, 1758)

Formica nigra Linnaeus, 1758: 580.

Literature. Crete: Forel 1886: CLXVII (as *Lasius alieno–niger*); Legakis 2011: 27; Borowiec & Salata 2012: 503; Borowiec 2014: 88. Chania Prov.: Stitz 1928: 91 – Phurnes (Fournes), VI 1926; Meskla, VI 1926.

Comments. Records noted by Forel (1886) and Stitz (1928) should be considered as a confirmation of the occurrence of *Lasius* species on Crete. Most recent data (Seifert 1992) allows stating that Crete is beyond the occurrence range of *L. niger*. Legakis (2011), citing both publications, wrongly considered this species as native to Crete. This information was repeated in further publications.

Lasius paralienus Seifert, 1992

Lasius (*Lasius*) *paralienus*: Seifert 1992: 16, figs. 5,6,12 (w,g).

Literature. Chania Prov.: Borowiec & Salata 2012: 504 – W Georgioupoli, 17 m, 35°22' N/24°15'E, 2 V 2007, leg. L. & M.L. Borowiec; Chania distr., Omalos Plateau, 1034 m, 35°20'N/23°53' E, 3 V 2011, leg. LB.

Comments. Most recent data (Seifert & Galkowski 2016) revealed that *L. paralienus* is replaced on Crete by closely related species: *L. bombycina* Seifert & Galkowski, 2016. Therefore, all literature records of *L. paralienus* should be assigned to this recently described species.

Lepisiota dolabellae (Forel, 1911)

Acantholepis frauenfeldi var. *dolabellae* Forel, 1911a: 351.

Literature. Chania Prov.: Borowiec & Salata 2012: 506 – Kato Daratso n. Chania, 20–25 m a.s.l., 35°30'N/23°58'E, urban area, 7 V 2011.

Comments. After a re-examination of specimens collected from Crete, we concluded that they represent *L. syriaca*. Therefore, the record of *L. dolabellae* should be treated as a misdetermination.

Lepisiota karawaiewi (Kuznetsov-Ugamsky, 1929)

Acantholepis frauenfeldi subsp. *karawaiewi* Kuznetsov-Ugamsky, 1929: 483.

Literature. Crete: Legakis 2011: 24; Borowiec & Salata 2012: 507.

Comments. Species known from Central Asia. In Balkans noted for the first time by Agosti & Collingwood (1987b), on Crete recorded by Legakis (2011). Personal communication with Legakis and an investigation of the ZMUA collection revealed no evidence that confirms its presence on Crete. Therefore, we consider this species as absent in Cretan myrmecofauna.

Lepisiota semenovi (Ruzsky, 1905)

Acantholepis frauenfeldi var. *semenovi* Ruzsky, 1905: 461.

Literature. Crete: Borowiec & Salata 2012: 509.

Comments. Borowiec & Salata (2012) listed this species from Crete based on data provided in Fauna Europea. Further investigation revealed that no literature record confirms its presence on the island. Therefore, we consider this species as absent in Cretan myrmecofauna.

Messor barbarus (Linnaeus, 1767)

Formica barbara Linnaeus, 1767: 962.

Literature. Chania Prov.: Neuenschwander *et al.* 1983: 26 – Stylos (as *Messor barbarus* var.)

Comments. *Messor barbarus* is a west-Mediterranean species, on Crete and Balkans replaced by *M. wasmanni*. Therefore, species recorded by Neuenschwander *et al.* (1983) should be assigned to the latter species.

Messor caducus (Motschoulsky, 1839)

Formica caduca Motschoulsky, 1839: 47.

Literature. Crete: Borowiec 2014: 103. Chania Prov.: Borowiec & Salata 2012: 512.

Comments. Cretan records of *M. caducus* published by Borowiec (2014) and Borowiec & Salata (2012) refer to recently described *Messor creticus* Salata & Borowiec, 2019, known from the Cretan alpine zone.

Messor denticulatus Santschi, 1927

Messor minor st. *denticulatus* Santschi, 1927b: 247.

Literature. Crete: Legakis 2011: 10; Borowiec & Salata 2012: 513; Ghahari & Collingwood 2013: 159; Bračko *et al.* 2014: 21.

Comments. *Messor denticulatus* is known from Central Asia, eastern Turkey, Israel, and Iran. In Balkans recorded for the first time by Agosti & Collingwood (1987b), on Crete noted by Legakis (2011). Its presence in Balkans is doubtful. With high possibility, all Cretan records of this species refer to *Messor creticus* known from the alpine zone.

Messor meridionalis (André, 1883)

Aphaenogaster barbara var. *meridionalis* André, 1883: 355.

Literature. Crete: Emery 1894: 11 (as *Aphaenogaster* (*Messor*) *barbara* var. *meridionalis*); Borowiec 2014: 109.

Comments. All historical records of *M. meridonalis* are assigned to *M. wasmanni*. Type specimens of *M. meridionalis* are lost, and its description is lacking any valuable information allowing its proper determination. Until the designation of a neotype of *M. meridionalis*, this taxon should be considered as incertae sedis.

Messor oertzeni Forel, 1910

Messor oertzeni Forel, 1910c: 25.

Literature. Crete: Borowiec & Salata 2012: 515; Borowiec 2014: 110.

Comments. Borowiec & Salata (2012) noted this species from Crete, referring to Legakis (2011) as an original data source. However, Legakis didn't note this species from the island. Therefore we should consider this record as unconfirmed and doubtful.

Messor semirufus (André, 1883)

Aphaenogaster barbara var. *semirufa* André, 1883: 355.

Literature. Chania Prov.: Neuenschwander *et al.* 1983: 26 – Stylos (as *Messor semirufus* var.)

Comments. Record of *M. semirufus* var. provided by Neuenschwander *et al.* (1983) should be assigned to *M. wasmanni*, the only member of the *M. semirufus* group known from Crete.

Messor structor (Latreille, 1798)

Formica structor Latreille, 1798: 46 (w.m.)

Literature. Crete: Forel 1886: CLXVIII; Emery 1894a: 11; Legakis 2011: 11; Borowiec 2014: 112. Chania Prov.: Stitz 1928: 90 – Akrotiri, V 1926. Rethymnon Prov.: Stitz 1928: 90 – Melidhoni, VI 1926.

Comments. Based on data provided by Steiner *et al*. (2018) and after the re-examination of samples collected during our survey we assumed that all Cretan samples of specimens previously determined as *M. structor* should be assigned to *M. ibericus*.

Messor sultanus Santschi, 1917

Messor barbarus var. *sultana* Santschi, 1917b: 89.

Literature. Crete: Legakis 2011: 12; Borowiec & Salata 2012: 516; Ghahari & Collingwood 2013: 160.

Comments. Species noted for the first time in Balkans by Agosti & Collingwood (1987b), on Crete recorded by Legakis (2011). Personal communication with Legakis and an investigation of the ZMUA collection revealed no evidence that confirms its presence on Crete. Therefore, we consider this species as absent in Cretan myrmecofauna, and its record should be assigned to species from the *M. structor* group.

Monomorium abeillei André, 1881

Monomorium abeillei André, 1881: 531.

Literature. Crete: Legakis 2011: 14; Borowiec & Salata 2012: 517.

Comments. Study on the *Monomorium* material deposited in ZMUA revealed that specimens determined as *M. abeillei* are *M. subopacum*. We also investigated specimens determined by Pisarski as *M. abeillei*, which were also misdetermined specimens of *M. subopacum*.

Monomorium phoenicum Santschi, 1927

Monomorium (*Xeromyrmex*) *subopacum* var. *phoenicum* Santschi, 1927b: 242.

Literature. Crete: Legakis 2011: 15; Borowiec & Salata 2012: 519; Borowiec 2014: 124.

Comments. Noted from Greece by Agosti & Collingwood (1987a,b), recorded on Crete by Legakis (2011). Study on the *Monomorium* material deposited in ZMUA revealed that specimens determined as *M. phoenicum* are *M. subopacum*.

Myrmecina graminicola (Latreille, 1802)

Formica graminicola Latreille, 1802: 255 (w.q.m.)

Literature: Crete: Legakis 2011: 12; Borowiec & Salata 2012: 520; Borowiec 2014: 128.

Comments. Noted from Crete by Legakis (2011). Study on the material deposited in ZMUA didn't confirm the presence of this species on the island. Moreover, there are no Cretan localities that provide accurate habitats to host this species. Therefore, we decided to exclude it from the Cretan checklist.

Myrmica rubra (Linnaeus, 1758)

Formica rubra Linnaeus 1758: 580.

Literature. Rethymnon Prov.: Lucas 1854: 491; Raulin 1861: 685 – Rethymno.

Comments. Crete is located beyond the distribution range of *M. rubra* and, additionally, is lacking habitats being able to host this species. Therefore, its presence on the island is impossible.

Prenolepis nitens (Mayr, 1853)

Tapinoma nitens Mayr, 1853a: 144.

Literature. Crete: Borowiec 2014: 149.

Comments. Borowiec (2014) noted this species from Crete referring to Fauna Europea as an original data source. However, there is no literature confirmation of this species on the island. Therefore, we consider this record as doubtful.

Oxyopomyrmex santschi Forel, 1904

Oxyopomyrmex santschii Forel, 1904c: 8.

Literature. Crete: Borowiec 2014: 140. Chania Prov.: Borowiec & Salata 2013: 363.

Comments. Data provided in recent revision of the genus *Oxyopomyrmex* (Salata & Borowiec 2015a) revealed that specimens considered to be *O. santschii* represent a distinct, endemic species: *O. laevibus*.

Pheidole megacephala (Fabricius, 1793)

Formica megacephala Fabricius, 1793: 361.

Literature. Crete: Jucker *et al*. 2008: 101; Legakis 2011: 12; Ghahari & Collingwood 2013: 161; Bračko *et al*. 2014: 15; Borowiec 2014: 142. Rethymnon Prov.: Borowiec & Salata 2013: 363 – rd. to Preveli Beach loc. 2, 48 m a.s.l., 35°10.398N/24°28.023 E, 7 V 2013.

Comments. According to Sarnat *et al.* (2015) all Mediterranean records of *P. megacephala* should be assigned to *P. pallidula*. Our reinvestigation of specimens collected in Rethymnon confirms this statement.

Ponera testacea Emery, 1895

Ponera coarctata var. *testacea* Emery, 1895a: 62.

Literature. Crete: Borowiec 2014: 148. Rethymnon Prov.: Borowiec & Salata 2013: 365.

Comments. Reinvestigation of specimens labeled as *P. testacea* revealed that they were misdetermined specimens of *Crypropone ochracea*.

Solenopsis wolfi Emery, 1915

Solenopsis wolfi Emery, 1915a: 259.

Literature. Crete: Borowiec 2014: 159. Chania Prov.: Borowiec & Salata 2012: 535.

Comments. Reinvestigation of Cretan specimens labelled as *S. wolfi* revealed that they were misdetermined specimens of *S. orbula*.

Tapinoma madeirense Forel, 1895

Tapinoma erraticum var. *madeirense* Forel, 1895b: 231.

Literature. Crete: Borowiec 2014: 168. Rethymnon Prov.: Borowiec & Salata 2013.

Comments. Our study on the male genitalia revealed that *T. madeirense* is replaced on Crete and Dodecanese by *T. festae*.

Tapinoma israele Forel, 1904

Tapinoma erraticum r. *israelis* Forel, 1904c: 16.

Literature. Crete: Emery 1925a: 58 (as *Tapinoma israelis*); Legakis 2011: 23.

Comments. Emery (1925a) mentioned specimens of *T. israele* collected on Crete. Based on the provided data, he investigated the worker caste only, which can be misleading in species determination within this genus. Based on the material collected during our research, we can state that *T. erraticum* is the only member of this group that occurs on the island.

Temnothorax niger (Forel, 1894)

Leptothorax tuberum r. *niger* Forel, 1894a: 42.

Literature. Crete: Legakis 2011: 18; Borowiec & Salata 2012: 542; Borowiec 2014: 184.

Comments. Species recorded on Crete by Legakis (2011), with reference to the checklist of Cretan species complied by Collingwood. Unfortunately, this checklist has never been published. *Temnothorax niger* is a west-Mediterranean species, and its presence on Crete is doubtful. With a high probability, this species was confused with *T. exilis* or *T. minotaurosi*.

Temnothorax tuberum (Fabricius, 1775)

Formica tuberum Fabricius, 1775: 393.

Literature. Chania Prov.: Borowiec & Salata 2012: 546.

Comments. Specimens labelled as *T. tuberum* by Borowiec & Salata (2012) represent *T. proteii*, species unknown to science in 2012.

Temnothorax unifasciatus (Latreille, 1798)

Formica unifasciata Latreille, 1798: 47.

Literature. Crete: Borowiec & Salata 2012: 546; Borowiec 2014: 192.

Comments. Specimens labelled as *T. unifasciatus* by Borowiec (2014) and Borowiec & Salata (2012) represent *T. proteii*, species unknown to science in 2012.

Tetramorium caespitum (Linnaeus, 1758)

Formica caespitum Linnaeus, 1758: 581 (w.)

Literature. Crete: Emery 1894a: 11; Legakis 2011: 20; Borowiec 2014: 195. Chania Prov.: Neuenschwander *et al.* 1983: 26 – Stylos (as *Tetramorium caespitum* var.).

Comments. Based on data provided by Wagner *et al.* (2018) presence of this species on Crete is doubtful. Moreover, after re-examination of samples collected during our survey we recorded only two members of the *caespitum* group on Crete: *T. indocile* and *T. immigrans*.

Tetramorium lucidulum Menozzi, 1933

Tetramorium punicum var. *lucidulum* Menozzi, 1933: 69 (= *Tetramorium caespitum punicum* var. *lucidula* Emery, 1909 d: 704 unavailable name).

Literature. Crete: Forel 1910a: 23 (as *Tetramorium caespitum* subsp. *punicum* v. *lucidula*); Legakis 2011: 21; Borowiec 2014: 201. Chania Prov.: Borowiec & Salata 2012.

Comments. Record of *Tetramorium caespitum* subsp. *punicum* v. *lucidula* on Crete (Forel 1910a) indicates a presence of *Tetramorium* species with a reduced head sculpture. However, Agosti & Collingwood (1987b) noted this species from other localities on Greece and Crete, and later this information was implemented in the further publications (Borowiec 2014, Borowiec & Salata 2012, Legakis 2011). After examination of the type specimen, we could state that this species can be distinguished based on the short scape, not reaching the occipital margin of the head and frontal carinae curved outwards, merging with rugae that surround antennal sockets. Based on the most current data, there is no such species know from Balkans and Crete. Therefore, we concluded that with high probability, all records of *T. lucidulum* from this region are based on the misdetermination of *T. punctatum*.

Tetramorium punicum (F. Smith, 1861)

Myrmica punica Smith, 1861: 34.

Literature. Crete: Forel 1910a: 23 (as *Tetramorium caespitum* subsp. *punicum*); Legakis 2011: 21; Borowiec & Salata 2012: 551; Borowiec 2014: 202.

Comments. Types of *T. punicum* are considered to be lost, and the original description is lacking any valuable information allowing its proper determination. Therefore, we consider this species as incertae sedis. Based on the collected material, we conclude that this record can refer to *T. punctatum*, the only Cretan species with strongly reduced body sculpture.

Tetramorium semilaeve André, 1883

Tetramorium caespitum var. *semilaeve* André, 1883: 286.

Literature. Chania Prov.: Borowiec & Salata 2012: 552 – 6 km S od Vrises, 280 m a.s.l., 35°19’ N/24°12’E, 1 V 2007; Sfakia, Askifou, 730 m a.s.l., 35°16’N/24°10’ E, 1 V 2007; Sfakia, 3 km S Askifou, 750 m a.s.l., 35°16’ N/24°10’ E, 1 V 2007; Therisso S of Chania, 320 m a.s.l., 35°26’ N/23°59’ E, 1 V 2011; Koutsomatados–Mili, 308 m a.s.l., 35°23’ N/23°40’ E, 2 V 2011; Kandanos–Floria, 588 m a.s.l., 35°21’ N/23°44’ E, 2 V 2011; Omalos–Prases, 945 m a.s.l., 35°20’ N/23°51’ E, 3 V 2011; Fres k. Vrises, 173 m a.s.l., 35°23’ N/24°09’ E, 5 V 2011.

Comments. Based on most recent data (Salata & Borowiec 2017) all Cretan records of this species should be assigned to *T. kephalosi*.

Tetramorium splendens Ruzsky, 1902

Tetramorium caespitum var. *splendens* Ruzsky, 1902: 33.

Literature. Crete: Legakis 2011: 22; Borowiec & Salata 2012: 553; Borowiec 2014: 204. Chania Prov.: Neuenschwander *et al.* 1983: 26 – Stylos (as *Tetramorium semileave* v. *splendens*).

Comments. Study on the material deposited in ZMUA and DBET revealed that all specimens labelled as *T. splendens* were misdetermined *T. kephalosi*.

Monomorium dentigerum (Roger, 1862)

Atta dentigera Roger, 1862: 259.

Literature. Chania Prov.: Neuenschwander *et al.* 1983: 26 – Stylos.

Comments. Based on the most recent data (Radchenko 1997) all Balkan records of *Monomorium dentigerum* should be assigned to *Monomorium perplexum* (now *Trichomyrmex*). Our material confirms this statement.

Preliminary zoogeographical remarks

Our study confirmed the presence of 100 ant species on Crete. They are representatives of 6 subfamilies and 28 genera. The most diverse genera are *Temnothorax* (17 species), *Camponotus* (11) and *Tetramorium* (9). 18 species are known from only one locality: *Aphaenogaster balcanicoides*, *A. splendida*, *Camponotus boghossiani*, *Crematogaster schmidti*, *Formica cunicularia*, *Lasius illyricus*, *L. myops*, *Linepithema humile*, *M. hellenius*, *Nylanderia jaegerskioeldi*, *Oxyopomyrmex krueperi*, *O. laevibus*, *Pheidole* sp. 1, *Strongylognathus huberi dalmaticus*, *S. silvestrii*, *Temnothorax ikarosi*, *Tetramorium bicarinatum*, and *T. hippocratis*. While 7 species are known only from two localities: *Aphaenogaster* cf. *subterranea* sp. 1, *Lepisiota syriaca*, *Stigmatomma denticulatum*, *Temnothorax incompletus*, *T. minotaurosi*, *T. muellerianus*, *and Tetramorium moravicum*.

Among 18 endemic species, there are representatives only of Formicinae and Myrmicinae subfamilies. As much as 89% of endemic taxa belong to the latter one. With 8 endemic species, the *Temnothorax* genus is the most diverse in this group. The following genera, with the number of endemic species higher than one, are *Aphaenogaster* (3) and *Messor* (2). Single endemic taxa were recorded within *Cataglyphis*, *Crematogaster*, *Lasius*, *Monomorium* and *Oxyopomyrmex* genera.

Among all species recorded from Crete we could distinguish 14 chorotypes (number of species in brackets):

1. Chorotypes of species widely spread in the Holarctic Region.

1.1. W- Palearctic (3): *Camponotus aethiops*, *Stenamma debile*, *Tapinoma erraticum*.

1.2. Turano-European (3): *Formica cunicularia*, *Tetramorium indocile*, *T. moravicum*.

1.3. Pontic (2): *Lasius bombycina*, *L. illyricus*.

2. Chorotypes of species more or less widely spread in Europe.

2.1. European (1): *Lasius psammophilus*.

2.2. S-European (2): *Lasius myops*, *Messor ibericus*.

3. Chorotypes of species more or less widely spread in the Mediterranean countries.

3.1. Mediterranean (23): *Aphaenogaster splendida*, *Camponotus gestroi*, *C. lateralis*, *C. piceus*, *Cardiocondyla elegans*, *Cataglyphis nodus*, *Colobopsis truncata*, *Crematogaster sordidula*, *Cryptopone ochracea*, *Lasius lasioides*, *Lepisiota frauenfeldi*, *Messor wasmanni*, *Monomorium monomorium*, *Pheidole pallidula*, *Plagiolepis pallescens*, *P. pygmaea*,

Stigmatomma denticulatum, *Temnothorax exilis*, *T. kraussei*, *T. muellerianus*, *T. recedens*, *Tetramorium diomedeum*, *T. punctatum*.

3.2. E-Mediterranean (8): *Camponotus baldaccii*, *C. jaliensis*, *C. rebeccae*, *Crematogaster ionia*, *Lasius turcicus*, *Lepisiota syriaca*, *Temnothorax semiruber*, *Trichomyrmex perplexus*.

3.3. NE-Mediterranean (9): *Camponotus oertzeni*, *Lepisiota melas*, *Oxyopomyrmex krueperi*, *Plagiolepis perperamus*, *Solenopsis orbula*, *Strongylognathus huberi dalmaticus*, *S. silvestrii*, *Temnothorax helenae*, *Tetramorium kephalosi*.

3.4. Aegaean (13): *Acropyga paleartica*, *Aphaenogaster rugosoferruginea*, *A. simonellii*, *Camponotus boghossiani*, *C. candiotes*, *C. kiesenwetteri*, *Messor hellenius*, *M. mcarthuri*, *Solenopsis crivellarii*, *Tapinoma festae*, *Temnothorax lucidus*, *T. subtilis*, *Tetramorium hippocratis*.

3.5. Mediterraneo-Sindian (2): *Lepisiota nigra*, *Tapinoma simrothi*.

3.6. Ponto-Mediterranean (4): *Aphaenogaster subterraneoides*, *Crematogaster schmidti*, *Proceratium melinum*, *Tetramorium ferox*.

4. Chorotypes of species more or less widely spread in the Palaeotropics and extending into Mediterranean countries.

4.1. Afrotropical (1): *Nylanderia jaegerskioeldi*.

5. Cosmopolitan: species occurring in at least 3 zoogeographical regions (9): *Cardiocondyla mauritanica*, *Hypoponera eduardi*, *Linepithema humile*, *Monomorium bicolor*, *M. pharaonis*, *M. subopacum*, *Pheidole indica*, *Tetramorium bicarinatum*, *Tetramorium immigrans*

6. Endemics (18): *Aphaenogaster balcanicoides*, *A. cecconii*, *A.* cf. *subterranea* sp. 1, *Cataglyphis cretica*, , *Crematogaster* cf. *ionia* sp. 1, *Lasius tapinomoides*, *Messor concolor*, *M. creticus*, *Monomorium creticum*, *Oxyopomyrmex laevibus*, *Temnothorax ariadnae*, *T. crassistriatus*, *T. daidalosi*, *T. ikarosi*, *T. incompletus*, *T. minotaurosi*, *T. proteii*, *T. variabilis*.

Taxa not included: *Cataglyphis* cf. *cretica* sp. 1 and *Pheidole* sp. 1.

The dominant group are chorotypes of species more or less widely spread in the Mediterranean countries. They represent 59% of known ant fauna of Crete. Among them the dominant are Mediterranean (23%), Aegaean (13%) and NE-Mediterranean (9%). Almost 20 of Cretan taxa are endemic to this island. Nevertheless, alarming is also a high percentage of invasive taxa recorded from the Island (10%). More advanced zoogeographical analyses will be presented in further publications.

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Figures

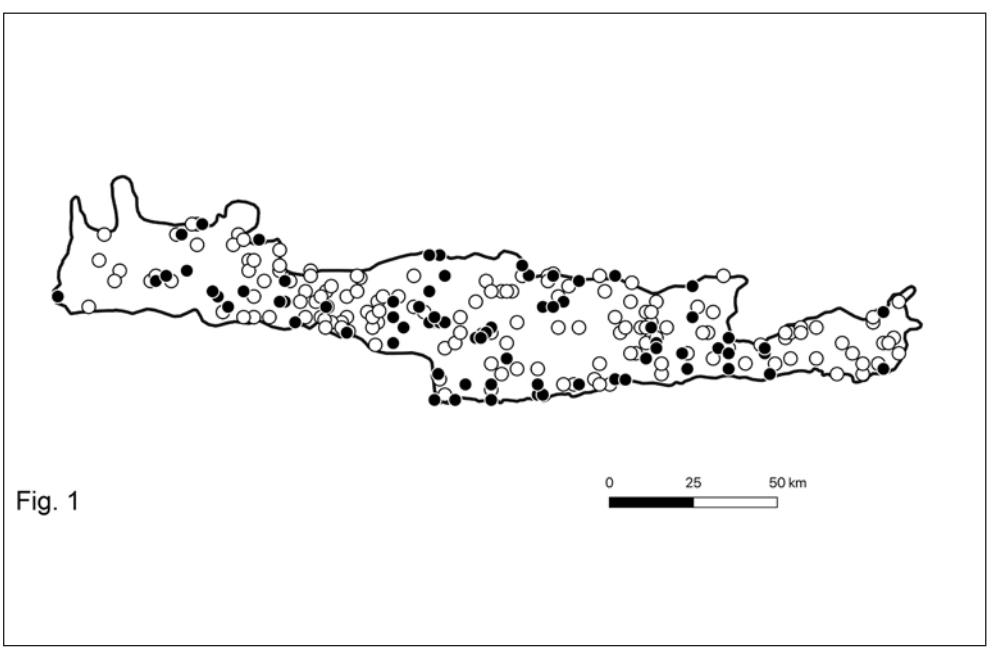


Fig. 1. Collecting localities on Crete. NHMC collection – transparent dots, DBET – black dots.

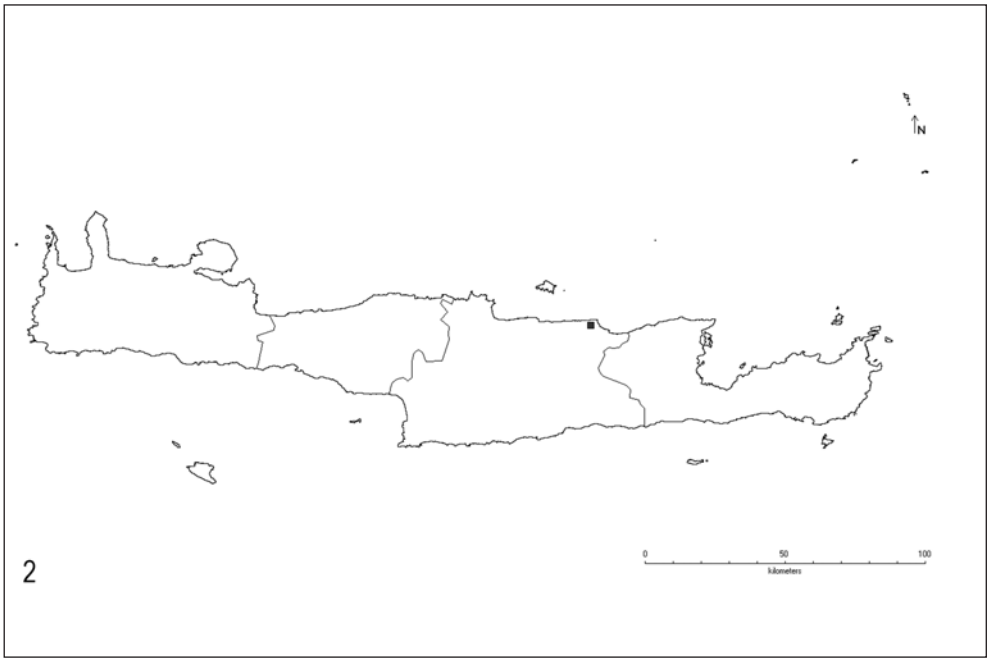


Fig. 2. Distribution of *Proceratium melinum* (ROGER) on Crete.

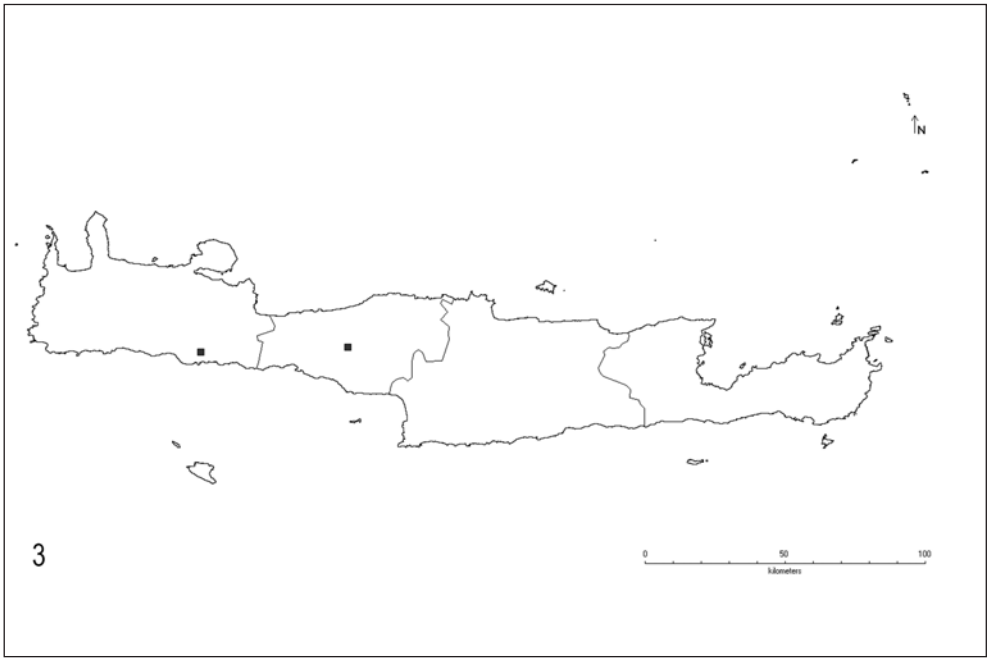


Fig. 3. Distribution of *Stigmatomma denticulatum* ROGER on Crete.

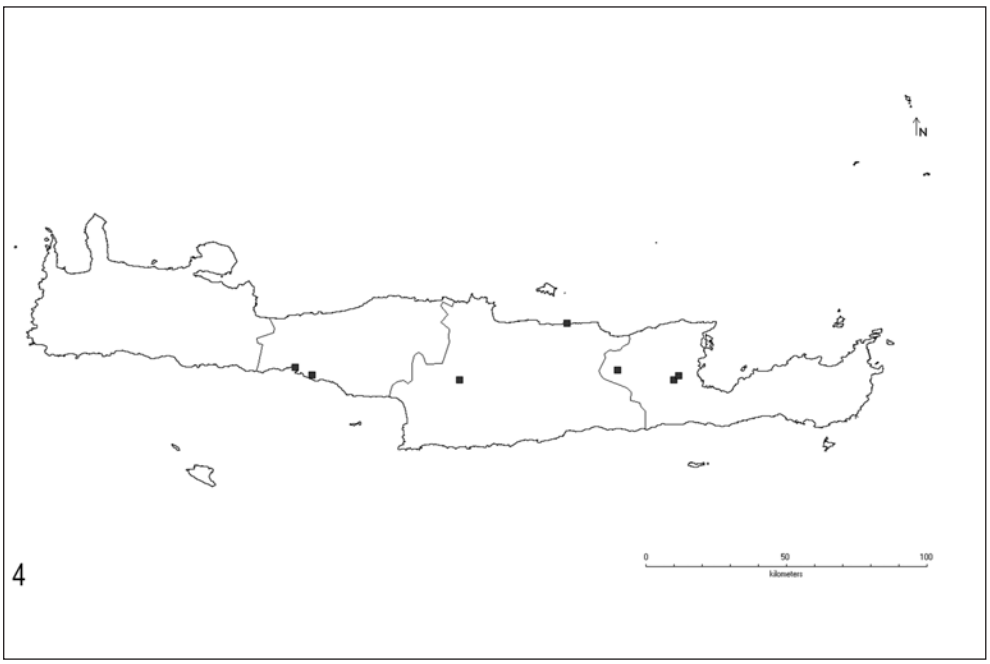


Fig. 4. Distribution of *Cryptopone ochracea* (MAYR) on Crete.

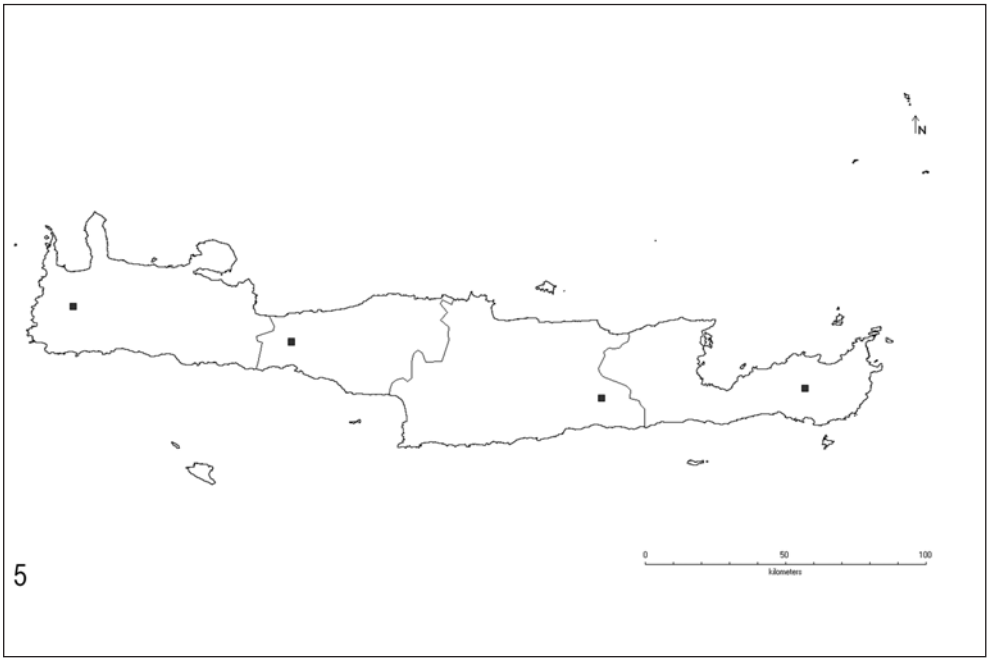


Fig. 5. Distribution of *Hypoponera eduardi* (FOREL) on Crete.

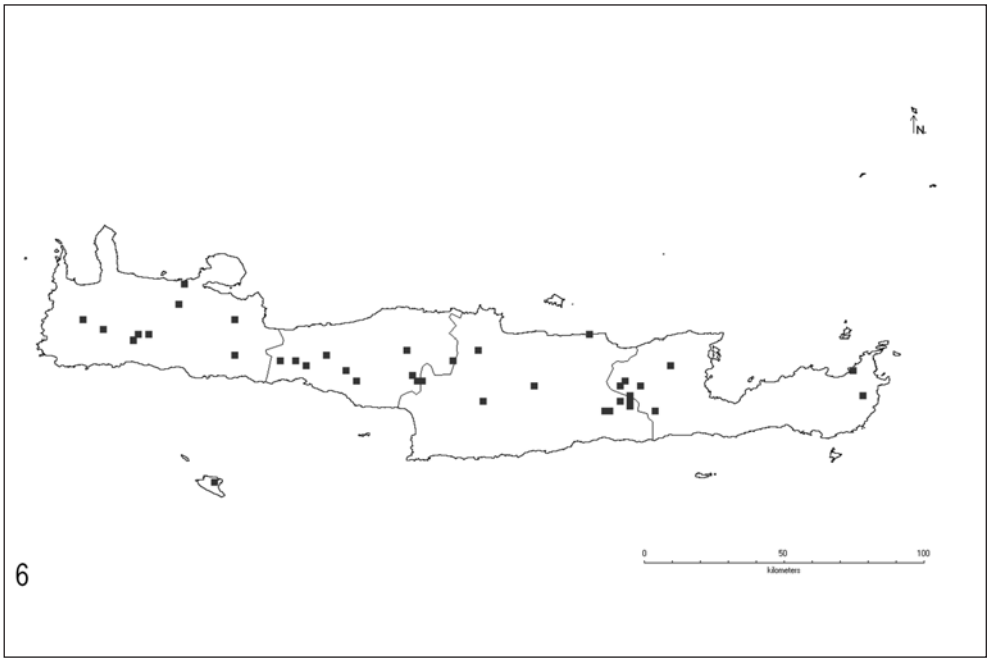


Fig. 6. Distribution of *Tapinoma erraticum* (LATREILLE) on Crete.

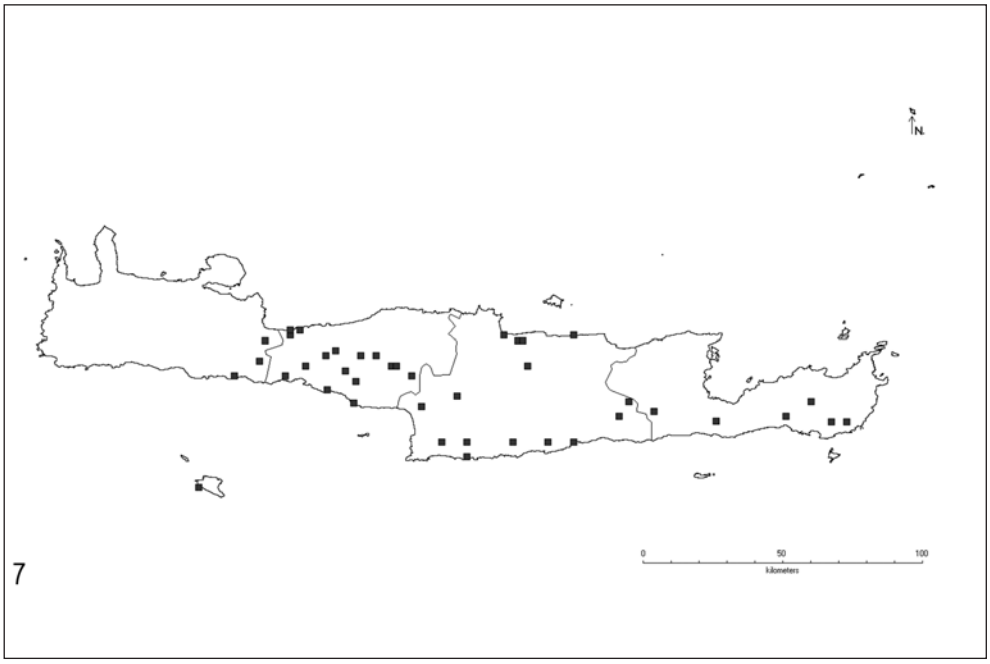


Fig. 7. Distribution of *Tapinoma festae* EMERY on Crete.

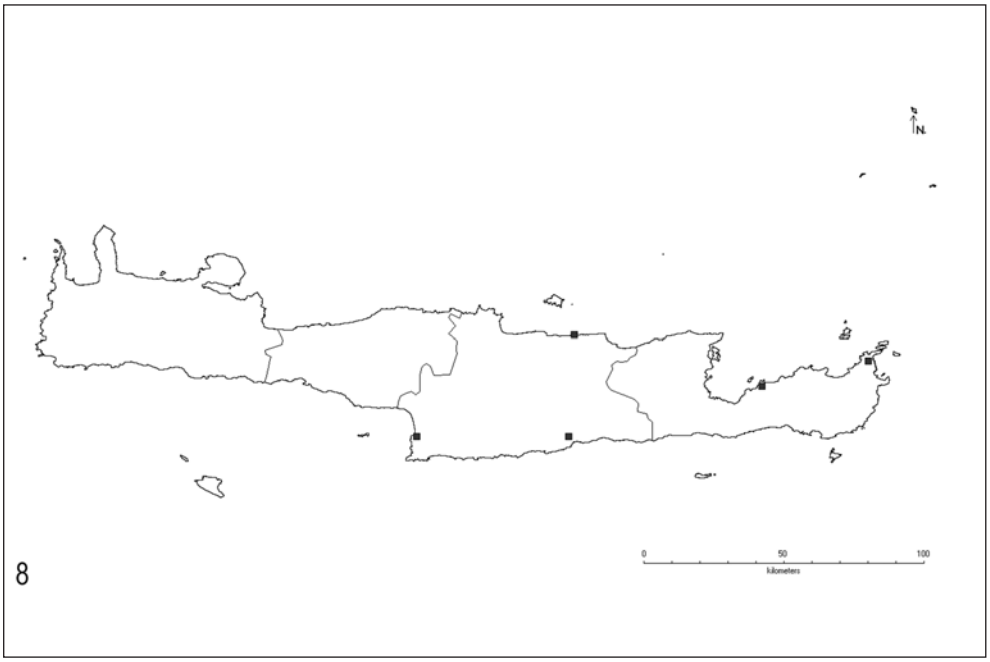


Fig. 8. Distribution of *Tapinoma simrothi* KRAUSSE on Crete.

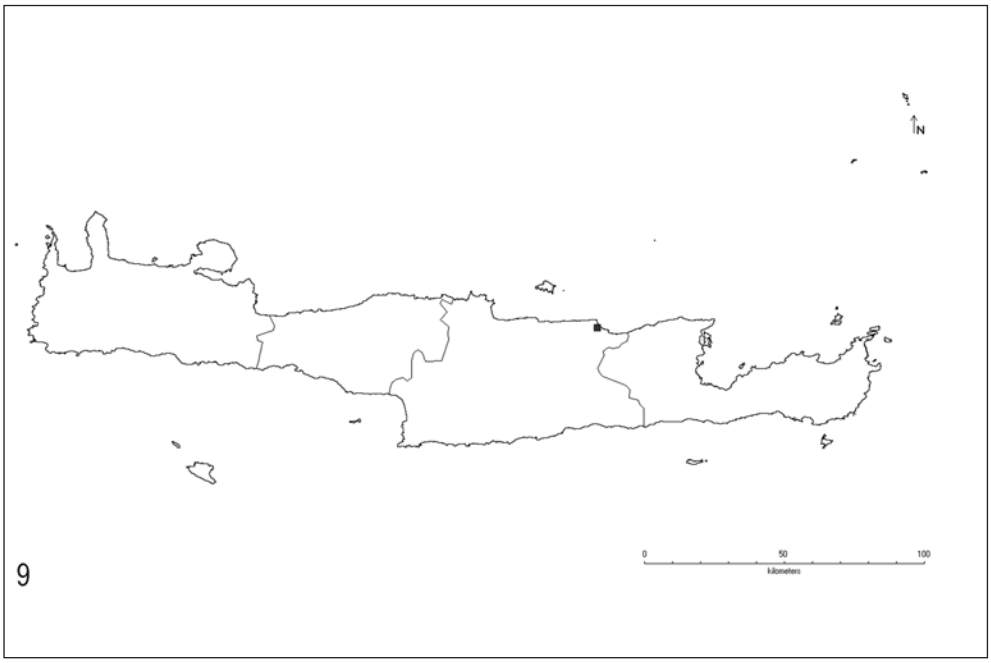


Fig. 9. Distribution of *Linepithema humile* (MAYR) on Crete.

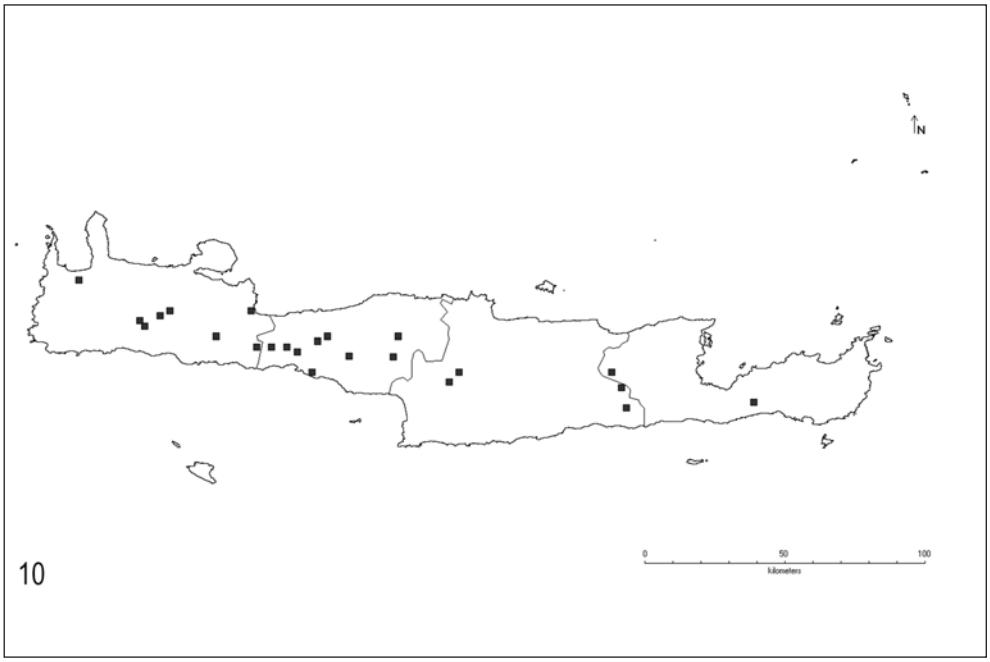


Fig. 10. Distribution of *Lasius bombycina* SEIFERT & GALKOWSKI on Crete.

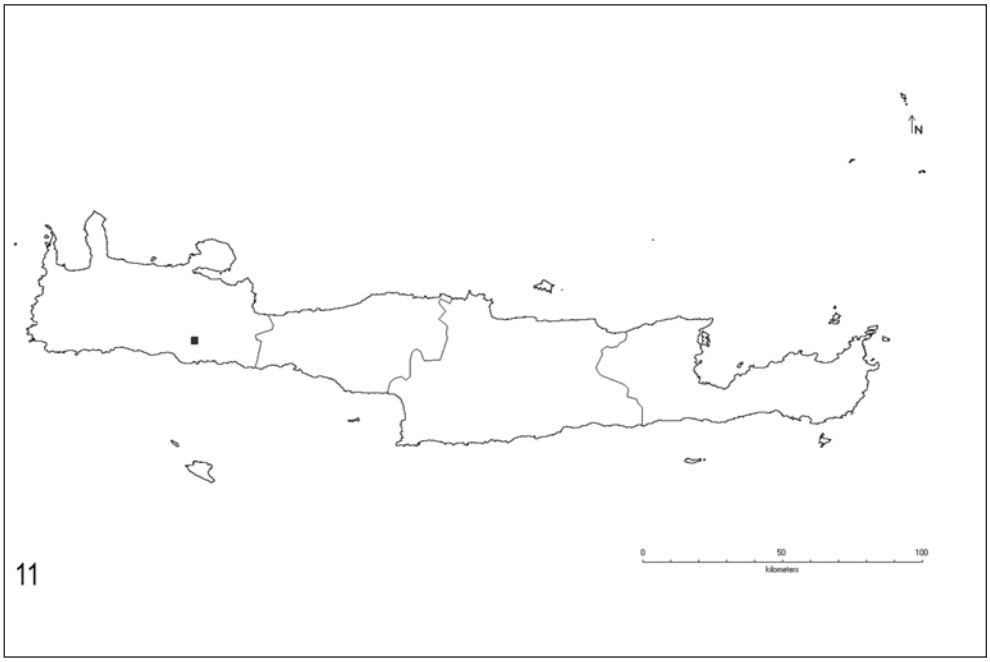


Fig. 11. Distribution of *Lasius myops* FOREL on Crete.

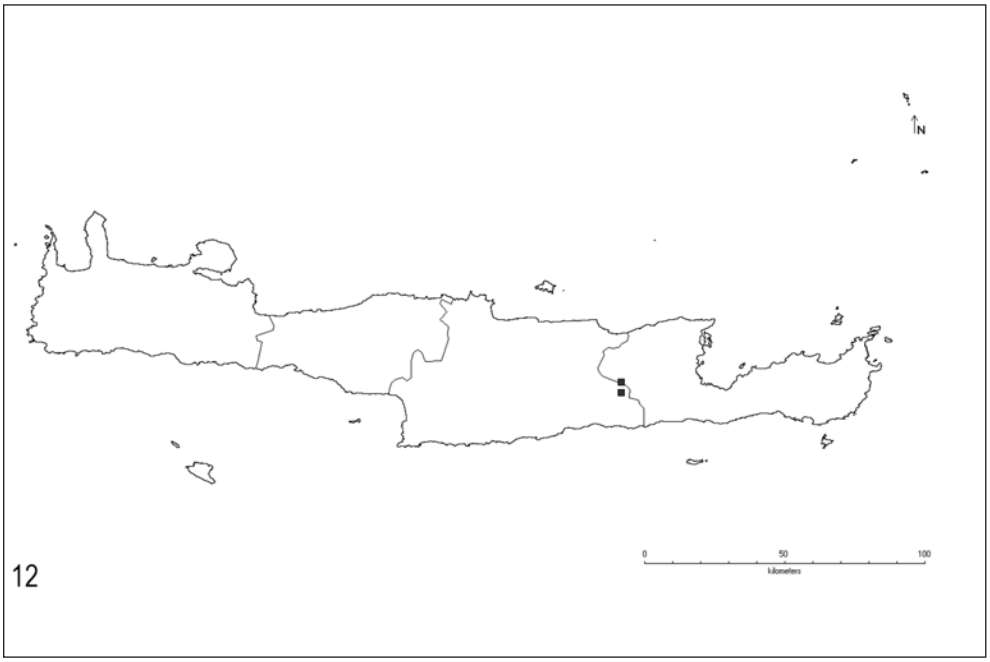


Fig. 12. Distribution of *Lasius illyricus* ZIMMERMANN on Crete.

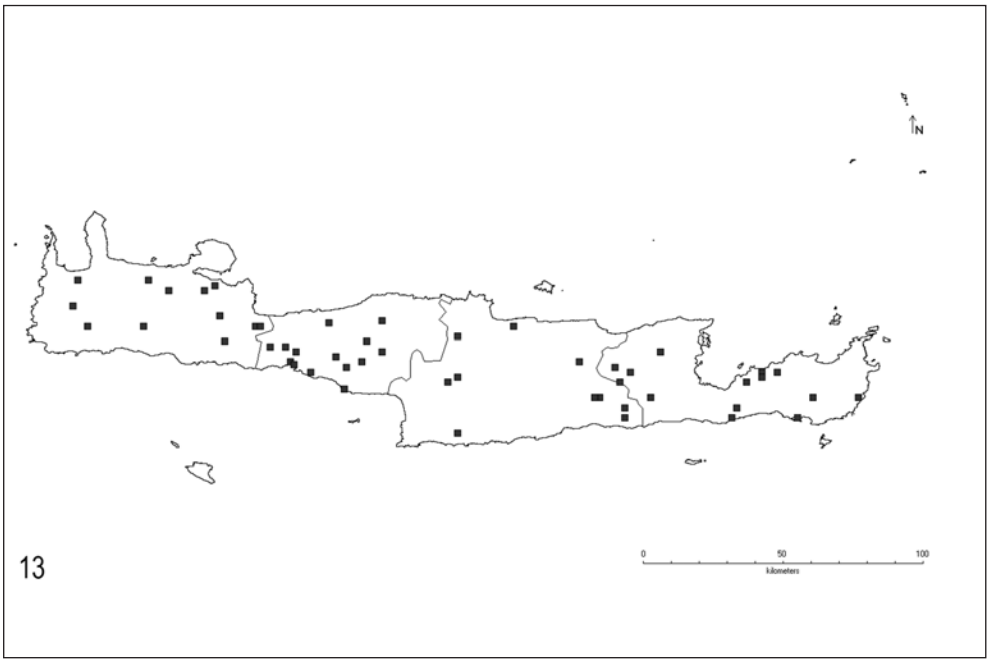


Fig. 13. Distribution of *Lasius lasioides* (EMERY) on Crete.

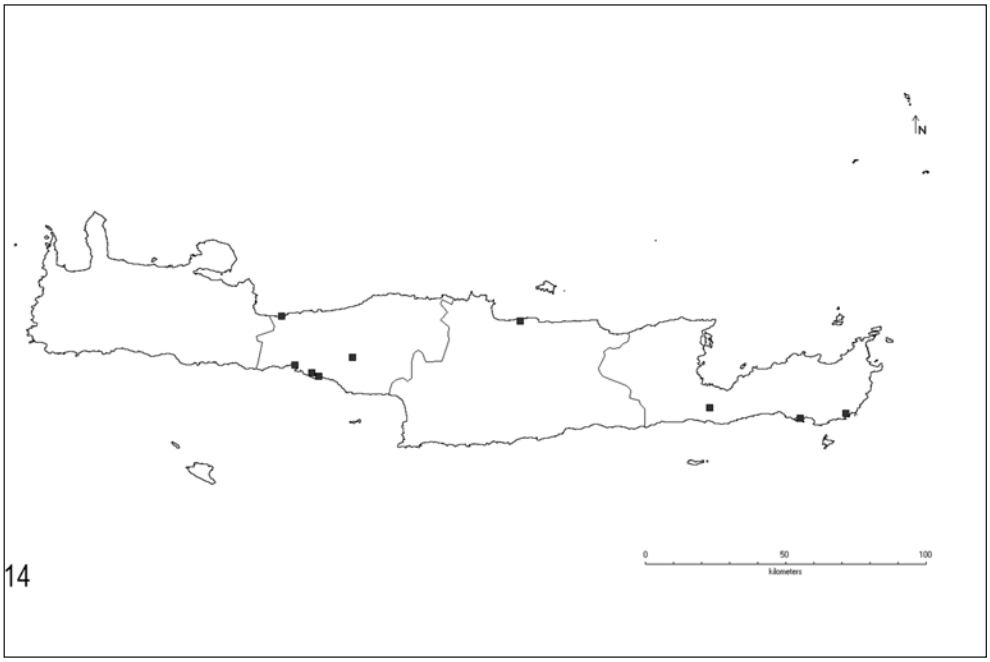


Fig. 14. Distribution of *Lasius psammophilus* SEIFERT on Crete.

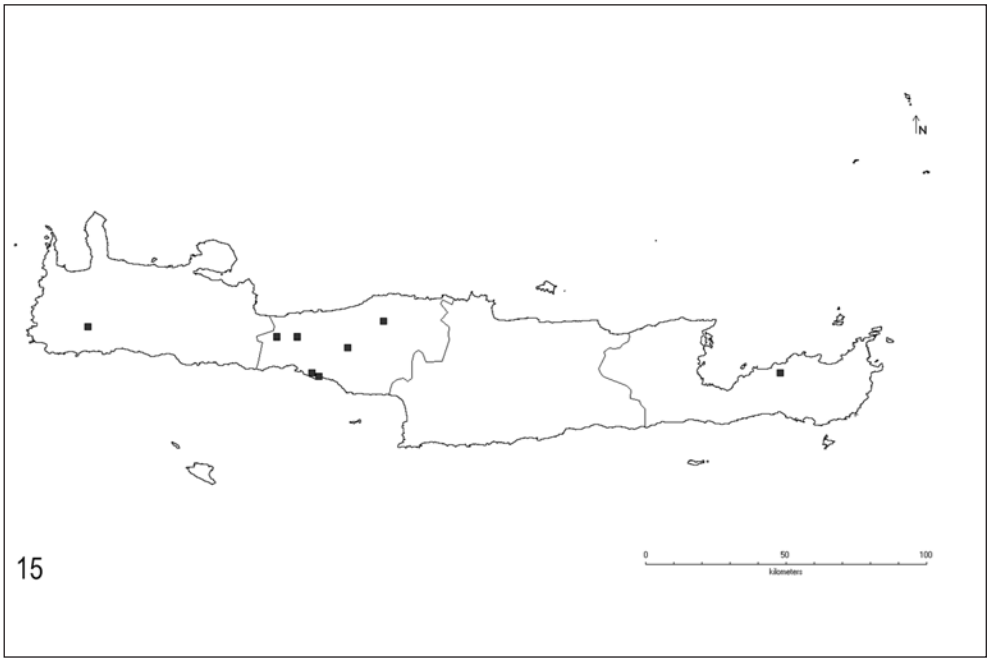


Fig. 15. Distribution of *Lasius tapinomoides* SALATA & BOROWIEC on Crete.

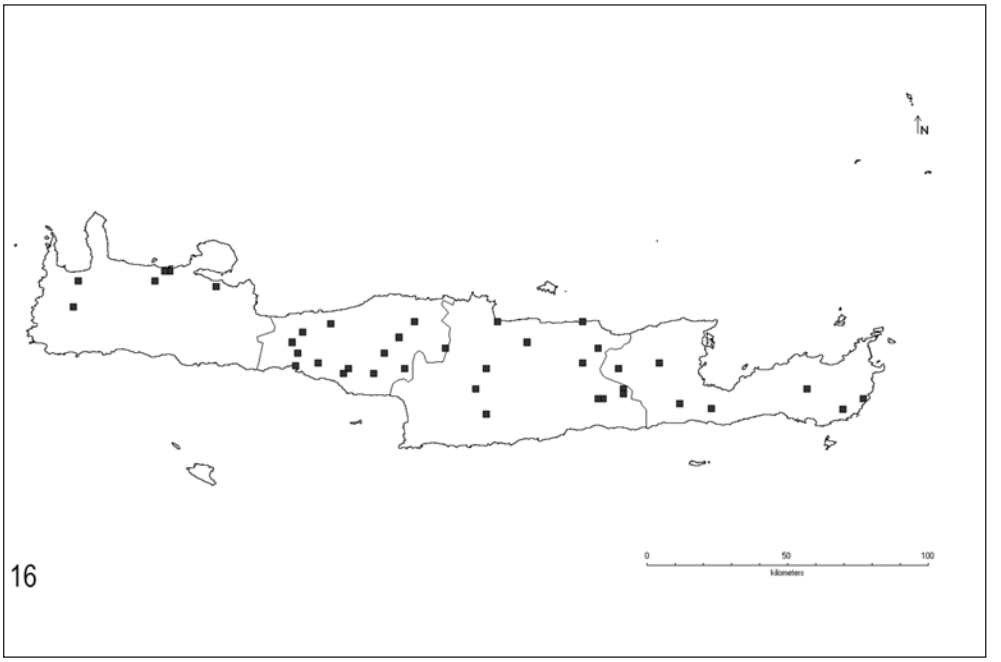


Fig. 16. Distribution of *Lasius turcicus* SANTSCHI on Crete.

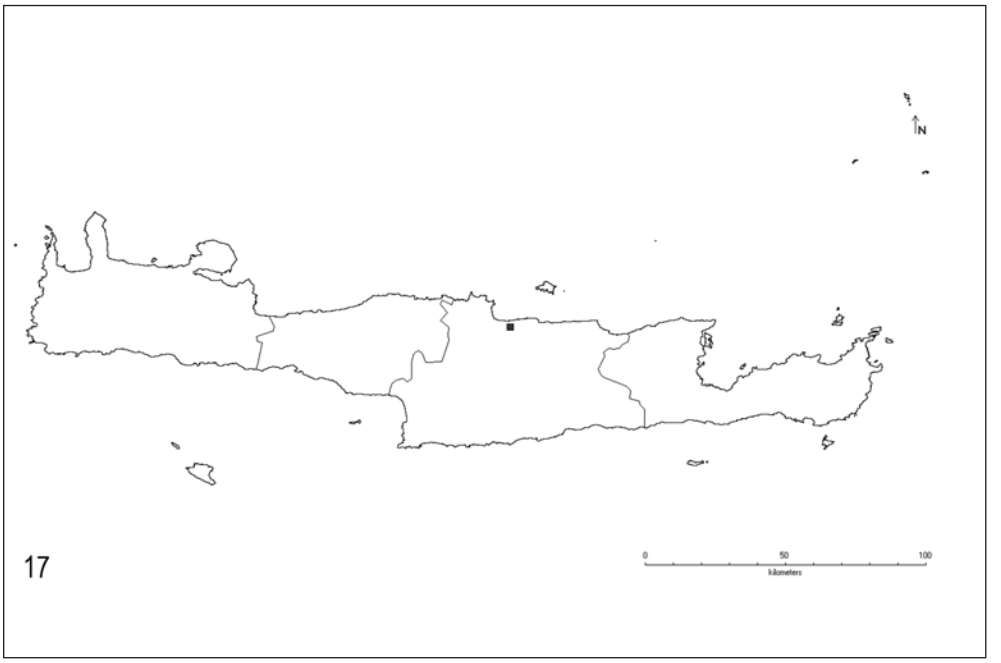


Fig. 17. Distribution of *Nylanderia jaegerskioeldi* (MAYR) on Crete.

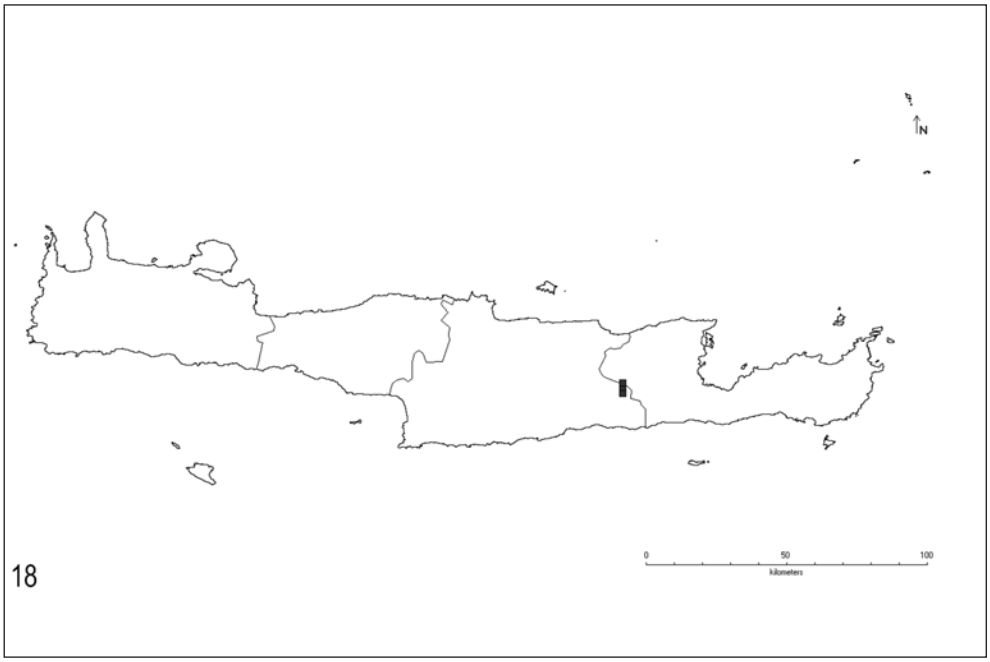


Fig. 18. Distribution of *Formica cunicularia* LATREILLE on Crete.

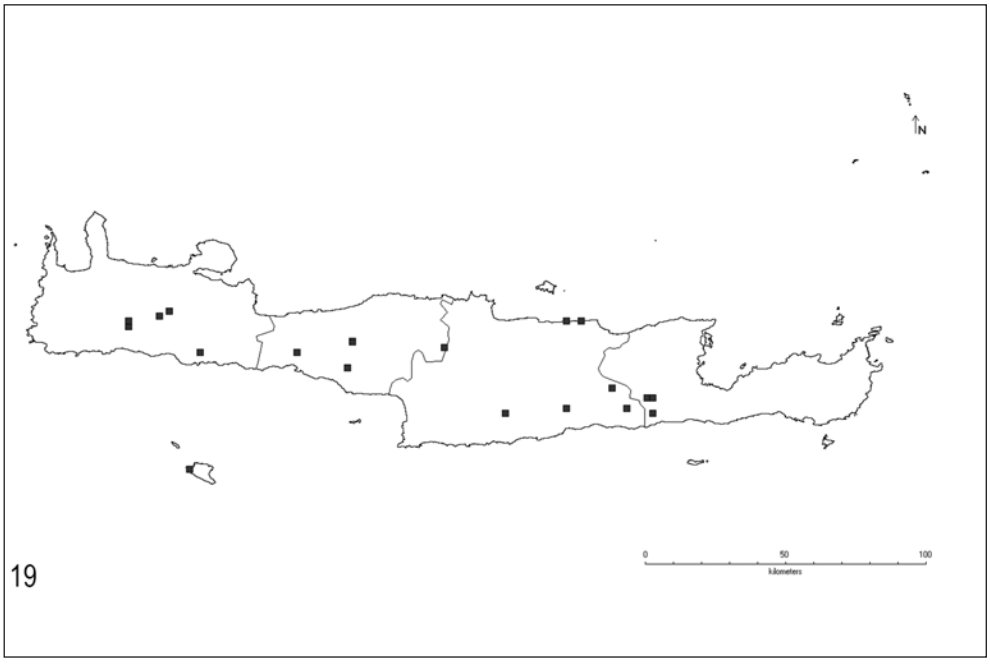


Fig. 19. Distribution of *Cataglyphis cretica* (FOREL) on Crete.

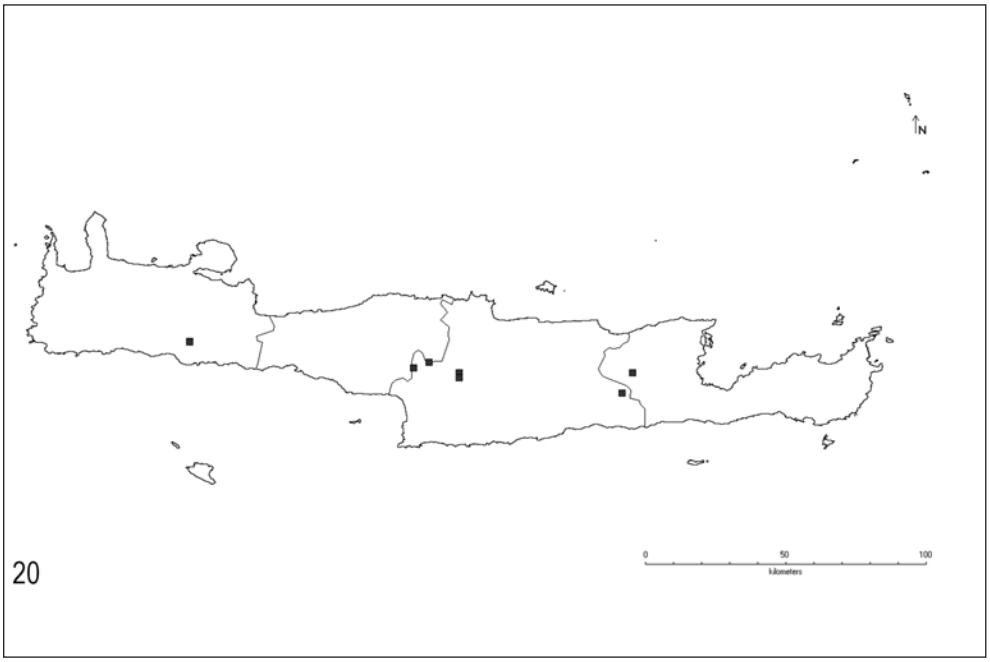


Fig. 20. Distribution of *Cataglyphis* cf. *cretica* sp .1 on Crete.

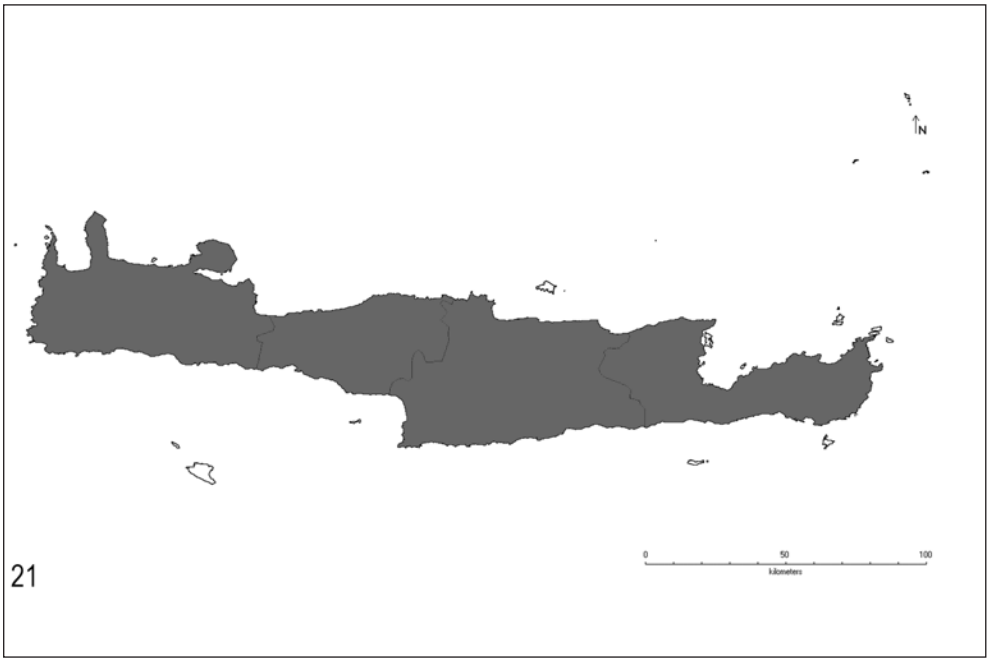


Fig. 21. Distribution of *Cataglyphis nodus* (Brullé) on Crete.

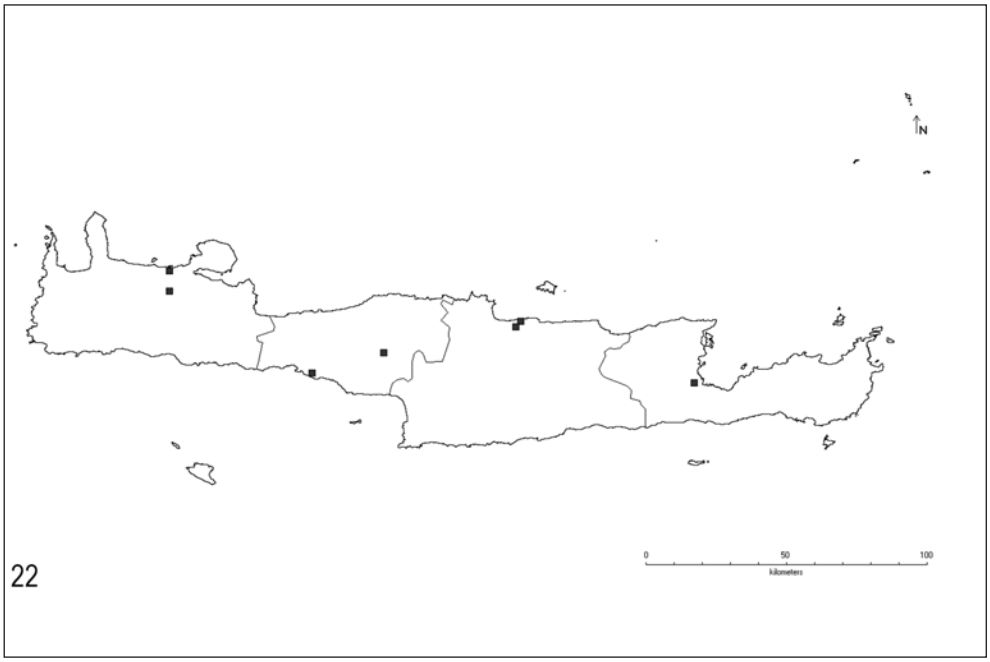


Fig. 22. Distribution of *Lepisiota frauenfeldi* (MAYR) on Crete.

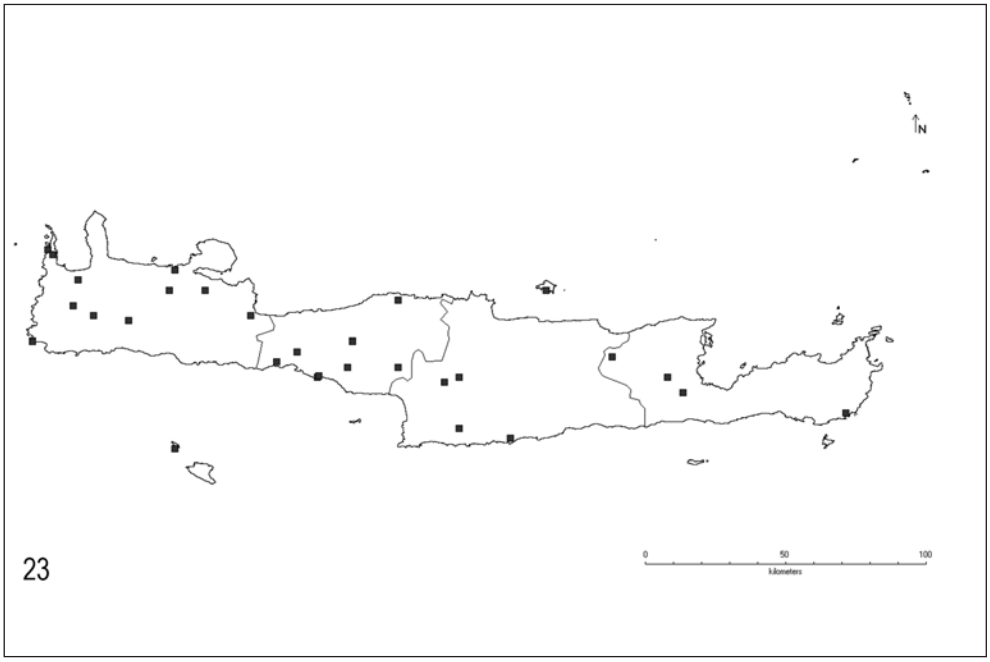


Fig. 23. Distribution of *Lepisiota melas* (EMERY) on Crete.

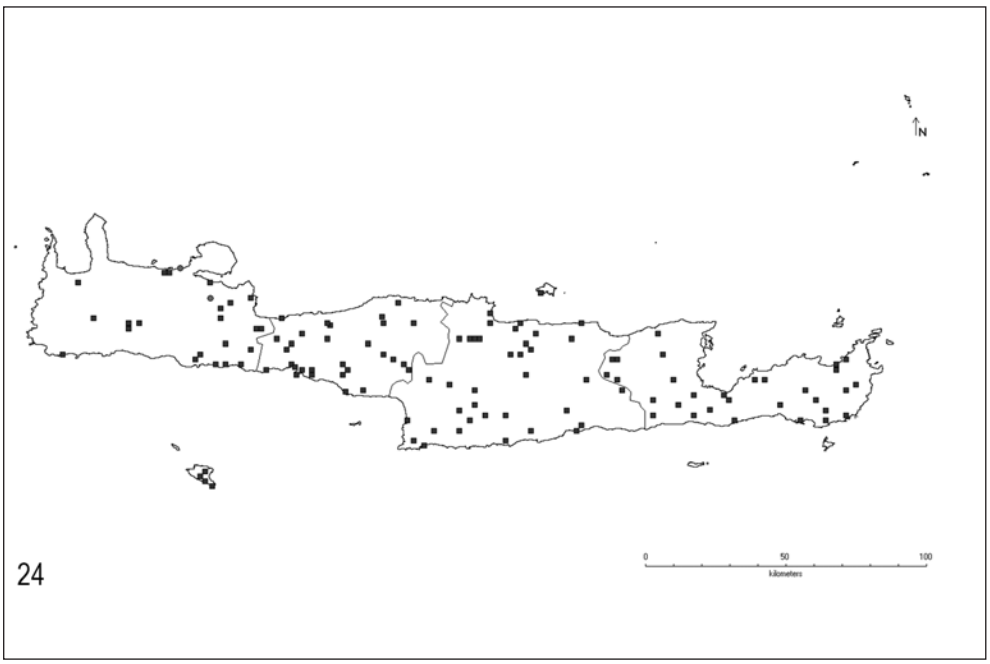


Fig. 24. Distribution of *Lepisiota nigra* (Dalla Torre) on Crete.

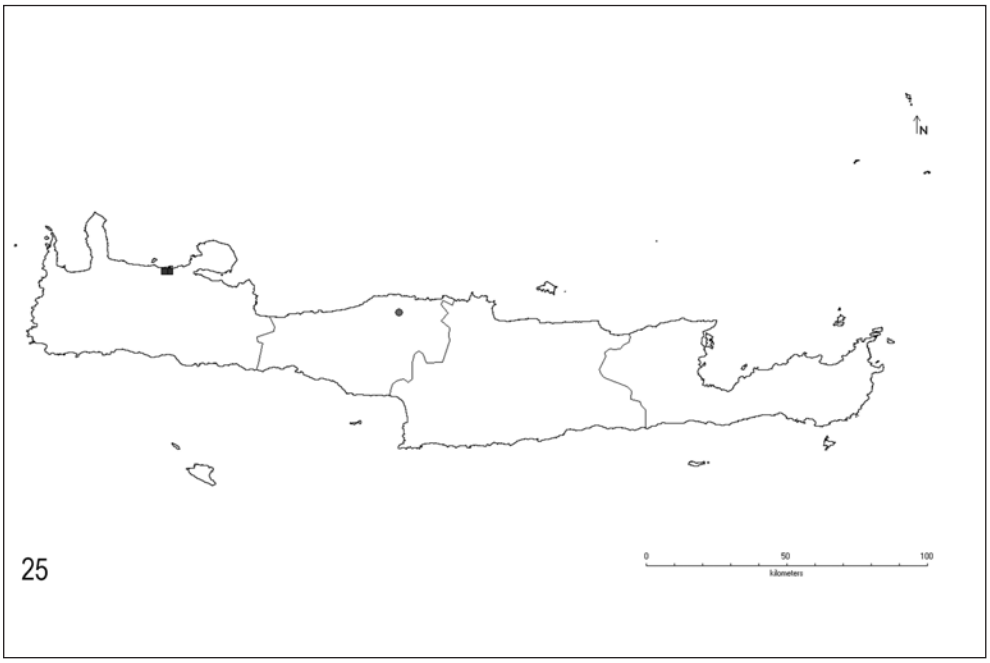


Fig. 25. Distribution of *Lepisiota syriaca* (André) on Crete.

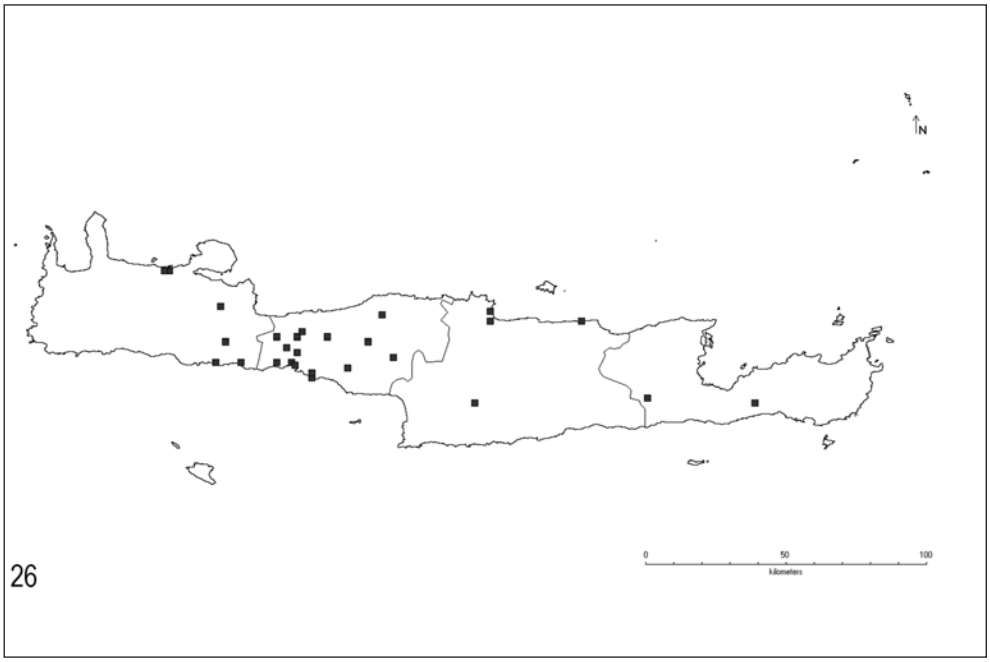


Fig. 26. Distribution of *Plagiolepis pallescens* Forel on Crete.

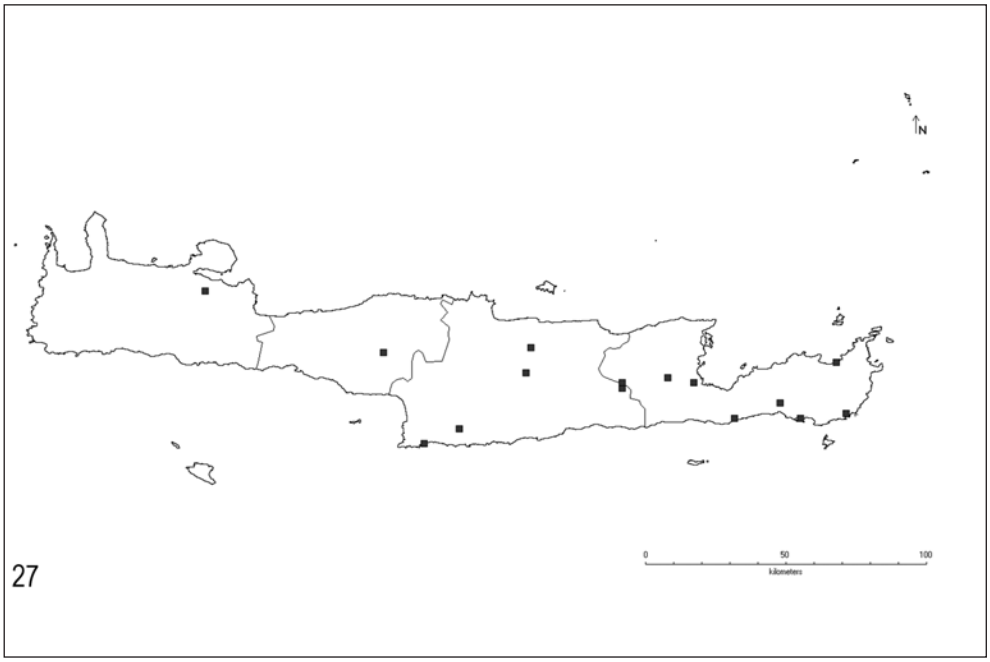


Fig. 27. Distribution of *Plagiolepis perperamus* Salata, Borowiec & Radchenko on Crete.

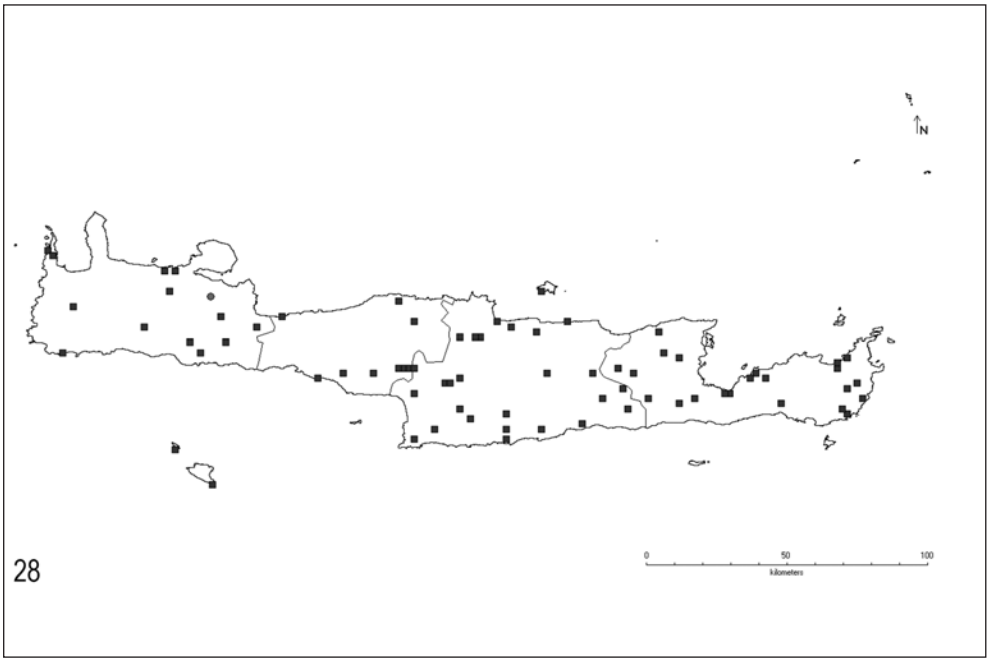


Fig. 28. Distribution of *Plagiolepis pygmaea* (LATREILLE) on Crete.

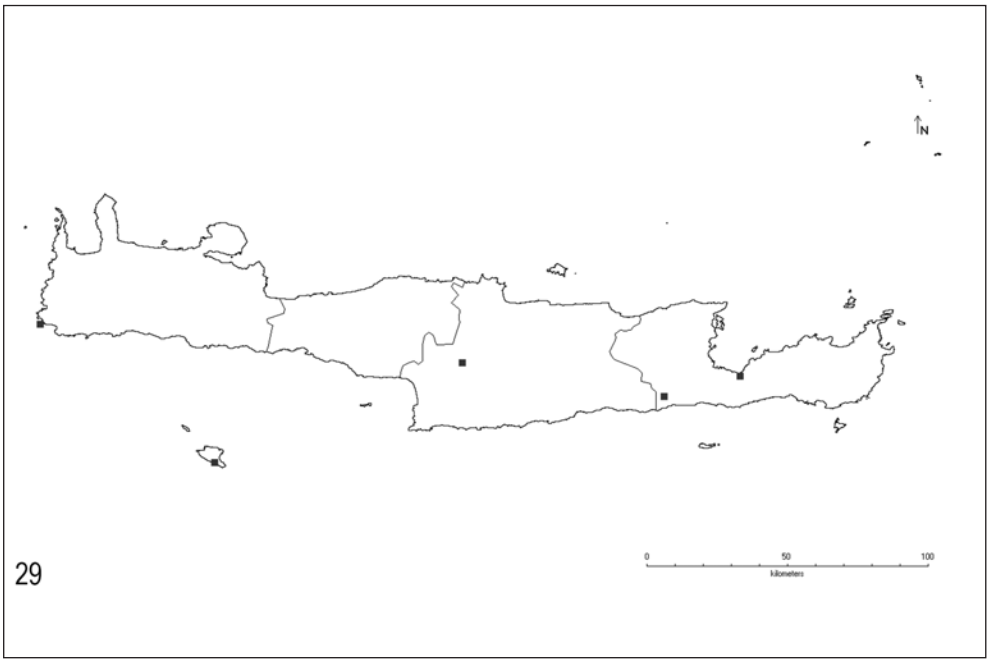


Fig. 29. Distribution of *Acropyga paleartica* MENOZZI on Crete.

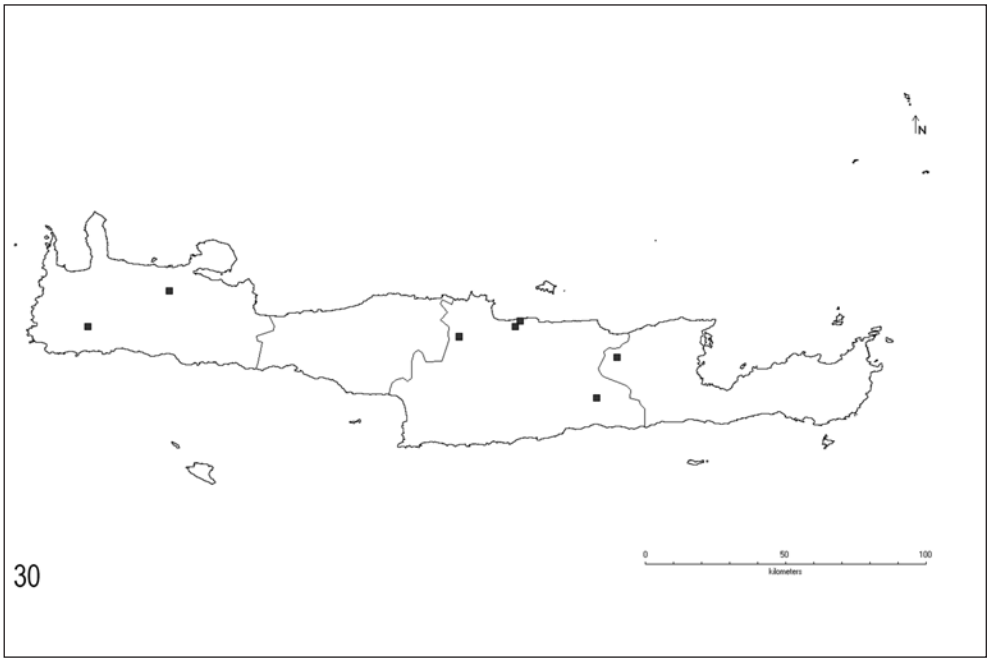


Fig. 30. Distribution of *Colobopsis truncata* (SPINOLA) on Crete.

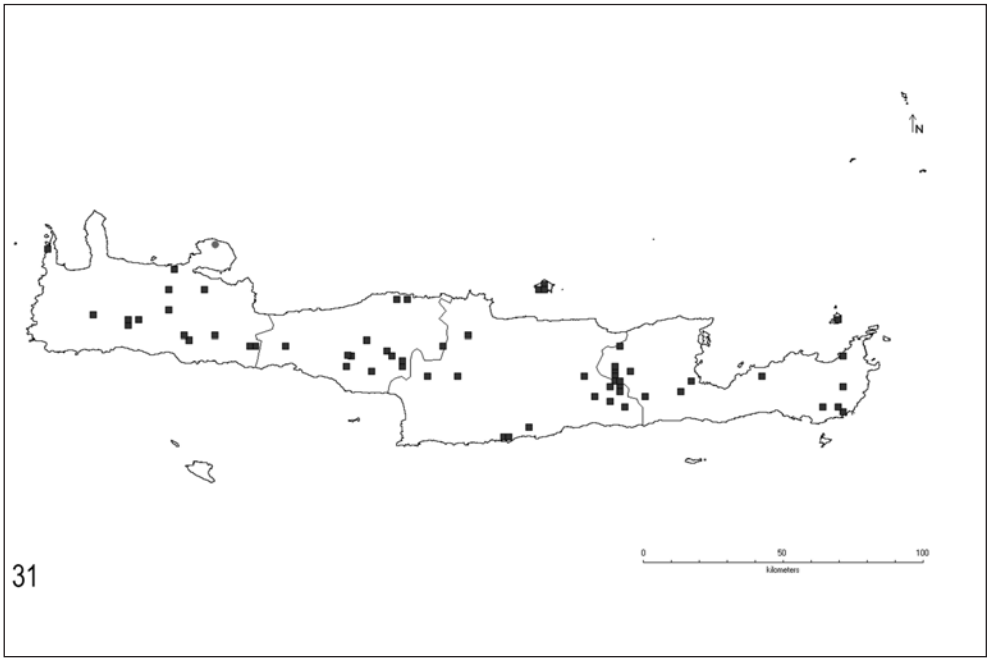


Fig. 31. Distribution of *Camponotus aethiops* (LATREILLE) on Crete.

Fig. 32. Distribution of *Camponotus baldaccii* Emery on Crete.

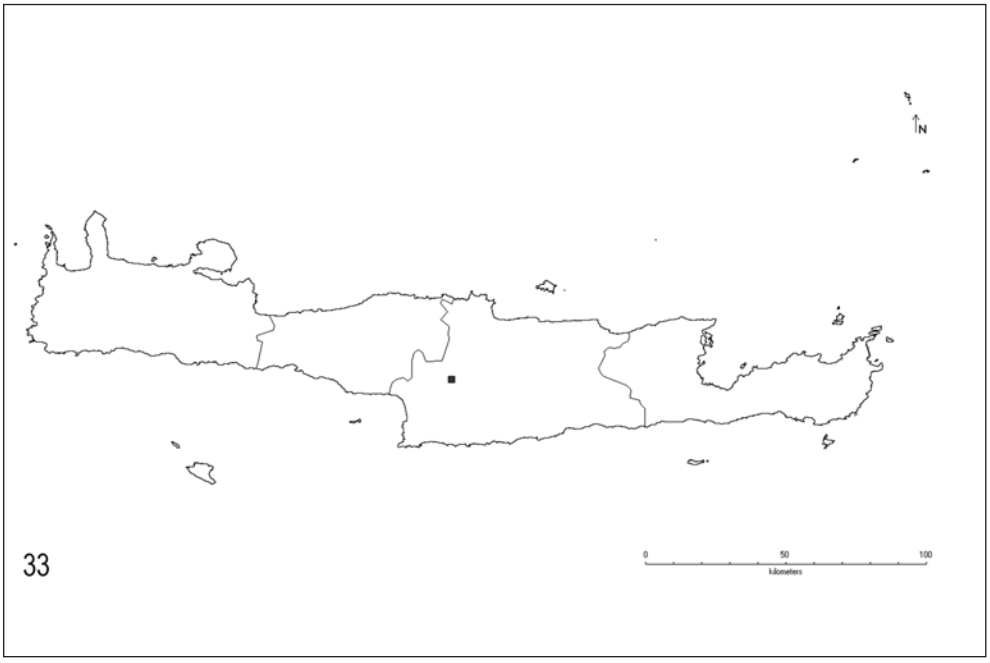


Fig. 33. Distribution of *Camponotus boghossiani* Forel on Crete.

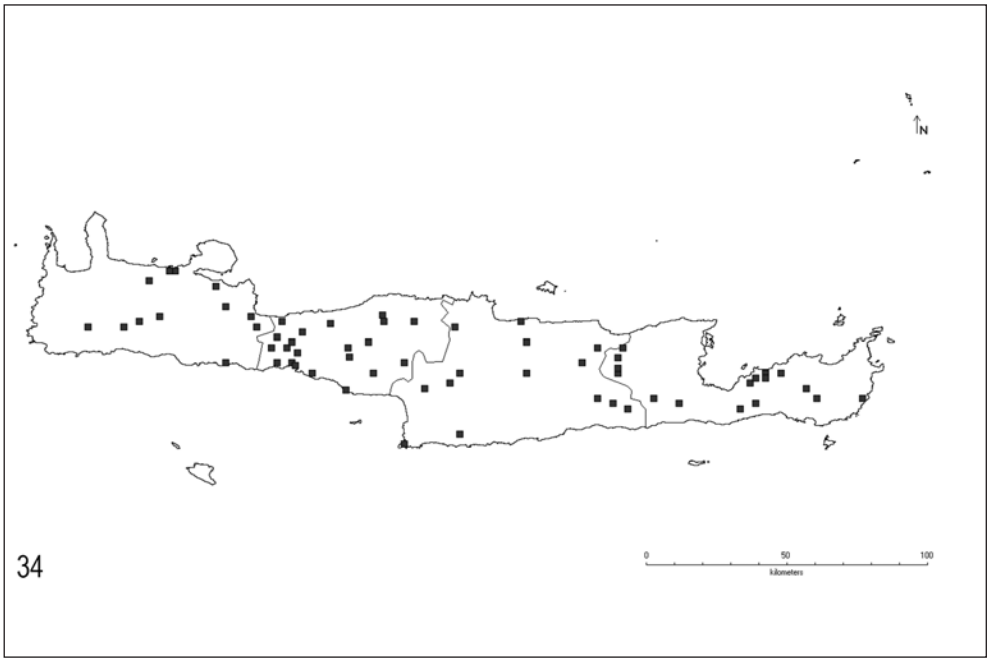


Fig. 34. Distribution of *Camponotus candiotes* EMERY on Crete.

Fig. 35. Distribution of *Camponotus gestroi* EMERY on Crete.

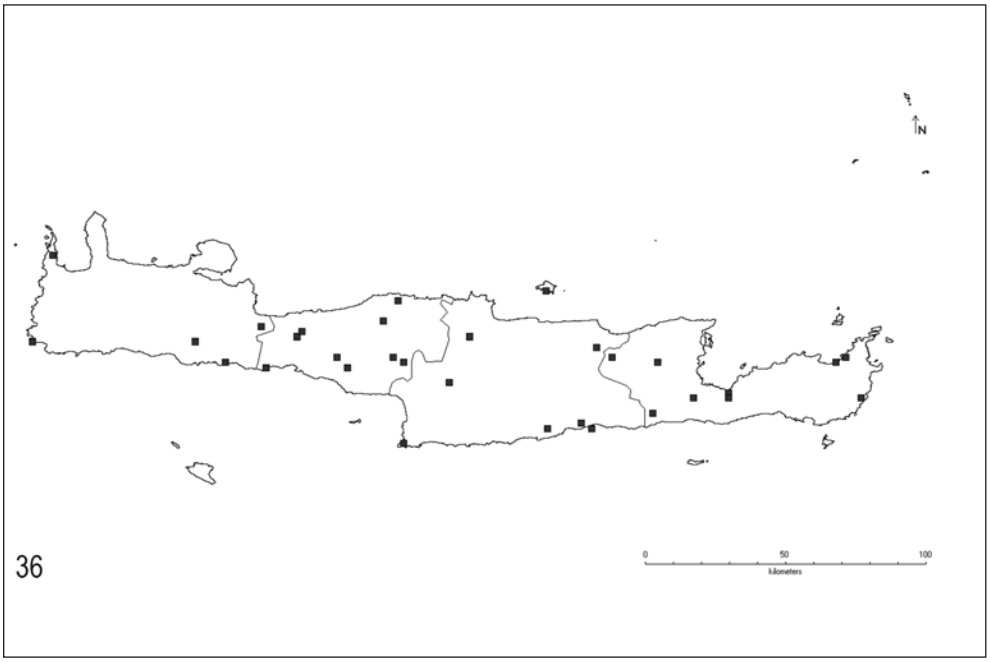


Fig. 36. Distribution of *Camponotus jaliensis* DALLA TORRE on Crete.

Fig. 37. Distribution of *Camponotus kiesenwetteri* (ROGER) on Crete.

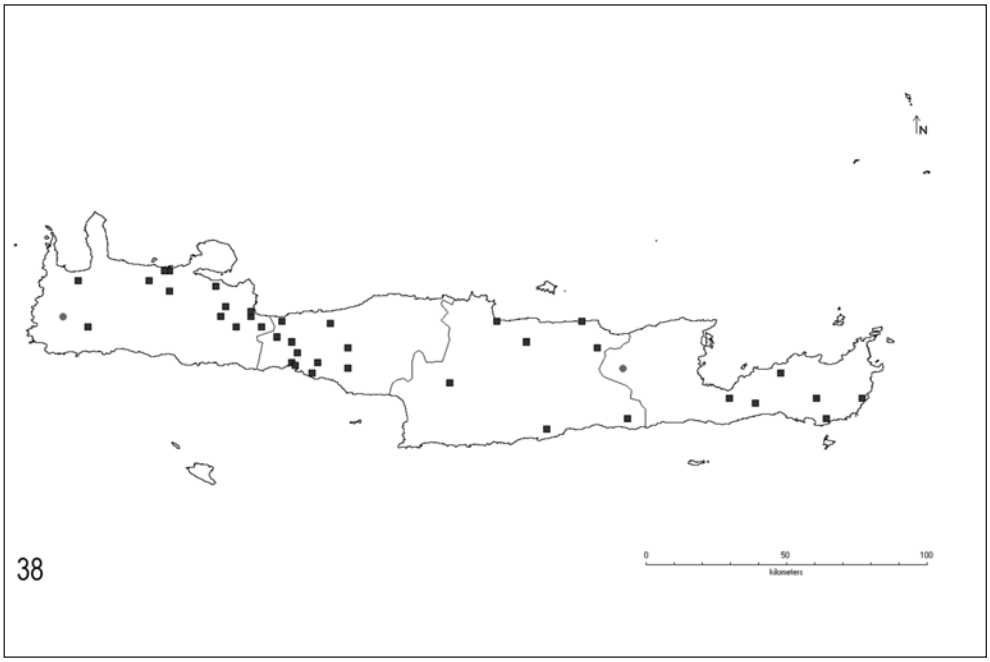


Fig. 38. Distribution of *Camponotus lateralis* (OLIVIER) on Crete.

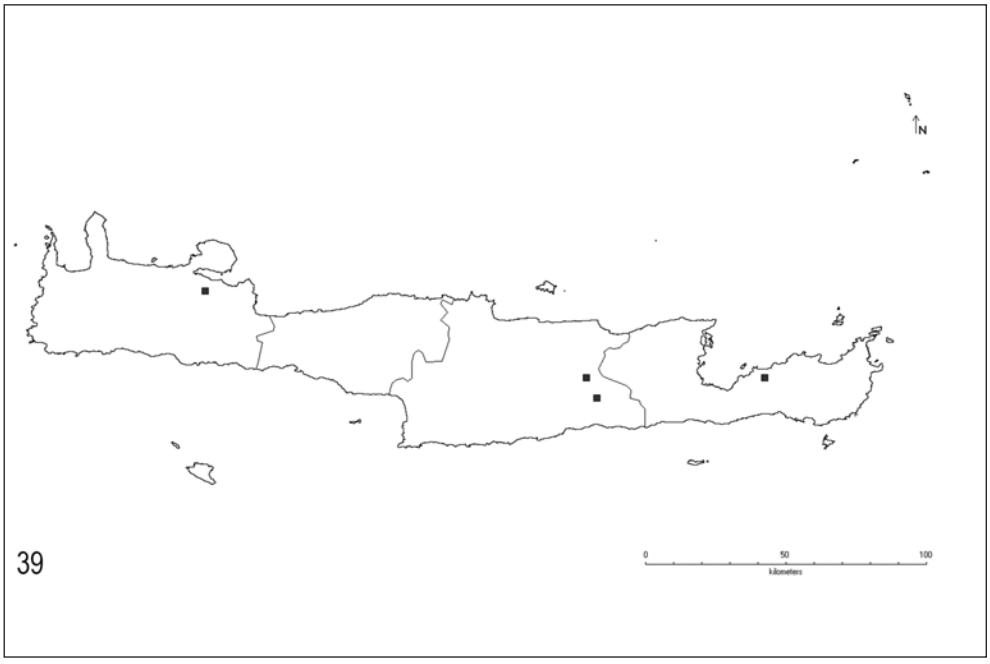


Fig. 39. Distribution of *Camponotus oertzeni* FOREL on Crete.

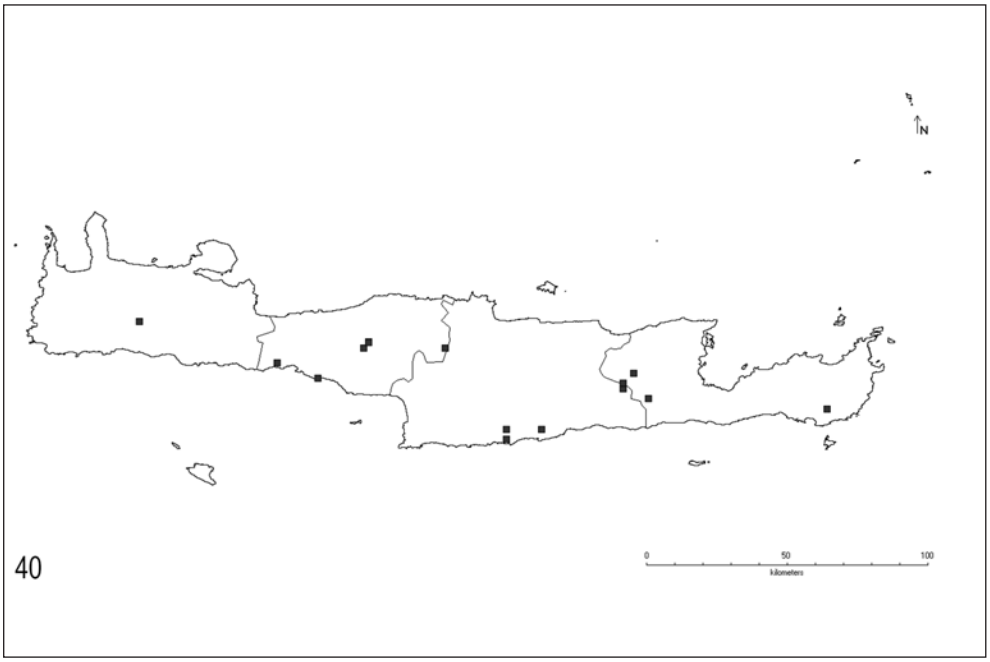


Fig. 40. Distribution of *Camponotus piceus* (LEACH) on Crete.

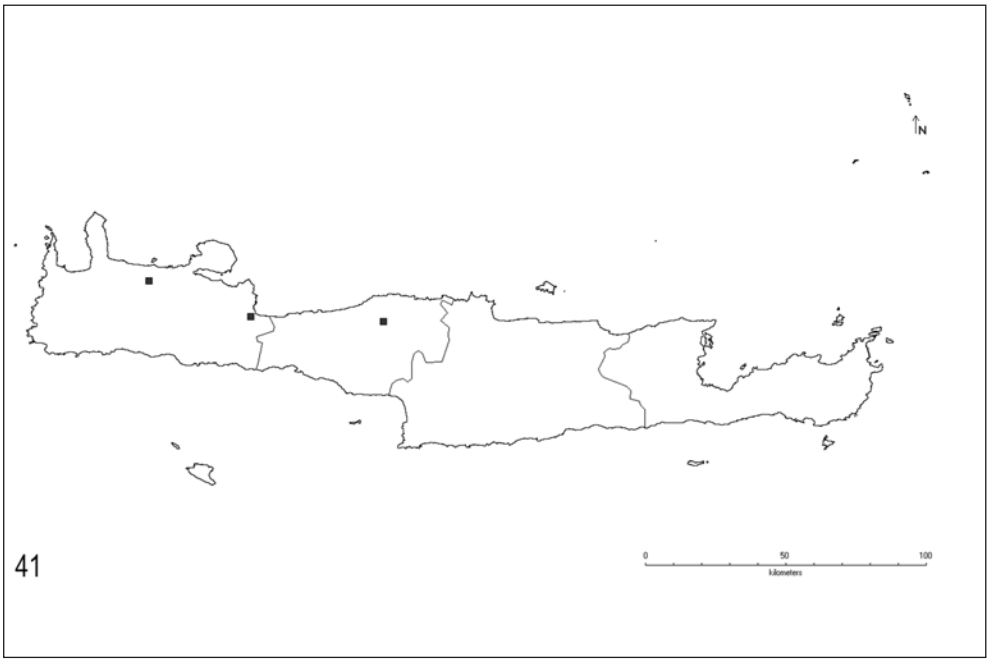


Fig. 41. Distribution of *Camponotus rebeccae* FOREL on Crete.

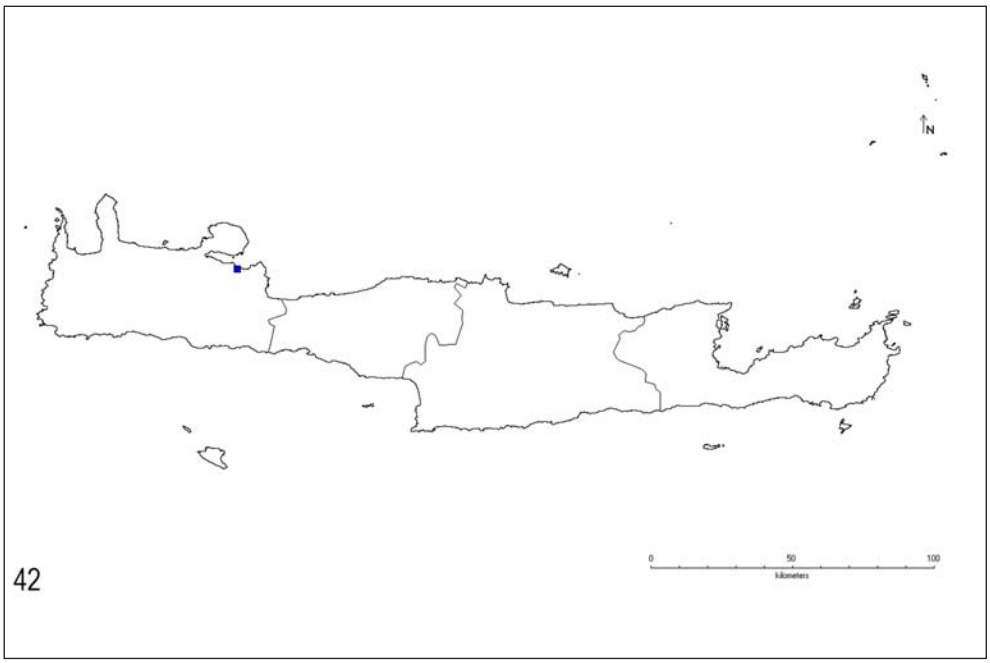


Fig. 42. Distribution of *Aphaenogaster balcanicoides* Boer on Crete.

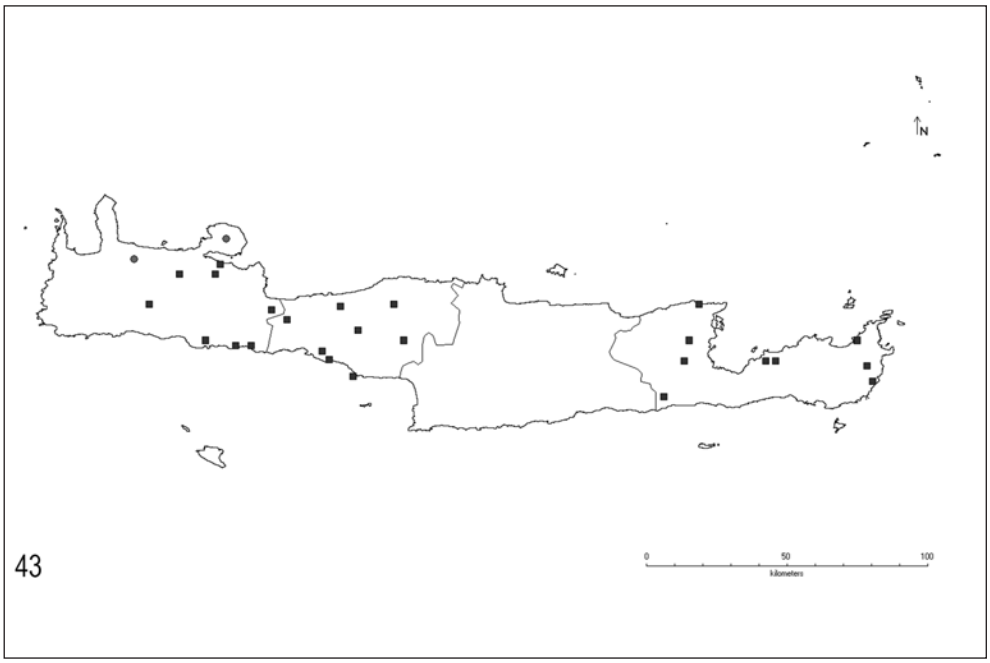


Fig. 43. Distribution of *Aphaenogaster cecconii* Emery on Crete.

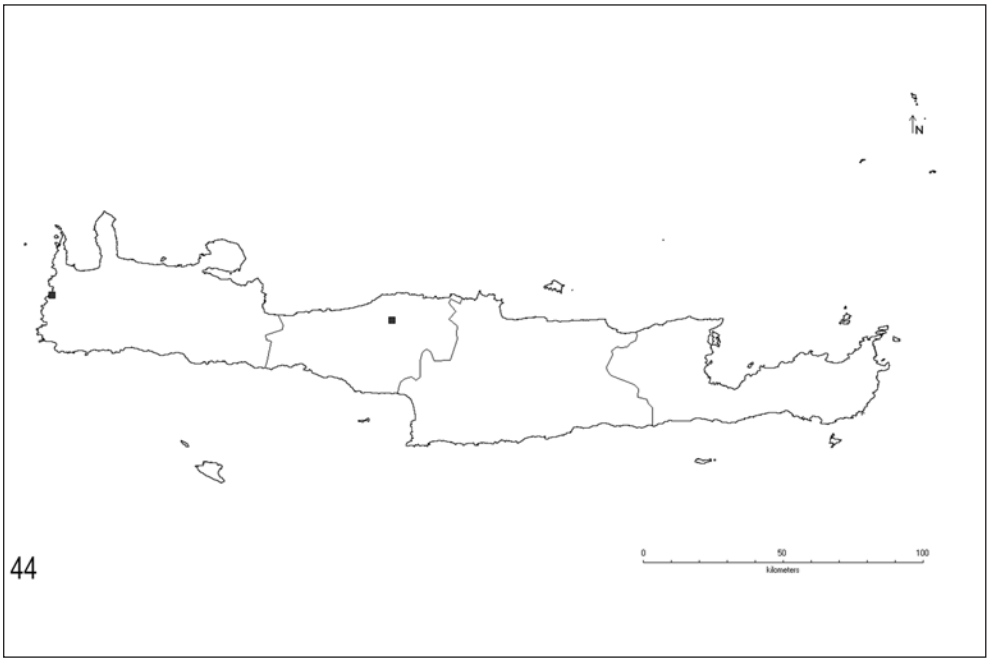


Fig. 44. Distribution of *Aphaenogaster* cf. *subterranea* sp. 1. on Crete.

Fig. 45. Distribution of *Aphaenogaster rugosoferruginea* FOREL on Crete.

Fig. 46. Distribution of *Aphaenogaster simonellii* EMERY on Crete.

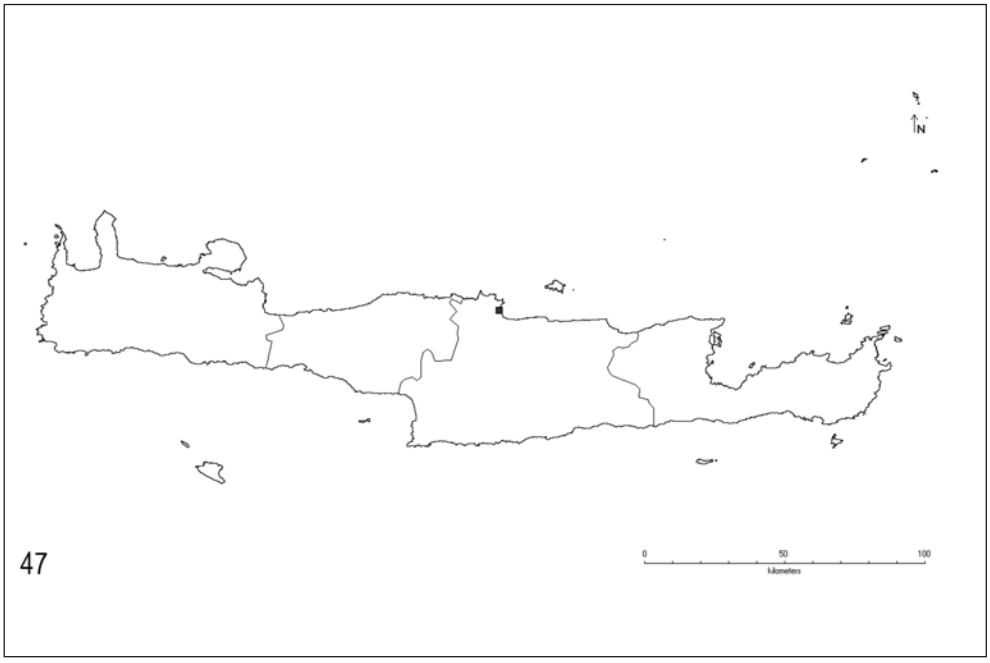


Fig. 47. Distribution of *Aphaenogaster splendida* (ROGER) on Crete.

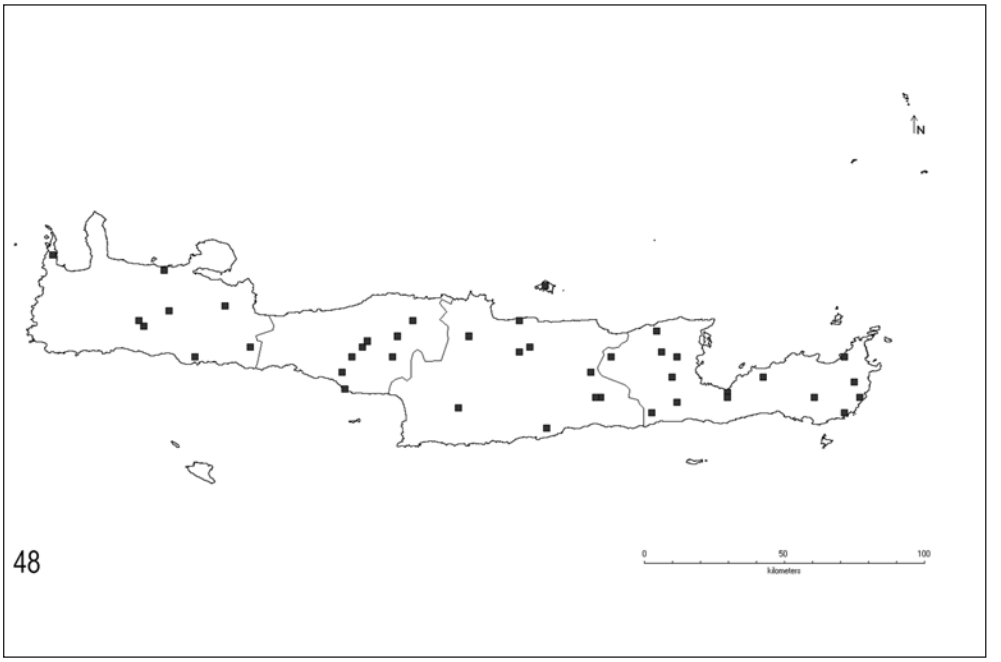


Fig. 48. Distribution of *Aphaenogaster subterraneoides* EMERY on Crete.

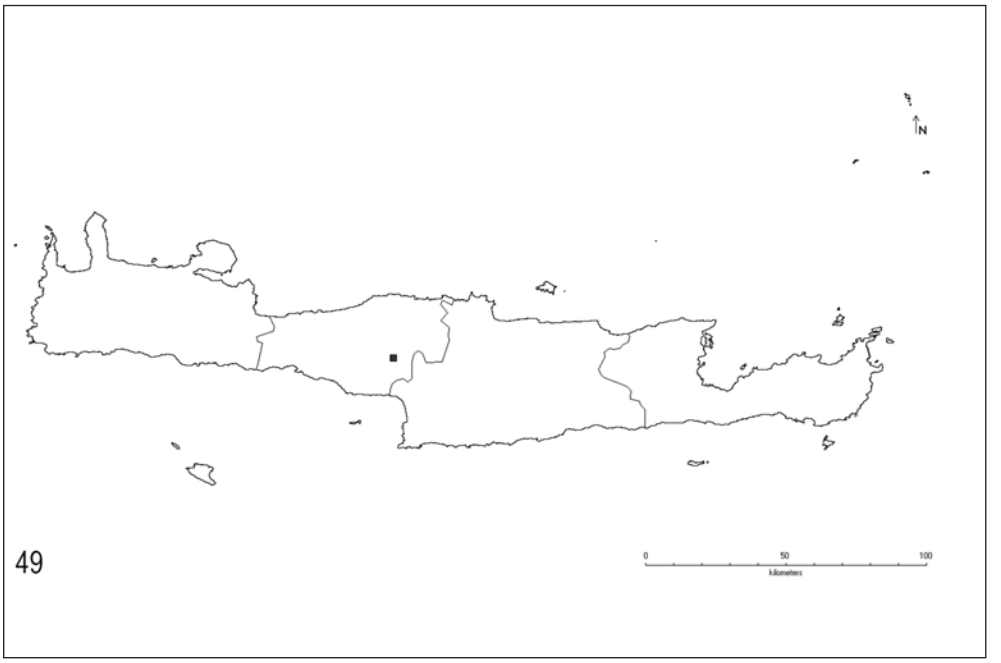


Fig. 49. Distribution of *Oxyopomyrmex krueperi* FOREL on Crete.

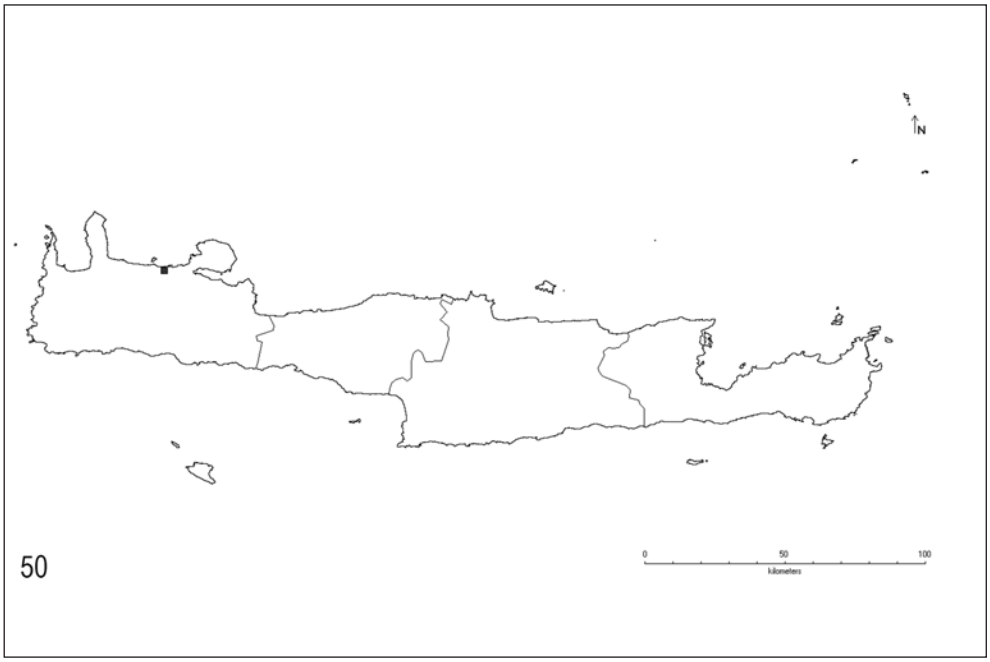


Fig. 50. Distribution of *Oxyopomyrmex laevibus* SALATA & BOROWIEC on Crete.

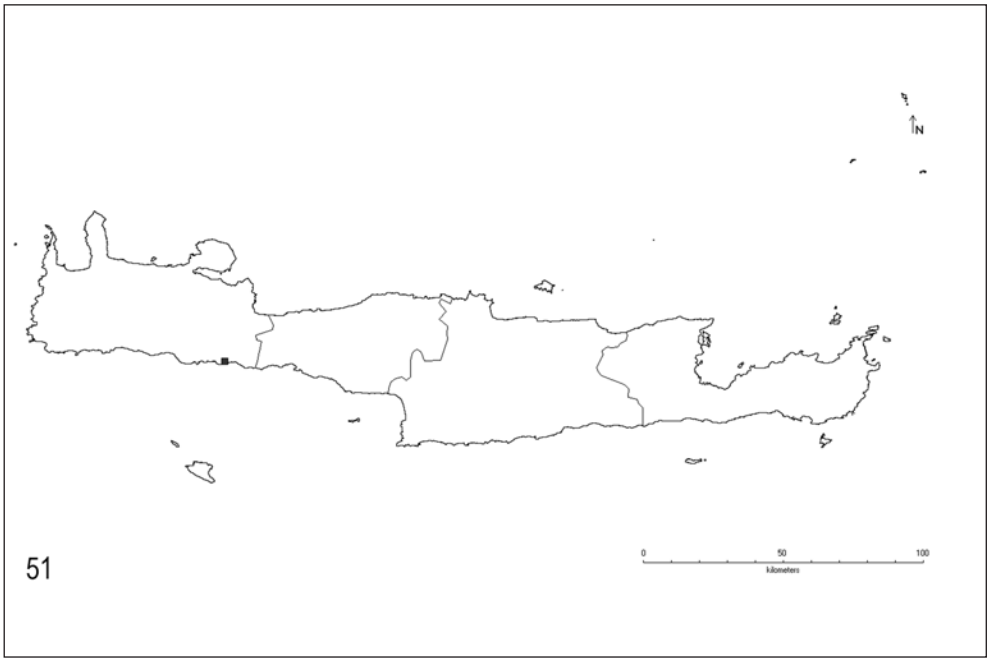


Fig. 51. Distribution of *Messor concolor* SANTSCHI on Crete.

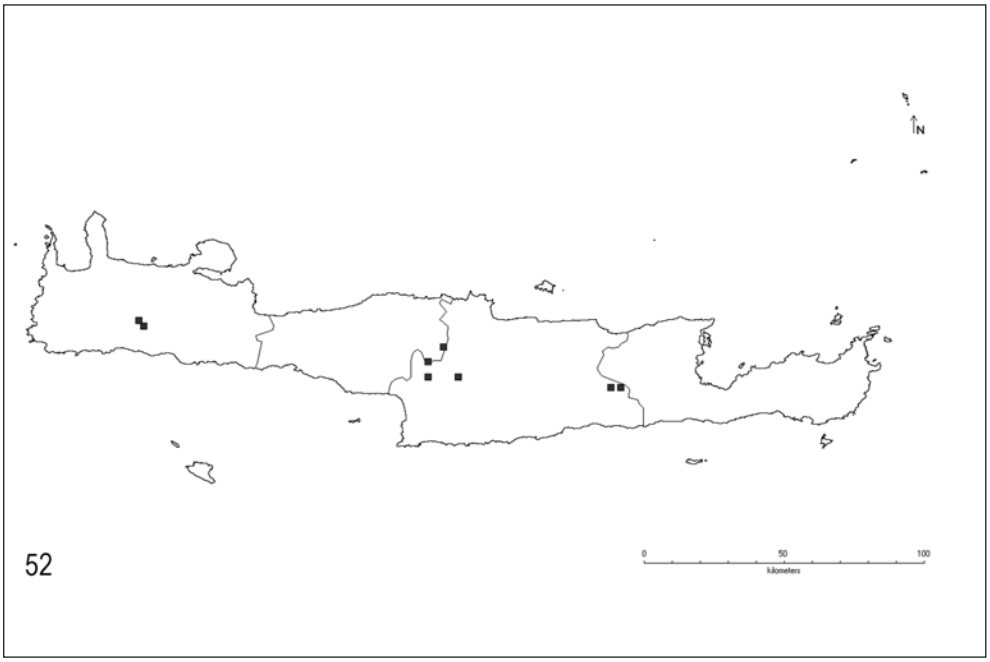


Fig. 52. Distribution of *Messor creticus* SALATA & BOROWIEC on Crete.

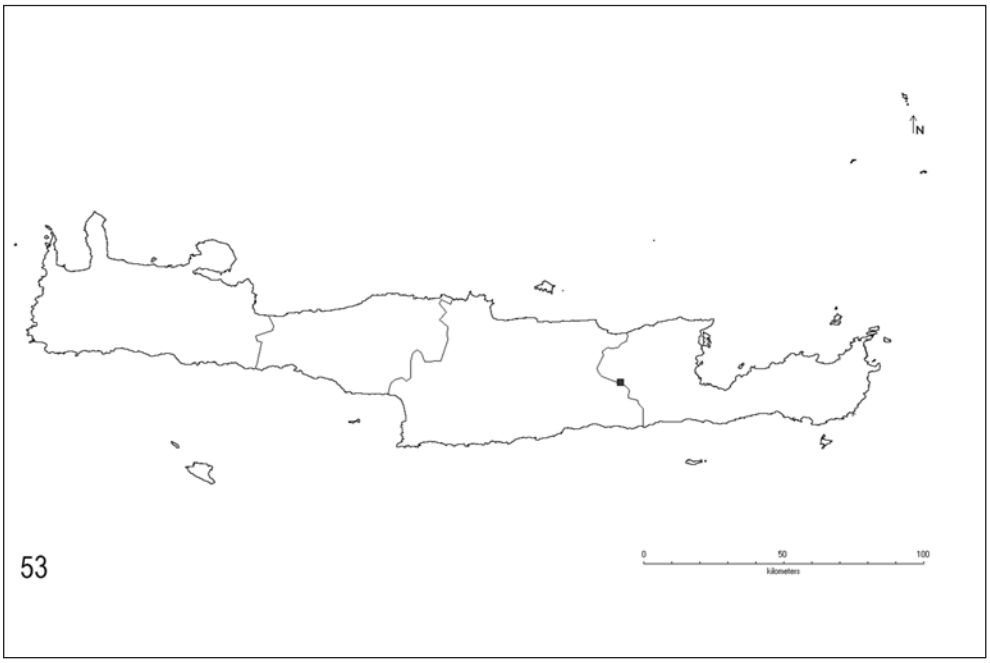


Fig. 53. Distribution of *Messor hellenius* AGOSTI & COLLINGWOOD on Crete.

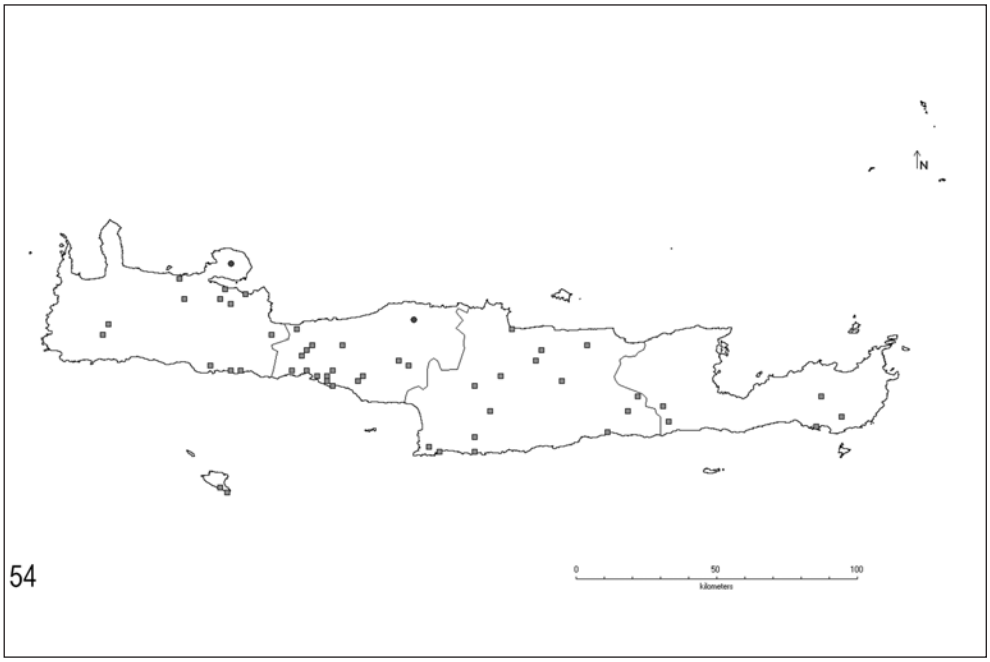


Fig. 54. Distribution of *Messor ibericus* SANTSCHI on Crete.

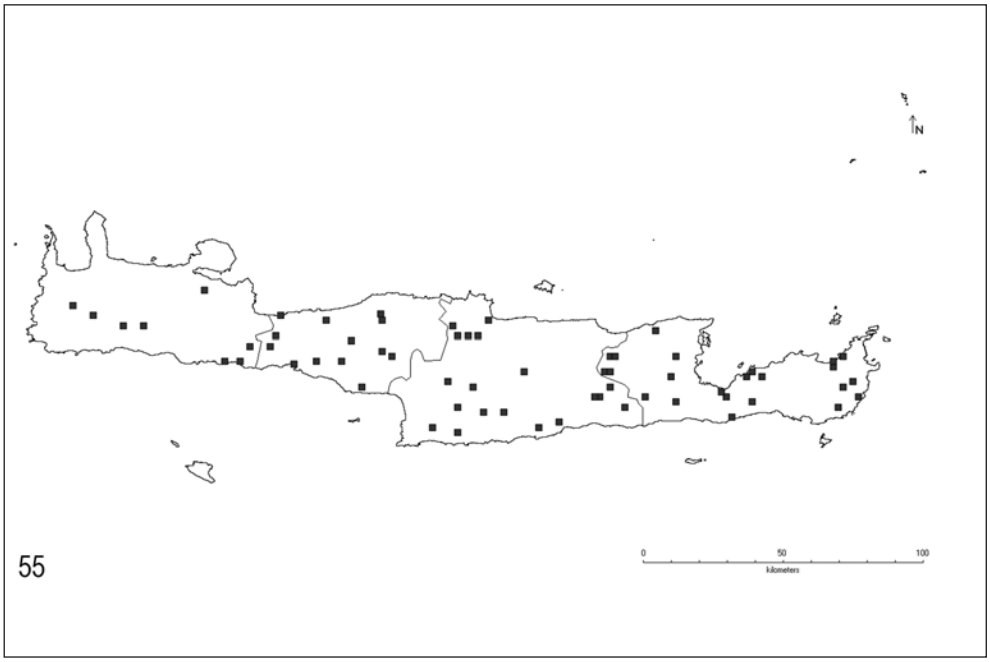


Fig. 55. Distribution of *Messor mcarthuri* STEINER *et al.* on Crete.

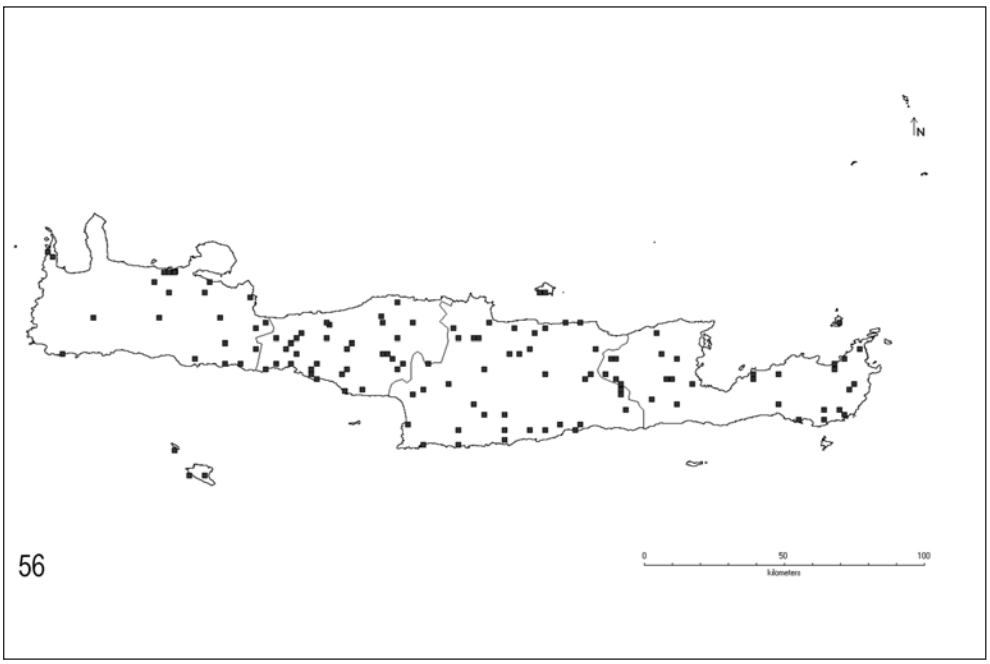


Fig. 56. Distribution of *Messor wasmanni* KRAUSSE on Crete.

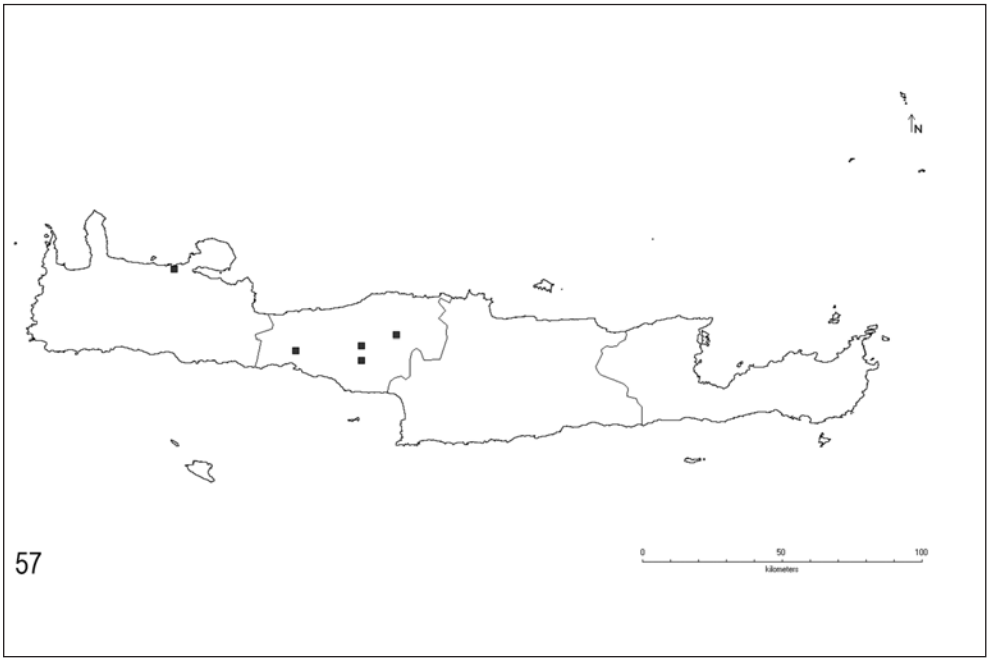


Fig. 57. Distribution of *Stenamma debile* (FOERSTER) on Crete.

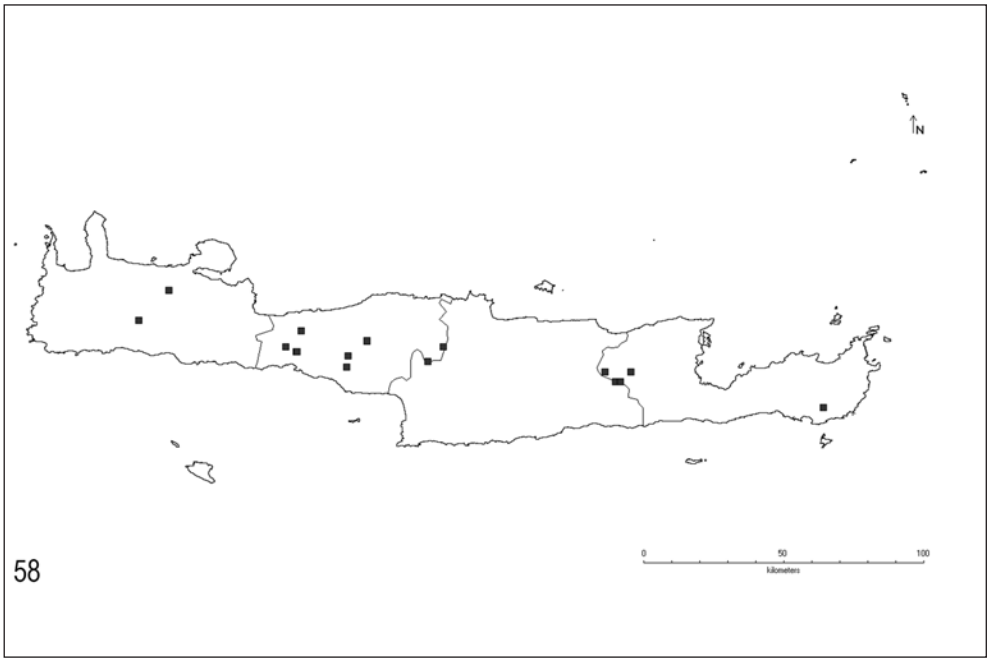


Fig. 58. Distribution of *Solenopsis crivellarii* MENOZZI on Crete.

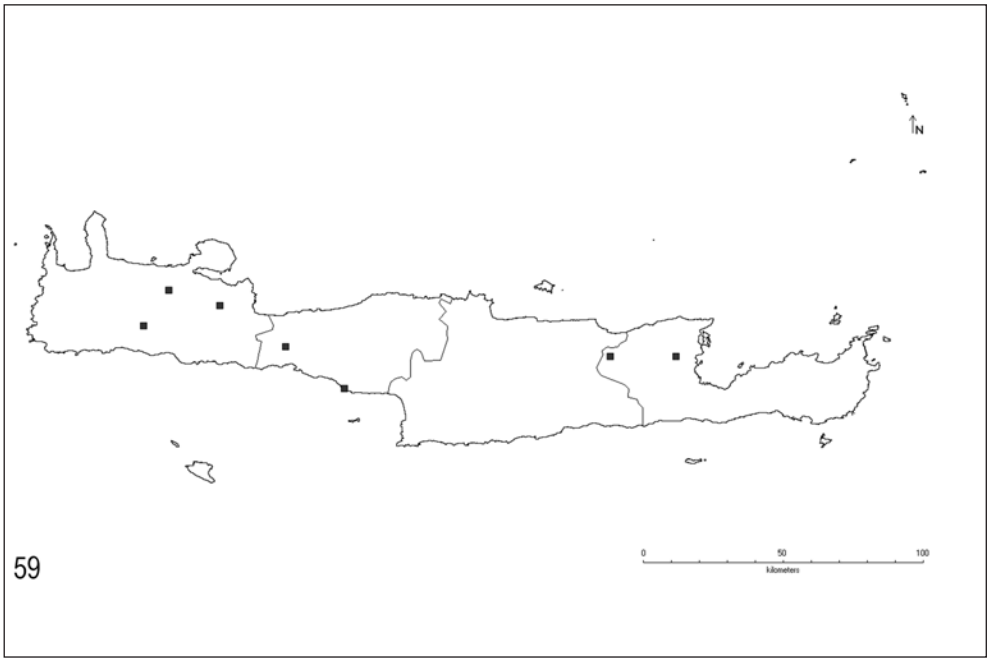


Fig. 59. Distribution of *Solenopsis orbula* EMERY on Crete.

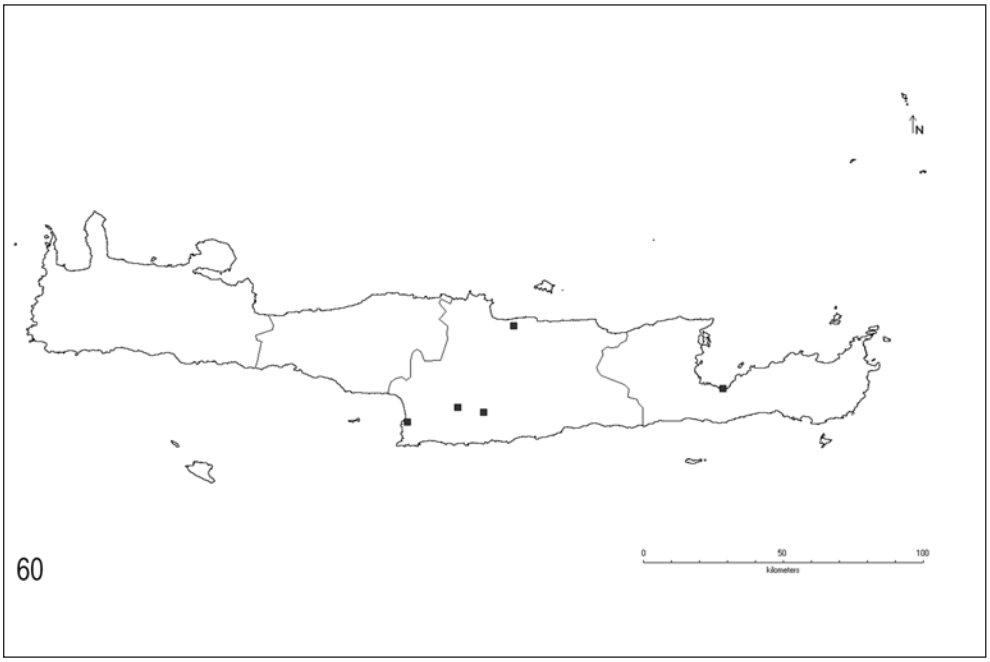


Fig. 60. Distribution of *Monomorium bicolor* EMERY on Crete.

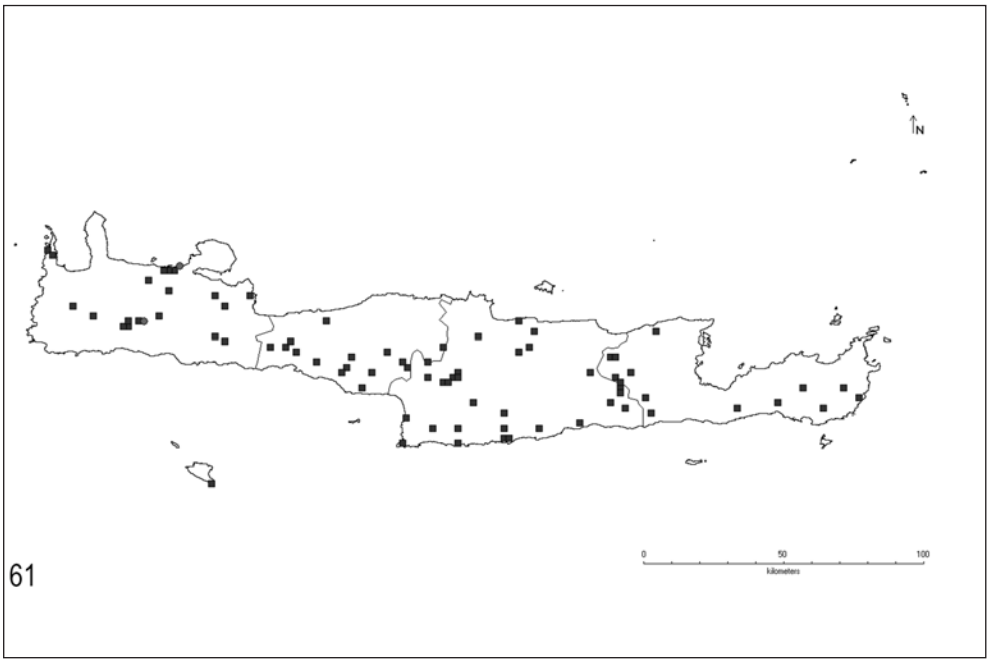


Fig. 61. Distribution of *Monomorium creticum* EMERY on Crete.

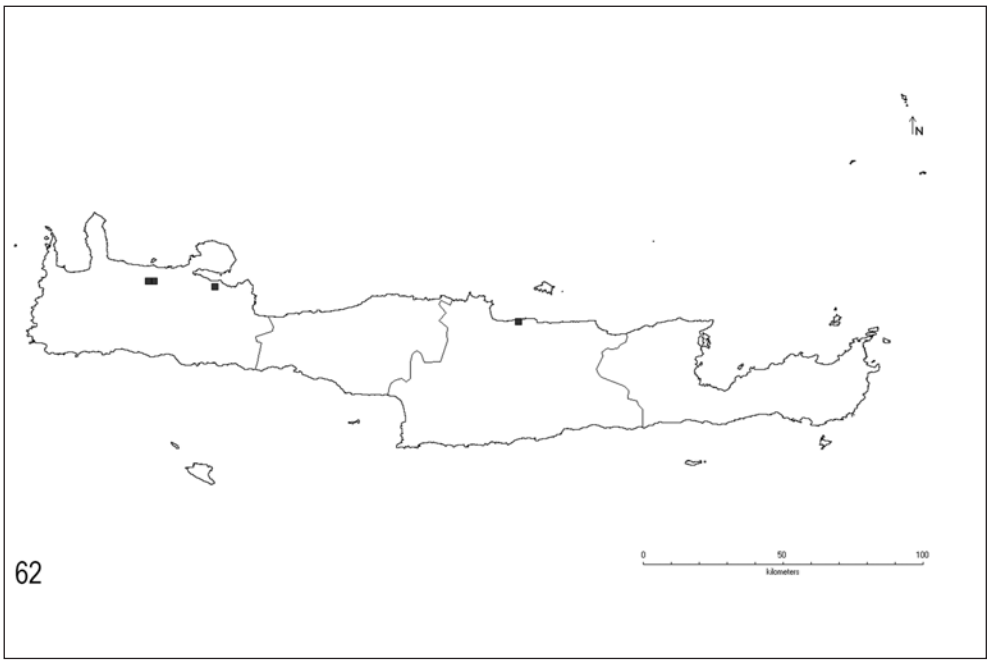


Fig. 62. Distribution of *Monomorium monomorium* BOLTON on Crete.

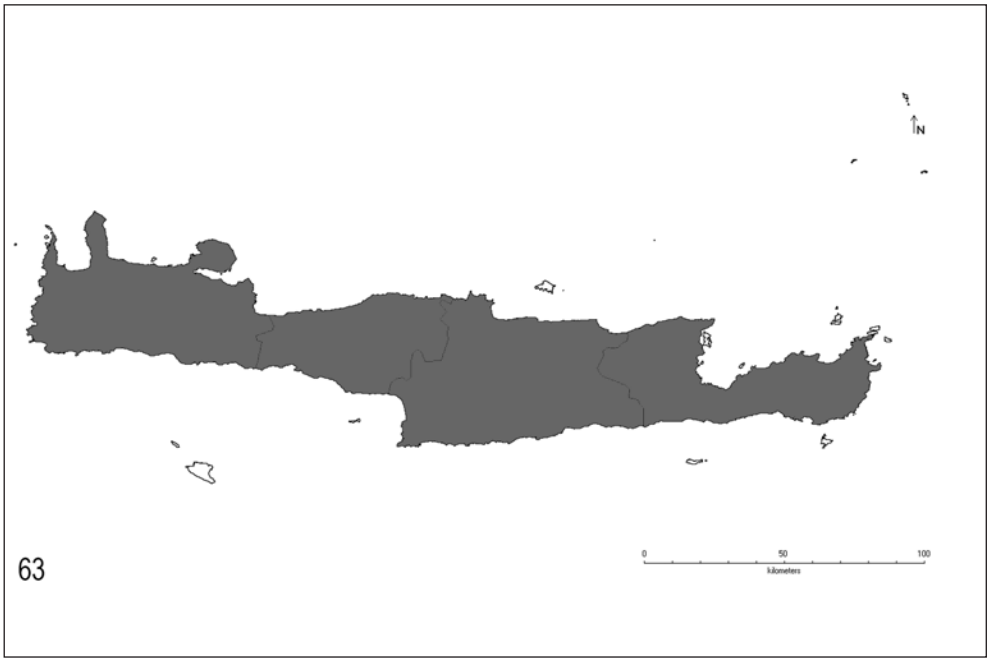


Fig. 63. Distribution of *Monomorium pharaonis* (LINNAEUS) on Crete.

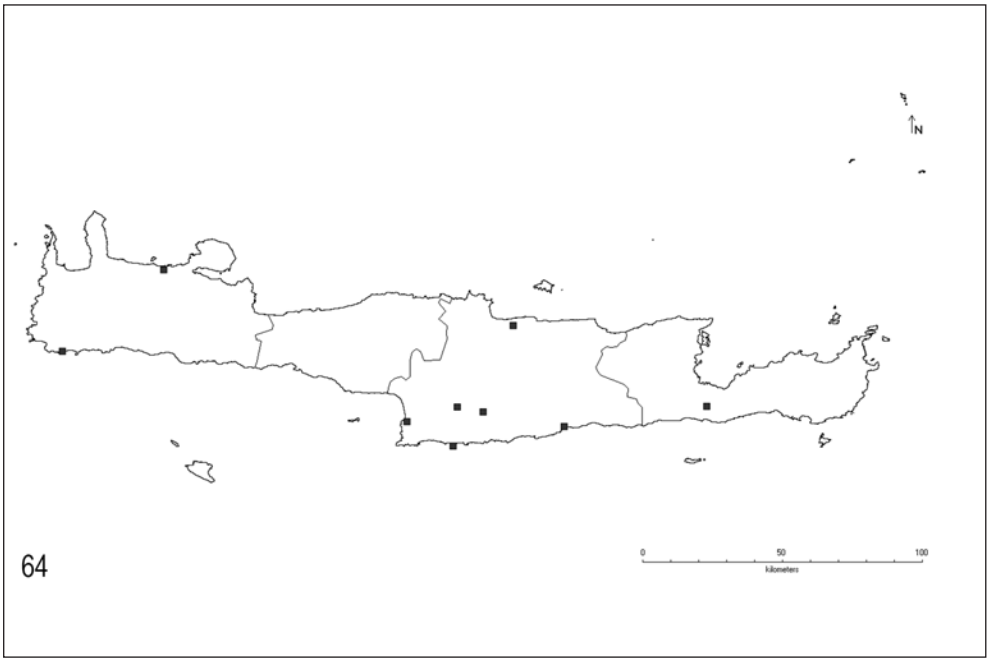


Fig. 64. Distribution of *Monomorium subopacum* (F. Smith) on Crete.

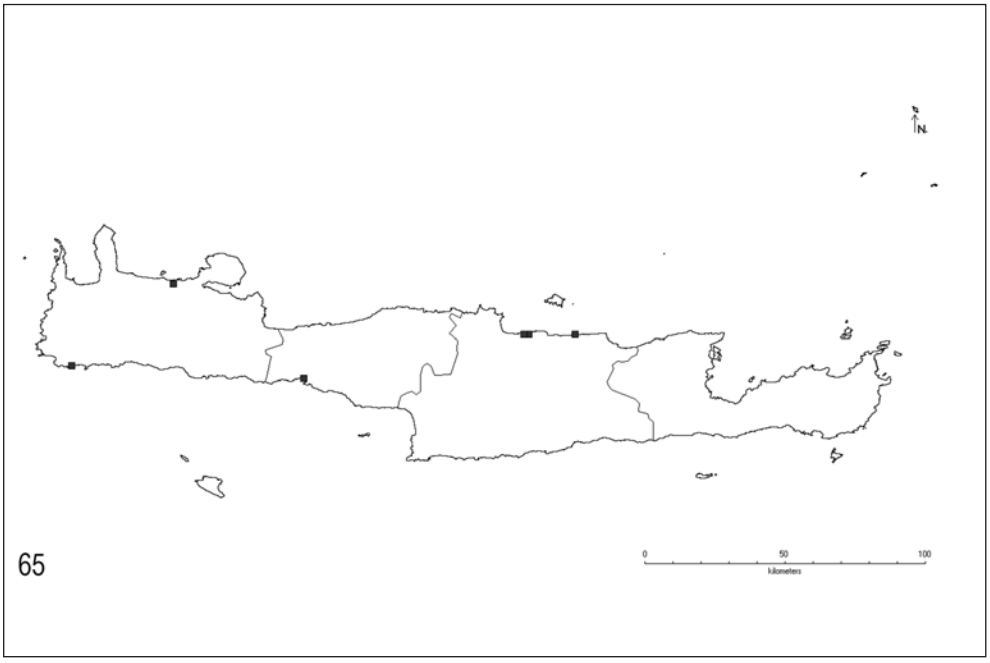


Fig. 65. Distribution of *Pheidole indica* Mayr on Crete.

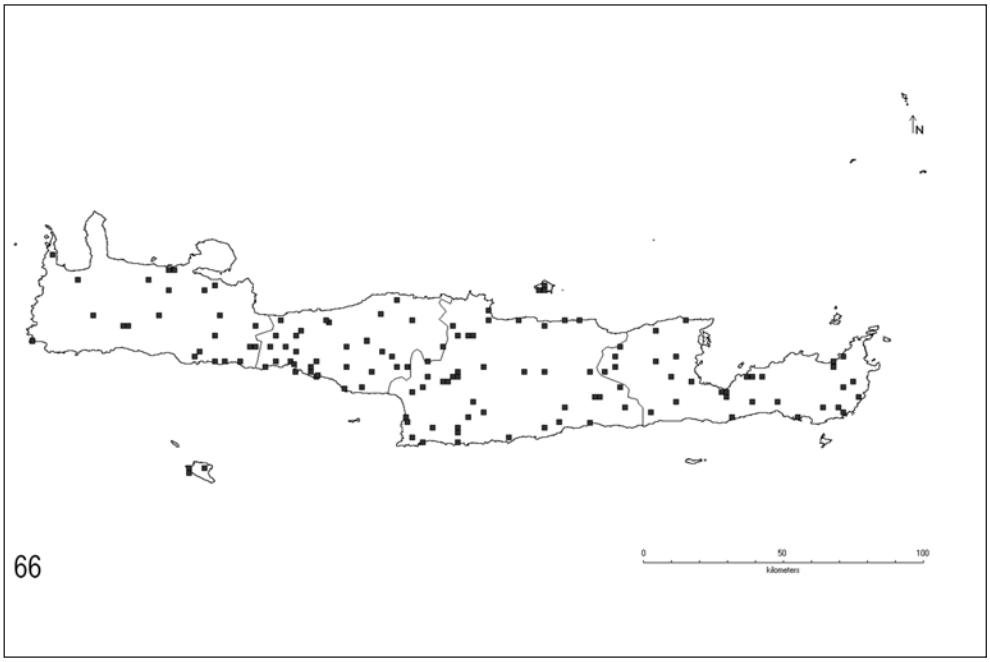


Fig. 66. Distribution of *Pheidole pallidula* (NYLANDER) on Crete.

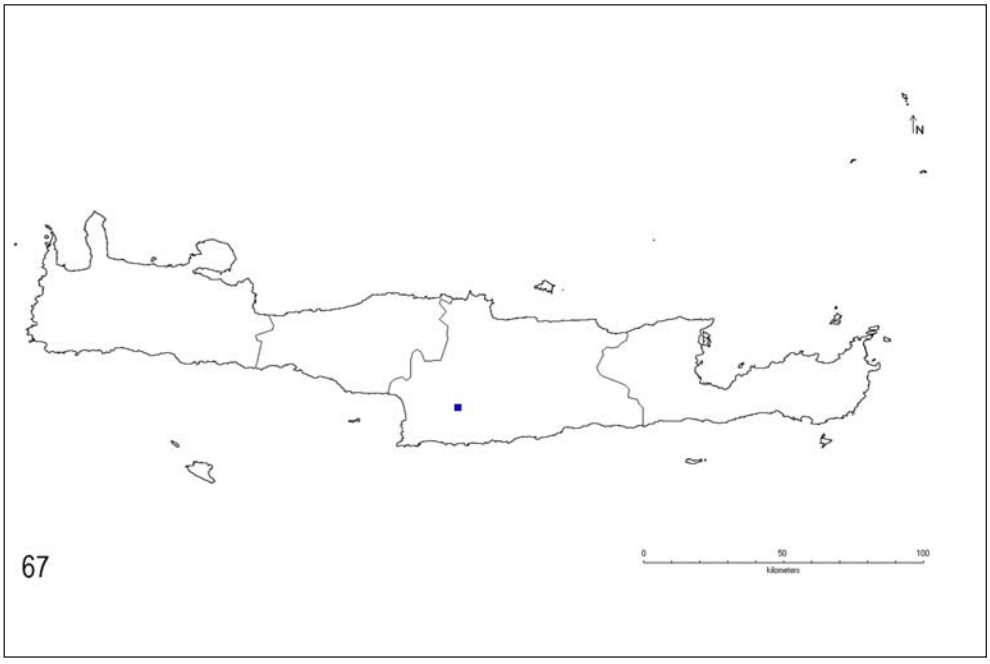


Fig. 67. Distribution of *Pheidole* sp. 1. on Crete.

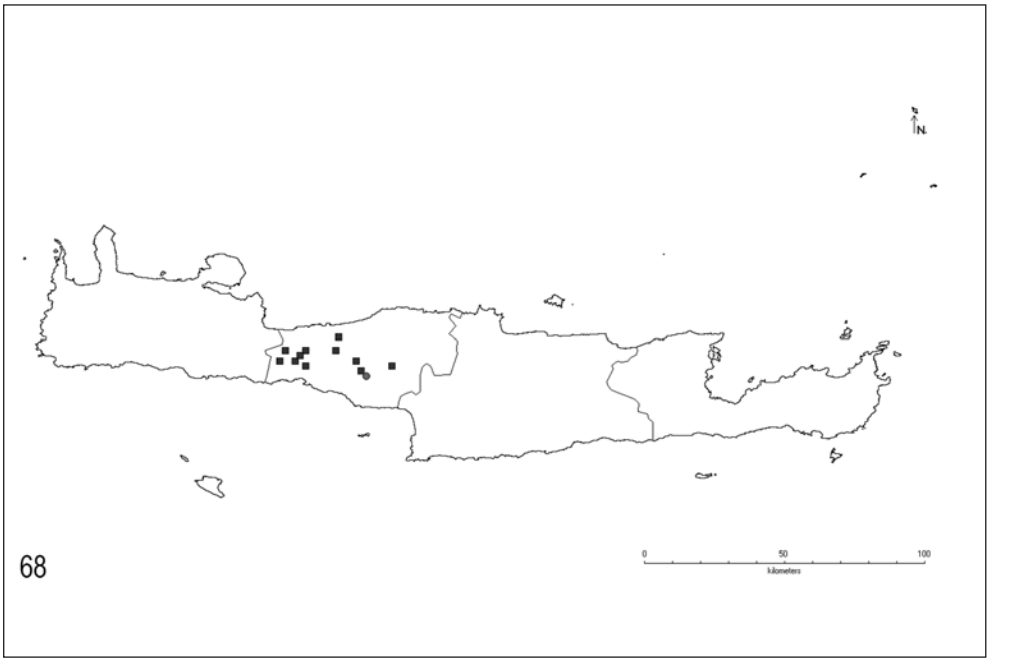


Fig. 68. Distribution of *Temnothorax ariadnae* Csősz, Heinze & Mikó on Crete.

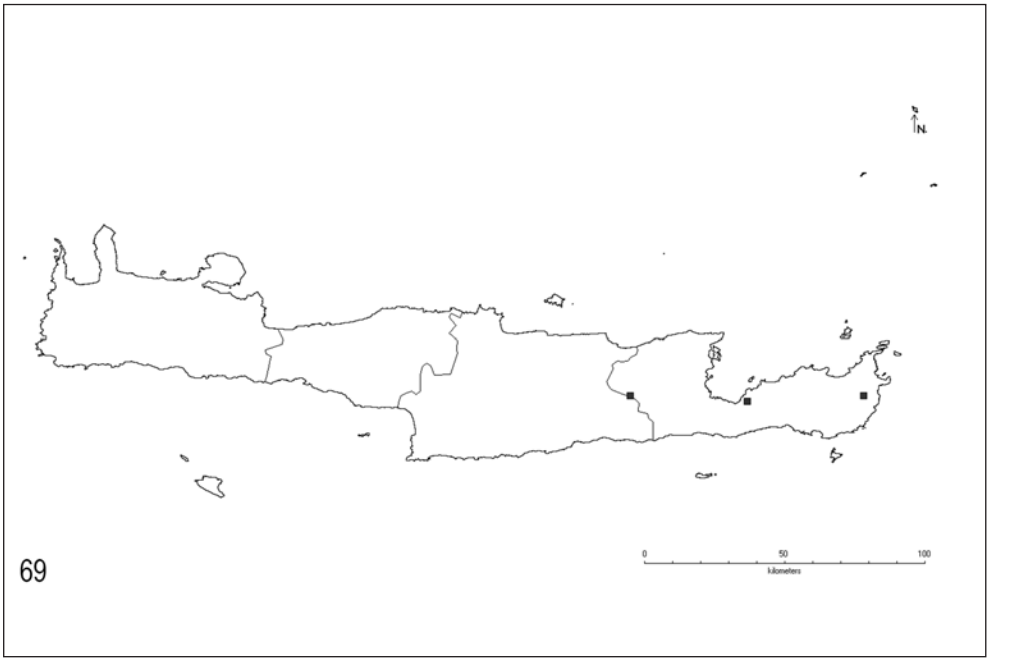


Fig. 69. Distribution of *Temnothorax crassistriatus* Salata, Borowiec & Trichas on Crete.

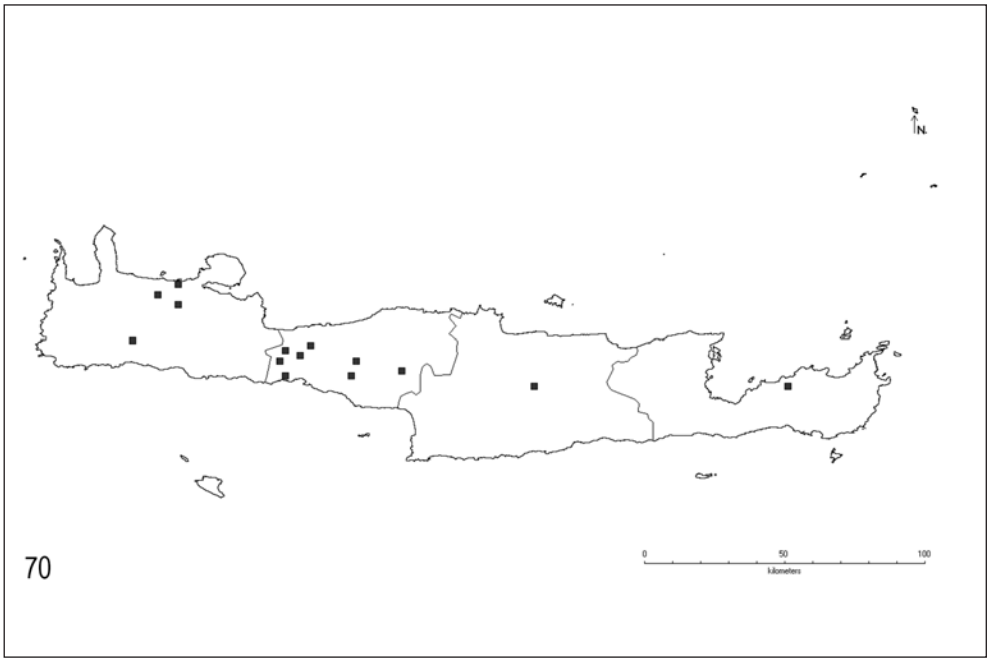


Fig. 70. Distribution of *Temnothorax daidalosi* SALATA, BOROWIEC & TRICHAS on Crete.

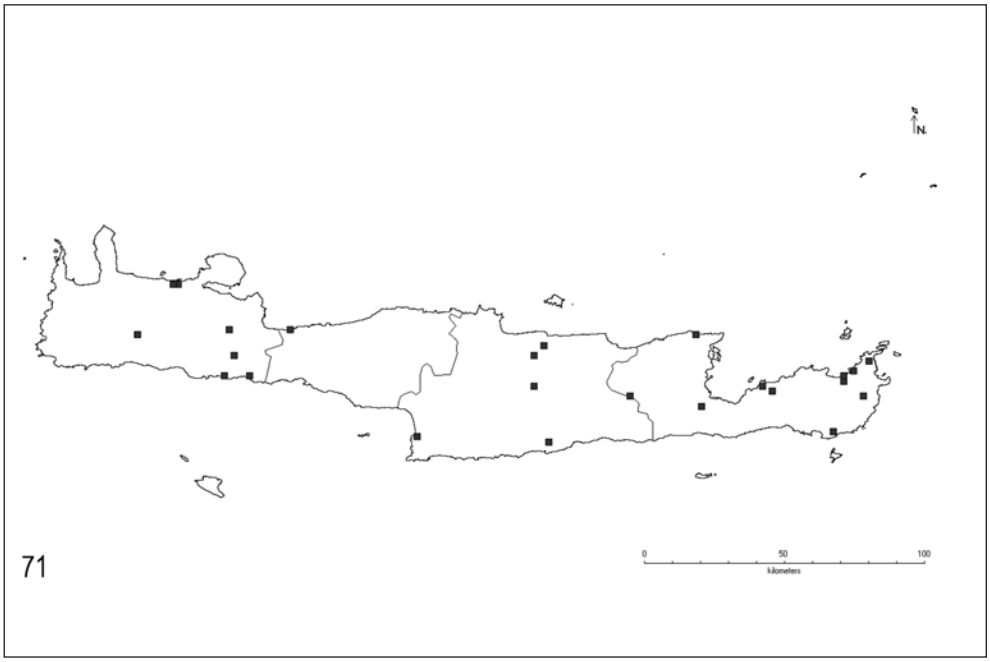


Fig. 71. Distribution of *Temnothorax exilis* (EMERY) on Crete.

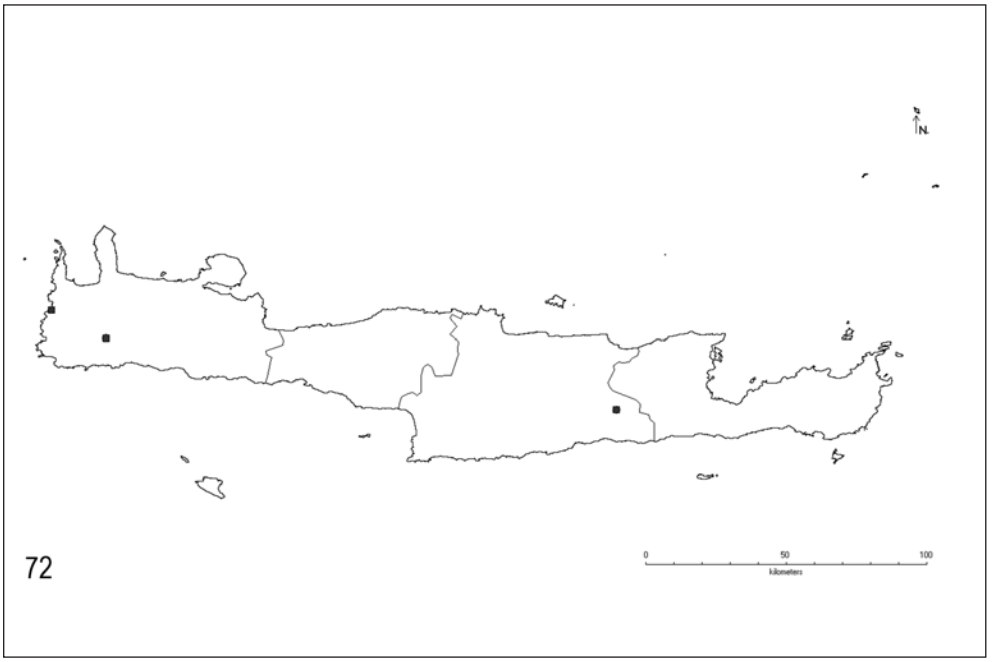


Fig. 72. Distribution of *Temnothorax helenae* Csősz, Heinze & Mikó on Crete.

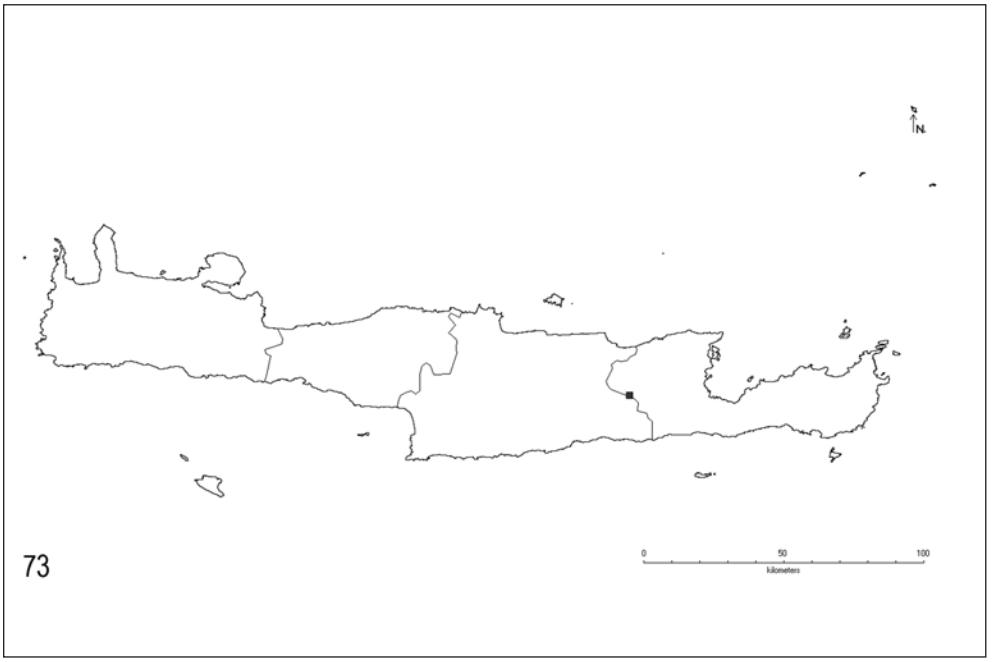


Fig. 73. Distribution of *Temnothorax ikarosi* Salata, Borowiec & Trichas on Crete.

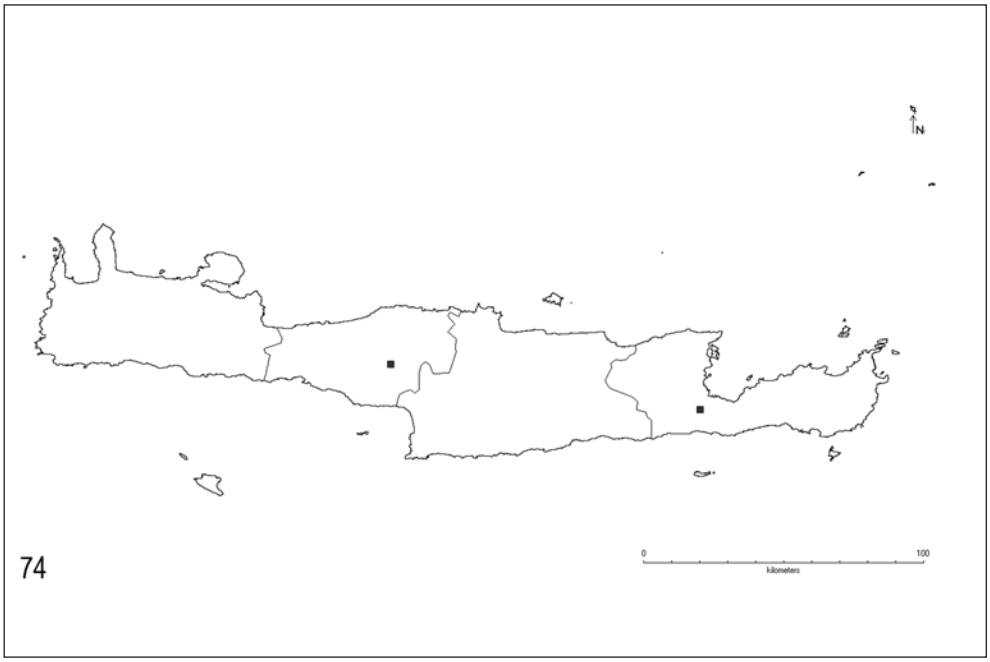


Fig. 74. Distribution of *Temnothorax incompletus* Salata, Borowiec & Trichas on Crete.

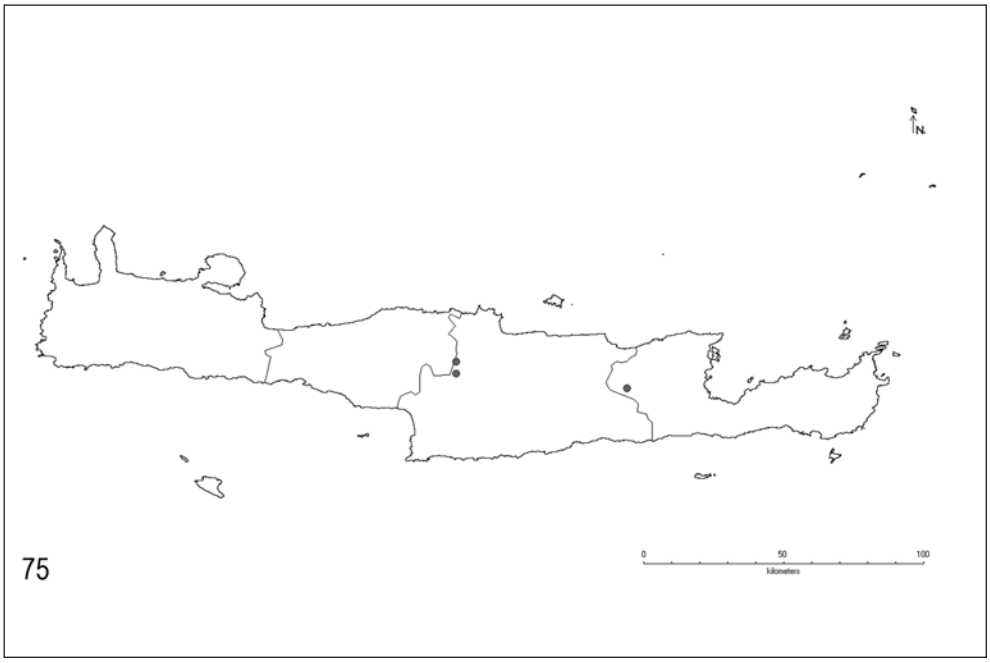


Fig. 75. Distribution of *Temnothorax lucidus* Csősz, Heinze & Mikó on Crete.

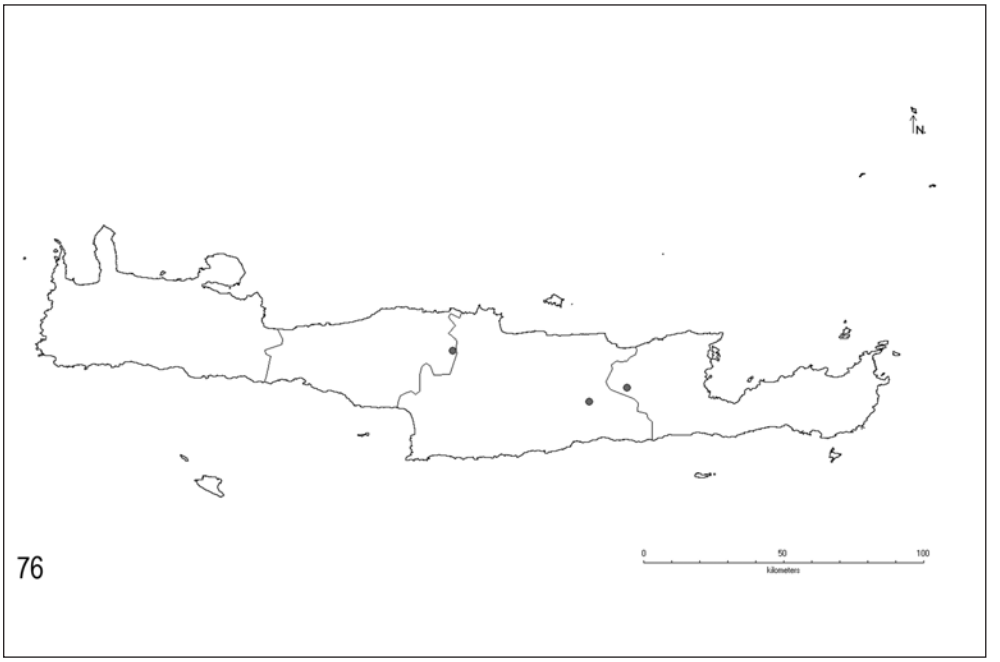


Fig. 76. Distribution of *Temnothorax kraussei* (Emery) on Crete.

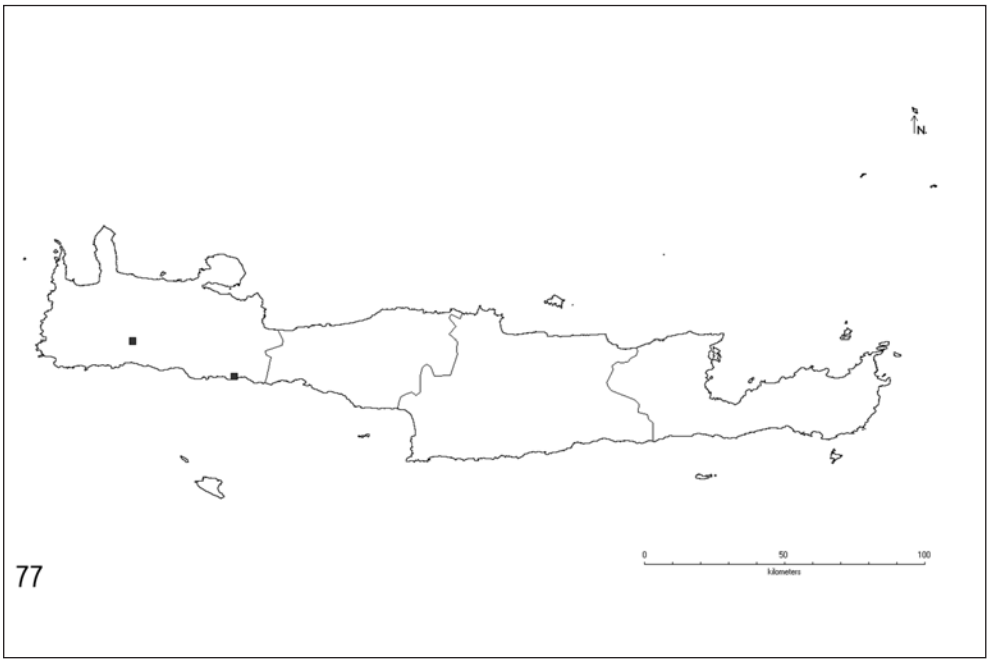


Fig. 77. Distribution of *Temnothorax minotaurosi* Salata, Borowiec & Trichas on Crete.

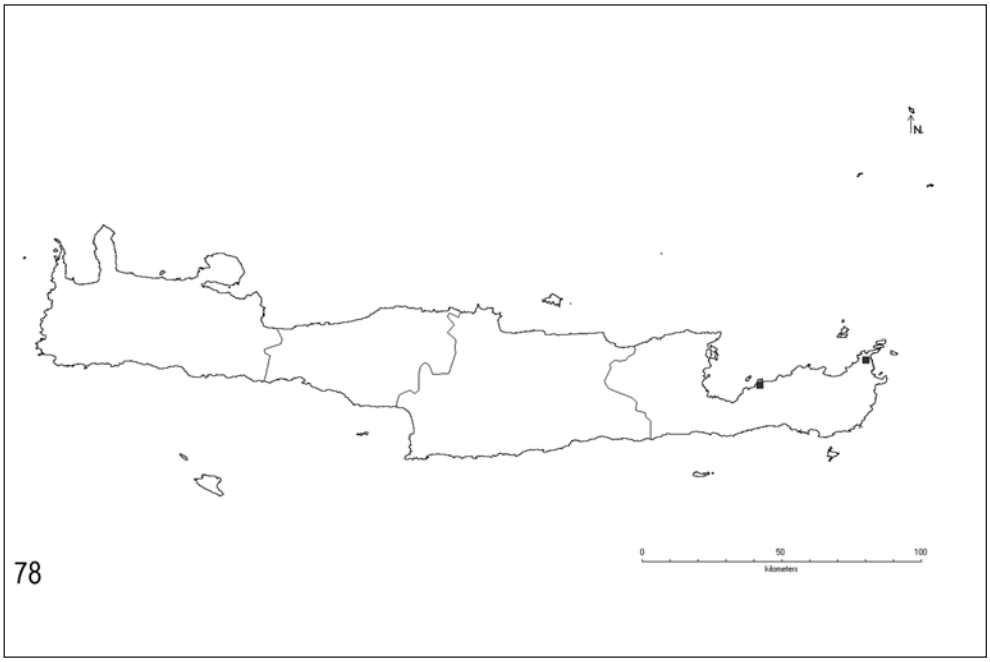


Fig. 78. Distribution of *Temnothorax muellerianus* (FINZI) on Crete.

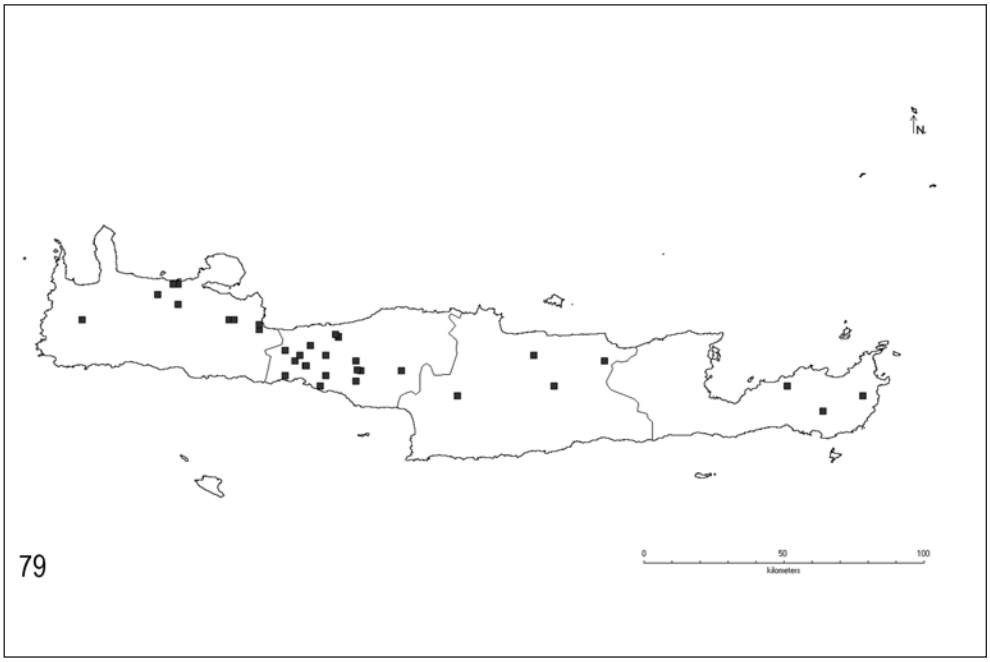


Fig. 79. Distribution of *Temnothorax proteii* SALATA, BOROWIEC & TRICHAS on Crete.

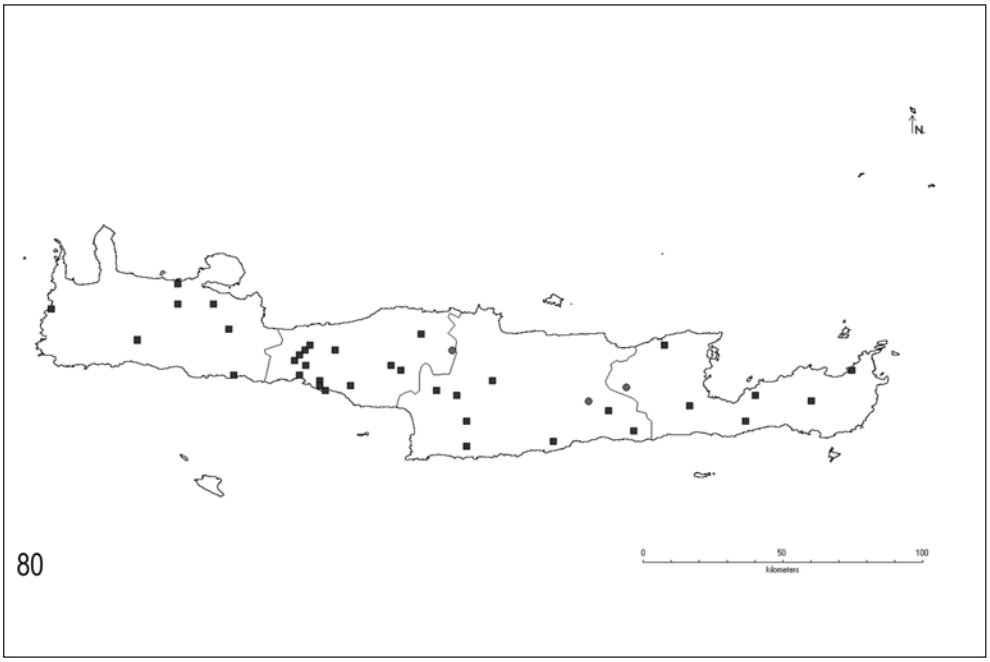


Fig. 80. Distribution of *Temnothorax recedens* (NYLANDER) on Crete.

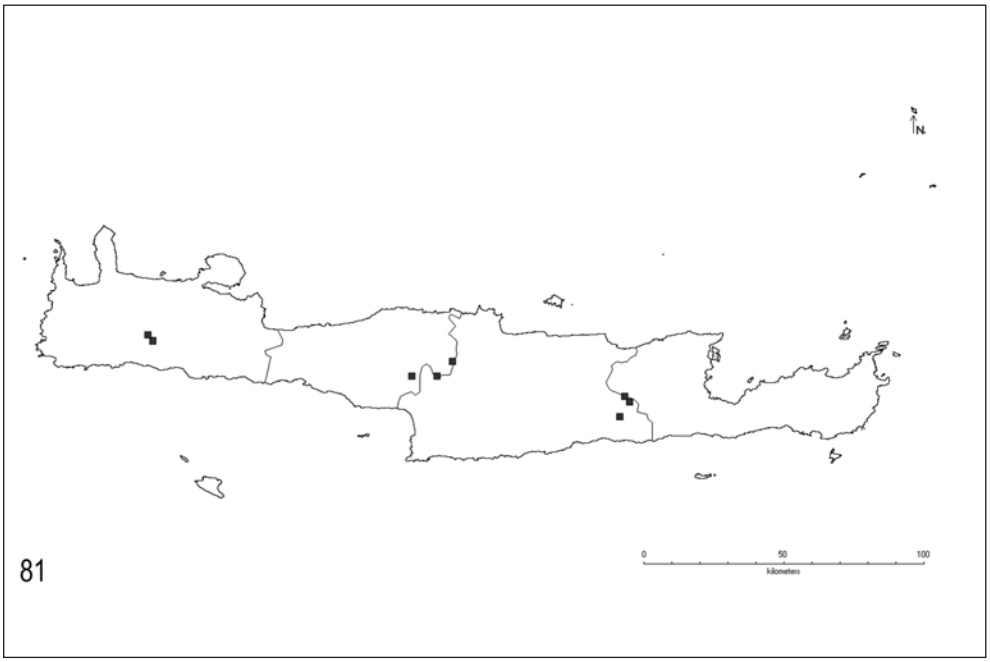


Fig. 81. Distribution of *Temnothorax semiruber* (ANDRÉ) on Crete.

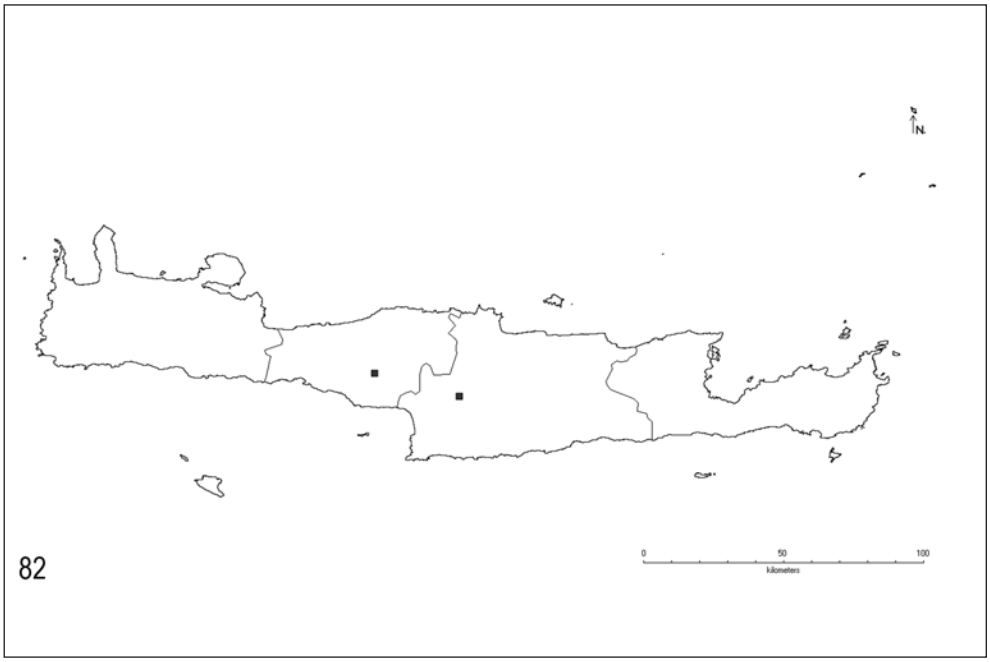


Fig. 82. Distribution of *Temnothorax subtilis* Csősz, Heinze & Mikó on Crete.

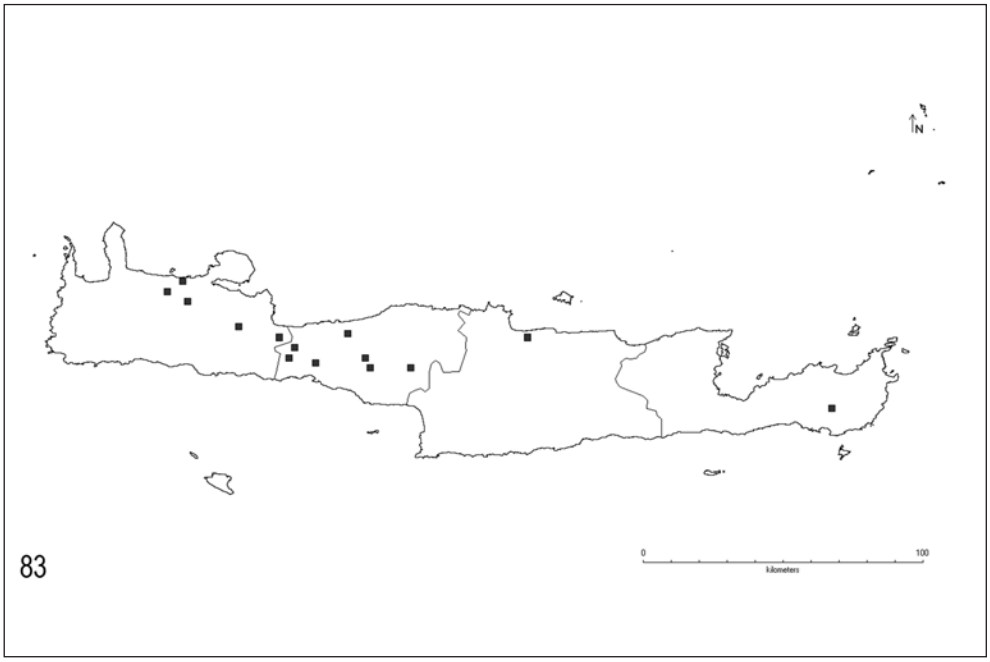


Fig. 83. Distribution of *Temnothorax variabilis* Salata, Borowiec & Trichas on Crete.

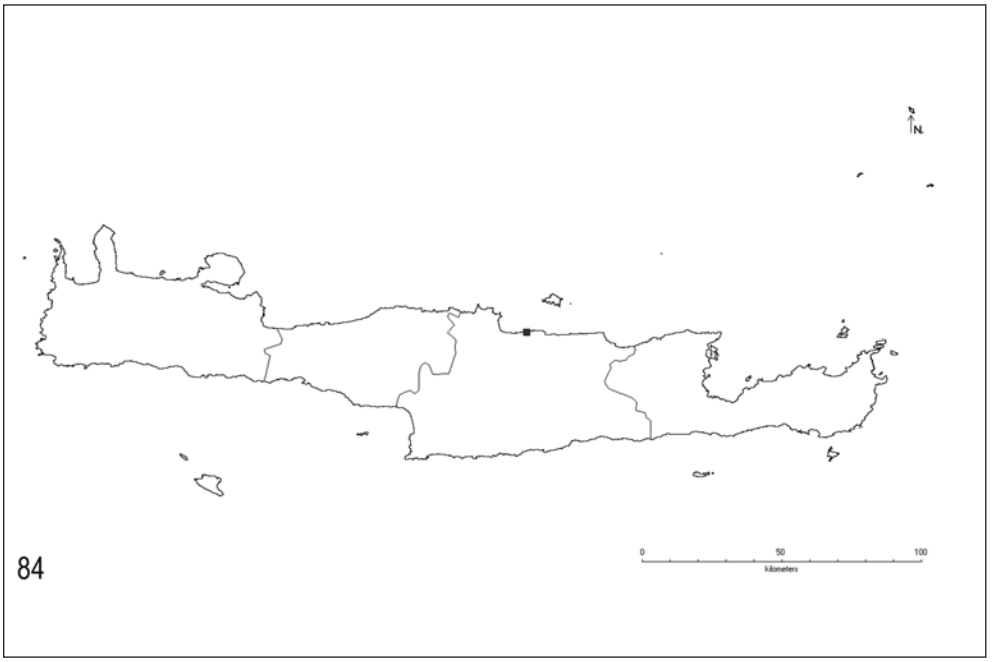


Fig. 84. Distribution of *Tetramorium bicarinatum* (NYLANDER) on Crete.

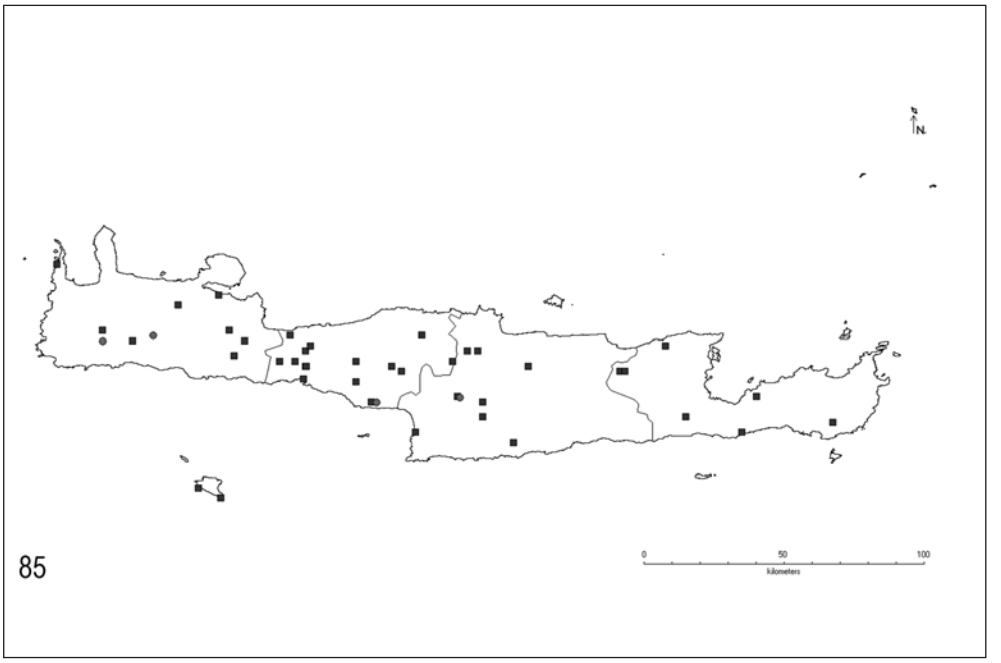


Fig. 85. Distribution of *Tetramorium diomedeum* EMERY on Crete.

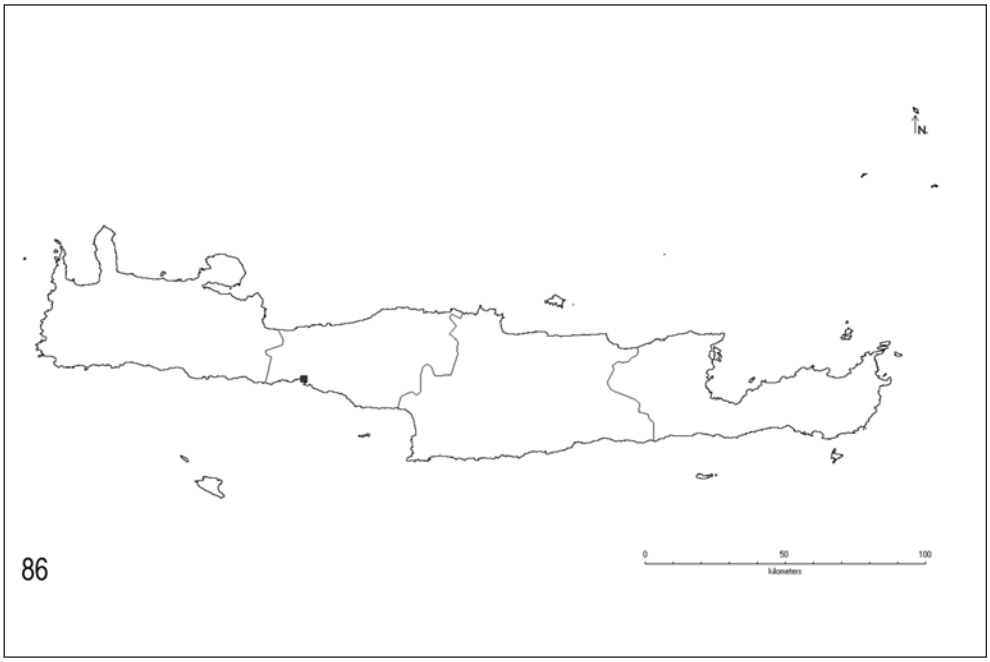


Fig. 86. Distribution of *Tetramorium ferox* RUZSKY on Crete.

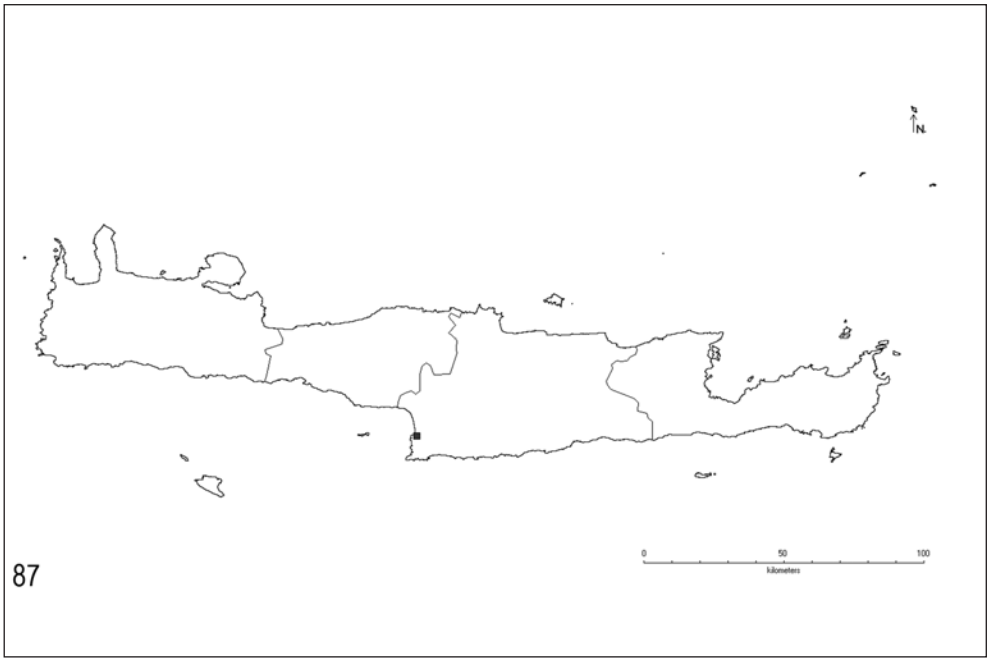


Fig. 87. Distribution of *Tetramorium hippocratis* AGOSTI & COLLINGWOOD on Crete.

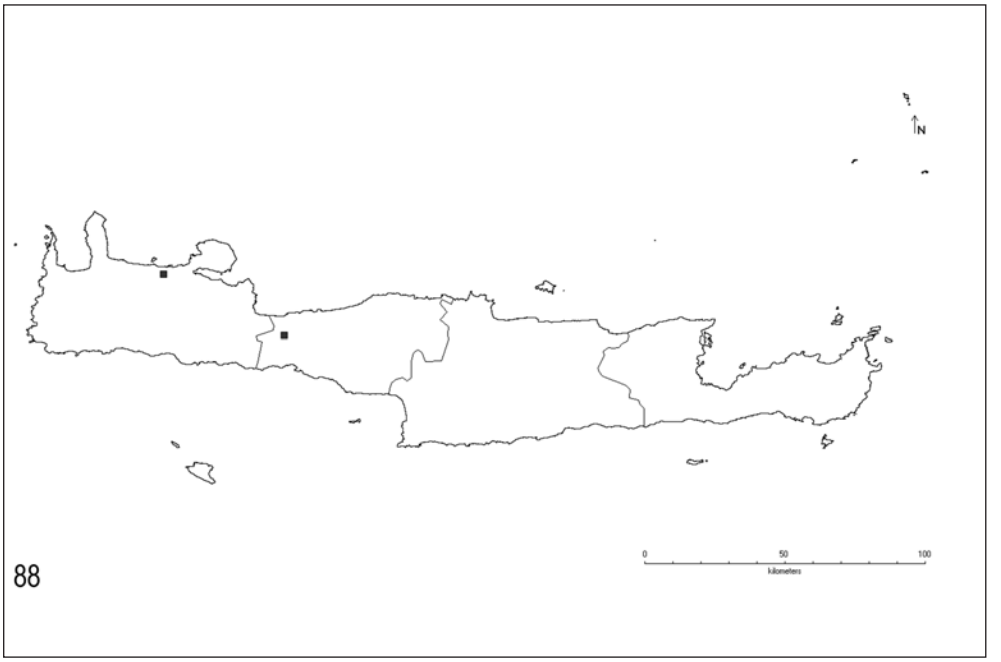


Fig. 88. Distribution of *Tetramorium immigrans* SANTSCHI on Crete.

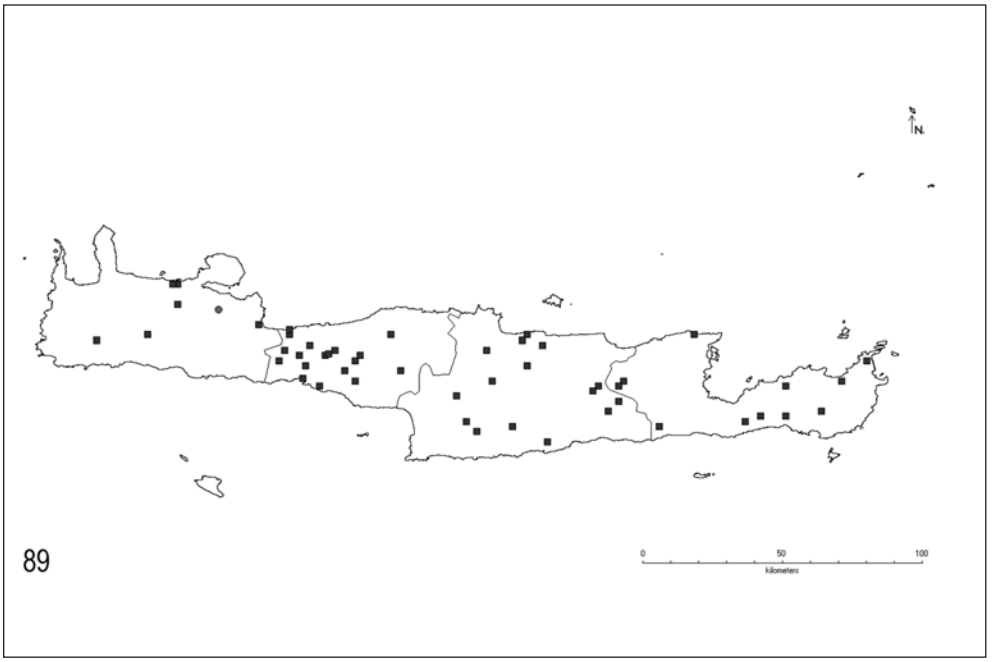


Fig. 89. Distribution of *Tetramorium indocile* SANTSCHI on Crete.

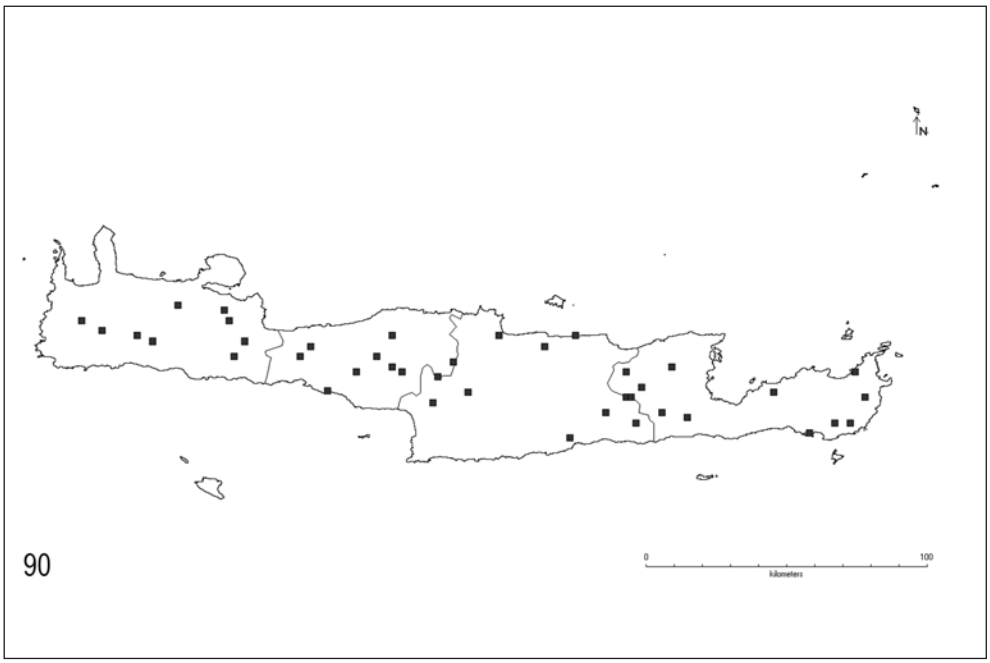


Fig. 90. Distribution of *Tetramorium kephalosi* Borowiec & Salata on Crete.

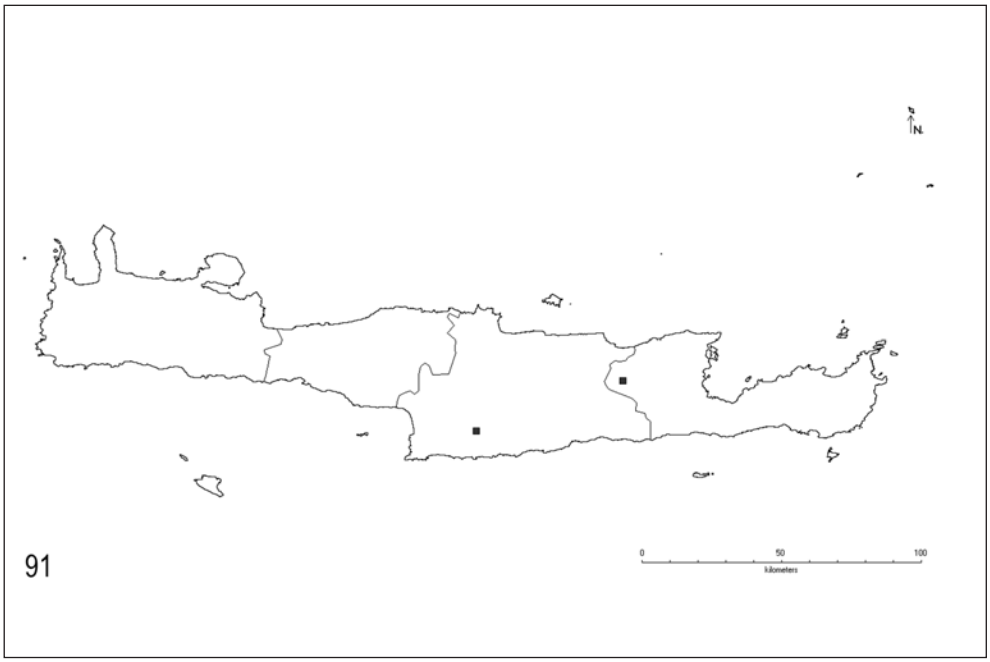


Fig. 91. Distribution of *Tetramorium moravicum* Novák & Sadil on Crete.

Fig. 92. Distribution of *Tetramorium punctatum* SANTSCHI on Crete.

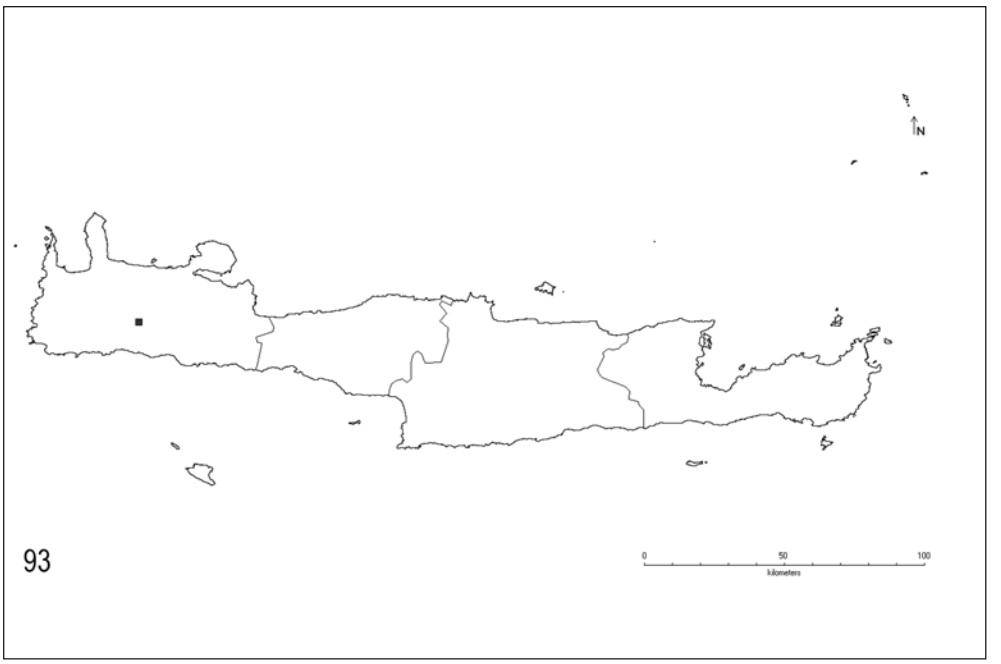


Fig. 93. Distribution of *Strongylognathus huberi dalmaticus* BARONI URBANI on Crete.

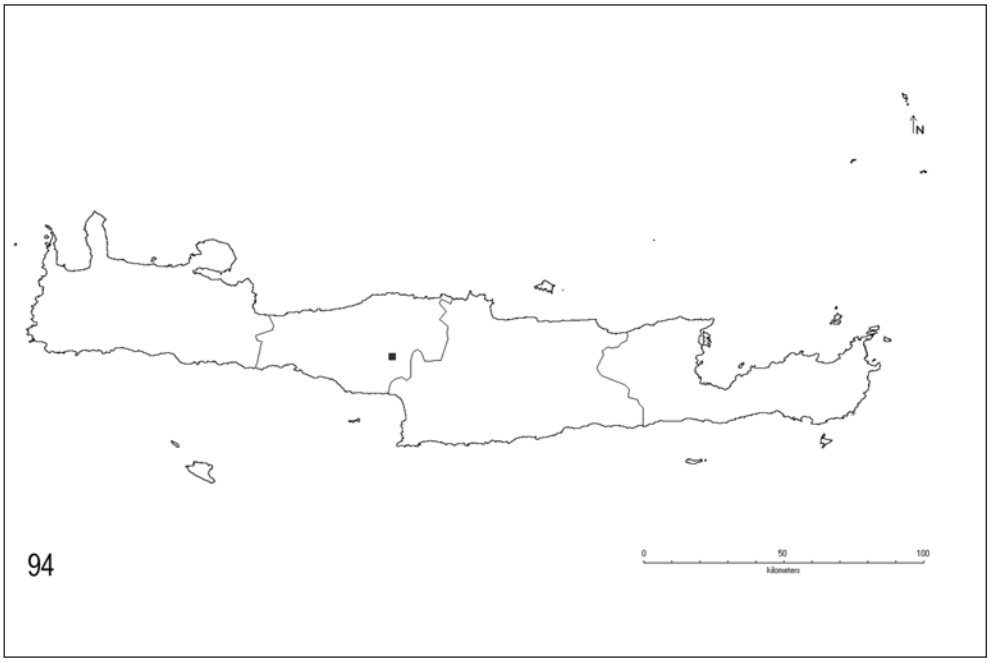


Fig. 94. Distribution of *Strongylognathus silvestrii* (MENOZZI) on Crete.

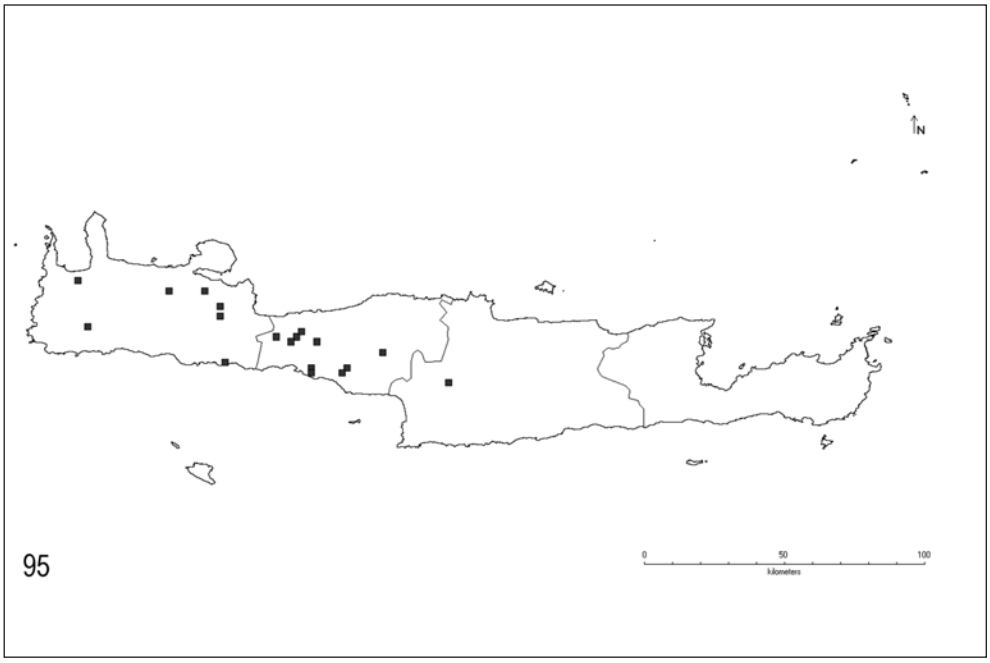


Fig. 95. Distribution of *Crematogaster* cf. *ionia* sp. 1. on Crete.

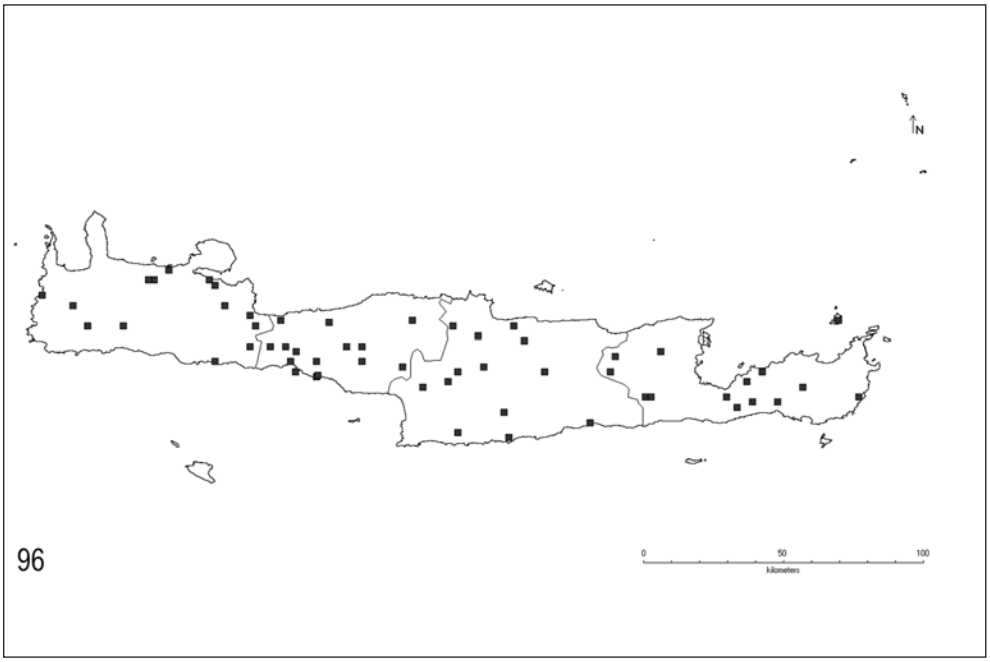


Fig. 96. Distribution of *Crematogaster ionia* FOREL on Crete.

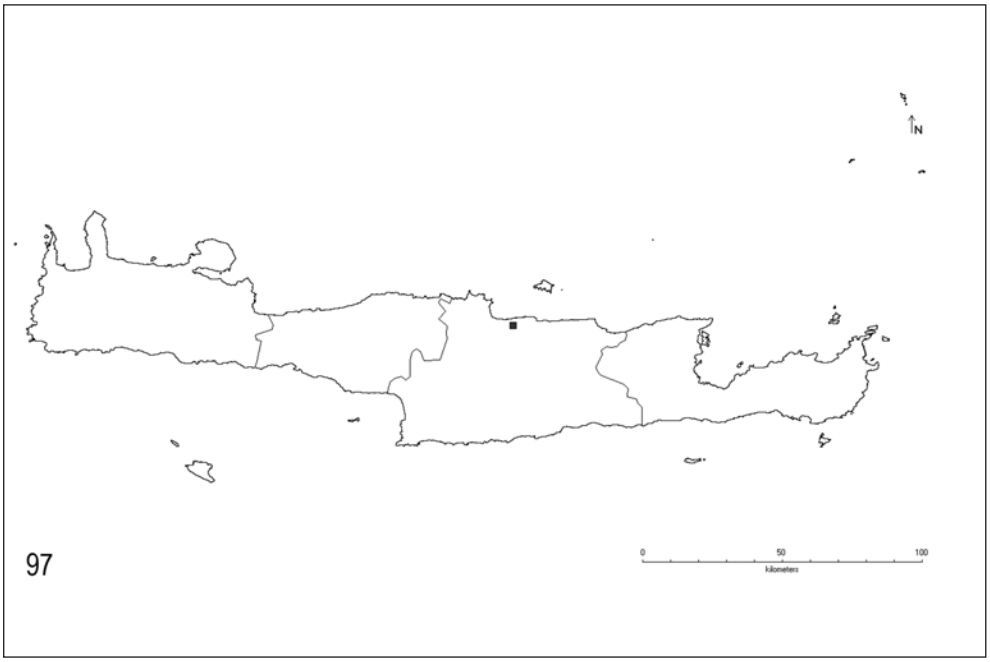


Fig. 97. Distribution of *Crematogaster schmidti* (MAYR) on Crete.

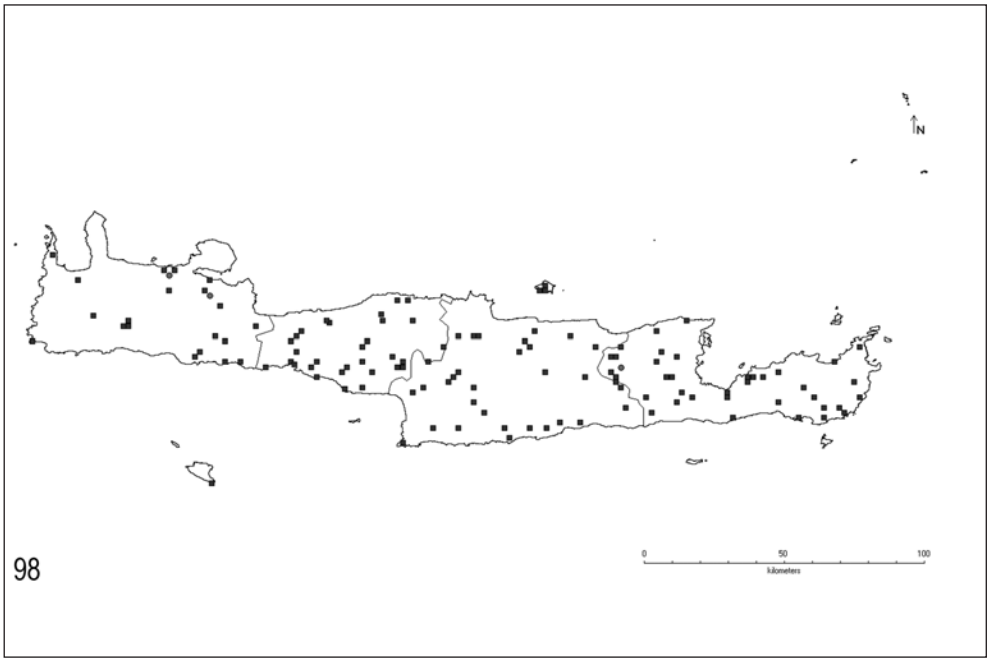


Fig. 98. Distribution of *Crematogaster sordidula* (NYLANDER) on Crete.

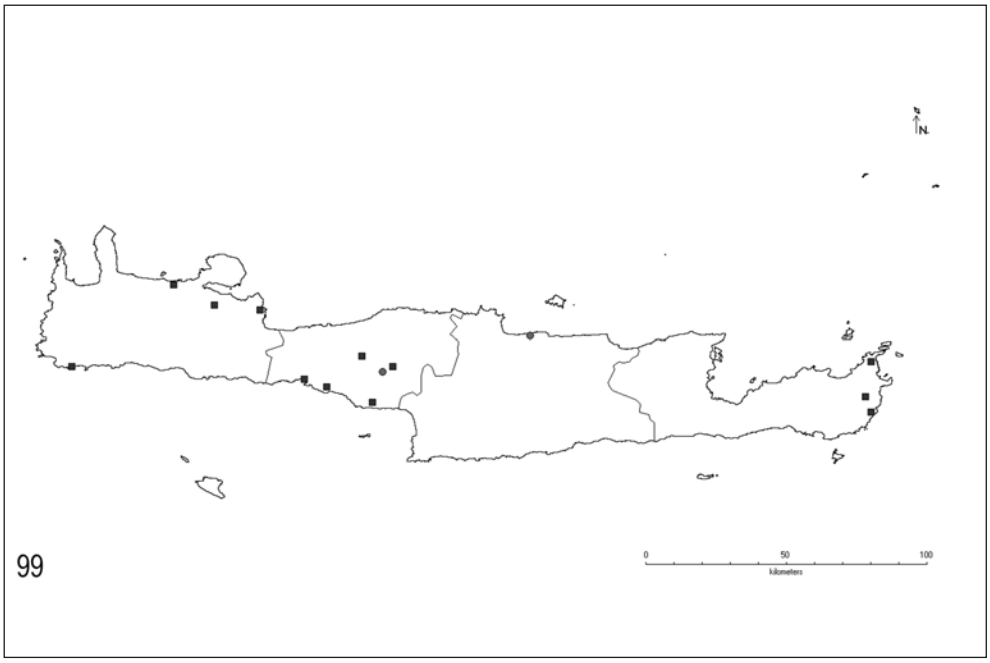


Fig. 99. Distribution of *Trichomyrmex perplexus* (RADCHENKO) on Crete.

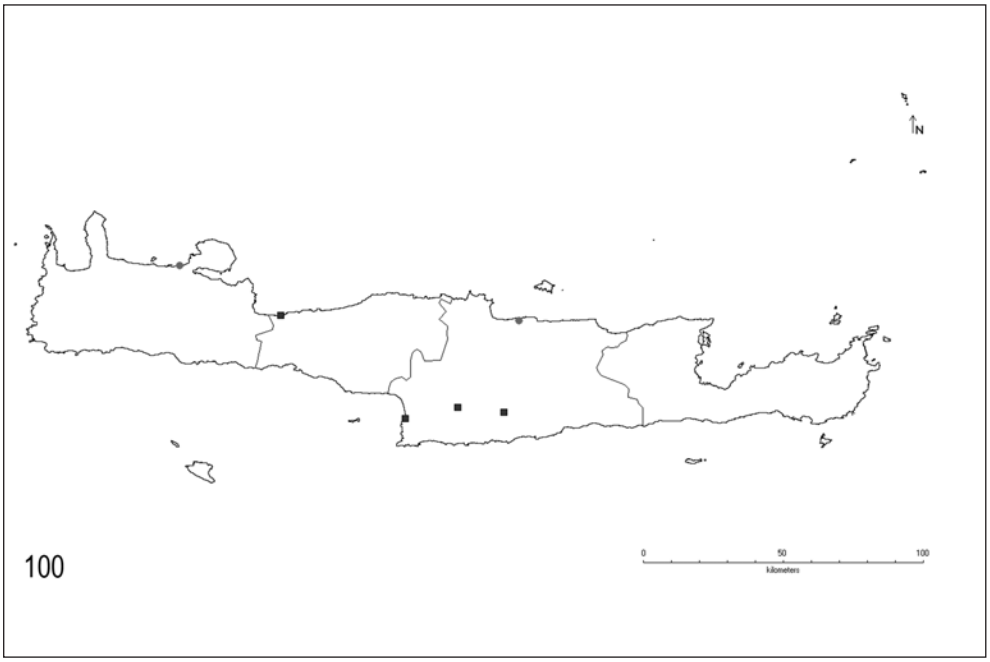


Fig. 100. Distribution of *Cardiocondyla elegans* Emery on Crete.

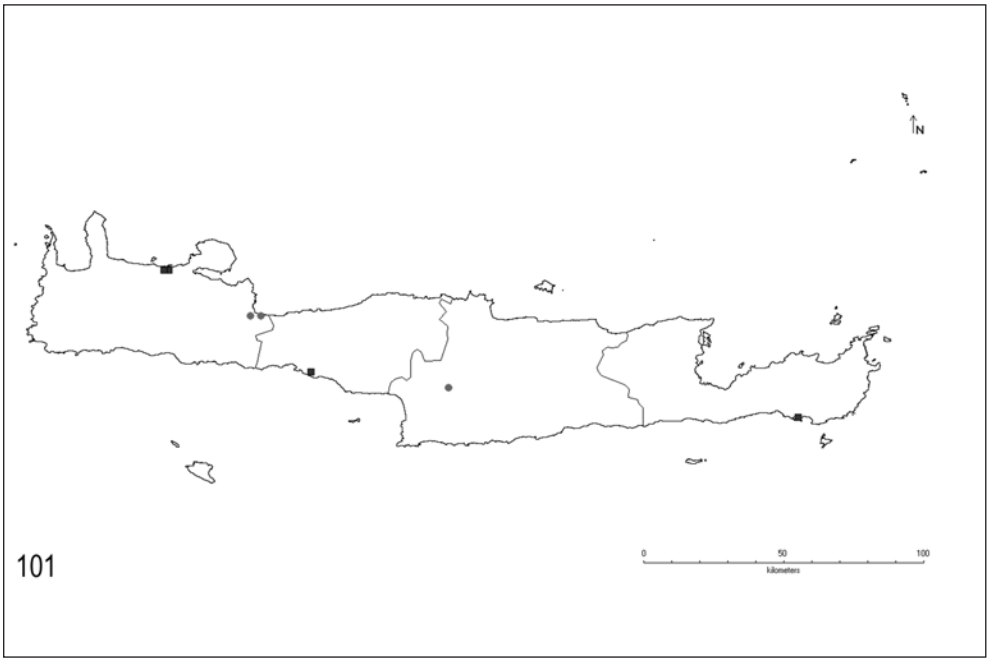


Fig. 101. Distribution of *Cardiocondyla mauritanica* Forel on Crete.

Figs. 102.1-102.3. *Proceratium melinum* (Roger); worker. 102.1, dorsal view. 102.2, lateral view. 102.3, head with antennae. Source: www.AntWeb.org, Will Ericson, Estella Ortega.

Figs. 103.1-103.4. *Stigmatomma denticulatum* Roger; worker (scale: 0.5 mm). 103.1, dorsal view. 103.2, lateral view. 103.3, head, sculpture. 103.4, head with antennae.

Figs. 104.1-104.4. *Cryptopone ochracea* (Mayr), worker (scale: 0.5 mm). 104.1, dorsal view. 104.2, lateral view. 104.3, head, sculpture. 104.4, head with antennae.

Figs. 105.1-105.4. *Hypoponera eduardi* (Forel), worker (scale: 0.5 mm). 105.1, dorsal view. 105.2, lateral view. 105.3, head, sculpture. 105.4, head with antennae.

Figs. 106.1-106.4. *Tapinoma erraticum* (LATREILLE), worker (scale: 0.5 mm). 106.1, dorsal view. 106.2, lateral view. 106.3, head, sculpture. 106.4, head with antennae.

Figs. 107.1-107.4. *Tapinoma festae* EMERY, worker (scale: 0.5 mm). 107.1, dorsal view. 107.2, lateral view. 107.3, head, sculpture. 107.4, head with antennae.

Figs. 108.1-108.4. *Tapinoma simrothi* KRAUSSE, worker (scale: 0.5 mm). 108.1, dorsal view. 108.2, lateral view. 108.3, head, sculpture. 108.4, head with antennae.

Figs. 109.1-109.6. *Tapinoma*, male genitalia. 109.1, *T. erraticum*, dorsal view. 109.2, *T. erraticum*, ventral view. 109.3, *T. festae*, dorsal view, 109.4, *T. festae*, ventral view. 109.5, *T. simrothi*, dorsal view. 109.6, *T. simrothi*, ventral view.

Figs. 110.1-110.4. *Linepithema humile* (MAYR), worker (scale: 0.5 mm). 110.1, dorsal view. 110.2, lateral view. 110.3, head, sculpture. 110.4, head with antennae.

Figs. 111.1-111.4. *Lasius bombycina* SEIFERT & GALKOWSKI, worker (scale: 0.5 mm). 111.1, lateral view. 111.2, dorsal view. 111.3, head, sculpture. 111.4, head with antennae.

Figs. 112.1-112.4. *Lasius myops* FOREL, worker (scale: 0.5 mm). 112.1, lateral view. 112.2, dorsal view. 112.3, head, sculpture. 112.4, head with antennae.

Figs. 113.1-113.5. *Lasius illyricus* ZIMMERMANN, worker (scale: 0.5 mm). 113.1, lateral view. 113.2, dorsal view. 113.3, head, sculpture. 113.4, head with antennae. 113.5, dark coloured form, lateral view.

Figs. 114.1-114.4. *Lasius lasioides* (Emery), worker (scale: 0.5 mm). 114.1, lateral view. 114.2, dorsal view. 114.3, head, sculpture. 114.4, head with antennae.

Figs. 115.1-115.4. *Lasius psammophilus* SEIFERT, worker (scale: 0.5 mm). 115.1, lateral view. 115.2, dorsal view. 115.3, head, sculpture. 115.4, head with antennae.

Figs. 116.1-116.4. *Lasius tapinomoides* Salata & Borowiec, worker (scale: 0.5 mm). 116.1, lateral view. 116.2, dorsal view. 116.3, head, sculpture. 116.4, head with antennae.

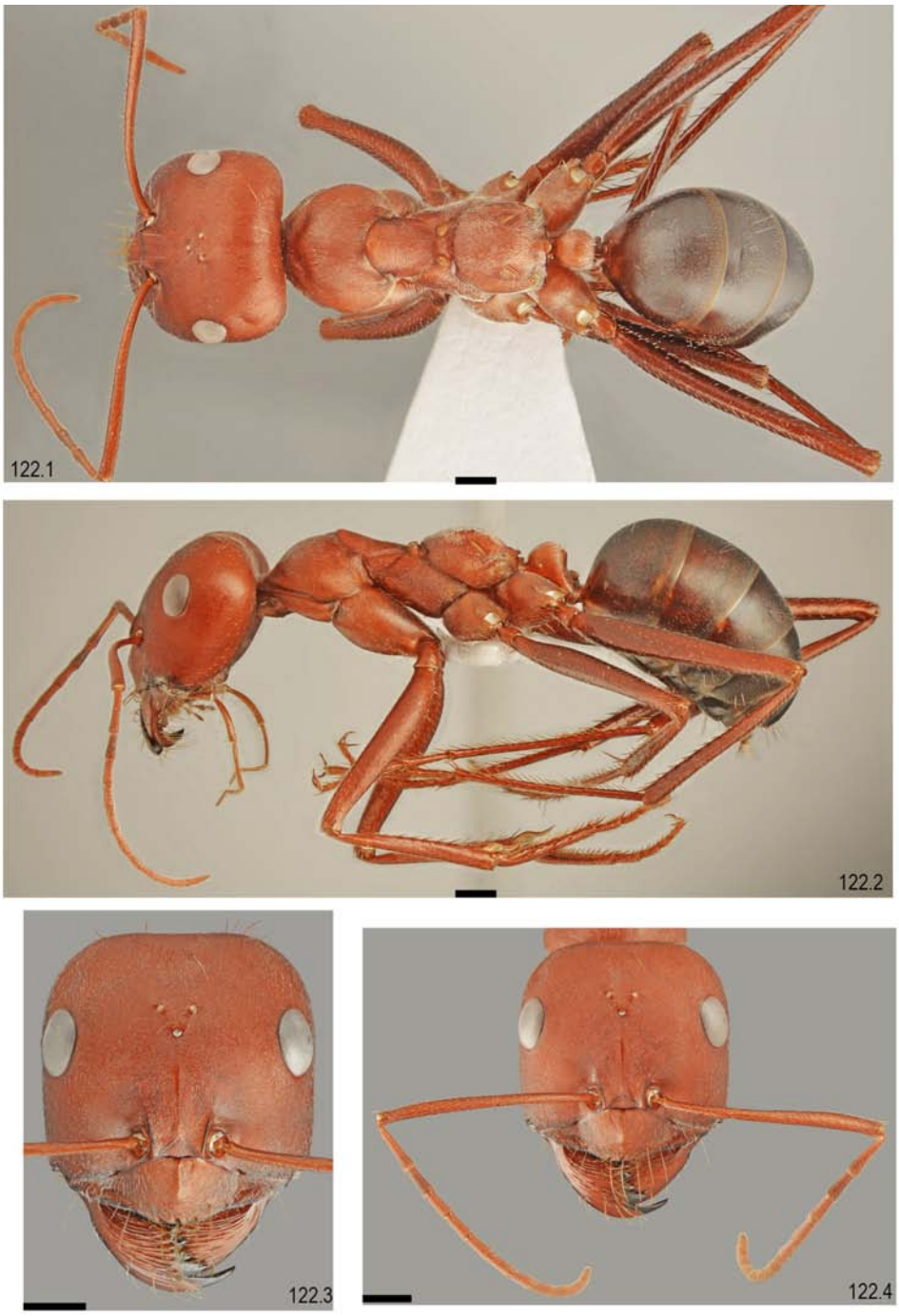
Figs. 117.1-117.4. *Lasius turcicus* SANTSCHI, worker (scale: 0.5 mm). 117.1, lateral view. 117.2, dorsal view. 117.3, head, sculpture. 117.4, head with antennae.

Figs. 118.1-118.4. *Nylanderia jaegerskioeldi* (Mayr), worker (scale: 0.5 mm). 118.1, lateral view. 118.2, dorsal view. 118.3, head, sculpture. 118.4, head with antennae.

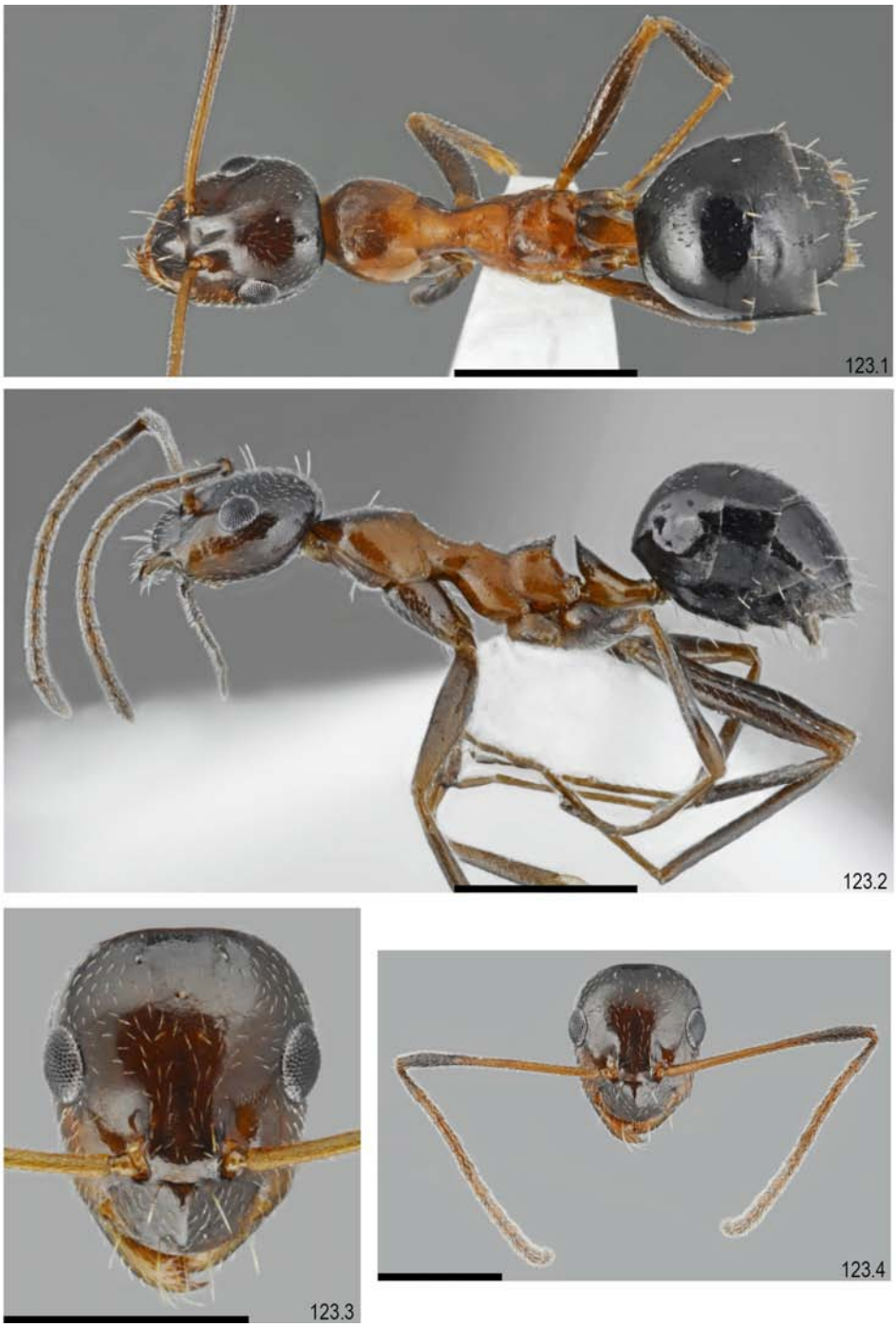
Figs. 119.1-119.5. *Formica cunicularia* Latreille, worker (scale: 0.5 mm). 119.1, lateral view. 119.2, dorsal view. 119.3, head, sculpture. 119.4, head with antennae. 119.5, melanistic form, lateral view.

Figs. 120.1-120.4. *Cataglyphis cretica* (FOREL), worker (scale: 0.5 mm). 120.1, dorsal view. 120.2, lateral view. 120.3, head, sculpture. 120.4, head with antennae.

Figs. 121.1-121.4. *Cataglyphis* cf. *cretica* sp. 1, worker (scale: 0.5 mm). 121.1, dorsal view. 121.2, lateral view. 121.3, head, sculpture. 121.4, head with antennaee.



Figs. 122.1-122.4. *Cataglyphis nodus* (Brullé), worker (scale: 0.5 mm). 122.1, dorsal view. 122.2, lateral view. 122.3, head, sculpture. 122.4, head with antennae.



Figs. 123.1-123.4. *Lepisiota frauenfeldi* (Mayr), worker (scale: 0.5 mm). 123.1, dorsal view. 123.2, lateral view. 123.3, head, sculpture. 123.4, head with antennae.

Figs. 124.1-124.4. *Lepisiota melas* (Emery), worker (scale: 0.5 mm). 124.1, dorsal view. 124.2, lateral view. 124.3, head, sculpture. 124.4, head with antennae.

Figs. 125.1-125.4. *Lepisiota nigra* (Dalla Torre), worker (scale: 0.5 mm). 125.1, lateral view. 125.2, dorsal view. 125.3, head with antennae. 125.4, head, sculpture.

Figs. 126.1-126.4. *Lepisiota syriaca* (André), worker (scale: 0.5 mm). 126.1, lateral view. 126.2, dorsal view. 126.3, head with antennae. 126.4, head, sculpture.

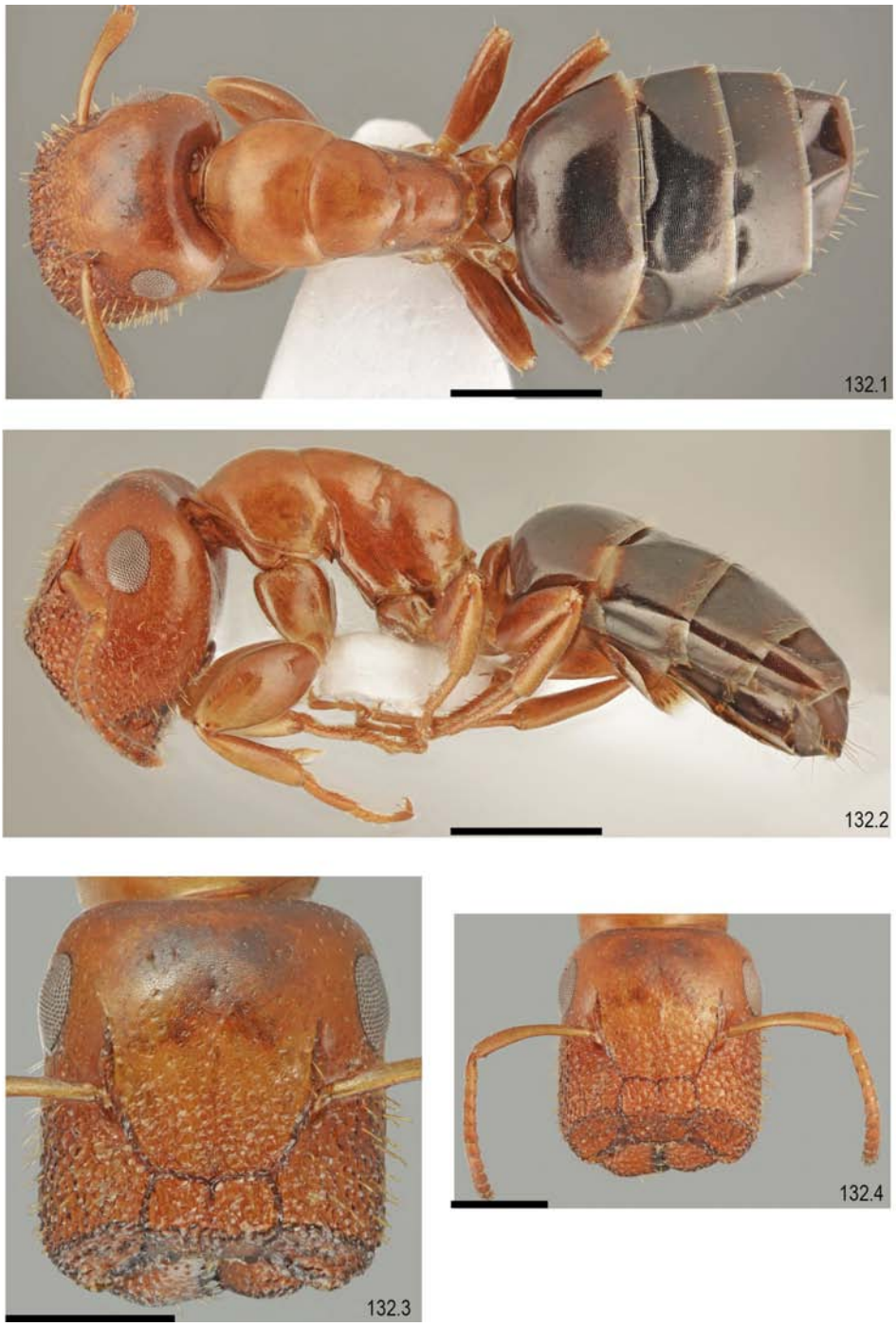
Figs. 127.1-127.4. *Plagiolepis pallescens* Forel, worker (scale: 0.5 mm). 127.1, dorsal view. 127.2, lateral view. 127.3, head, sculpture. 127.4, head with antennae.

Figs. 128.1-128.4. *Plagiolepis perperamus* Salata, Borowiec & Radchenko, worker (scale: 0.5 mm). 128.1, dorsal view. 128.2, lateral view. 128.3, head, sculpture. 128.4, head with antennae.

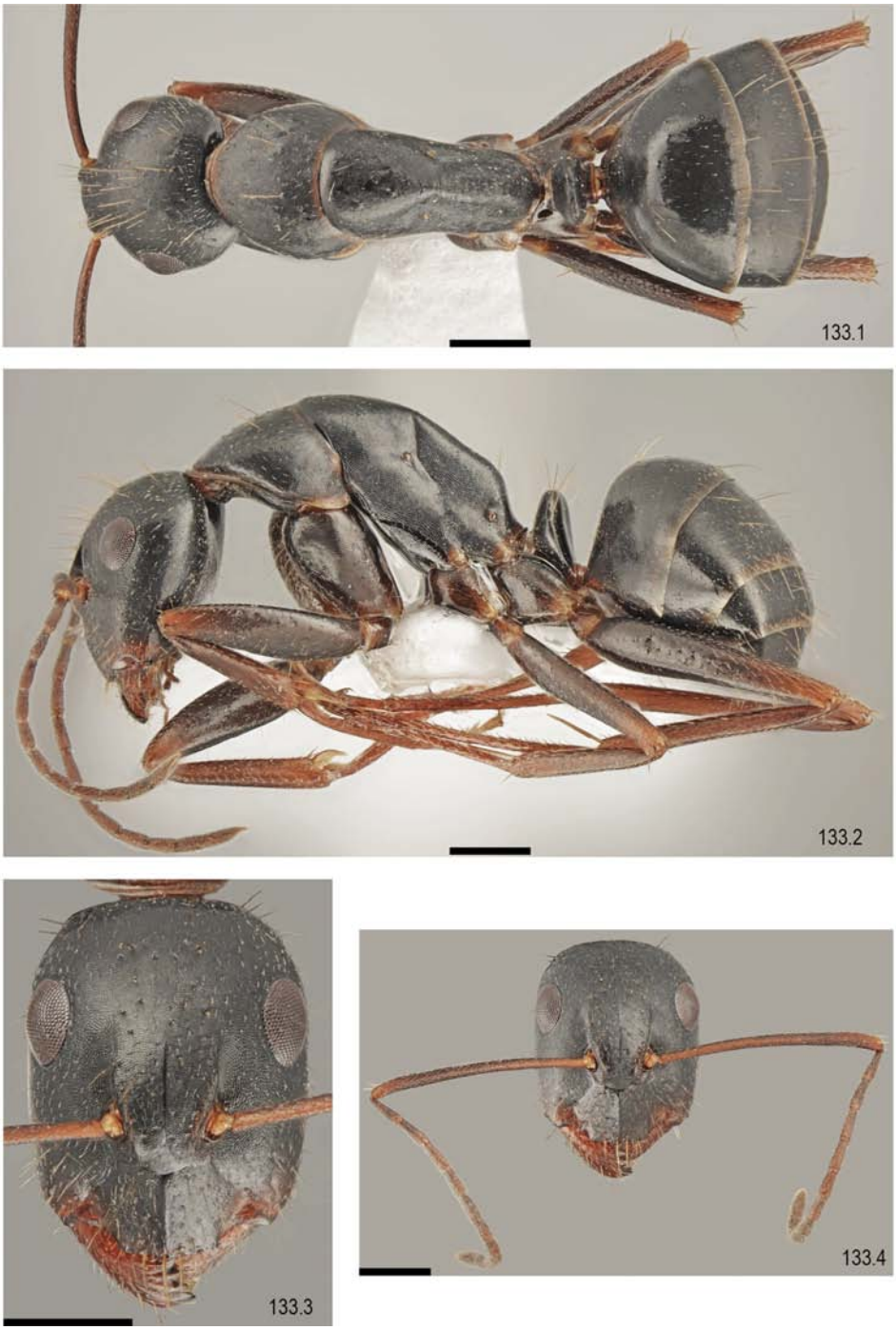
Figs. 129.1-129.4. *Plagiolepis pygmaea* (LATREILLE), worker (scale: 0.5 mm). 129.1, dorsal view. 129.2, lateral view. 129.3, head, sculpture. 129.4, head with antennae.

Figs. 130.1-130.3. *Acropyga paleartica* MENOZZI, worker (scale: 0.5 mm). 130.1, lateral view. 130.2, head with antennae. 130.3, dorsal view.

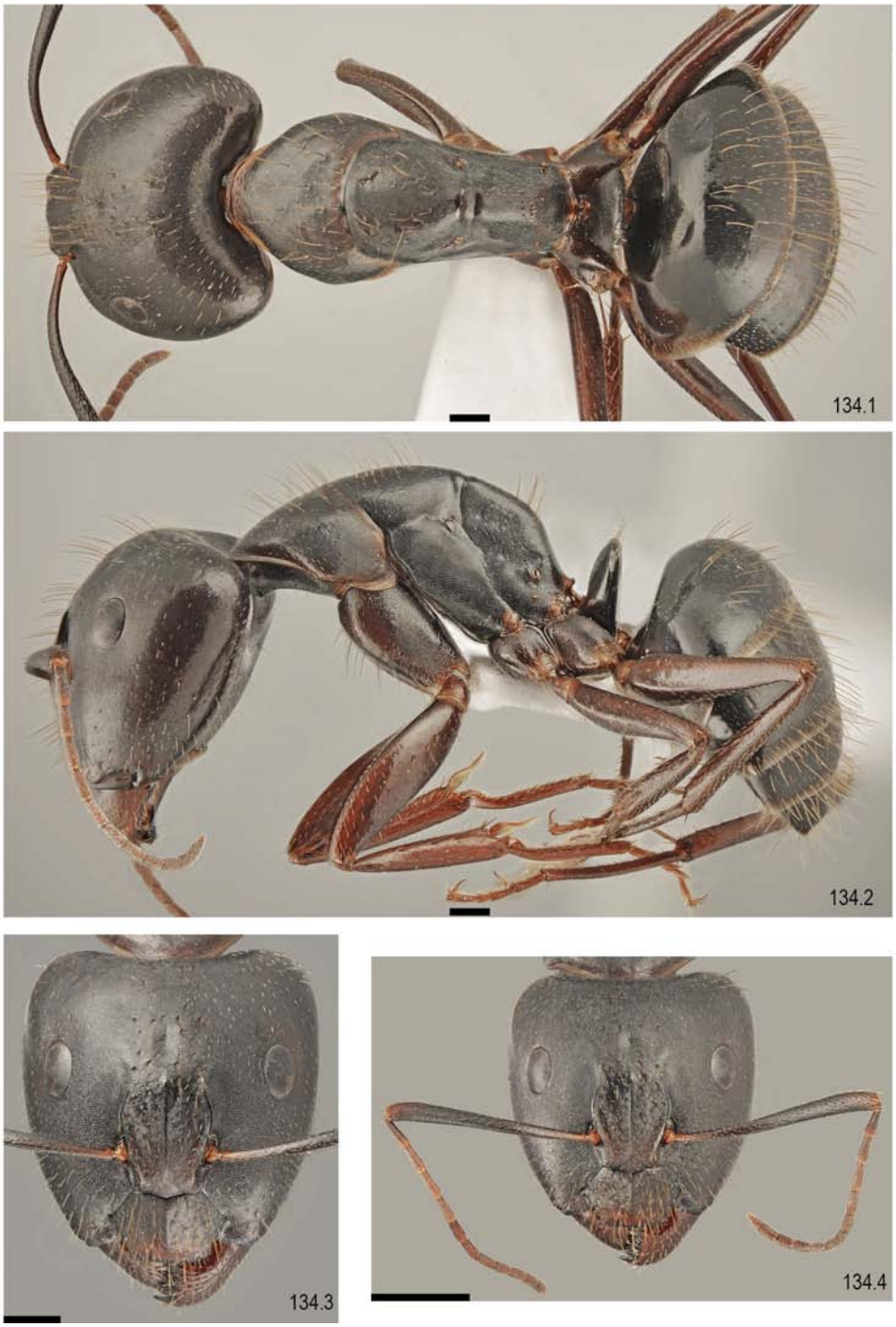
Figs. 131.1-131.4. *Colobopsis truncata* (SPINOLA), worker minor (scale: 0.5 mm). 131.1, dorsal view. 131.2, lateral view. 131.3, head, sculpture. 131.4, head with antennae.



Figs. 132.1-132.4. *Colobopsis truncata* (SPINOLA), worker major (scale: 0.5 mm). 132.1, dorsal view. 132.2, lateral view. 132.3, head, sculpture. 132.4, head with antennae.



Figs. 133.1-133.4. *Camponotus aethiops* (LATREILLE), worker minor (scale: 0.5 mm). 133.1, dorsal view. 133.2, lateral view. 133.3, head, sculpture. 133.4, head with antennae.

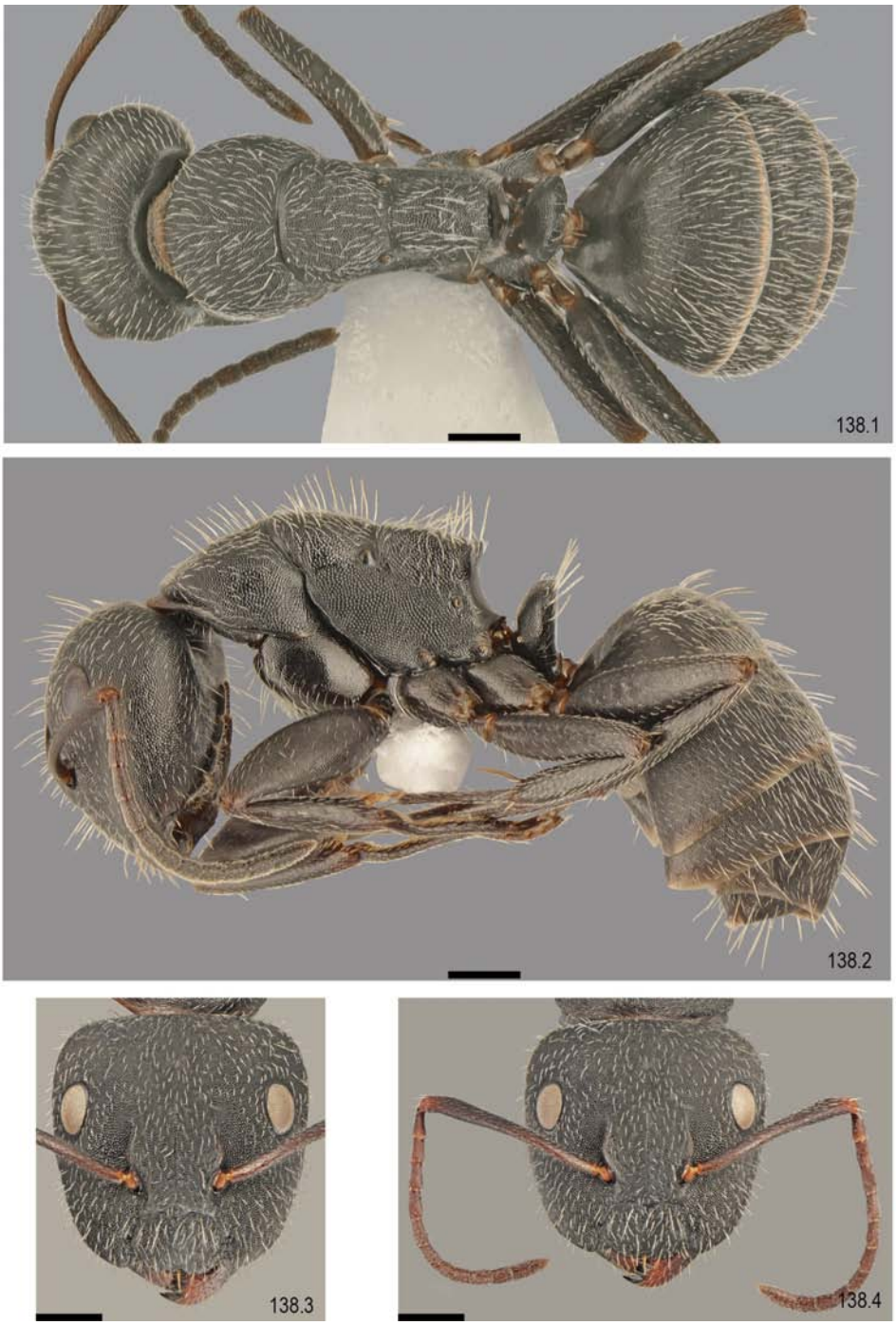


Figs. 134.1-134.4. *Camponotus aethiops* (LATREILLE), worker major (scale: 0.5 mm). 134.1, dorsal view. 134.2, lateral view. 134.3, head, sculpture. 134.4, head with antennae.

Figs. 135.1-135.4. *Camponotus baldaccii* EMERY, worker minor (scale: 0.5 mm). 135.1, dorsal view. 135.2, lateral view. 135.3, head, sculpture. 135.4, head with antennae.

Figs. 136.1-136.4. *Camponotus baldaccii* Emery, worker major (scale: 0.5 mm). 136.1, dorsal view. 136.2, lateral view. 136.3, head, sculpture. 136.4, head with antennae.

Figs. 137.1-137.4. *Camponotus boghossiani* FOREL, worker minor (scale: 0.5 mm). 137.1, dorsal view. 137.2, lateral view. 137.3, head, sculpture. 137.4, head with antennae.

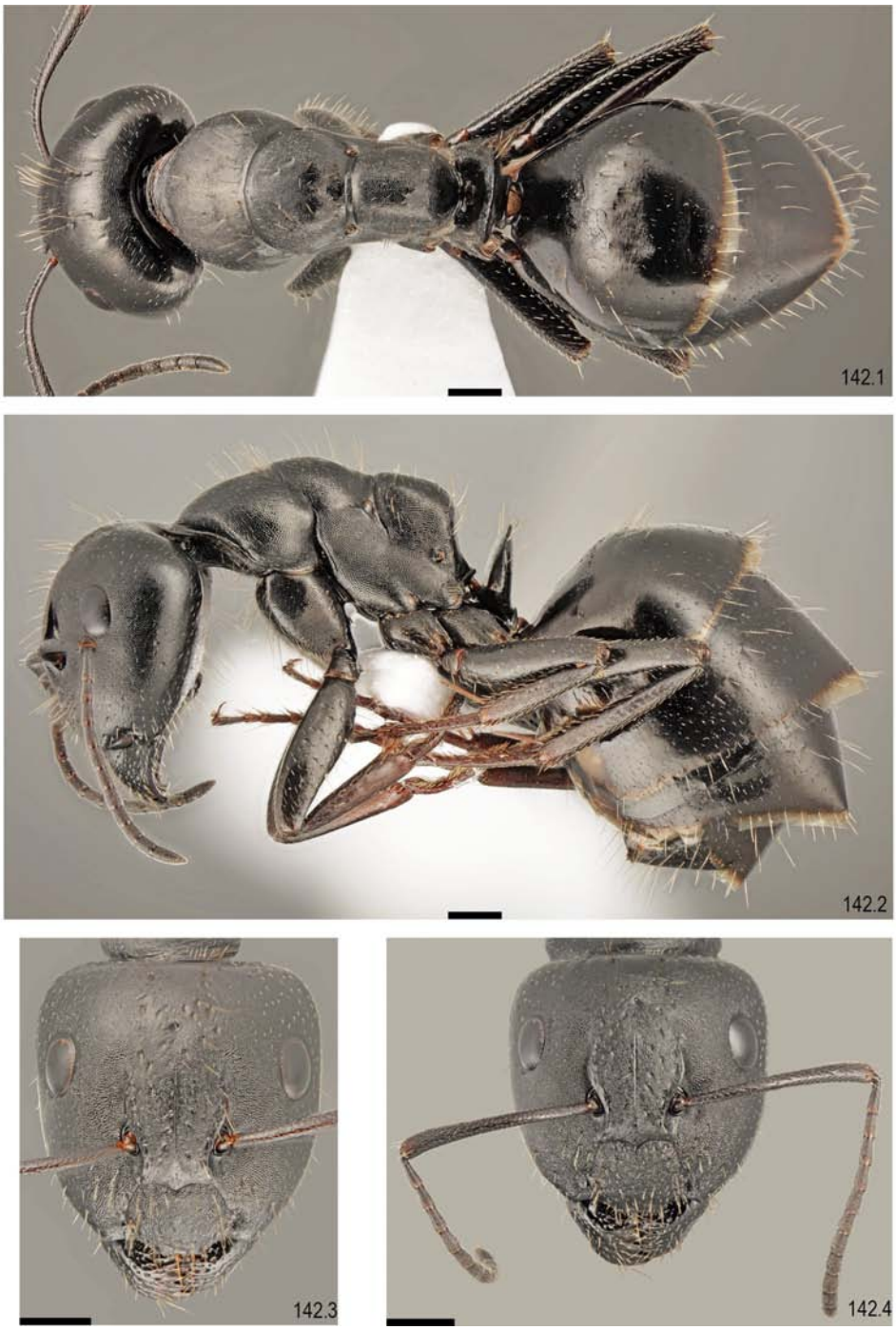


Figs. 138.1-138.4. *Camponotus boghossiani* FOREL, worker major (scale: 0.5 mm). 138.1, dorsal view. 138.2, lateral view. 138.3, head, sculpture. 138.4, head with antennae.

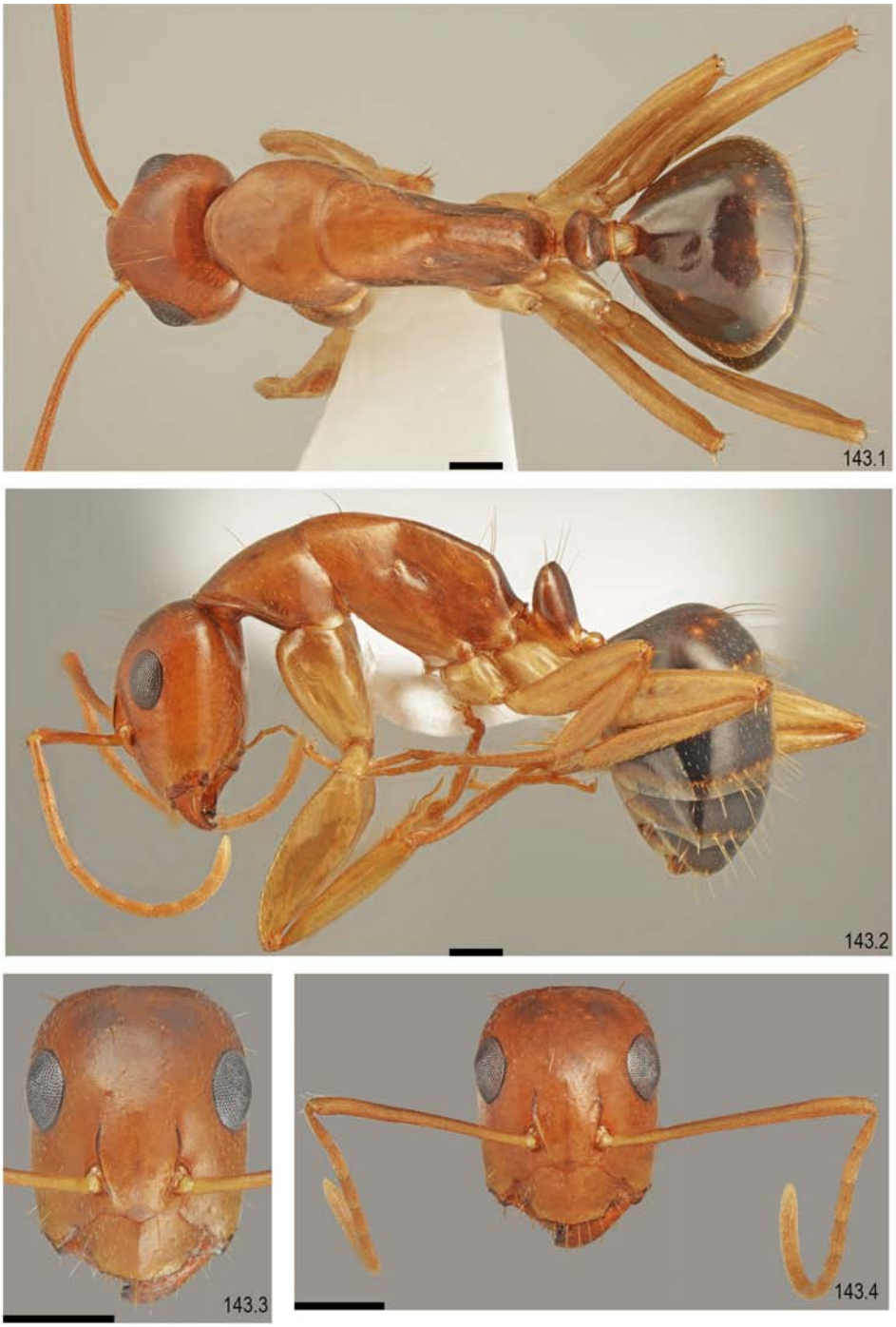
Figs. 139.1-139.4. *Camponotus candiotes* Emery, worker minor (scale: 0.5 mm). 139.1, dorsal view. 139.2, lateral view. 139.3, head, sculpture. 139.4, head with antennae.

Figs. 140.1-140.4. *Camponotus candiotes* Emery, worker major (scale: 0.5 mm). 140.1, dorsal view. 140.2, lateral view. 140.3, head, sculpture. 140.4, head with antennae.

Figs. 141.1-141.4. *Camponotus gestroi* EMERY, worker minor (scale: 0.5 mm). 141.1, dorsal view. 141.2, lateral view. 141.3, head, sculpture. 141.4, head with antennae.



Figs. 142.1-142.4. *Camponotus gestroi* EMERY, worker major (scale: 0.5 mm). 142.1, dorsal view. 142.2, lateral view. 142.3, head, sculpture. 142.4, head with antennae.

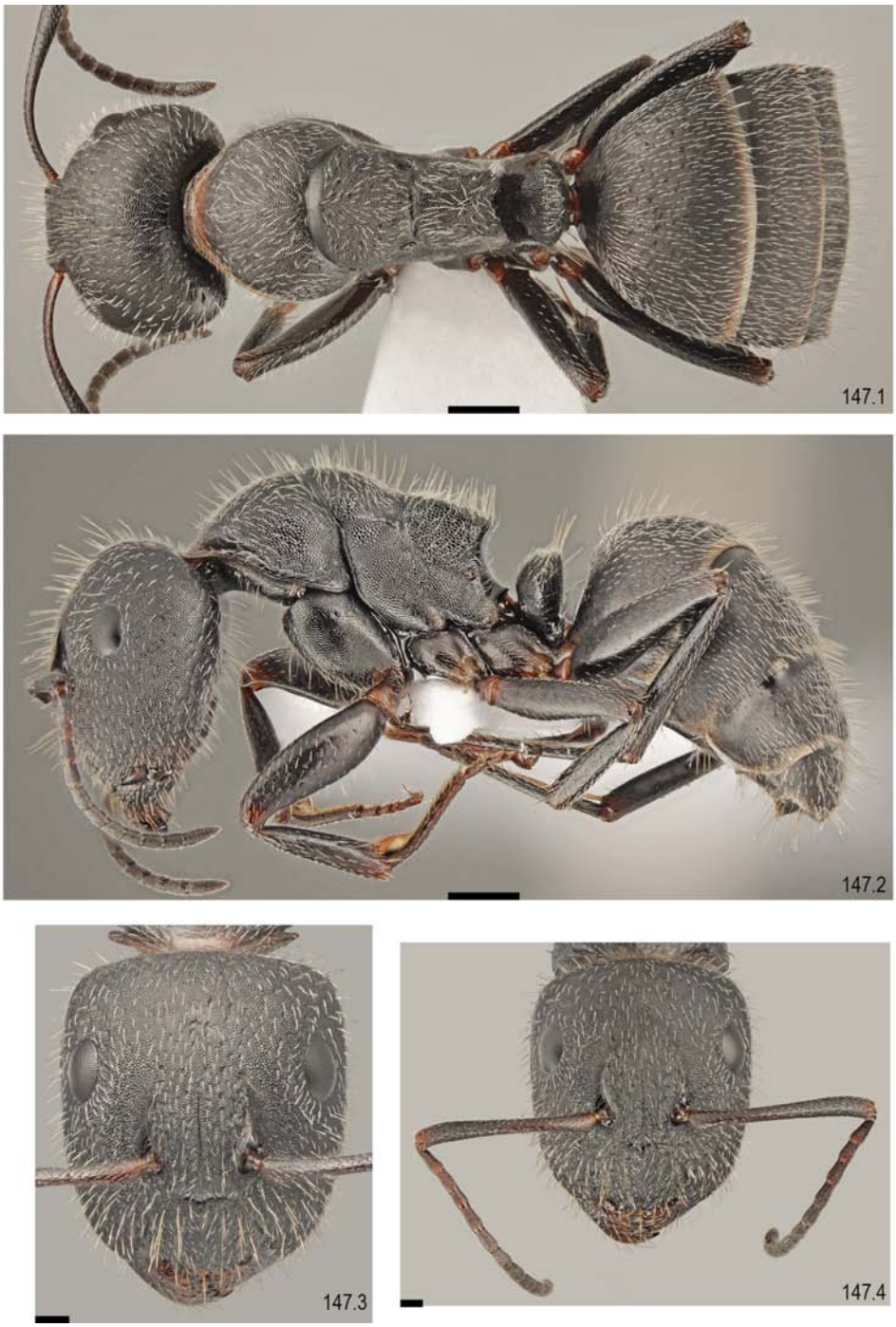


Figs. 143.1-143.4. *Camponotus jaliensis* Dalla Torre, worker minor (scale: 0.5 mm). 143.1, dorsal view. 143.2, lateral view. 143.3, head, sculpture. 143.4, head with antennae.

Figs. 144.1-144.4. *Camponotus jaliensis* Dalla Torre, worker major (scale: 0.5 mm). 144.1, dorsal view. 144.2, lateral view. 144.3, head, sculpture. 144.4, head with antennae.

Figs. 145.1-145.2. *Camponotus jaliensis* Dalla Torre, worker (scale: 0.5 mm). 145.1, bicoloured form, lateral view. 43.2, bright form, lateral view.

Figs. 146.1-146.4. *Campono*tus *kiesenwetteri* (Roger), worker minor (scale: 0.5 mm). 146.1, dorsal view. 146.2, lateral view. 146.3, head, sculpture. 146.4, head with antennae.



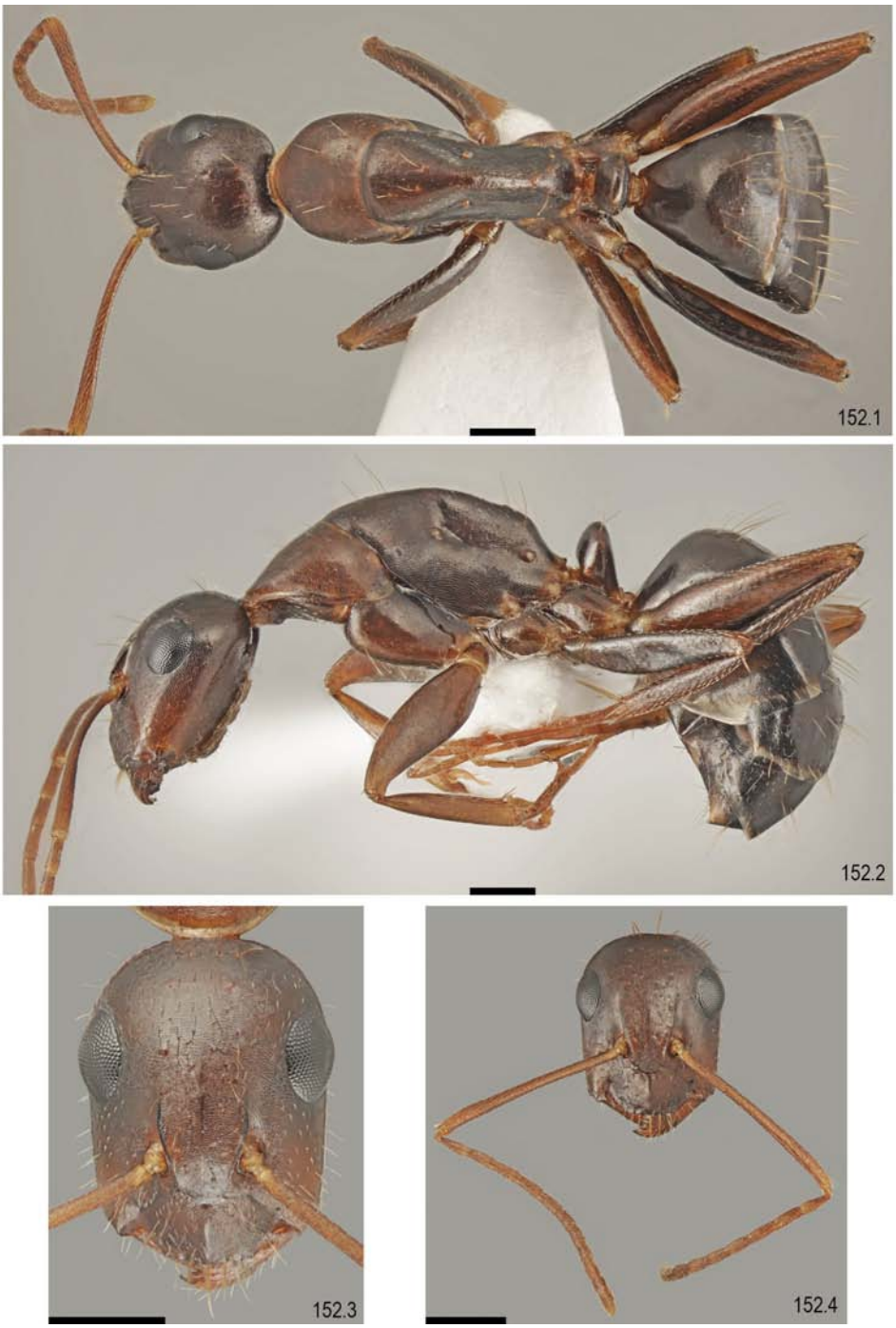
Figs. 147.1-147.4. *Camponotus kiesenwetteri* (ROGER), worker major (scale: 0.5 mm). 147.1, dorsal view. 147.2, lateral view. 147.3, head, sculpture. 147.4, head with antennae.

Figs. 148.1-148.4. *Camponotus lateralis* (Olivier), worker minor, typical specimen (scale: 0.5 mm). 148.1, dorsal view. 148.2, lateral view. 148.3, head, sculpture. 148.4, head with antennae.

Figs. 149.1-149.4. *Camponotus lateralis* (Olivier), worker major, typical specimen (scale: 0.5 mm). 149.1, dorsal view. 149.2, lateral view. 149.3, head, sculpture. 149.4, head with antennae.

Figs. 150.1-150.4. *Camponotus lateralis* (OLIVIER), worker minor, specimen with dense setosity (scale: 0.5 mm). 150.1, dorsal view. 150.2, lateral view. 150.3, head, sculpture. 150.4, head with antennae.

Figs. 151.1-151.4. *Camponotus lateralis* (OLIVIER), worker major, specimen with dense setosity (scale: 0.5 mm). 49.1, dorsal view. 49.2, lateral view. 49.3, head, sculpture. 49.4, head with antennae.



Figs. 152.1-152.4. *Camponotus oertzeni* Forel, worker minor (scale: 0.5 mm). 152.1, dorsal view. 152.2, lateral view. 152.3, head, sculpture. 152.4, head with antennae.

Figs. 153.1-153.4. *Camponotus oertzeni* FOREL, worker major (scale: 0.5 mm). 153.1, dorsal view. 153.2, lateral view. 153.3, head, sculpture. 153.4, head with antennae.

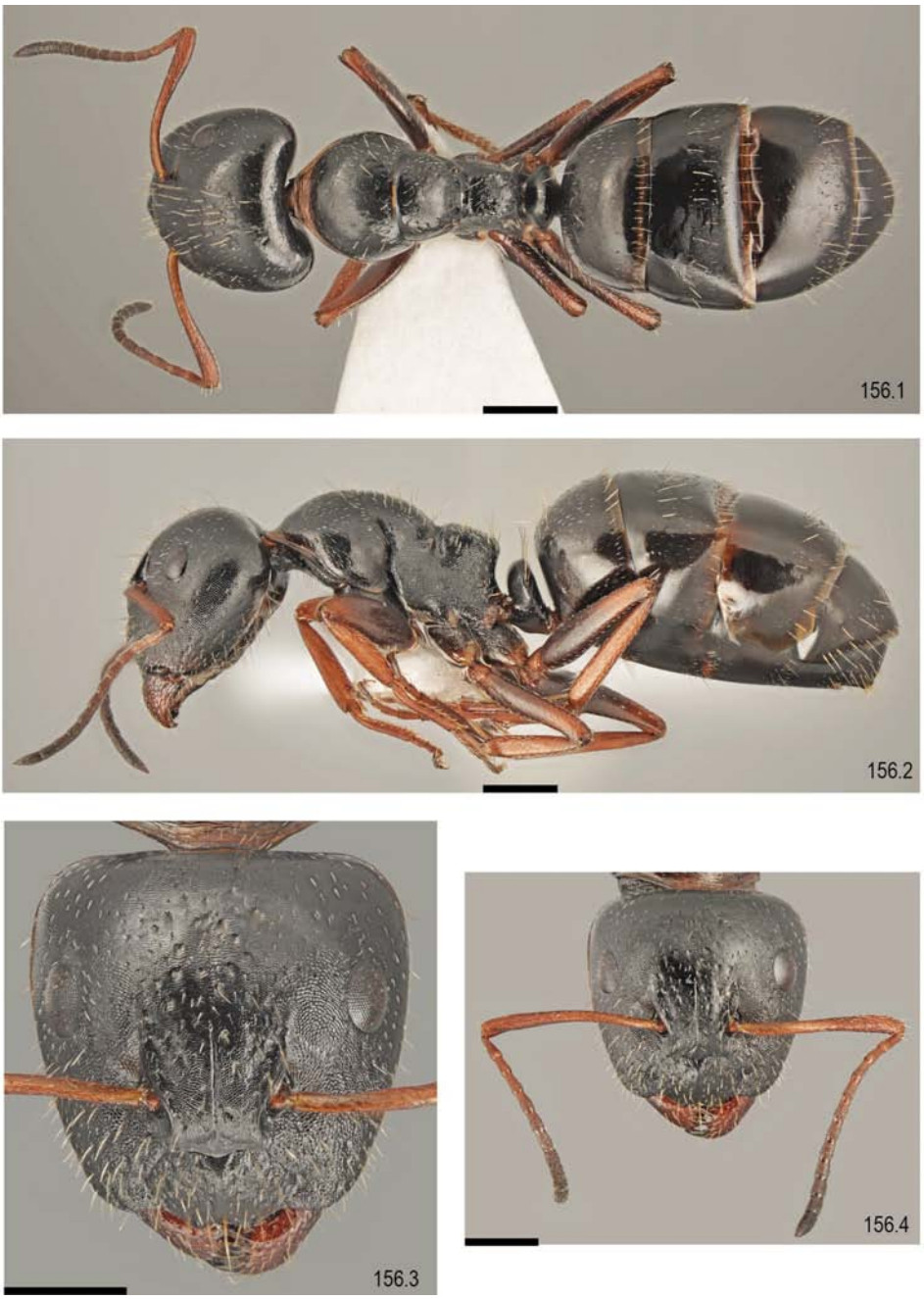
154.1

154.2

154.3

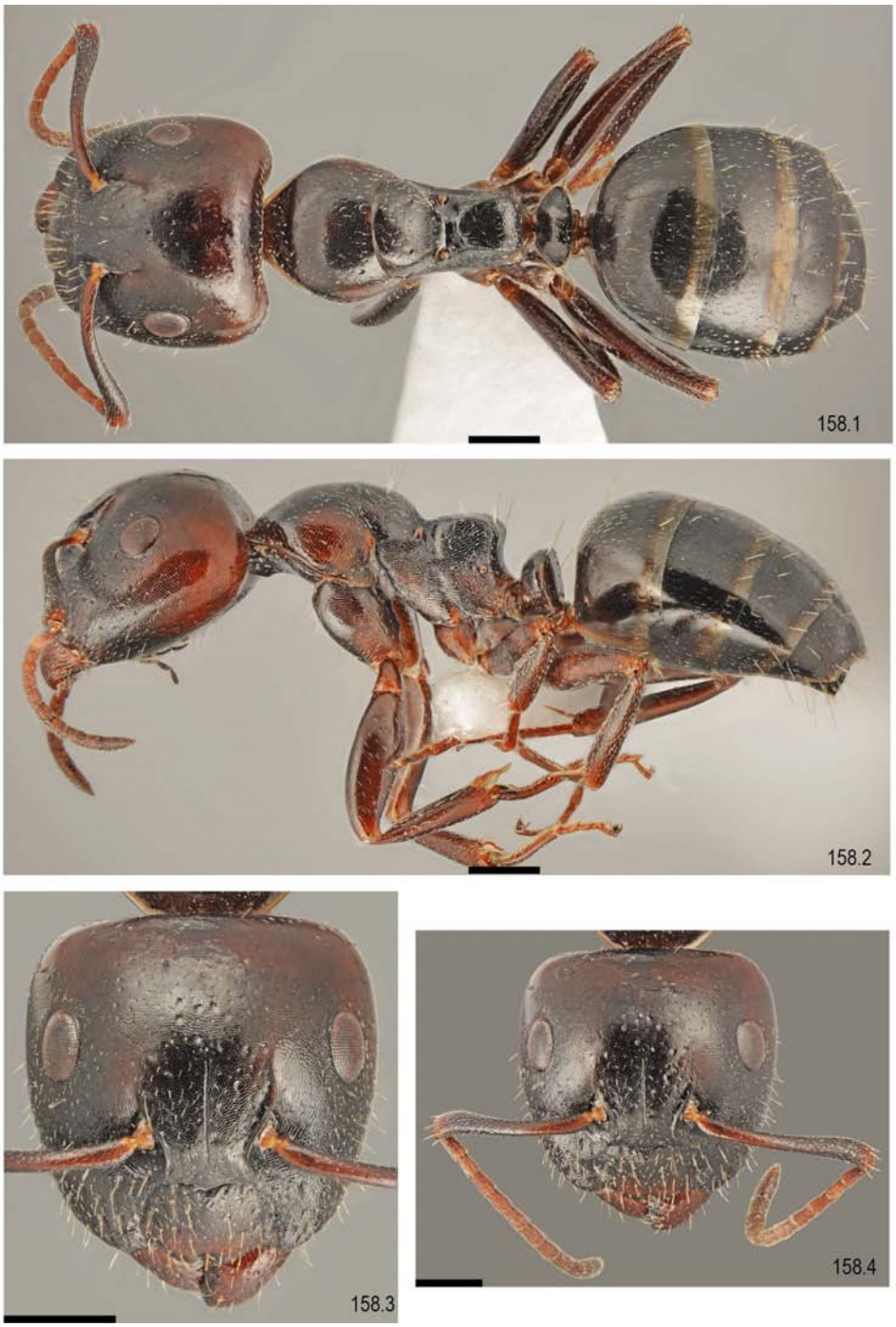
Figs. 154.1-154.3. 154.1. *Camponotus oertzeni* FOREL, gaster setosity. 154.2, *Camponotus aethiops* (LATREILLE), gaster setosity. 154.3, *Camponotus oertzeni* FOREL, bright specimen (scale: 0.5 mm).

Figs. 155.1-155.4. *Camponotus piceus* (LEACH), worker minor (scale: 0.5 mm). 155.1, dorsal view. 155.2, lateral view. 155.3, head, sculpture. 155.4, head with antennae.



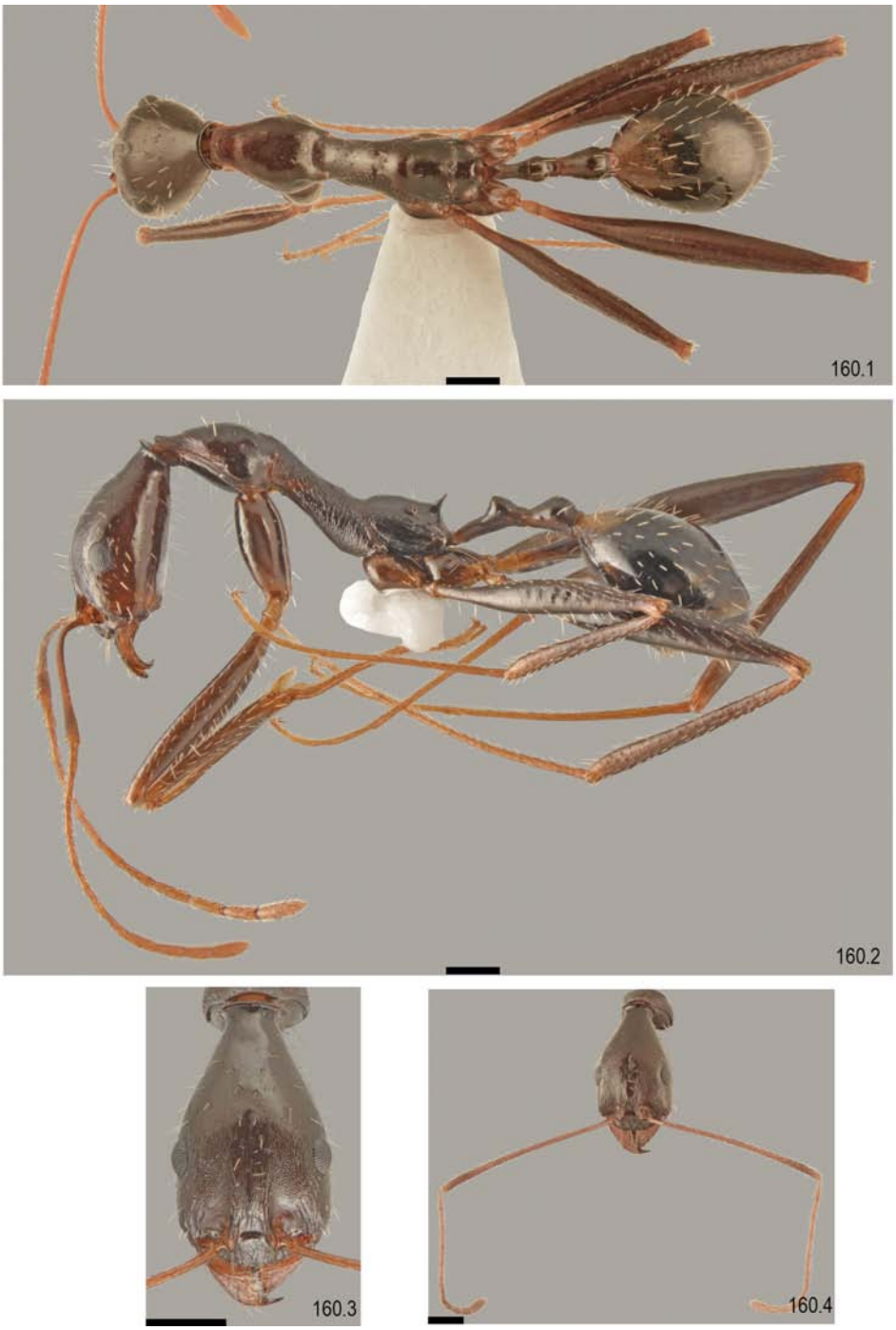
Figs. 156.1-156.4. *Camponotus piceus* (LEACH), worker major (scale: 0.5 mm). 156.1, dorsal view. 156.2, lateral view. 156.3, head, sculpture. 156.4, head with antennae.

Figs. 157.1-157.4. *Camponotus rebeccae* Forel, worker minor (scale: 0.5 mm). 157.1, dorsal view. 157.2, lateral view. 157.3, head, sculpture. 157.4, head with antennae.



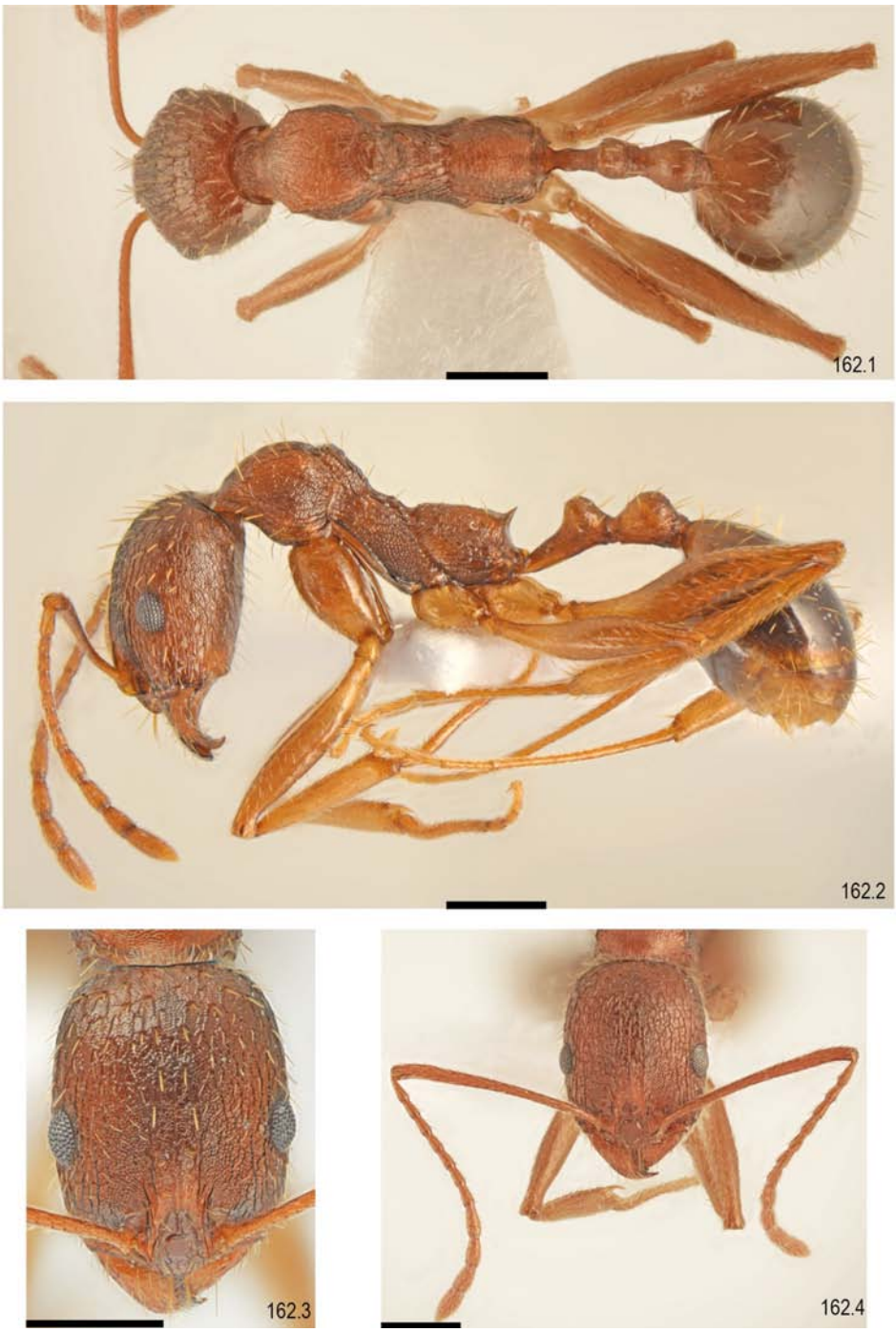
Figs. 158.1-158.4. *Camponotus rebeccae* FOREL, worker major (scale: 0.5 mm). 158.1, dorsal view. 158.2, lateral view. 158.3, head, sculpture. 158.4, head with antennae.

Figs. 159.1-159.4. *Aphaenogaster balcanicoides* Boer, worker (scale: 0.5 mm). 159.1, dorsal view. 159.2, lateral view. 159.3, head, sculpture. 159.4, head with antennae.

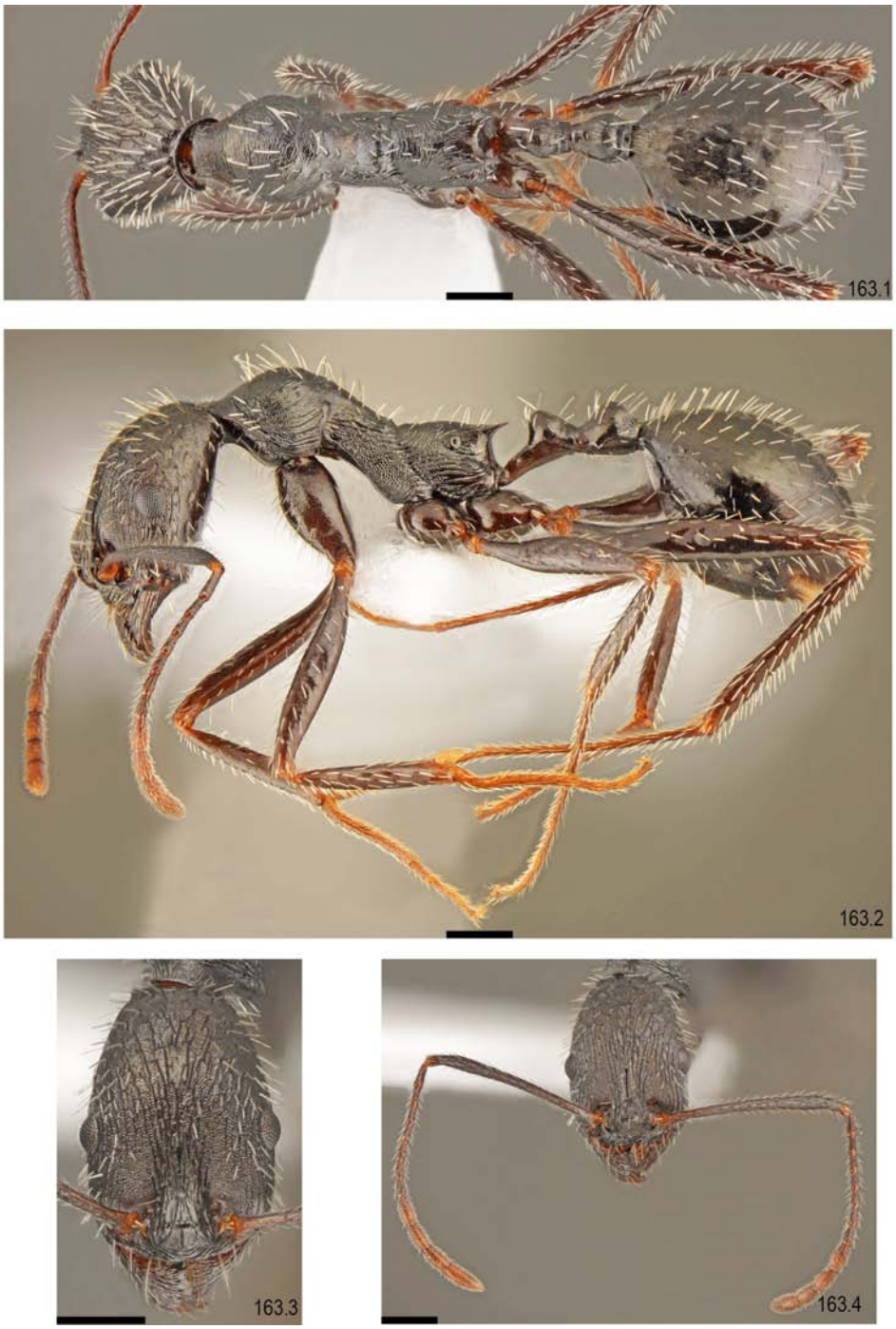


Figs. 160.1-160.4. *Aphaenogaster cecconii* Emery, worker (scale: 0.5 mm). 160.1, dorsal view. 160.2, lateral view. 160.3, head, sculpture. 160.4, head with antennae.

Figs. 161.1-161.4. *Aphaenogaster* cf. *subterranea* sp. 1, worker (scale: 0.5 mm). 161.1, dorsal view. 161.2, lateral view. 161.3, head, sculpture. 161.4, head with antennae.



Figs. 162.1-162.4. *Aphaenogaster rugosoferruginea* FOREL, worker (scale: 0.5 mm). 162.1, dorsal view. 162.2, lateral view. 162.3, head, sculpture. 162.4, head with antennae.



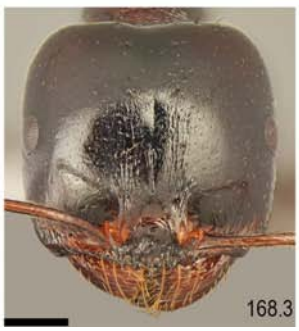
Figs. 163.1-163.4. *Aphaenogaster simonellii* Emery, worker (scale: 0.5 mm). 163.1, dorsal view. 163.2, lateral view. 163.3, head, sculpture. 163.4, head with antennae.

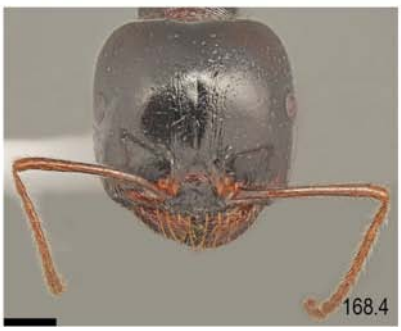
Figs. 164.1-164.4. *Aphaenogaster splendida* (ROGER), worker (scale: 0.5 mm). 164.1, dorsal view. 164.2, lateral view. 164.3, head, sculpture. 164.4, head with antennae.

Figs. 165.1-165.4. *Aphaenogaster subterraneoides* Emery, worker (scale: 0.5 mm). 165.1, dorsal view. 165.2, lateral view. 165.3, head, sculpture. 165.4, head with antennae.

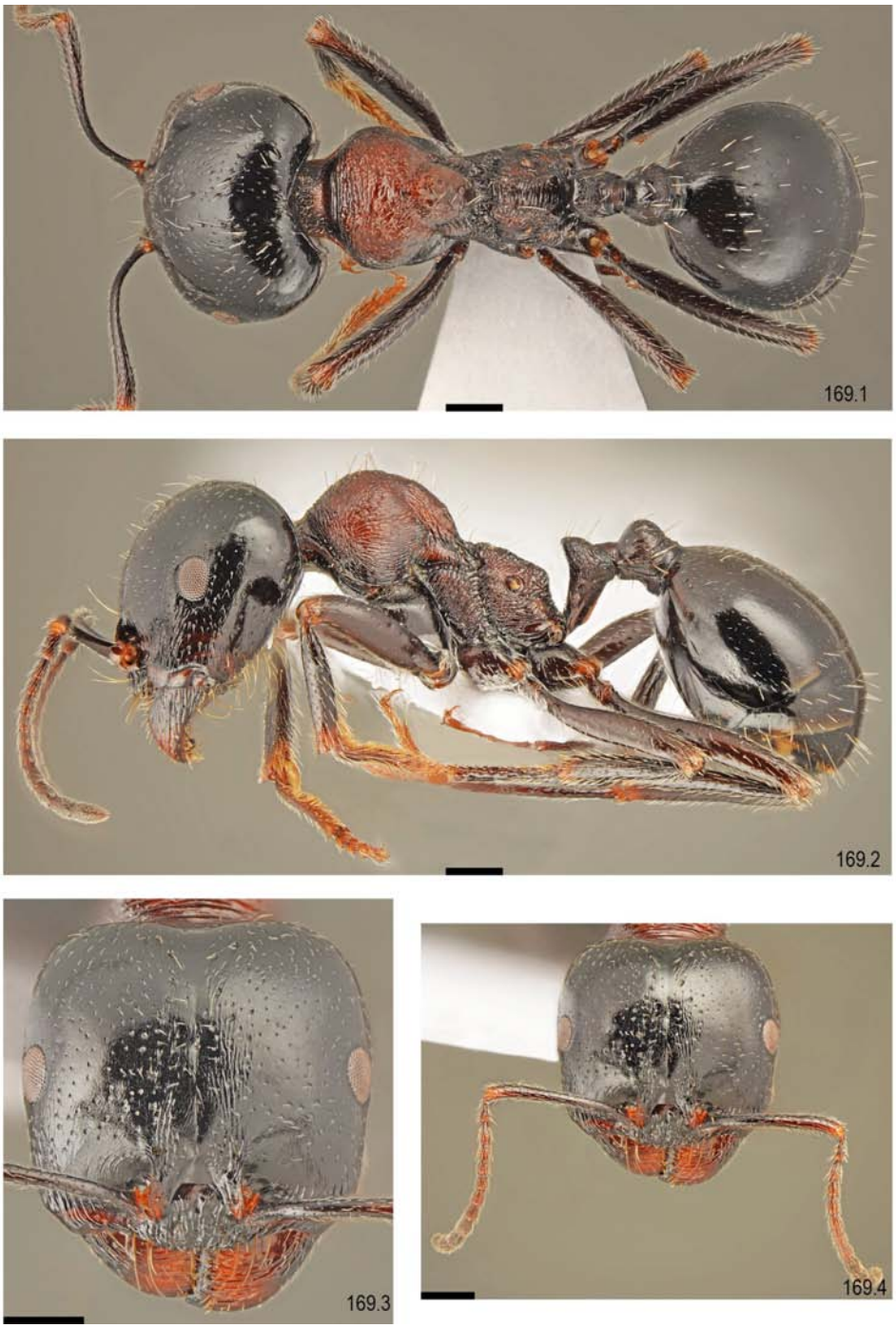
Figs. 166.1-166.4. *Oxyopomyrmex krueperi* Forel, worker (scale: 0.5 mm). 166.1, dorsal view. 166.2, lateral view. 166.3, head, sculpture. 166.4, head with antennae.

Figs. 167.1-167.4. *Oxyopomyrmex laevibus* Salata & Borowiec, worker (scale: 0.5 mm). 167.1, dorsal view. 167.2, lateral view. 167.3, head, sculpture. 167.4, head with antennae.





Figs. 168.1-168.4. *Messor concolor* SANTSCHI, worker (scale: 0.5 mm). 168.1, dorsal view. 168.2, lateral view. 168.3, head, sculpture. 168.4, head with antennae.



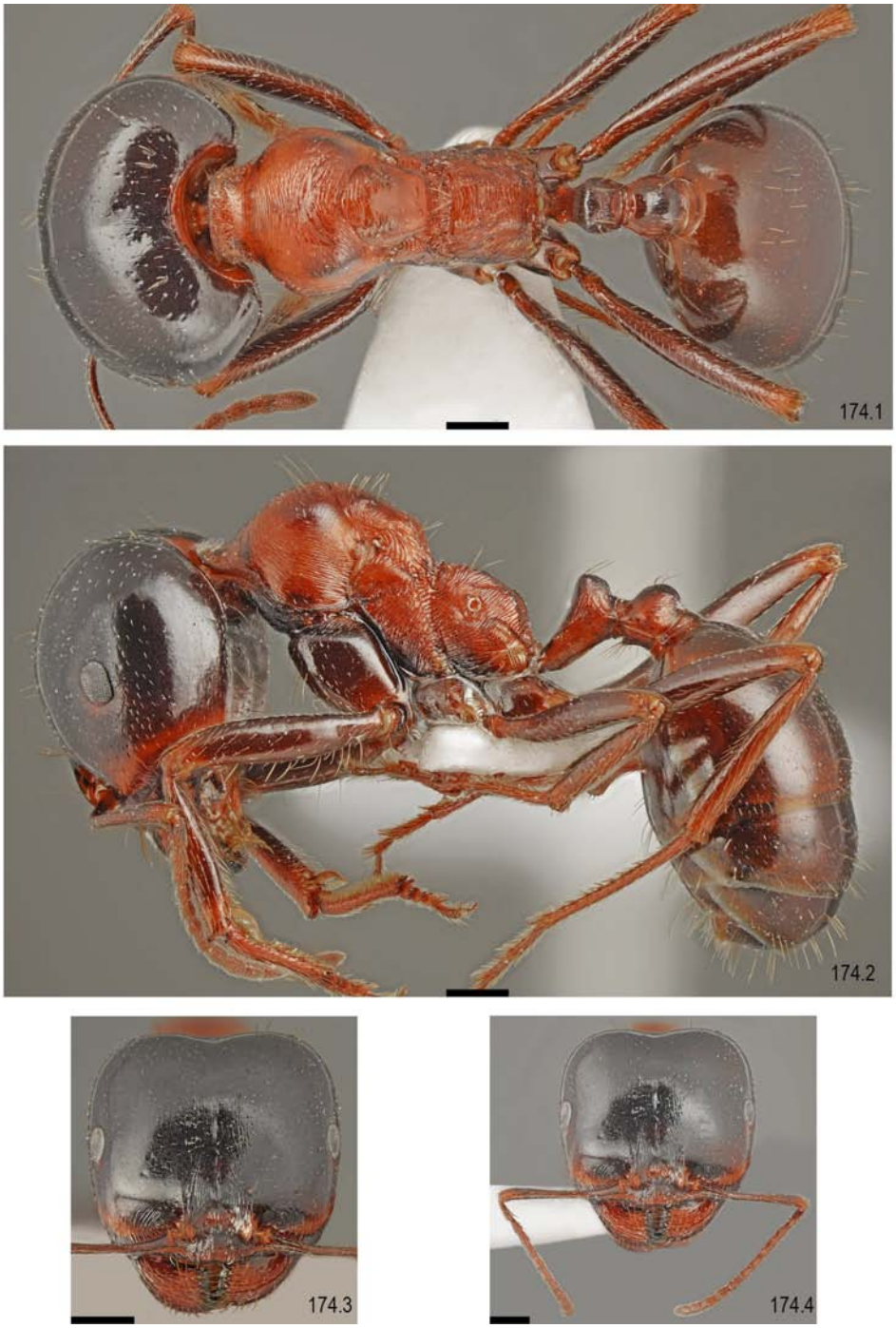
Figs. 169.1-169.4. *Messor creticus* SALATA & BOROWIEC, worker (scale: 0.5 mm). 169.1, dorsal view. 169.2, lateral view. 169.3, head, sculpture. 169.4, head with antennae.

Figs. 170.1-170.4. *Messor hellenius* Agosti & Collingwood, worker (scale: 0.5 mm). 170.1, dorsal view. 170.2, lateral view. 170.3, head, sculpture. 170.4, head with antennae.

Figs. 171.1-171.4. *Messor ibericus* SANTSCHI, worker (scale: 0.5 mm). 171.1, dorsal view. 171.2, lateral view. 171.3, head, sculpture. 171.4, head with antennae.

Figs. 172.1-172.4. *Messor mcarthuri* STEINER *et al.*, worker (scale: 0.5 mm). 172.1, dorsal view. 172.2, lateral view. 172.3, head, sculpture. 172.4, head with antennae.

Figs. 173.1-173.2. Specimens with bright body colouration (scale: 0.5 mm). 173.1, *Messor hellenius* Agosti & Collingwood, lateral view. 173.2, *Messor ibericus* Santschi, lateral view.



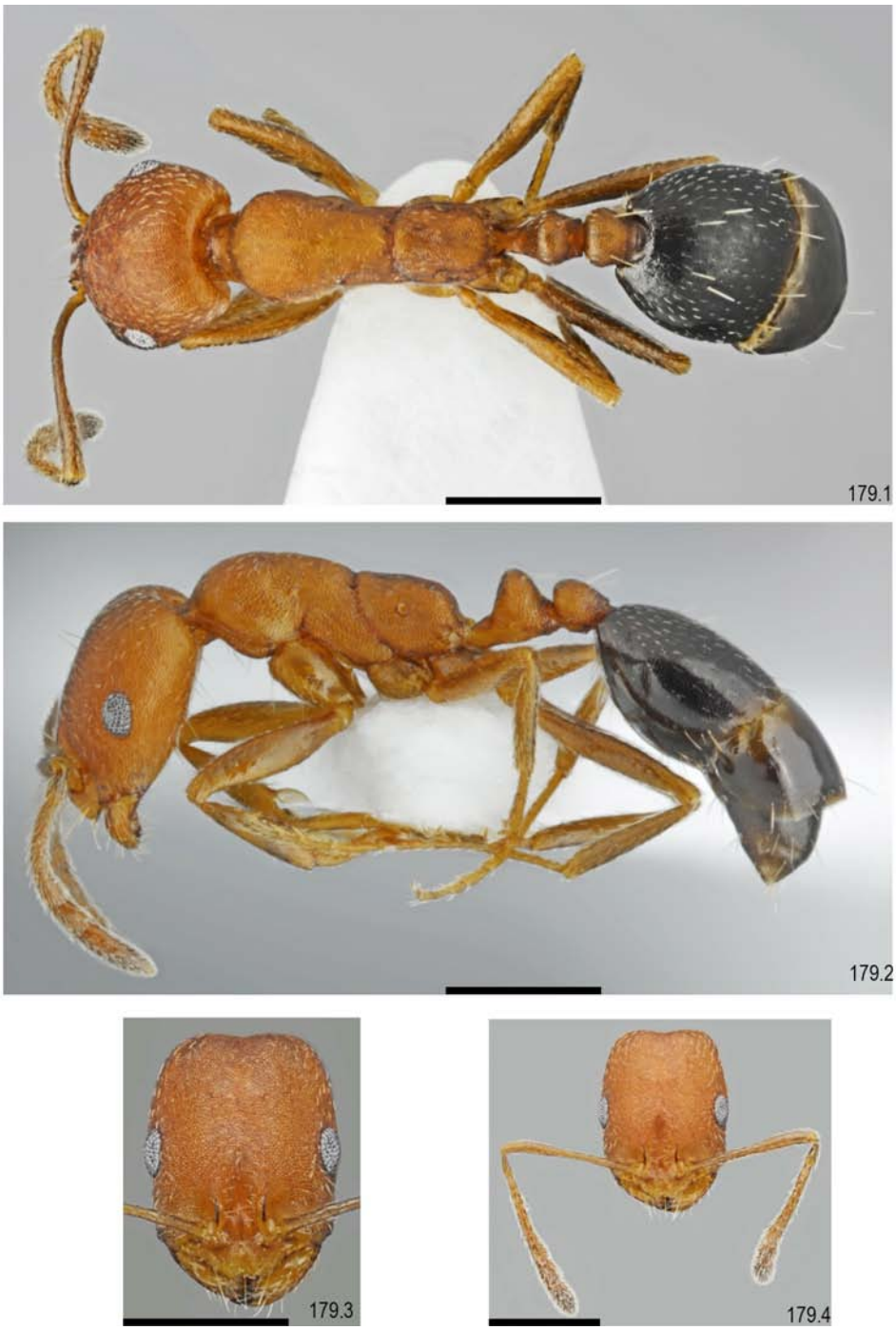
Figs. 174.1-174.4. *Messor wasmanni* KRAUSSE, worker (scale: 0.5 mm). 174.1, dorsal view. 174.2, lateral view. 174.3, head, sculpture. 174.4, head with antennae.

Figs. 175.1-175.2. *Messor wasmanni* KRAUSSE, worker (scale: 0.5 mm). 175.1, specimen with bright body colouration, lateral view. 175.2, melanistic specimen, lateral view.

Figs. 176.1-176.4. *Stenamma debile* (Foerster), worker (scale: 0.5 mm). 176.1, dorsal view. 176.2, lateral view. 176.3, head, sculpture. 176.4, head with antennae.

Figs. 177.1-177.4. *Solenopsis crivellarii* Menozzi, worker (scale: 0.5 mm). 177.1, dorsal view. 177.2, lateral view. 177.3, head, sculpture. 177.4, head with antennae.

Figs. 178.1-178.4. *Solenopsis orbula* Emery, worker (scale: 0.5 mm). 178.1, dorsal view. 178.2, lateral view. 178.3, head, sculpture. 178.4, head with antennae.

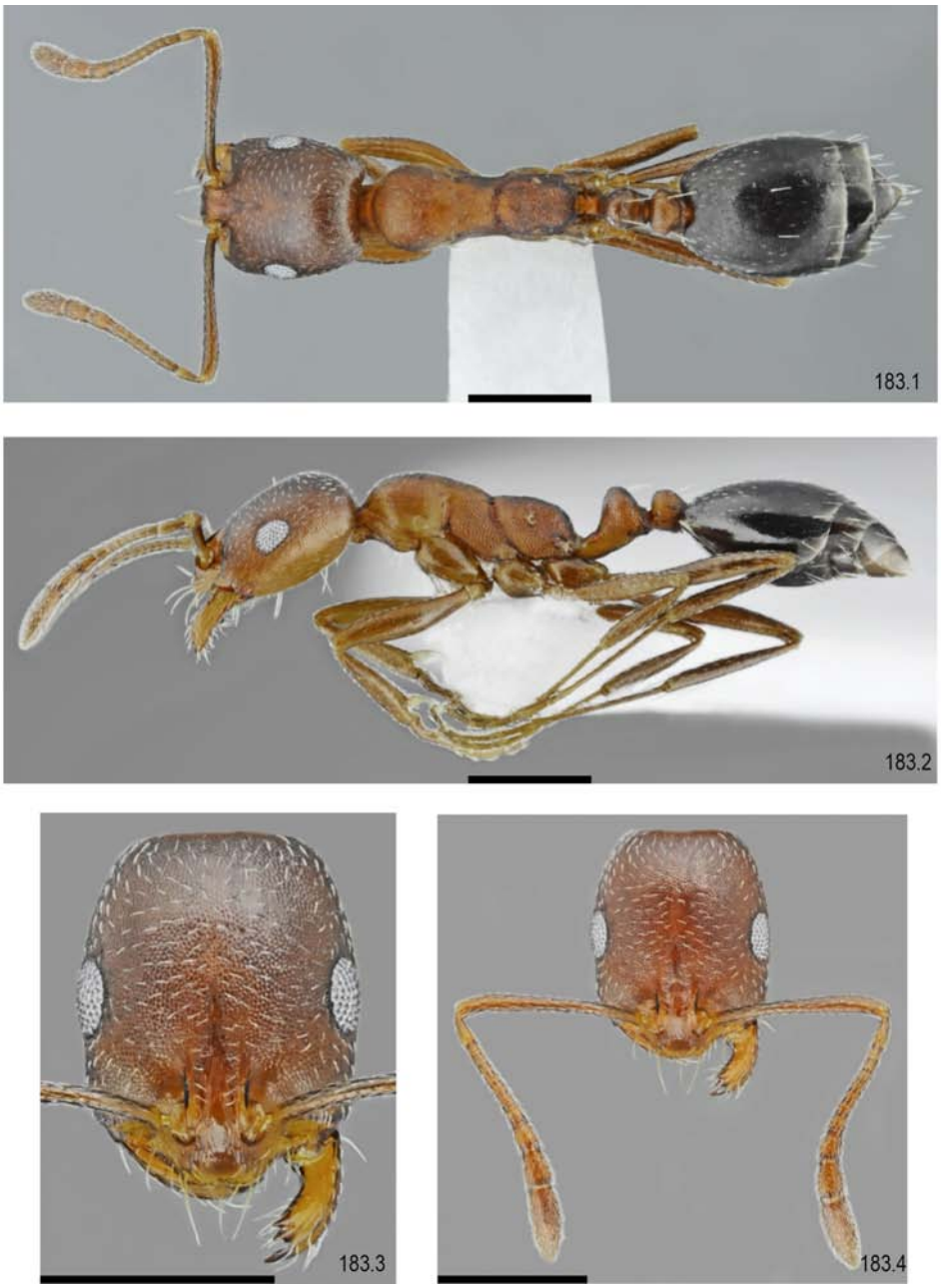


Figs. 179.1-179.4. *Monomorium bicolor* EMERY, worker (scale: 0.5 mm). 179.1, dorsal view. 179.2, lateral view. 179.3, head, sculpture. 179.4, head with antennae.

Figs. 180.1-180.4. *Monomorium creticum* EMERY, worker (scale: 0.5 mm). 180.1, dorsal view. 180.2, lateral view. 180.3, head, sculpture. 180.4, head with antennae.

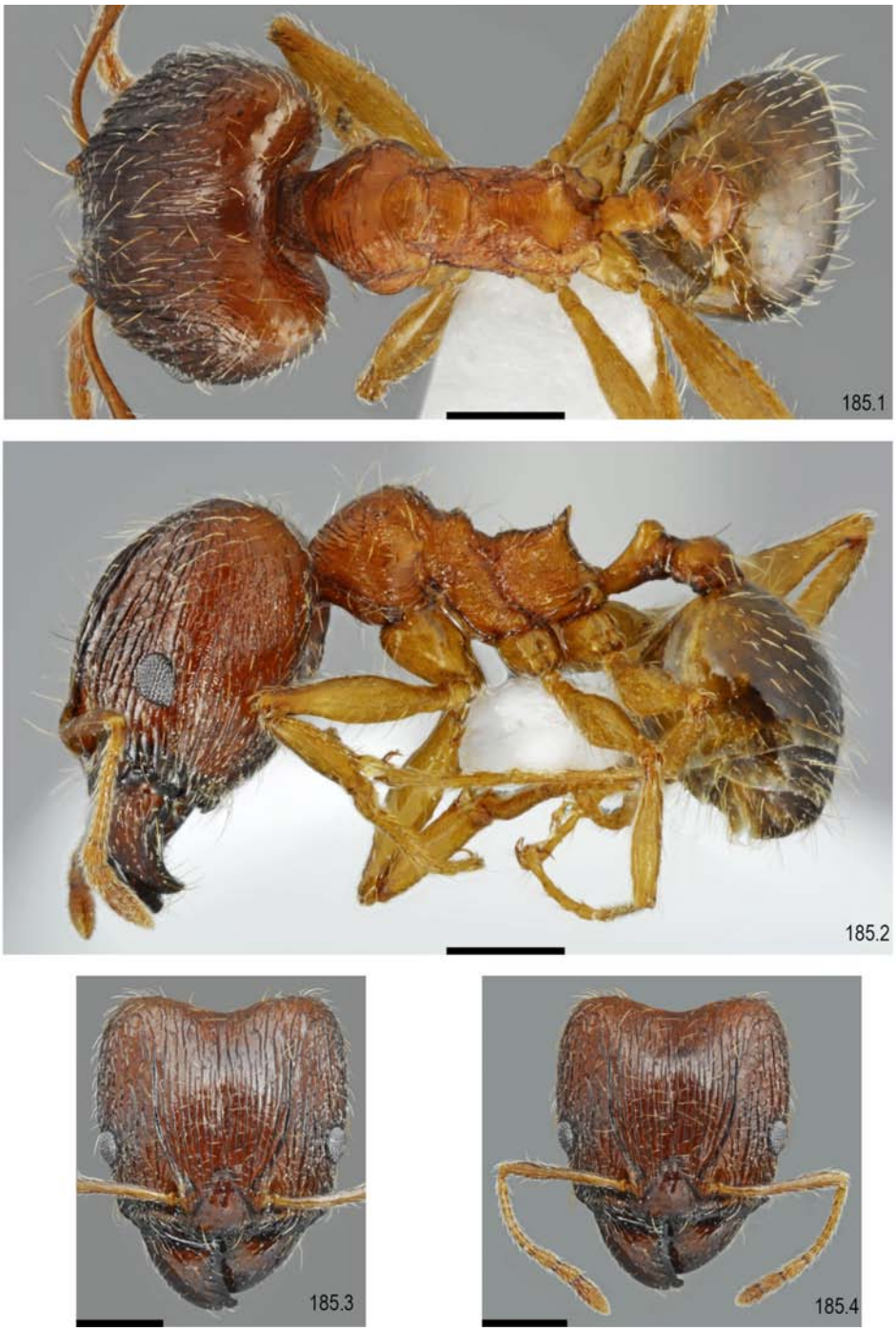
Figs. 181.1-181.4. *Monomorium monomorium* Bolton, worker (scale: 0.5 mm). 181.1, dorsal view. 181.2, lateral view. 181.3, head, sculpture. 181.4, head with antennae.

Figs. 182.1-182.4. *Monomorium pharaonis* (LINNAEUS), worker (scale: 0.5 mm). 182.1, dorsal view. 182.2, lateral view. 182.3, head, sculpture. 182.4, head with antennae.



Figs. 183.1-183.4. *Monomorium subopacum* (F. Smith), worker (scale: 0.5 mm). 183.1, dorsal view. 183.2, lateral view. 183.3, head, sculpture. 183.4, head with antennae.

Figs. 184.1-184.4. *Pheidole indica* Mayr, worker minor (scale: 0.5 mm). 184.1, dorsal view. 184.2, lateral view. 184.3, head, sculpture. 184.4, head with antennae.



Figs. 185.1-185.4. *Pheidole indica* MAYR, worker major (scale: 0.5 mm). 185.1, dorsal view. 185.2, lateral view. 185.3, head, sculpture. 185.4, head with antennae.

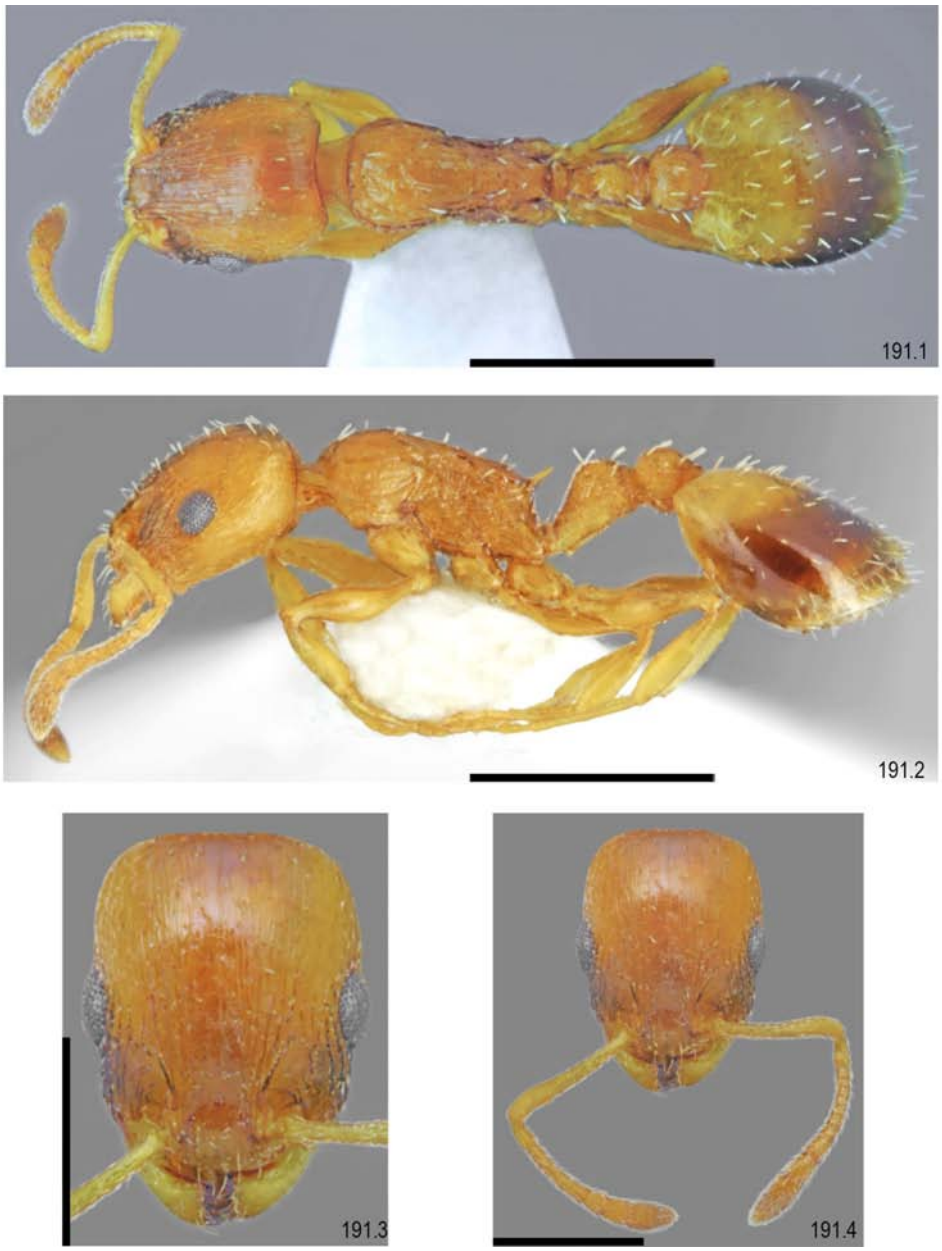
Figs. 186.1-186.4. *Pheidole pallidula* (NYLANDER), worker minor (scale: 0.5 mm). 186.1, dorsal view. 186.2, lateral view. 186.3, head, sculpture. 186.4, head with antennae.

Figs. 187.1-187.4. *Pheidole pallidula* (NYLANDER), worker major (scale: 0.5 mm). 187.1, dorsal view. 187.2, lateral view. 187.3, head, sculpture. 187.4, head with antennae.

Figs. 188.1-188.4. *Pheidole* sp. 1, worker minor (scale: 0.5 mm). 188.1, dorsal view. 188.2, lateral view. 188.3, head, sculpture. 188.4, head with antennae.

Figs. 189.1-189.4. *Pheidole* sp. 1, worker major (scale: 0.5 mm). 189.1, dorsal view. 189.2, lateral view. 189.3, head, sculpture. 189.4, head with antennae.

Figs. 190.1-190.4. *Temnothorax ariadnae* Csősz, Heinze & Mikó, worker (scale: 0.5 mm). 190.1, dorsal view. 190.2, lateral view. 190.3, head, sculpture. 190.4, head with antennae.



Figs. 191.1-191.4. *Temnothorax crassistriatus* SALATA, BOROWIEC & TRICHAS, worker (scale: 0.5 mm). 191.1, dorsal view. 191.2, lateral view. 191.3, head, sculpture. 191.4, head with antennae.

Figs. 192.1-192.4. *Temnothorax daidalosi* Salata, Borowiec & Trichas, worker (scale: 0.5 mm). 192.1, dorsal view. 192.2, lateral view. 192.3, head, sculpture. 192.4, head with antennae.

Figs. 193.1-193.4. *Temnothorax exilis* (EMERY), worker (scale: 0.5 mm). 193.1, dorsal view. 193.2, lateral view. 193.3, head, sculpture. 193.4, head with antennae.

Figs. 194.1-194.4. *Temnothorax helenae* Csősz, Heinze & Mikó, worker (scale: 0.5 mm). 194.1, dorsal view. 194.2, lateral view. 194.3, head, sculpture. 194.4, head with antennae.

Figs. 195.1-195.4. *Temnothorax ikarosi* Salata, Borowiec & Trichas, worker (scale: 0.5 mm). 195.1, dorsal view. 195.2, lateral view. 195.3, head, sculpture. 195.4, head with antennae.

Figs. 196.1-196.5. *Temnothorax incompletus* Salata, Borowiec & Trichas, worker (scale: 0.5 mm). 196.1, dorsal view. 196.2, lateral view. 196.3, head, sculpture. 196.4, head with antennae. 196.5. gaster, dorsal view.

Figs. 197.1-197.3. *Temnothorax lucidus* Csősz, Heinze & Mikó, worker (scale: 0.5 mm). 197.1, dorsal view. 197.2, lateral view. 197.3, head, sculpture. Source: www.AntWeb.org, Michele Esposito.

Figs. 198.1-198.4. *Temnothorax kraussei* (EMERY), worker (scale: 0.5 mm). 198.1, dorsal view. 198.2, lateral view. 198.3, head, sculpture. 198.4, head with antennae.

Figs. 199.1-199.4. *Temnothorax minotaurosi* Salata, Borowiec & Trichas, worker (scale: 0.5 mm). 199.1, dorsal view. 199.2, lateral view. 199.3, head, sculpture. 199.4, head with antennae.

Figs. 200.1-200.4. *Temnothorax muellerianus* (FINZI), worker (scale: 0.5 mm). 200.1, dorsal view. 200.2, lateral view. 200.3, head, sculpture. 200.4, head with antennae.

Figs. 201.1-201.4. *Temnothorax proteii* SALATA, BOROWIEC & TRICHAS, worker (scale: 0.5 mm). 201.1, dorsal view. 201.2, lateral view. 201.3, head, sculpture. 201.4, head with antennae.

Figs. 202.1-202.2. 202.1. *Temnothorax daidalosi* Salata, Borowiec & Trichas, specimen with long propodeal spines (scale: 0.5 mm). 202.2, *Temnothorax proteii* Salata, Borowiec & Trichas, specimen with bright body colouration (scale: 0.5 mm).

Figs. 203.1-203.4. *Temnothorax recedens* (NYLANDER), worker (scale: 0.5 mm). 203.1, dorsal view. 203.2, lateral view. 203.3, head, sculpture. 203.4, head with antennae.

Figs. 204.1-204.4. *Temnothorax semiruber* (André), worker (scale: 0.5 mm). 204.1, dorsal view. 204.2, lateral view. 204.3, head, sculpture. 204.4, head with antennae.

Figs. 205.1-205.2. Specimens with dark body colouration (scale: 0.5 mm). 205.1, *Temnothorax recedens* (NYLANDER). 205.2, *Temnothorax semiruber* (ANDRÉ).

Figs. 206.1-206.4. *Temnothorax subtilis* Csősz, Heinze & Mikó, worker (scale: 0.5 mm). 206.1, dorsal view. 206.2, lateral view. 206.3, head, sculpture. 206.4, head with antennae.

Figs. 207.1-207.4. *Temnothotax variabilis* Salata, Borowiec & Trichas, worker with weak body sculpture (scale: 0.5 mm). 207.1, dorsal view. 207.2, lateral view. 207.3, head, sculpture. 207.4, head with antennae.

Figs. 208.1-208.4. *Temnothotax variabilis* SALATA, BOROWIEC & TRICHAS, worker strong body sculpture (scale: 0.5 mm). 208.1, dorsal view. 208.2, lateral view. 208.3, head, sculpture. 208.4, head with antennae.

Figs. 209.1-209.4. *Tetramorium bicarinatum* (NYLANDER), (scale: 0.5 mm). 209.1, dorsal view. 209.2, lateral view. 209.3, head, sculpture. 209.4, head with antennae.

Figs. 210.1-210.4. *Tetramorium diomedeum* EMERY, worker (scale: 0.5 mm). 210.1, dorsal view. 210.2, lateral view. 210.3, head, sculpture. 210.4, head with antennae.

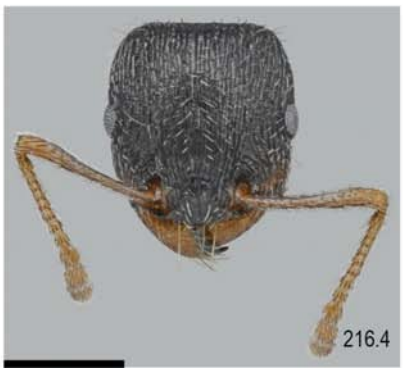
Figs. 211.1-211.4. *Tetramorium ferox* RUZSKY, worker (scale: 0.5 mm). 211.1, dorsal view. 211.2, lateral view. 211.3, head, sculpture. 211.4, head with antennae.

Figs. 212.1-212.4. *Tetramorium hippocratis* Agosti & Collingwood, worker (scale: 0.5 mm). 212.1, dorsal view. 212.2, lateral view. 212.3, head, sculpture. 212.4, head with antennae.

Figs. 213.1-213.4. *Tetramorium indocile* SANTSCHI, worker (scale: 0.5 mm). 213.1, dorsal view. 213.2, lateral view. 213.3, head, sculpture. 213.4, head with antennae.

Figs. 214.1-214.4. *Tetramorium immigrans* SANTSCHI, worker (scale: 0.5 mm). 214.1, dorsal view. 214.2, lateral view. 214.3, head, sculpture. 214.4, head with antennae.

Figs. 215.1-215.5. *Tetramorium kephalosi* Borowiec & Salata, worker (scale: 0.5 mm). 215.1, dorsal view. 215.2, lateral view. 215.3 head, weak sculpture. 215.4 head, strong sculpture. 215.5. head with antennae.

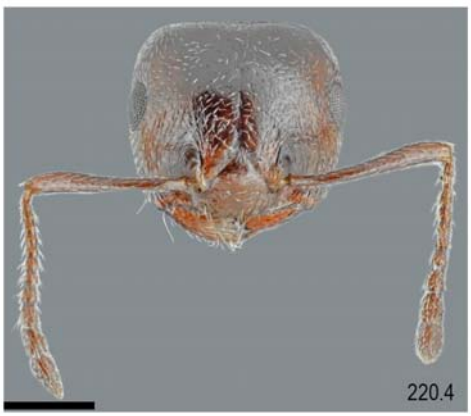


Figs. 216.1-216.4. *Tetramorium moravicum* NOVÁK & SADIL, worker (scale: 0.5 mm). 216.1, dorsal view. 216.2, lateral view. 216.3, head, sculpture. 216.4, head with antennae.

Figs. 217.1-217.4. *Tetramorium punctatum* SANTSCHI, worker (scale: 0.5 mm). 217.1, dorsal view. 217.2, lateral view. 217.3, head, sculpture. 217.4, head with antennae.

Figs. 218.1-218.4. *Strongylognathus huberi dalmaticus* Baroni Urbani, worker (scale: 0.5 mm). 218.1, dorsal view. 218.2, lateral view. 218.3, head, sculpture. 218.4, head with antennae.

Figs. 219.1-219.4. *Strongylognathus silvestrii* (Menozzi), worker (scale: 0.5 mm). 219.1, dorsal view. 219.2, lateral view. 219.3, head, sculpture. 219.4, head with antennae.



Figs. 220.1-220.4. *Crematogaster* cf. *ionia* sp. 1, worker (scale: 0.5 mm). 220.1, dorsal view. 220.2, lateral view. 220.3, head, sculpture. 220.4, head with antennae.

Figs. 221.1-221.4. *Crematogaster ionia* Forel, worker (scale: 0.5 mm). 221.1, dorsal view. 221.2, lateral view. 221.3, head, sculpture. 221.4, head with antennae.

Figs. 222.1-222.4. *Crematogaster schmidti* (Mayr), worker (scale: 0.5 mm). 222.1, dorsal view. 222.2, lateral view. 222.3, head, sculpture. 222.4, head with antennae.

Figs. 223.1-223.4. *Crematogaster sordidula* (NYLANDER), worker (scale: 0.5 mm). 223.1, dorsal view. 223.2, lateral view. 223.3, head, sculpture. 223.4, head with antennae.

Figs. 224.1-224.4. *Trichomyrmex perplexus* (RADCHENKO), worker minor (scale: 0.5 mm). 224.1, dorsal view. 224.2, lateral view. 224.3, head, sculpture. 224.4, head with antennae.

Figs. 225.1-124.4. *Trichomyrmex perplexus* (RADCHENKO), worker major (scale: 0.5 mm). 225.1, dorsal view. 225.2, lateral view. 225.3, head, sculpture. 225.4, head with antennae.

Figs. 226.1-226.4. *Cardiocondyla elegans* Emery, worker major (scale: 0.5 mm). 226.1, dorsal view. 226.2, lateral view. 226.3, head, sculpture. 226.4, head with antennae.

Figs. 227.1-227.4. *Cardiocondyla mauritanica* FOREL, worker major (scale: 0.5 mm). 227.1, dorsal view. 227.2, lateral view. 227.3, head, sculpture. 227.4, head with antennae.

Appendix 1.

Checklist of ant species recorded from Crete until the end of the 19th century.
(underline – taxa described from Crete)
Total number: 32.

Acantholepis frauenfeldi (Mayr)
Aphaenogaster cecconii Emery
Aphaenogaster splendida rugosoferruginea Forel
Aphaenogaster testaceopilosa (Lucas)
Aphaenogaster testaceopilosa simonellii Emery
Camponotus gestroi creticus Forel
Camponotus kiesenwetteri (Roger)
Camponotus lateralis (Olivier)
Camponotus lateralis candiotes Emery
Camponotus lateralis foveolatus (Mayr)
Camponotus maculatus dichrous baldaccii Forel
Camponotus maculatus aethiops concavus Forel
Camponotus rubripes dichrous Forel
Camponotus sylvaticus aethiops (Latreille)
Camponotus sylvaticus dichrous Forel
Crematogaster auberti (Mayr)
Crematogaster scutellaris (Olivier)
Crematogaster sordidula Nylander
Colobopsis truncata (Spinola)
Formica pubescens Fabricius
Lasius niger alienus Foerster
Lasius alienoniger Forel
Messor barbara meridionalis (André)
Messor structor (Latreille)
Monomorium abeillei creticum (Emery)
Myrmecocystus cursor (Fonscolombe)
Myrmecocystus viaticus (Fabricius)
Myrmica rubra (Linnaeus)
Pheidole pallidula (Nylander)
Plagiolepis pygmaea (Latreille)
Tapinoma erraticum (Latreille)
Tetramorium caespitum (Linnaeus)

Appendix 2.

Checklist of ant species recorded from Crete until 1939.
(underline – taxa described from Crete, *– species new to Cretan fauna)
Total number: 50.

Acantholepis frauenfeldi (Mayr)
Acantholepis frauenfeldi splendens Karavaiev*
Acantholepis frauenfeldi syriaca André*
Aphaenogaster cecconii Emery

Aphaenogaster splendida rugosoferruginea Forel
Aphaenogaster testaceopilosa (Lucas)
Aphaenogaster testaceopilosa simonellii Emery
Camponotus aethiops concavus Dalla Torre (=*Camponotus maculatus aethiops concavus* Forel)
Camponotus boghossiani stenotica Emery*
Camponotus gestroi creticus Forel
Camponotus kiesenwetteri (Roger)
Camponotus lateralis (Olivier)
Camponotus lateralis candiotes Emery
Camponotus maculatus baldaccii Emery (=*Camponotus maculatus dichrous* v. *baldaccii* Emery)
Camponotus maculatus cecconii Emery*
Camponotus piceus (Leach) (=*Camponotus lateralis foveolatus* (Mayr))
Camponotus rubripes dichrous Forel
Camponotus sylvaticus aethiops (Latreille)
Camponotus sylvaticus dichrous Forel
Camponotus truncatus (Spinola) (=*Colobopsis truncata* (Spinola))
Camponotus vagus (Scopoli) (=*Formica pubescens* Fabricius)
Cardiocondyla elegans Emery (=*Cardiocondyla elegans* s*antschii* Forel)*
Crematogaster auberti (Mayr)
Crematogaster scutellaris (Olivier)
Crematogaster sordidula Nylander
Crematogaster sordidula flachi (Nylander)*
Epixenus biroi Forel*
Epixenus creticus Emery*
Lasius alienoniger Forel
Lasius niger alienus Foerster
Leptothorax exilis creticus Forel*
Messor barbara meridionalis (André)
Messor barbarus orientalis Emery*
Messor barbarus wasmanni Krausse*
Messor semirufus concolor Santschi (=*Messor barbarus semirufus concolor* Emery)*
Messor structor (Latreille)
Messor structor aegaea Emery*
Monomorium abeillei creticum (Emery)
Monomorium salomonis subopacum (Smith)*
Myrmecocystus cursor (Fonscolombe)
Myrmecocystus cursor cretica Forel (=*Myrmecocystus cursor hellenicus cretica* Emery)*
Myrmecocystus viaticus (Fabricius)
Myrmica rubra (Linnaeus)
Pheidole pallidula (Nylander)
Plagiolepis pygmaea (Latreille)
Tapinoma erraticum (Latreille)
Tapinoma erraticum israele Forel*
Tetramorium caespitum (Linnaeus)
Tetramorium caespitum punicum (Smith)*
Tetramorium caespitum lucidulum Menozzi*

Appendix 3.

Checklist of ant species recorded from Crete until the end of the 20th century.
(underline – taxa described from Crete, *– species new to Cretan fauna, strikethrough – species excluded from Cretan fauna)
Total number: 57.
Excluded species: 1.

Aphaenogaster cecconii Emery
Aphaenogaster splendida rugosoferruginea Forel
Aphaenogaster testaceopilosa (Lucas)
Aphaenogaster testaceopilosa simonellii Emery
Camponotus aethiops (Latreille) (=*Camponotus concavus* Dalla Torre)
Camponotus baldaccii Emery
Camponotus boghossiani stenotica Emery
Camponotus candiotes Emery
Camponotus cecconii Emery
Camponotus gestroi Emery (=*Camponotus gestroi creticus* Forel)
Camponotus kiesenwetteri (Roger)
Camponotus lateralis (Olivier)
Camponotus piceus (Leach)
Camponotus rubripes dichrous Forel
Camponotus sylvaticus dichrous Forel
Camponotus truncatus (Spinola)
Camponotus vagus (Scopoli)
Cardiocondyla elegans Emery
Cataglyphis cursor (Fonscolombe) (=*Myrmecocystus cursor* (Fonscolombe))
Cataglyphis cursor cretica Forel (=*Myrmecocystus cursor cretica* Forel)
Cataglyphis viaticus (Fabricius) (=*Myrmecocystus viaticus* (Fabricius))
Crematogaster auberti (Mayr)
Crematogaster scutellaris (Olivier)
Crematogaster sordidula Nylander (=*Crematogaster sordidula flachi* (Nylander))
Epimyrma kraussei Emery*
Lasius alienus Foerster
Lasius brunneus (Latreille)*
Lasius niger (Linnaeus) (=*Lasius alienoniger* Forel)
Lepisiota frauenfeldi (Mayr) (=*Acantholepis frauenfeldi* (Mayr))
Lepisiota nigra Dalla Torre*
Lepisiota splendens Karavaiev (=*Acantholepis frauenfeldi splendens* Karavaiev)
Lepisiota syriaca André (=*Acantholepis frauenfeldi syriaca* André)
Leptothorax exilis Emery (=*Leptothorax exilis creticus* Forel)
Leptothorax recedens Nylander*
Messor barbarus (Linnaeus)*
Messor meridionalis (André)
Messor orientalis Emery
Messor semirufus André*
Messor wasmanni Krausse (=*Messor semirufus concolor* Santschi)
Messor structor (Latreille)
Messor structor aegaea Emery

Monomorium biroianum Bolton (=*Epixenus biroi* Forel)
Monomorium creticum (Emery)
Monomorium creticus Emery (=*Epixenus creticus* Emery)
~~*Monomorium dentigerum*(Roger)*~~
Monomorium perplexum Radchenko*
Monomorium pharaonis (Linnaeus)*
Monomorium subopacum (Smith)
Myrmica rubra (Linnaeus)
Pheidole pallidula (Nylander)
Plagiolepis pygmaea (Latreille)
Strongylognathus cf. *insularis**
Tapinoma erraticum (Latreille)
Tapinoma israele Forel
Tetramorium caespitum (Linnaeus)
Tetramorium lucidulum Menozzi
Tetramorium punicum (Smith)
Tetramorium splendens Ruzsky*

Appendix 4.

Checklist of ant species recorded from Crete up to 2018.
(underline – taxa described from Crete, *– species new to Cretan fauna, strikethrough – species excluded from Cretan fauna)
Total number: 111.
Excluded species: 19.

Acropyga paleartica Menozzi
Aphaenogaster balcanicoides Boer*
Aphaenogaster cecconii Emery
Aphaenogaster rugosoferruginea Forel
Aphaenogaster simonellii Emery
Aphaenogaster subterraneoides Emery (=*Aphaenogaster lesbica*: Borowiec & Salata 2012)
Camponotus aegaeus Emery
Camponotus aethiops (Latreille) (=*Camponotus cosensis* Finzi)
Camponotus baldaccii Emery
Camponotus boghossiani Forel
Camponotus candiotes Emery
Camponotus cecconii Emery
Camponotus gestroi Emery
Camponotus honaziensis Karaman & Aktaç*
Camponotus jaliensis Dalla Torre
Camponotus kiesenwetteri (Roger)
Camponotus lateralis (Olivier)
Camponotus oertzeni (Forel) (=*Camponotus andrius* Dalla Torre)
Camponotus piceus (Leach)
Camponotus sanctus Forel
Camponotus vagus (Scopoli)
Cardiocondyla elegans Emery

Cardiocondyla mauritanica Forel
Cardiocondyla nigra Forel
Cataglyphis cretica Forel (=*Cataglyphis aenescens* (Nylander): Borowiec & Salata 2013,= *Cataglyphis hellenica* (Forel)
Cataglyphis albicans (Roger)
Cataglyphis nodus (Brullé)
Colobopsis truncatus (Spinola) (=*Camponotus truncatus* (Spinola))
Cataglyphis viaticus (Fabricius)
Crematogaster auberti (Mayr)
Crematogaster ionia Forel
Crematogaster schmidti (Mayr)
Crematogaster scutellaris (Olivier)
Crematogaster sordidula Nylander
Cryptopone ochracea (Mayr)*
Formica cunicularia Latreille
Hypoponera eduardi (Forel)
Lasius alienus Foerster
Lasius brunneus (Latreille)
Lasius lasioides (Emery)
Lasius niger (Linnaeus)
Lasius tapinomoides Salata & Borowiec
Lasius paralienus Seifert
Lasius psammophilus Seifert*
Lasius turcicus Santschi
Lepisiota frauenfeldi (Mayr)
Lepisiota melas (Emery)
Lepisiota nigra Dalla Torre (=*Lepisiota splendens* Karavaiev)
Linepithema humile (Mayr)
Messor barbarus (Linnaeus)
Messor caducus (Motschoulsky)
Messor mcarthuri Steiner *et al.* (=*Messor orientalis* Emery: Borowiec & Salata 2012)
Messor oertzeni Forel
Messor semirufus André
Messor wasmanni Krausse
Messor ibericus Santschi (=*Messor structor* (Latreille): Borowiec & Salata 2012)
Messor varrialei Emery (=*Messor structor aegaea* Emery)
Monomorium creticum (Emery) (=*Monomorium biroianum* Bolton, = *Monomorium pseudoepixenus* Özdikmen)
Monomorium monomorium Bolton
Monomorium pharaonis (Linnaeus)
Monomorium phoenicum Santschi
Monomorium subopacum (Smith)
Myrmecina graminicola (Latreille)
Myrmica rubra (Linnaeus)
Oxyopomyrmex krueperi Forel
Oxyopomyrmex laevibus Salata & Borowiec*
Pheidole pallidula (Nylander)
Pheidole teneriffana Forel

Plagiolepis pallescens Forel (=*Plagiolepis taurica* Santschi)
Plagiolepis perperamus Salata, Borowiec & Radchenko*
Plagiolepis pygmaea (Latreille)
Ponera testacea Emery*
Prenolepis nitens (Mayr)*
Solenopsis wolfi Emery
Stigmatomma denticulatum Roger*
Strongylognathus huberi dalmaticus Baroni Urbani*
Strongylognathus silvestrii Menozzi (=*Strongylognathus* cf. *insularis*)
Tapinoma erraticum (Latreille)
Tapinoma festae Emery
Tapinoma madeirense Forel*
Tapinoma simrothi Krausse
Temnothorax ariadnae Csősz, Heinze & Mikó*
Temnothorax crassistriatus Salata, Borowiec & Trichas*
Temnothorax daidalosi Salata, Borowiec & Trichas*
Temnothorax exilis Emery (=*Temnothorax specularis* Emery)
Temnothorax helenae Csősz, Heinze & Mikó*
Temnothorax ikarosi Salata, Borowiec & Trichas*
Temnothorax incompletus Salata, Borowiec & Trichas*
Temnothorax lucidus Csősz, Heinze & Mikó*
Temnothorax minotaurosi Salata, Borowiec & Trichas*
Temnothorax muellerianus (Finzi) (=*Chalepoxenus muellerianus* (Finzi))
Temnothorax kraussei (Emery) (=*Myrmoxenus kraussei* (Emery))
Temnothorax niger (Forel)
Temnothorax proteii Salata, Borowiec & Trichas
Temnothorax recedens (Nylander)
Temnothorax semiruber (André)
Temnothorax subtilis Csősz, Heinze & Mikó*
Temnothorax unifasciatus (Latreille)
Temnothorax variabilis Salata, Borowiec & Trichas*
Tetramorium diomedeum Emery
Tetramorium ferox Ruzsky
Tetramorium hippocratis Agosti & Collingwood
Tetramorium indocile Santschi
Tetramorium immigrans Santschi
Tetramorium kephalosi Salata & Borowiec*
Tetramorium lucidulum Menozzi
Tetramorium moravicum Novák & Sadil
Tetramorium punicum (Smith)
Tetramorium semilaeve André
Tetramorium splendens Ruzsky
Trichomyrmex perplexus (Radchenko) (=*Monomorium perplexum* Radchenko)

Species excluded from Cretan checklist in 2012-2018

Aphaenogaster balcanica (Emery)
Aphaenogaster ionia Santschi

Aphaenogaster testaceopilosa (Lucas)
~~*Oxyopomyrmex santschii* Forel~~*
Camponotus sylvaticus (Olivier)
Camponotus thales Forel
Cataglyphis cursor (Fonscolombe)
Lepisiota karawaiewi Kuznetsov-Ugamsky
Lepisiota semenovi (Ruzsky)
Lepisiota syriaca André
Messor denticulatus Santschi
Messor orientalis Emery
Messor structor (Latreille)
Messor sultanus Santschi
Monomorium abeillei André
Pheidole megacephala (Fabricius)
Tapinoma israele Forel
Temnothorax tuberum (Fabricius)
Tetramorium caespitum (Linnaeus)

Appendix 5.

Collecting data of the samples deposited in the Natural History Museum of Crete, Heraklion, Greece (NHMC), Museum d'Histoire Naturelle, Genève, Switzerland (MHNG), and those collected by G. Bračko (GBC).

Code	Deposi-tory	Collector	Date	District	Locality	Altitude	Latitude	Longitude
CHM001	NHMC	P. Lymberakis	1997-07-08	Chania	Agia (lake)	40 m	35.46667	23.93333
CHM002.1	NHMC	M. Chatzaki	2006-07-22	Chania	Anopoli	1780 m	35.26667	24.06667
CHM002.2	NHMC	M. Chatzaki	2006-07-22	Chania	Anopoli	720 m	35.23333	24.08333
CHM003	NHMC	S. Simaiakis	2001-05-29	Chania	Asi Gonia	716 m	35.25	24.26667
CHM004	GBC	G. Bračko	2006-07-25	Chania	Kournas (lake)	30 m	35.31667	24.26667
CHM005	NHMC	P. Lymberakis	1997-07-12	Chania	Chamaitoulo	80 m	35.56667	23.58333
CHM006	GBC	G. Bračko	2015-05-01	Chania	Chania. city	10 m	35.5025	24.0025
CHM007	NHMC	P. Lymberakis	1996-10-29	Chania	Elafonisi	5 m	35.26667	23.53333
CHM008	NHMC	K. Paragamian	1997-06-14	Chania	Gavdopoula	84 m	34.91667	24
CHM009	NHMC	K. Paragamian	1997-08-28	Chania	Gavdos	15 m	34.85	24.1
CHM010	NHMC	K. Paragamian	1996-11-10	Chania	Gavdos	53 m	34.85	24.05
CHM011	NHMC	K. Paragamian	1997-08-27	Chania	Gavdos	58 m	34.8	24.12212
CHM012	NHMC	K. Paragamian	1996-11-09	Chania	Gavdos	126 m	34.83333	24.08333
CHM013	NHMC	K. Paragamian	1997-06-14	Chania	Gavdos	200 m	34.81667	24.1
CHM014	NHMC	K. Paragamian	1997-06-13	Chania	Gavdos	258 m	34.83333	24.05
CHM015	NHMC	P. Lymberakis	1997-07-12	Chania	Gramvousa (peninsula)	80 m	35.56667	23.58333
CHM016	NHMC	P. Lymberakis	1996-10-29	Chania	Gramvousa (peninsula)	140 m	35.55	23.6
CHM017	NHMC	S. Simaiakis	2013-07-19	Chania	Greleska–Agioi Theodoroi	1171 m	35.31667	23.85
CHM018	GBC	G. Bračko	2015-05-04	Chania	Imbros gorge	500 m	35.21667	24.16666
CHM019	NHMC	I. Stathi	2001-10-07	Chania	Kallikratis	950 m	35.25	24.25

Code	Deposi-tory	Collector	Date	District	Locality	Altitude	Latitude	Longitude
CHM020	NHMC	P. Lymberakis	1995-11-25	Chania	Karga	22 m	35.45	24.18333
CHM021	GBC	G. Bračko	2015-05-03	Chania	Kissamos–Elafonisi	120 m	35.41667	23.56667
CHM022	NHMC	K. Paragamian	1997-06-14	Chania	Korfos/Kefala	55 m	34.83333	24.1
CHM023	NHMC	P. Lymberakis	1997-07-10	Chania	Kournas (lake)	30 m	35.31667	24.26667
CHM024	NHMC	A. Trichas	1991-09-26	Chania	Lefka Ori	1800 m	35.26667	24.05
CHM025	GBC	G. Bračko	2015-05-04	Chania	Neo Chorio	50 m	35.41667	24.13333
CHM026	NHMC	S. Simaiakis	2013-07-19	Chania	Niato (plateau)	1200 m	35.28333	24.13333
CHM027	NHMC	S. Simaiakis	2013-12-31	Chania	Omalos (plateau)	1034 m	35.33333	23.88333
CHM028	NHMC	S. Simaiakis	2013-12-31	Chania	Saridantoni	8 m	35.5	24
CHM029	NHMC	S. Simaiakis	2013-10-04	Chania	Therisso-Kaloros	1130 m	35.35	23.95
CHM030	NHMC	S. Simaiakis	2013-07-19	Chania	Therisso-Kaloros	1134 m	35.36667	23.98333
HERM001	NHMC	M. Papadimitrakis	1999-09-28	Heraklion	Achentrias	750 m	34.98333	25.21667
HERM002	NHMC	A. Trichas	1988-11-12	Heraklion	Agios Syllas	250 m	35.23333	25.1
HERM003	NHMC	E. Aspradaki	2012-06-03	Heraklion	Almyros (river)	297 m	35.33469	25.05441
HERM004	NHMC	M. Papadimitrakis	1999-05-26	Heraklion	Anapodaris	250 m	35	25.33333
HERM005	NHMC	M. Papadimitrakis	1999-06-08	Heraklion	Apesokari–Miammou	350 m	34.98333	24.93333
HERM006	NHMC	A. Trichas	2000-08-02	Heraklion	Aposelemis	7 m	35.33333	25.33333
HERM007	NHMC	M. Chatzaki	2000-05-20	Heraklion	Archanes	381 m	35.25	25.16667
HERM008	NHMC	S. Roberts	2000-04-13	Heraklion	Dia	225 m	35.45	25.21667
HERM009	NHMC	E. Nikolakakis	1999-08-03	Heraklion	Dia	30 m	35.43333	25.2
HERM010	NHMC	S. Roberts	2000-04-13	Heraklion	Dia	36 m	35.43333	25.21667
HERM011	NHMC	E. Nikolakakis	1999-05-02	Heraklion	Dia	63 m	35.43333	25.2
HERM012	NHMC	E. Nikolakakis	1999-10-19	Heraklion	Diplori	1350 m	35.16667	24.93333
HERM013	NHMC	M. Chatzaki	1999-04-20	Heraklion	Giouchtas	470 m	35.23333	25.13333

Code	Deposi-tory	Collector	Date	District	Locality	Altitude	Latitude	Longitude
HERM014	NHMC	E. Panagiotou	2010-09-18	Heraklion	Heraklion	10 m	35.33333	25.13333
HERM015	GBC	G. Bračko	2006-07-22/26	Heraklion	Kato Gouves	0 m	35.33333	25.28528
HERM016	NHMC	M. Papadimitrakis	1999-09-28	Heraklion	Keratokampos	0 m	34.99861	25.36667
HERM017	NHMC	M. Papadimitrakis	1999-07-28	Heraklion	Keratokampos	30 m	34.99861	25.36667
HERM018	NHMC	E. Hadjicharalambous	1997-05-26	Heraklion	Kofinas	1000 m	34.95	25.08333
HERM019	NHMC	M. Papadimitrakis	1999-09-30	Heraklion	Kommos	40 m	35.01694	24.76222
HERM020	NHMC	E. Hadjicharalambous	1996-07-17	Heraklion	Koudoumas	520 m	34.95	25.08333
HERM021.1	NHMC	E. Hadjicharalambous	1996-10-21	Heraklion	Koudoumas	700 m	34.95	25.08333
HERM021.2	NHMC	E. Nikolakakis	1999-08-18	Heraklion	Kouroutes	650 m	35.18333	24.73333
HERM022	NHMC	E. Hadjicharalambous	1996-10-21	Heraklion	Koudoumas	800 m	34.95	25.1
HERM023	NHMC	E. Nikolakakis	2000-02-03	Heraklion	Lentas	100 m	34.93333	24.93333
HERM024	NHMC	E. Nikolakakis	2000-02-04	Heraklion	Martsalos	200 m	34.93333	24.75
HERM025	NHMC	M. Chatzaki	2000-04-14	Heraklion	Moni Vrondisiou	600 m	35.13333	24.88333
HERM026	NHMC	M. Papadimitrakis	1999-09-28	Heraklion	Omalos Viannou	1100 m	35.06667	25.43333
HERM027	NHMC	M. Papadimitrakis	1999-05-20	Heraklion	Panagia Almyri	350 m	35.06667	24.98333
HERM028	NHMC	E. Panagiotou	2010-04-21	Heraklion	Pantanassa	10 m	35.36667	25.03333
HERM029	NHMC	E. Nikolakakis	2000-02-03	Heraklion	Pigaidakia	450 m	34.98333	24.85
HERM030	NHMC	E. Nikolakakis	2000-02-03	Heraklion	Platia Peramata	450 m	34.93333	24.81667
HERM031	NHMC	E. Nikolakakis	2000-02-09	Heraklion	Rouvast	1000 m	35.15	24.91667
HERM032	NHMC	E. Panagiotou	2010-06-22	Heraklion	Stavromenos	40 m	35.31667	25.21667
HERM033	NHMC	E. Hadjicharalambous	1997-05-26	Heraklion	Sternes	450 m	34.98333	25.08333
HERM034	NHMC	E. Hadjicharalambous	1996-11-09	Heraklion	Sternes	750 m	34.98333	25.08333
HERM035	GBC	G. Bračko	2006-07-31	Heraklion	Zaros	350 m	35.13333	24.9
HERM036	NHMC	E. Nikolakakis	1999-07-26	Heraklion	Zaros	450 m	35.13333	24.9

Code	Deposi-tory	Collector	Date	District	Locality	Altitude	Latitude	Longitude
HERM037	MHNG	Hauser	1982-03-23	Heraklion	Analipsis	20 m	35.3317	25.3453
LASM001	NHMC	E. Nikolakakis	2000-02-01	Lasithi	Agios Ioannis	200 m	35.01667	25.83333
LASM002	NHMC	I. Stathi	1997-08-06	Lasithi	Amygdali–Neapoli	561 m	35.2	25.58333
LASM003	NHMC	M. Papadimitrakis	1999-05-04	Lasithi	Bramiana (lake)	100 m	35.03333	25.7
LASM004	NHMC	E. Nikolakakis	2000-02-01	Lasithi	Cha gorge	150 m	35.08333	25.81667
LASM005	NHMC	E. Nikolakakis	2001-05-06	Lasithi	Chamaitoulo	180 m	35.03333	26.2
LASM006	NHMC	E. Nikolakakis	2001-05-10	Heraklion	Dikti	1450 m	35.11667	25.46667
LASM007	NHMC	M. Chatzaki	2000-08-05	Heraklion	Dikti	1750 m	35.1	25.46667
LASM008	NHMC	P. Lymberakis	2012-09-14	Lasithi	Dragonada	33 m	35.33333	26.18333
LASM009	NHMC	I. Stathi	1998-01-24	Lasithi	Istro	20 m	35.13333	25.7
LASM010	NHMC	I. Stathi	1997-08-07	Lasithi	Istro	80 m	35.13333	25.7
LASM011	NHMC	M. Papadimitrakis	1999-09-22	Lasithi	Kavousi	200 m	35.1	25.81667
LASM012	NHMC	E. Nikolakakis	2000-01-31	Lasithi	Kroustas	400 m	35.1	25.66667
LASM013	NHMC	M. Mylonas	1996-12-13	Lasithi	Lasithi (plateau)	813 m	35.16667	25.45
LASM014	NHMC	M. Chatzaki	2000-10-11	Lasithi	Milatos	170 m	35.3	25.58333
LASM015	NHMC	M. Chatzaki	2000-07-12	Lasithi	Milatos	310 m	35.3	25.58333
LASM016	NHMC	M. Mylonas	1996-12-14	Lasithi	Moni Toplou	160 m	35.21667	26.2
LASM017	NHMC	E. Nikolakakis	2000-01-31	Lasithi	Myrtos	100 m	35.03333	25.56667
LASM018	NHMC	E. Nikolakakis	2000-01-31	Lasithi	Prina–Messeleroi	350 m	35.08333	25.7
LASM019	NHMC	M. Papadimitrakis	1999-07-23	Lasithi	Selakano	800 m	35.08333	25.55
LASM020	NHMC	A. Trichas	2001-09-26	Lasithi	Trocharis	2131 m	35.28333	24.03333
RETM001	NHMC	E. Nikolakakis	1999-10-21	Rethymnon	Afentis Christos	650 m	35.23333	24.7
RETM002	NHMC	I. Stathi	2000-04-15	Rethymnon	Agia Foteini	450 m	35.25	24.61667
RETM003	NHMC	I. Stathi	2001-05-30	Rethymnon	Agios Ioannis	520 m	35.23333	24.4

Code	Deposi-tory	Collector	Date	District	Locality	Altitude	Latitude	Longitude
RETM004	NHMC	M. Papadimitrakis	2000-04-14	Rethymnon	Agios Titos	1000 m	35.18333	24.75
RETM005	NHMC	M. Papadimitrakis	1999-09-28	Rethymnon	Anapodaris	250 m	35	25.33333
RETM006	NHMC	I. Stathi	2000-04-15	Rethymnon	Ano Meros	750 m	35.16667	24.65
RETM007	NHMC	A. Trichas	1995-12-15	Rethymnon	Bali	27 m	35.4	24.76667
RETM008	NHMC	E. Nikolakakis	2001-05-08	Rethymnon	Exantis	170 m	35.4	24.73333
RETM009	NHMC	E. Nikolakakis	1999-07-20	Rethymnon	Garazo	100 m	35.33333	24.78333
RETM010	NHMC	E. Nikolakakis	1999-08-21	Rethymnon	Garazo	100 m	35.33333	24.78333
RETM011	NHMC	E. Nikolakakis	2000-01-26	Rethymnon	Kardaki	650 m	35.2	24.61667
RETM012	NHMC	I. Stathi	2001-05-29	Rethymnon	Korakas	35 m	35.18333	24.3
RETM013	NHMC	M. Chatzaki	2006-07-27	Rethymnon	Lochria	1330 m	35.18333	24.76667
RETM014	NHMC	M. Maroukli	1996-08-26	Rethymnon	Moni Preveli	15 m	35.15	24.46667
RETM015	NHMC	E. Nikolakakis	2001-06-12	Rethymnon	Psiloreitis	1950 m	35.18333	24.78333
RETM016	NHMC	E. Nikolakakis	2001-06-12	Rethymnon	Psiloreitis. Kouroutes	1650 m	35.2	24.75
RETM017	NHMC	M. Papadimitrakis	2000-04-16	Rethymnon	Saktouria	450 m	35.11667	24.61667
RETM018	NHMC	E. Nikolakakis	2000-04-07	Rethymnon	Tigania	1100 m	35.28333	24.73333

Appendix 6.

Samples collected between 2007-2014, deposited in the Department of Biodiversity and Evolutionary Taxonomy, Wrocław, Poland

Code	Collector	Date	District	Locality	Altitude	Latitude	Longitude	Description
CH001	L. Borowiec, M.L. Borowiec	2007-05-01	Chania	3 km S, Aski-fou	750 m	35.26666	24.16666	phrygana overgrown by single olive trees
CH002	L. Borowiec, M.L. Borowiec	2007-05-01	Chania	6 km S, Vrises	280 m	35.31666	24.2	oak forest and phrygana
CH003	L. Borowiec, M.L. Borowiec	2007-04-30	Chania	8 km E, Georgioupoli, Episkopi	18 m	35.33333	24.3	olive grove
CH004	S. Salata	2014-05-01	Chania	Agia Irini	587 m	35.31667	23.83333	humid and dark gorge partly overgrown by deciduous forest (*Quercus-Platanus*)
CH005	L. Borowiec	2011-05-03	Chania	Agia, 6 km SW Chania	22 m	35.46666	23.91666	deciduous forest (*Quercus* sp.) and dry meadows surrounding artificial water reservoir
CH006	L. Borowiec	2011-05-03	Chania	Akrotiri	90 m	35.5494445	24.133055	peninsula overgrown by phrygana and macchia
CH007	L. Borowiec	2011-05-04	Chania	ancient Aptera	186 m	35.46666	24.11666	ruins overgrown by phrygana
CH008	S. Salata	2014-04-30	Chania	Aradena	580 m	35.21667	24.06667	dry riverbed in gorge, overgrown by single olive trees and phrygana
CH009	L. Borowiec, M.L. Borowiec	2007-05-01	Chania	Askifou	730 m	35.26666	24.16666	mountain plateau with fields and phrygana
CH010	L. Borowiec	2011-04-30	Chania	Chania	20-25 m	35.5	23.966667	urban green area
CH011	L. Borowiec	2011-05-04	Chania	Diktamos Gorge n. Stilos	160 m	35.43333	24.1	calcareous gorge overgrown by singe *Platanus* sp. trees

Code	Collector	Date	District	Locality	Altitude	Latitude	Longitude	Description
CH012	L. Borowiec, M.L. Borowiec	2007-04-30	Chania	Episkopi	298 m	35.333333	24.3	olive groves
CH013	L. Borowiec	2011-05-05	Chania	Fres n. Vrises	173 m	35.38333	24.15	pine grove
CH014	L. Borowiec, M.L. Borowiec	2007-05-04	Chania	Georgioupoli	17 m	35.35	24.25	several deciduous trees on sandy area
CH015	S. Salata	2014-04-30	Chania	Grameno	0 m	35.23333	23.63333	sandy beach
CH016	L. Borowiec	2013-05-08	Chania	Imbros	234 m	35.2	24.16666	calcareous gorge partly overgrown by deciduous forest and phrygana
CH017	S. Salata	2014-04-30	Chania	Kalives	26 m	35.45	24.13333	riverbanks overgrown by blackberry bushes and oaks
CH018	L. Borowiec	2013-05-08	Chania	Kallikratiano	441 m	35.2	24.21667	calcareous gorge partly overgrown by deciduous forest and phrygana
CH019	L. Borowiec	2011-05-02	Chania	Kandanos–Floria	588 m	35.35	23.73333	blackberry bushes on roadsides
CH020	L. Borowiec	2011-05-07	Chania	Kato Daratso	10-15 m	35.5	23.983333	sandy, anthropogenic seaside overgrown by single pine trees and phrygana
CH021	L. Borowiec	2011-05-07	Chania	Kato Daratso	20-25 m	35.5	23.983333	sandy, anthropogenic seaside overgrown by single pine trees and phrygana
CH022	L. Borowiec	2011-04-30	Chania	Kato Daratso	35-40 m	35.5	23.983333	sandy, anthropogenic seaside overgrown by single pine trees and phrygana
CH023	L. Borowiec	2011-05-06	Chania	Kato Daratso n. Chania	13 m	35.5	23.98333	sandy, anthropogenic seaside overgrown by single pine trees and phrygana

Code	Collector	Date	District	Locality	Altitude	Latitude	Longitude	Description
CH024	L. Borowiec	2011-05-06	Chania	Kato Daratso n. Chania	17 m	35.5	23.96666	sandy, anthropogenic seaside overgrown by single pine trees and phrygana
CH025	L. Borowiec	2011-05-06	Chania	Kato Daratso n. Chania	18 m	35.5	23.96666	sandy, anthropogenic seaside overgrown by single pine trees and phrygana
CH026	L. Borowiec	2011-05-07	Chania	Kato Daratso n. Chania	22 m	35.5	23.96666	sandy, anthropogenic seaside overgrown by single pine trees and phrygana
CH027	L. Borowiec	2011-05-07	Chania	Kato Daratso n. Chania	23 m	35.5	23.96666	urban green area
CH028	L. Borowiec. M.L. Borowiec	2007-04-29	Chania	Kato Kefalas	298 m	35.41666	24.25	old gardens
CH029	L. Borowiec. M.L. Borowiec	2007-05-01	Chania	Khora Sfakion	6 m	35.2	24.13333	rocky seaside
CH030	L. Borowiec. M.L. Borowiec	2007-05-03	Chania	Kourna	95 m	35.31666	24.28333	calcareous rocks overgrown by phrygana
CH031	L. Borowiec	2011-05-02	Chania	Koutsomata-dos–Mili	308 m	35.38333	23.66666	hill slope overgrown by deciduous forest
CH032	S. Salata	2014-05-03	Chania	Omalos	1122 m	35.31667	23.9	mountain plateau - macchia
CH033	L. Borowiec	2011-05-03	Chania	Omalos	1034 m	35.33333	23.88333	mountain plateau, soil ramp separating fields
CH034	L. Borowiec	2011-05-03	Chania	Omalos–Prases	945 m	35.33333	23.85	mountain plateau - macchia
CH035	L. Borowiec	2011-05-02	Chania	Plemeniana n. Kandanos	339 m	35.31666	23.71666	mixed forest
CH036	L. Borowiec	2011-05-02	Chania	Potamida n. Mythimna	37 m	35.46666	23.68333	olive groves

Code	Collector	Date	District	Locality	Altitude	Latitude	Longitude	Description
CH037	L. Borowiec, M.L. Borowiec	2007-05-04	Chania	S od Geor-gioupoli	17 m	35.35	24.25	fields
CH038	L. Borowiec, M.L. Borowiec	2007-05-01	Chania	Sfakia	730 m	35.266667	24.166667	hillslopes overgrown by macchia
CH039	L. Borowiec	2011-05-01	Chania	Therisso	320 m	35.43333	23.98333	calcareous gorge partly overgrown by deciduous trees and phrygana
CH040	L. Borowiec	2011-05-05	Chania	Tzitzifes n. Vrises	264 m	35.35	24.15	calcareous rocks and olive groves
CH041	L. Borowiec, M.L. Borowiec	2007-04-29	Chania	Vamos	200 m	35.4	24.18333	olive groves
CH042	S. Salata	2014-04-29	Chania	Vogle	642 m	35.21667	24.06667	rocky area overgrown by phrygana
CH043	S. Salata	2014-04-30	Chania	Vrisses–Agii Pantes	106 m	35.38333	24.16667	stream vicinity overgrown by mixed forest
CH044	L. Borowiec, M.L. Borowiec	2007-05-02	Chania	W Geor-gioupoli	17 m	35.36666	24.25	wetlands near road
HER001	S. Salata	2014-04-28	Heraklion	Agia Triada n. Kalamaki	1 m	35.0508	25.7542	macchia growing along the water source.
HER002	S. Salata	2014-04-16	Heraklion	Agios Eirini	130 m	35.26667	25.15	fields and macchia close to a stream
HER003	S. Salata	2014-04-22	Heraklion	Alagni–Patsi-deros	463 m	35.16667	25.21667	Olive groves and phrygana
HER004	S. Salata	2014-04-03	Heraklion	Almiros George	42 m	35.33333	25.03333	wide and arid gorge, overgrown by phrygana and deciduous trees
HER005	S. Salata	2014-05-03	Heraklion	Gotrys	151 m	35.05	24.93333	ruins of medieval basilica surrounded by olive groves. situated close to a dry river bank
HER006	S. Salata	2014-05-03	Heraklion	Asimi	258 m	35.03333	25.08333	olive groves
HER007	S. Salata	2014-05-03	Heraklion	Avgeniki	227 m	35.18333	25.01667	narrow and humid gorge overgrown by single pine trees

Code	Collector	Date	District	Locality	Altitude	Latitude	Longitude	Description
HER008	S. Salata	2014-04-23	Heraklion	Dermestes	0 m	34.98333	25.31667	sandy beach with single deciduous trees
HER009	S. Salata	2014-04-23	Heraklion	Ethia	683 m	34.98333	25.2	small mountain plateau transformed into fields
HER010	S. Salata	2014-05-08	Heraklion	Archanes	768 m	35.23333	25.13333	hilltop overgrown by oak forest, macchia and phrygana
HER011	S. Salata	2014-04-15	Heraklion	Ganies–Kal-amaki	439 m	35.28333	24.93333	phrygana and single pine trees
HER012	S. Salata	2014-04-16	Heraklion	4 km E Ganies	383 m	35.28333	24.96667	hillslopes overgrown by phrygana
HER013	S. Salata	2014-04-16	Heraklion	Gerali–Mathia	493 m	35.15	25.35	fields and macchia
HER014	S. Salata	2014-04-03	Heraklion	Hamoprina	327 m	35.25	25.46667	recreation area overgrown by oaks
HER015	S. Salata	2014-06-08	Heraklion	Heraklion	29 m	35.34006	25.13342	urban city area
HER016	S. Salata	2014-05-23	Heraklion	Hersonissos	10 m	35.31111	25.3875	lawn surrounding city mall
HER017	S. Salata	2014-04-22	Heraklion	Houdetsi	426 m	35.16667	25.15	hill slope overgrown by macchia
HER018	S. Salata	2014-04-01	Heraklion	Heraklion, city	6 m	35.31667	25.1	lawns surrounding promenade
HER019	S. Salata	2014-04-12	Heraklion	Heraklion, city	46 m	35.31667	25.11667	old city walls
HER020	S. Salata	2014-04-25	Heraklion	Kali Limnes	76 m	34.95	24.78333	arid and sandy slopes overgrown by herbs
HER021	S. Salata	2014-04-15	Heraklion	1 km E Kas-telli	363 m	35.2	25.33333	macchia and olive groves
HER022	S. Salata	2014-04-09	Heraklion	Kato Gouvas	0 m	35.3333	25.28333	sandy beach
HER023	S. Salata	2014-04-01	Heraklion	Kato Gouvas	1 m	35.3334	25.2852	sandy beach
HER024	S. Salata	2014-04-22	Heraklion	Kato Kastel-liana–Tsout-souros	390 m	35.01055	25.26667	hillslope overgrown by phrygana
HER025	S. Salata	2014-04-12	Heraklion	Katofigi	560 m	35.08333	25.4	deciduous forest on hill slope

Code	Collector	Date	District	Locality	Altitude	Latitude	Longitude	Description
HER026	S. Salata	2014-04-24	Heraklion	Komos	28 m	35.014166	24.76667	dry and sandy area overgrown by single olive trees and clumps of grass
HER027	S. Salata	2014-04-24	Heraklion	Lagolio	154 m	35.1	24.78333	macchia growing along the water source
HER028	S. Salata	2014-04-25	Heraklion	Laguota	242 m	35.05	25.28333	olive groves
HER029	S. Salata	2014-04-24	Heraklion	Magarikari	421 m	35.11667	24.81667	small gorge overgrown by macchia
HER030	S. Salata	2014-04-23	Heraklion	Mathia	589 m	35.16667	25.36667	hillslope overgrown by phrygana and olive trees
HER031	S. Salata	2014-04-24	Heraklion	Miamou	494 m	34.96667	24.93333	gorge overgrown by macchia and surrounded by phrygana
HER032	S. Salata	2014-04-24	Heraklion	Moutria	609 m	34.98333	25.16667	arid and rocky area overgrown by clumps of grass
HER033	S. Salata	2014-04-24	Heraklion	Panastros	545 m	35.11667	24.98333	small gorge overgrown by macchia
HER034	S. Salata	2014-05-05	Heraklion	Rouvas loc. 1	1316 m	35.15	24.93333	rocky mountain hills overgrown by oak forest
HER035	S. Salata	2014-05-03	Heraklion	Rouvas loc. 2	1089 m	35.15	24.83333	rocky mountain hills overgrown by oak forest
HER036	S. Salata	2014-04-24	Heraklion	Rouvas Gorge	455 m	35.14444	24.9061	wet area in gorge overgrown by deciduous trees and surrounded by phrygana
HER037	S. Salata	2014-04-05	Heraklion	Roza's Gorge	316 m	35.21667	25.43333	dark and moist gorge with water stream, its upper part overgrown by orange trees, its lower part overgrown by blackberry bushes and mixed forest
HER038	S. Salata	2014-04-01	Heraklion	Sfendili	151 m	35.25	25.38333	deciduous forest in small gorge
HER039	S. Salata	2014-04-01	Heraklion	Skalani–Prasas	43 m	35.3	25.18333	phrygana and olive groves

Code	Collector	Date	District	Locality	Altitude	Latitude	Longitude	Description
HER040	S. Salata	2014-04-16	Heraklion	Skalavokam-bos	562 m	35.28333	24.93333	phrygana and olive trees
HER041	S. Salata	2014-04-09	Heraklion	Skotina	125 m	35.28333	25.3	gorge overgrown by macchia
HER042	S. Salata	2014-05-03	Heraklion	Stoli–Louves	197 m	35.03333	25.01667	dry riverbed overgrown by macchia
HER043	S. Salata	2014-04-15	Heraklion	Tilissos –Moni loc. 1	261 m	35.28333	25.0	gorge overgrown by macchia
HER044	S. Salata	2014-04-15	Heraklion	Tilissos–Moni loc. 2	341 m	35.28333	24.98333	phrygana and olive trees
HER045	S. Salata	2014-04-23	Heraklion	Tsoutsouros	0 m	34.98333	25.28333	sandy beach
HER046	S. Salata	2014-05-05	Heraklion	Vagiono–Agia Deka	119 m	35.01667	24.96667	olive groves and blackberry bushes on the readside
HER047	S. Salata	2014-04-12	Heraklion	Xanias–Mili-arades	504 m	35.08333	25.38333	phrygana and olive trees
HER048	S. Salata	2014-05-06	Heraklion	Zaros	409 m	35.13333	24.9	artificial deciduous forest and macchia surrounding lake
LAS001	S. Salata	2014-04-16	Lasithi	Kalimaki loc. 1	909 m	35.15	25.45	mixed forest
LAS002	S. Salata	2014-04-16	Lasithi	Kalimaki loc. 2	1169 m	35.13333	25.45	mixed forest
LAS003	S. Salata	2014-04-05	Lasithi	Kalimaki loc. 3	1240 m	35.11667	25.43333	mixed forest
LAS004	S. Salata	2014-04-08	Lasithi	Adravasti–Ka-ridi	498 m	35.11667	26.2	hillslope overgrown by phrygana
LAS005	S. Salata	2014-04-07	Lasithi	Agia Fotia	21 m	35.18333	26.16667	gorge overgrown by olive grove and macchia
LAS006	S. Salata	2014-04-07	Lasithi	Agia Fotia–Palekastro	2 m	35.2	26.16667	rocky seaside overgrown by herbs

Code	Collector	Date	District	Locality	Altitude	Latitude	Longitude	Description
LAS007	S. Salata	2014-04-09	Lasithi	Agia Irini	260 m	35.03333	26.2	hillslope overgrown by phrygana
LAS008	S. Salata	2014-04-22	Lasithi	Agia Triada–Goudouras	230 m	35.01667	26.13333	hillslope overgrown by phrygana
LAS009	S. Salata	2014-04-05	Lasithi	Cha Canyon	123 m	35.08333	25.81667	gorge overgrown by deciduous forest and macchia
LAS010	S. Salata	2014-04-08	Lasithi	Chochlades	76 m	35.13333	26.23333	gorge overgrown by phrygana and olive trees
LAS011	S. Salata	2014-04-11	Lasithi	Dead's Gorge	15 m	35.08333	26.25	gorge overgrown by mixed forest and macchia
LAS012	S. Salata	2014-04-08	Lasithi	Erimoupolis	0 m	35.25	26.25	phrygana
LAS013	S. Salata	2014-04-04	Lasithi	Exo Lakkonia	156 m	35.21667	25.65	gorge overgrown by macchia
LAS014	S. Salata	2014-04-06	Lasithi	Gorge of Richtis	245 m	35.16667	25.98333	moisture gorge overgrown by deciduous forest and macchia
LAS015	S. Salata	2014-04-09	Lasithi	Hametoulo	520 m	35.05	26.18333	hillslope overgrown by phrygana
LAS016	S. Salata	2014-04-11	Lasithi	Hristos–Mathokotsana	703 m	35.08333	25.56667	mountain pasture
LAS017	S. Salata	2014-04-12	Lasithi	Kalamafka	472 m	35.06667	25.65	hillslope overgrown by macchia
LAS018	S. Salata	2014-04-12	Lasithi	Kalami–Psari Forada	419 m	35.016667	25.48333	gorge overgrown by mixed forest
LAS019	S. Salata	2014-04-04	Lasithi	Kalio Horio–Prina	145 m	35.1	25.7	pine forest
LAS020	S. Salata	2014-04-09	Lasithi	Kallaria–Adravasti	251 m	35.11667	26.21667	hillslope overgrown by macchia and deciduous forest
LAS021	S. Salata	2014-04-12	Lasithi	Kato Symi loc. 1	1206 m	35.05	25.48333	pine forest
LAS022	S. Salata	2014-04-12	Lasithi	Kato Symi loc. 2	1021 m	35.05	25.48333	pine forest

Code	Collector	Date	District	Locality	Altitude	Latitude	Longitude	Description
LAS023	S. Salata	2014-04-13	Lasithi	Kato Symi loc. 3	818 m	35.05	25.48333	pine forest
LAS024	S. Salata	2014-04-04	Lasithi	Krista Gorge	243 m	35.15	25.63333	gorge overgrown by macchia and deciduous forest
LAS025	S. Salata	2014-04-04	Lasithi	Krista loc. 1	468 m	35.15	25.63333	gorge overgrown by macchia
LAS026	S. Salata	2014-04-05	Lasithi	Krista loc. 2	747 m	35.15	25.61667	phrygana and olive trees
LAS027	S. Salata	2014-04-16	Lasithi	Kato Metohi	810 m	35.16667	25.41667	oak forest on the plateau
LAS028	S. Salata	2014-04-16	Lasithi	Pinakiano	806 m	35.18333	25.45	dry riverbed on the plateau
LAS029	S. Salata	2014-04-16	Lasithi	Plati	831 m	35.16667	25.43333	shafts separating fields, covered with rock rubble and overgrown by blackberry bushes.
LAS030	S. Salata	2014-04-10	Lasithi	Lastros	336 m	35.13333	25.88333	phrygana
LAS031	S. Salata	2014-04-06	Lasithi	Lastros–Sfaka	198 m	35.15	25.9	hillslope overgrown by macchia
LAS032	S. Salata	2014-04-26	Lasithi	Limnakarou	1130 m	35.13333	25.46667	small mountain plateau with single cheery trees and phrygana
LAS033	S. Salata	2014-04-12	Lasithi	Males–Hristos	464 m	35.08333	25.56667	pasture
LAS034	S. Salata	2014-04-26	Lasithi	Mesa Lasithi	838 m	35.16667	25.5	fields on the plateau
LAS035	S. Salata	2014-04-06	Lasithi	Mohlos	9 m	35.16667	25.9	gorge overgrown by macchia
LAS036	S. Salata	2014-04-10	Lasithi	Moni Kapsa	1 m	35.01667	26.05	phrygana
LAS037	S. Salata	2014-04-08	Lasithi	Moni Toplou Gorge	151 m	35.21667	26.2	olive grove and phrygana
LAS038	S. Salata	2014-04-03	Lasithi	Neapoli–Vrisses	443 m	35.2333	25.6	hillslope overgrown by macchia
LAS039	S. Salata	2014-04-10	Lasithi	Orino	523 m	35.06667	25.9	gorge overgrown by macchia
LAS040	S. Salata	2014-04-05	Lasithi	Pahia Ammos	2 m	35.11055	25.81416	rocky beach
LAS041	S. Salata	2014-04-10	Lasithi	Pefki	439 m	35.06667	25.98333	olive grove and phrygana

Code	Collector	Date	District	Locality	Altitude	Latitude	Longitude	Description
LAS042	S. Salata	2014-04-10	Lasithi	Pefki–Agios Stefanos	359 m	35.06667	25.98433	gorge overgrown by macchia
LAS043	S. Salata	2014-04-11	Lasithi	Perma–Kout-ounari	60 m	35.01667	25.83333	hillslope overgrown by phrygana
LAS044	S. Salata	2014-04-05	Lasithi	Platanos–Las-tros	339 m	35.15	25.88333	deciduous forest and phrygana
LAS045	S. Salata	2014-04-09	Lasithi	Praisos	320 m	35.11667	26.06667	gorge overgrown by olive grove and macchia
LAS046	S. Salata	2014-05-08	Lasithi	Roza's Gorge loc. 2	664 m	35.21667	25.45	pasture and macchia located in the gorge
LAS047	S. Salata	2014-04-28	Lasithi	Sarakinas Gorge	118 m	35.03333	25.56667	gorge overgrown by macchia
LAS048	S. Salata	2014-04-10	Lasithi	Schinokap-sala–Agios Ioannis	400 m	35.05	25.85	hillslope overgrown by deciduous forest
LAS049	S. Salata	2014-04-07	Lasithi	Sfaka–Tourloti	337 m	35.15	25.93333	gorge overgrown by macchia
LAS050	S. Salata	2014-04-22	Lasithi	Stavromenos	347 m	35.06667	25.98333	gorge overgrown by macchia
LAS051	S. Salata	2014-04-07	Lasithi	Tourloti–Mirsini	266 m	35.15	25.93333	gorge overgrown by macchia
LAS052	S. Salata	2014-04-03	Lasithi	Vlihadia Gorge	3 m	35.33333	25.68333	sandy gorge overgrown by herbs
LAS053	S. Salata	2014-04-09	Lasithi	Voila	578 m	35.08333	26.1	rocks overgrown by macchia
LAS054	S. Salata	2014-04-09	Lasithi	3 km S Ziros	570 m	35.05	26.13333	hillslope overgrown by macchia
RET001	L. Borowiec, M.L. Borowiec	2007-04-30	Rethymno	12 km E Geor-gioupoli	110 m	35.33333	24.35	dry riverbank overgrown by phrygana
RET002	L. Borowiec, M.L. Borowiec	2007-04-28	Rethymno	18 km E Geor-gioupoli	3 m	35.35	24.38333	olive groves

Code	Collector	Date	District	Locality	Altitude	Latitude	Longitude	Description
RET003	L. Borowiec, S. Salata	2013-05-12	Rethymno	2 km of Pano Saktouria	433 m	35.11666	24.61666	hillslope overgrown by phrygana
RET004	L. Borowiec, S. Salata	2013-05-06	Rethymno	Ag. Joannis loc. 1	448 m	35.23333	24.4	oak forest
RET005	L. Borowiec, S. Salata	2013-05-06	Rethymno	Ag. Joannis loc. 2	448 m	35.23333	24.4	roadsides overgrown by phrygana and blackberry bushes
RET006	L. Borowiec, S. Salata	2013-05-17	Rethymno	Ag. Joannis loc. 3	439 m	35.23333	24.4	deciduous forest
RET007	L. Borowiec, S. Salata	2013-05-06	Rethymno	Ag. Joannis loc. 4	480 m	35.23333	24.4	humid deciduous forest growing along the water source
RET008	S. Salata	2014-04-16	Rethymno	Aidonobori	528 m	35.316667	24.91667	deciduous forest
RET009	L. Borowiec, S. Salata	2013-05-10	Rethymno	Ambelaki	455 m	35.26666	24.46666	deciduous forest
RET010	L. Borowiec, S. Salata	2013-05-10	Rethymno	Ampelakiou	464 m	35.355556	24.67944	gorge overgrown by macchia
RET011	L. Borowiec, S. Salata	2013-05-11	Rethymno	Antonios Spilia Gorge	342 m	35.25	24.56666	gorge overgrown by deciduous forest
RET012	L. Borowiec, S. Salata	2013-05-10	Rethymno	Chromonastiri	262 m	35.326944	24.510278	gorge overgrown by deciduous forest
RET013	S. Salata	2014-04-01	Rethymno	Episkopi	0 m	35.35	24.35	sandy beach
RET014	L. Borowiec, S. Salata	2013-05-14	Rethymno	Fourfouras	578 m	35.21666	24.71666	Mountain meadow
RET015	L. Borowiec, S. Salata	2013-05-07	Rethymno	Frati	297 m	35.2	24.46666	oak forest
RET016	L. Borowiec, S. Salata	2013-05-09	Rethymno	Gerakari	751 m	35.21666	24.58333	oak forest

Code	Collector	Date	District	Locality	Altitude	Latitude	Longitude	Description
RET017	L. Borowiec, S. Salata	2013-05-08	Rethymno	Kallikratiano Gorge	441 m	35.2	24.21667	gorge overgrown by macchia
RET018	L. Borowiec, M.L. Borowiec	2007-04-30	Rethymno	Karoti, 12 km E od Geor-gioupoli	110 m	35.33333	24.35	dry riverbed overgrown by macchia
RET019	L. Borowiec, S. Salata	2013-05-15	Rethymno	Kato Malaki	235 m	35.28333	24.4	deciduous forest
RET020	L. Borowiec, S. Salata	2013-05-05	Rethymno	Katsifou Gorge	57 m	35.2	24.38333	gorge overgrown by macchia
RET021	L. Borowiec, S. Salata	2013-05-09	Rethymno	Kissos	623 m	35.18333	24.56667	deciduous forest
RET022	L. Borowiec, S. Salata	2013-05-14	Rethymno	Kissou Kam-bros	514 m	35.16666	24.55	hillslope overgrown by deciduous forest and macchia
RET023	L. Borowiec, S. Salata	2013-05-06	Rethymno	Klisidi	642 m	35.26666	24.63333	oak forest
RET024	L. Borowiec, S. Salata	2013-05-06	Rethymno	Kourtaliotiko Gorge	158 m	35.18333	24.45	gorge partially overgrown by macchia
RET025	L. Borowiec, S. Salata	2013-05-06	Rethymno	Mariou	210 m	35.18333	24.41667	macchia and olive groves
RET026	L. Borowiec, S. Salata	2013-05-07	Rethymno	Moni Preveli	200 m	35.15	24.45	hill overgrown by phrygana
RET027	L. Borowiec, S. Salata	2013-05-13	Rethymno	n. Argiroupolis	197 m	35.28333	24.33333	moisture area overgrown by deciduous forest
RET028	L. Borowiec, S. Salata	2013-05-13	Rethymno	n. Velonado	373 m	35.25	24.36667	hillside overgrown by deciduous forest
RET029	L. Borowiec, S. Salata	2013-05-13	Rethymno	n. Vilandredo	354 m	35.25	24.31667	gorge overgrown by deciduous forest

Code	Collector	Date	District	Locality	Altitude	Latitude	Longitude	Description
RET030	S. Salata	2014-04-29	Rethymno	Nida platou	1370 m	35.2	24.83333	plateau adapted into pasture
RET031	L. Borowiec, S. Salata	2013-05-10	Rethymno	Oros	591 m	35.33333	24.5	gorge overgrown by mixed forest
RET032	S. Salata	2014-04-28	Rethymno	Orthes Gorge	318 m	35.33333	24.68333	moisture gorge overgrown by deciduous forest
RET033	L. Borowiec, S. Salata	2013-05-15	Rethymno	Palelimnos	262 m	35.3	24.41666	oak forest
RET034	L. Borowiec, S. Salata	2013-05-05	Rethymno	Plakias	26 m	35.191389	24.395	urban area, pavements and lawns
RET035	L. Borowiec, S. Salata	2013-05-05	Rethymno	Plakias	4 m	35.191389	24.395	promenade, lawns and pavements
RET036	L. Borowiec, S. Salata	2013-05-05	Rethymno	Plakias, Akrotiri Kakomouri	28 m	35.16667	24.39805	peninsula overgrown by phrygana
RET037	L. Borowiec, S. Salata	2013-05-11	Rethymno	Potamoi Darn n. Veleones	210 m	35.26666	24.58333	gorge overgrown by deciduous forest
RET038	L. Borowiec, S. Salata	2013-05-07	Rethymno	Preveli Beach	10 m	35.154444	24.472778	palm forest growing along the river
RET039	S. Salata	2014-04-26	Rethymno	road to Nida platou	1166 m	35.25	24.88333	mountain meadow with single olive trees
RET040	L. Borowiec, S. Salata	2013-05-07	Rethymno	road to Preveli Beach loc. 1	58 m	35.16666	24.45	deciduous forest growing along the river
RET041	L. Borowiec, S. Salata	2013-05-08	Rethymno	Rodakino–Sellia	301 m	35.2	24.33333	phrygana
RET042	L. Borowiec, S. Salata	2013-05-11	Rethymno	Selli–Oros	473 m	35.28333	24.5	single oaks at the roadside
RET043	L. Borowiec, S. Salata	2013-05-15	Rethymno	Setoures	305 m	35.26667	24.38333	gorge overgrown by macchia and phrygana

Code	Collector	Date	District	Locality	Altitude	Latitude	Longitude	Description
RET044	L. Borowiec, S. Salata	2013-05-09	Rethymno	Spili	537 m	35.21666	24.53333	oak forest
RET045	L. Borowiec, S. Salata	2013-05-09	Rethymno	Spili–Gerakari loc. 1	763 m	35.2	24.55	mountain pasture
RET046	L. Borowiec, S. Salata	2013-05-09	Rethymno	Spili–Gerakari loc. 2	804 m	35.21987	24.57144	mountain pasture
RET047	L. Borowiec, S. Salata	2013-05-16	Rethymno	Vistagi	563 m	35.23333	24.68333	gorge overgrown by macchia and phrygana
RET048	L. Borowiec, S. Salata	2007-05-02	Rethymno	W Geor-gioupoli	20 m	35.36666	24.25	wetland close to the road
RET049	L. Borowiec, S. Salata	2013-05-12	Rethymno	Xirokambos	24 m	35.110556	24.558889	wadi overgrown by single bushes

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Mulsant E., Rey A. 1844a. Histoire Naturelle des Coléopteres de France. Maison, Paris: vii + 1–196, pl. 1.

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