

New records of ants (Hymenoptera: Formicidae) from southern Portugal

LECH BOROWIEC¹, SEBASTIAN SALATA²

^{1,2}Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław, Przybyszewskiego 63/77, 51-148 Wrocław, Poland

e-mail: ¹ lech.borowiec@uwr.edu.pl, ² rubisco198@gmail.com

ABSTRACT. New records of ants (Hymenoptera: Formicidae) from southern Portugal.

Forty two species of ants have been collected in Algarve and Baixo Alentejo regions (southern Portugal). *Gonomma baeticum*, *Myrmoxenus krausseii* and *Temnothorax luteus* are new to the fauna of Portugal, 11 species are new to Algarve and three are new to Baixo Alentejo regions.

KEY WORDS: ants, faunistics, Portugal, new country records, new regional records.

INTRODUCTION

Ant fauna of Portugal is insufficiently known. By the end of the 1940, information about ants from Portugal were scattered in various faunistic and taxonomic publications. First comprehensive list of ants from this country was published by SCHMITZ (1955) who recorded 55 species. Important addition to this list was a survey of Iberian ants published by COLLINGWOOD & YARROW (1969). In this paper 11 species were recorded for the first time from Portugal. A milestone in the knowledge of Iberian ants was paper by COLLINGWOOD (1978) which includes both a key to the worker caste and a checklist of 73 Portuguese ants species. An amended and supplemented guide to the ants of Portugal, compiled by COLLINGWOOD & PRINCE (1998), created new perspectives to study of this group of insects. They listed 103 species but with only general distribution in Portugal. Finally, SALGUEIRO (2002a) published a detailed and critical list of 106 species of ants from Portugal with distribution data in historical regions of the country. Few faunistic additions published after his catalogue (BOIEIRO *et al.* 2002, 2009, ESPADALER *et al.* 2008, ESPADALER & GÓMEZ 2014, OBREGÓN-ROMERO & REYES-LÓPEZ 2012, SALGUEIRO 2002b, 2003) finally established the number of species known from Portugal at 121.

MATERIAL AND METHODS

Ants were collected between 2 and 8 May 2016 in western part of Algarve region (Faro District). One locality is placed in southwestern part of Baixo Alentejo region (Beja District). In selecting study localities, we took into account the variety of microhabitats, especially well protected natural areas, suggesting a high diversity of species. Few anthropogenic and urban localities were also penetrated, especially to collect tramp species. Below we list the locality number, coordinates, altitudes above sea level, date of

collection and provide descriptions of the habitat type at particular localities (in brackets locality code number used in Database of Mediterranean Ants preserved at Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław):

- 1 (POR_312) – Baixo Alentejo: Beja distr., Barragem de Santa Clara, 146 m, 2016-05-07, 37,50889 N/-8,43632 W, pine forest close to artificial lake.
- 2 (POR_294 and POR_294A) – Algarve: Faro distr., Carvoeiro, 22 m, 2016-05-02 and 2016-05-05, 37,09302 N/-8,46495 W, bush on Atlantic cliff.
- 3 (POR_295) – Algarve: Faro distr., Carvoeiro, 48 m, 2016-05-03, 37,09659 N/-8,46503 W, hotel area.
- 4 (POR_313) – Algarve: Faro distr., Carvoeiro east, 22 m, 2016-05-08, 37,09228 N/-8,45796 W, bush on Atlantic cliff.
- 5 (POR_296) – Algarve: Faro distr., 2 km N of Silves, 28 m, 2016-05-03, 37,20723 N/-8,4353 W, rocks along stream at border of *Eucalyptus* plantation.
- 6 (POR_297) – Algarve: Faro distr., 6 km N of Silves, 138 m, 2016-05-03, 37,24327 N/-8,44363 W, *Eucalyptus* plantation.
- 7 (POR_298) – Algarve: Faro distr., 10.2 km N of Silves, 175 m, 2016-05-03, 37,27974 N/-8,43565 W, meadow close to a stream.
- 8 (POR_299) – Algarve: Faro distr., 14.5 km N of Silves, 260 m, 2016-05-03, 37,3106 N/-8,37932 W, rock at roadside.
- 9 (POR_300) – Algarve: Faro distr., n. Alferce, 229 m, 2016-05-03, 37,33966 N/-8,49141 W, cork oak forest.
- 10 (POR_306) – Algarve: Faro distr., n. Penina, 324 m, 2016-05-05, 37,24991 N/-8,11085 W, xerothermic shrubs.
- 11 (POR_306A) – Algarve: Faro distr., n. Freixo Seco, 329 m, 2016-05-05, 37,26463 N/-8,04439 W, roadsides.
- 12 (POR_301) – Algarve: Faro distr., n. Barão de S. João, 153 m, 2016-05-04, 37,14122 N/-8,78826 W, Mediterranean deciduous forest.
- 13 (POR_302) – Algarve: Faro distr., 3.8 km N of Vila do Bispo, 138 m, 2016-05-04, 37,11562 N/-8,89786 W, pine forest on Atlantic dunes.
- 14 (POR_304) – Algarve: Faro distr., Carrapateira, 15 m, 2016-05-04, 37,18561 N/-8,89811 W, Atlantic dunes.
- 15 (POR_303) – Algarve: Faro distr., 3.6 km SE of Carrapateira, 103 m, 2016-05-04, 37,1557 N/-8,8731 W, cork oak forest.
- 16 (POR_305) – Algarve: Faro distr., 3.4 km NNW of Bensafrim, 86 m, 2016-05-04, 37,1836 N/-8,7533 W, roadsides inside *Eucalyptus* plantation.
- 17 (POR_307) – Algarve: Faro distr., Serra de Monchique, 1 km S of Caldas de Monchique, 147 m, 2016-05-06, 37,27445 N/-8,55007 W, rest area with bushes.
- 18 (POR_308) – Algarve: Faro distr., Serra de Monchique, 2.3 km SW of Monchique, 410 m, 2016-05-06, 37,3011 N/-8,57203 W, cork oak forest.

19 (POR_309) – Algarve: Faro distr., Serra de Monchique, Mt. Foia, 881 m, 2016-05-06, 37,3157 N/-8,59305 W, alpine grassland.

20 (POR_310) – Algarve: Faro distr., Serra de Monchique, 2 km S of Monchique, 375 m, 2016-05-06, 37,30149 N/-8,56283 W, cork oak forest.

21 (POR_311) – Algarve: Faro distr., Serra de Monchique, 1 km NNE of Monchique, 457 m, 2016-05-07, 37,32634 N/-8,54947 W, cork oak forest.

All species were collected by Lech Borowiec. Photos were taken using a Nikon SMZ 1500 stereomicroscope, Nikon D5200 photo camera and Helicon Focus software. Examined specimens are housed in Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław, Poland. In the list of species, taxa are arranged in the same order as given in the catalogue of Portuguese ants (SALGUEIRO 2002a). General distribution is given after BOROWIEC (2014).

LIST OF SPECIES

Linepithema humile (MAYR, 1868)

Localities: 2, 3, 4, 13.

Distribution. Tramp species, originating from subtropical South America, is an important pest displacing native species in many parts of the world. In Portugal known from Douro Litoral, Beira Litoral, Beira Alta, Estremadura Estremadura and Baixo Alentejo. Recorded from Algarve by SILVA DIAS (1955) and ZINA (2008).

Tapinoma madeirense FOREL, 1895

Locality: 19.

Distribution. Without doubts occurs in the western part of Mediterranean Basin, records from the eastern part probably based on misidentifications (SEIFERT 2012). In Portugal recorded only from Alto Alentejo under synonymic name *Tapinoma ambiguum* EMERY, 1925. New to Algarve.

Tapinoma erraticum (LATREILLE, 1798)

Locality: 16.

Distribution. Wide spread in Europe, Caucasian countries and Central Asia. In Portugal known from Trás-os-Montes, Beira Litoral, Beira Alta and Estremadura. Recorded from Algarve by ZINA (2008). Our record confirms its occurrence in this region.

Tapinoma simrothi KRAUSSE, 1911

Localities: 5, 16.

Distribution. Wide spread in the Mediterranean Basin and Arabian Peninsula. In Portugal known from Beira Litoral, Ribateiro, Estremadura, Alto Alentejo and Baixo Alentejo. Recorded from Algarve by ZINA (2008). Our record confirms its occurrence in this region.

Camponotus figaro COLLINGWOOD & YARROW, 1969

Localities: 6, 10.

Distribution. Iberian endemic. In Portugal known from Douro Litoral, Beira Litoral, Beira Baixa, Estremadura and Alto Alentejo. Recorded from Algarve by ZINA (2008). Our record confirms its occurrence in this region.

Camponotus lateralis (OLIVIER, 1792)

Localities: 1, 7, 10, 15.

Distribution. Wide spread in southern Europe and northern Africa. In Portugal known from Douro Litoral, Trás-os-Montes, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo and Algarve.

Camponotus cruentatus (LATREILLE, 1802)

Localities: 8, 10, 15, 16, 18.

Distribution. Western Europe and northern Africa. In Portugal known from Minho, Douro Litoral, Beira Litoral, Estremadura, Alto Alentejo, Baixo Alentejo and Algarve.

Camponotus micans (NYLANDER, 1856)

Localities: 2, 2, 4.

Distribution. Western Europe and northern Africa. In Portugal known from Trás-os-Montes, Estremadura, Alto Alentejo, Baixo Alentejo and Algarve.

Camponotus foreli EMERY, 1881

Localities: 2, 4, 5, 10.

Distribution. Western Europe and northern Africa. In Portugal known from Trás-os-Montes, Estremadura, Alto Alentejo, Baixo Alentejo and Algarve.

Camponotus pilicornis (ROGER, 1859)

Locality: 12.

Distribution. Iberian Peninsula and Sicily. In Portugal known from Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Ribatejo, Estremadura, Alto Alentejo and Algarve.

Camponotus sylvaticus (OLIVIER, 1792)

Localities: 1, 2, 4, 5, 8, 12, 15, 16.

Distribution. Western Europe. In Portugal known from Douro Litoral, Trás-os-Montes, Beira Litoral, Beira Alta, Beira Baixa, Ribatejo, Estremadura, Alto Alentejo. New to Baixo Alentejo and Algarve.

Cataglyphis hispanica (EMERY, 1906)

Localities: 1, 6, 7, 8.

Distribution. Iberian Endemic. In Portugal known from Douro Litoral, Trás-os-Montes, Beira Litoral, Beira Alta, Beira Baixa, Ribatejo, Estremadura, Alto Alentejo, Baixo Alentejo and Algarve.

Cataglyphis iberica (EMERY, 1906)

Locality: 2.

Distribution. Iberian Endemic. In Portugal known from Minho, Douro Litoral, Trás-os-Montes, Beira Litoral, Beira Alta, Estremadura and Alto Alentejo. New to Algarve.

Formica gerardi BONDROIT, 1917

Localities: 15, 18.

Distribution. Iberian Peninsula and France. In Portugal known from Douro Litoral, Beira Litoral, Beira Baixa, Estremadura and Alto Alentejo. New to Algarve.

Iberoformica subrufa (ROGER, 1859)

Localities: 6, 16.

Distribution. Iberian Endemic. In Portugal known from Douro Litoral, Trás-os-Montes, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo and Algarve.

Lasius brunneus (LATREILLE, 1798)

Localities: 15, 18.

Distribution. Europe and Caucasian countries. In Portugal known from Estremadura and Baixo Alentejo. Recorded from Algarve by ZINA (2008). Our record confirms its occurrence in this region.

Lasius grandis FOREL, 1909

Localities: 7, 9, 12, 15, 16, 18, 19, 21.

Distribution. Iberian Peninsula, Morocco and Algeria. In Portugal known from Douro Litoral. Recorded from Algarve by ZINA (2008). Our record confirms its occurrence in this region.

Plagiolepis pygmaea (LATREILLE, 1798)

Localities: 5, 9, 18, 20.

Distribution. Central and southern Europe. In Portugal known from Douro Litoral, Beira Litoral, Beira Alta, Estremadura and Algarve.

Plagiolepis schmitzii FOREL, 1895

Localities: 1, 4, 6, 8, 10, 11, 12, 15, 16, 17, 21.

Distribution. Central and southern Europe. In Portugal known from Beira Litoral, Beira Alta, Estremadura, Alto Alentejo, Baixo Alentejo and Algarve.

Crematogaster auberti EMERY, 1869

Localities: 1, 2, 4, 5, 6, 7, 10, 13, 15, 16, 19.

Distribution. Western Europe and northwestern Africa. In Portugal known from Trás-os-Montes, Beira Litoral, Beira Baixa, Estremadura, Alto Alentejo and Baixo Alentejo. Recorded from Algarve by ZINA (2008). Our record confirms its occurrence in this region.

Crematogaster scutellaris (OLIVIER, 1792)

Localities: 5, 7, 9, 10, 12, 13, 15, 21.

Distribution. Western Europe east to Croatia and Hungary and northwestern Africa. In Portugal known from Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo and Algarve.

Crematogaster sordidula (NYLANDER, 1849)

Localities: 5, 6, 12.

Distribution. Whole Mediterranean basin north to Hungary. In Portugal known from Beira Litoral, Beira Alta and Estremadura. Recorded from Algarve by ZINA (2008). Our record confirms its occurrence in this region.

Temnothorax luteus (FOREL, 1874)

Locality: 20.

Distribution and comments. Recent revision of *Temnothorax luteus* complex (SEIFERT *et al.* 2014) suggests that *T. luteus* is distributed in Andorra, France and Switzerland in opposition to the more western distribution of *T. racovitzai* occurring in Spain and France. Spanish



Fig. 1. Worker of *Goniomma baeticum* from Carvoeiro (scale bar = 0.5 mm) (photo L. Borowiec).

Ryc. 1. Robotnica *Goniomma baeticum* z Carvoeiro (skala = 0.5 mm) (fot. L. Borowiec).



Fig. 2. Gyne of *Myrmoxenus kraussei* from Barragem de Santa Clara (scale bar = 0.5 mm) (photo L. Borowiec).

Ryc. 2. Królowa *Myrmoxenus kraussei* z Barragem de Santa Clara (skala = 0.5 mm) (fot. L. Borowiec).

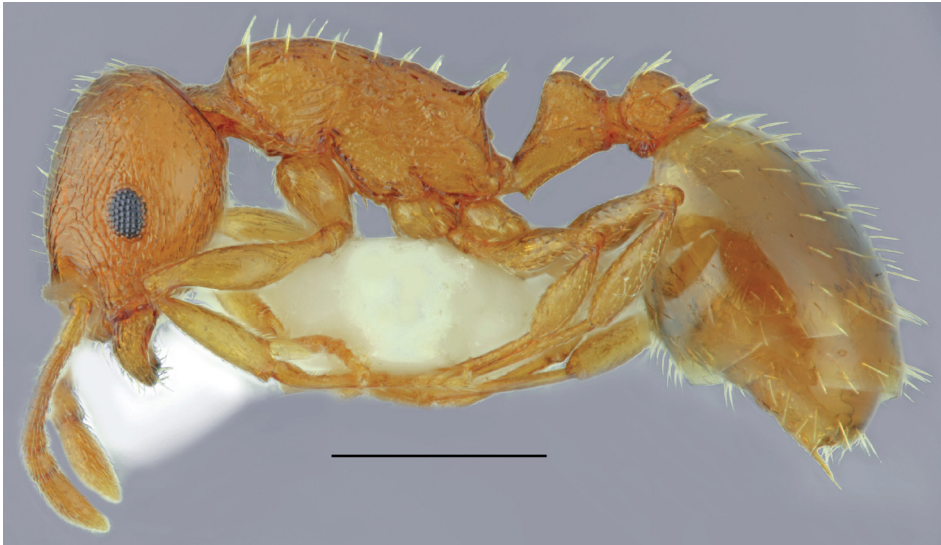


Fig. 3. Worker of *Temnothorax luteus* from Serra de Monchique (scale bar = 0.5 mm) (photo L. Borowiec).

Ryc. 3. Robotnica *Temnothorax luteus* z Serra de Monchique (skala = 0.5 mm) (fot. L. Borowiec).

sources (i.e. <http://mirmecologia.jimdo.com/fichas-especies/myrmicinae>) recorded both taxa from Spain but suggest that *T. luteus* is distinctly less common than *T. racovitzai*. Our material from Portugal confirms that *T. racovitzai* predominate in southern part of the country. However, two nest samples from locality no. 20, in morphometric characters, fit within the range of variation for *T. luteus* given in SEIFERT *et al.* (2014). They represent a form with dark colouration and strong sculpture of mesosoma described as *Temnothorax tristis* (BONDROIT, 1918) which was synonymized with *T. luteus* by SEIFERT *et al.* (2014). New to Portugal.

Temnothorax racovitzai (BONDROIT, 1918)

Localities: 5, 9, 18, 20, 21.

Distribution and comments. SEIFERT *et al.* (2014) recorded this species from Spain and France, records east of France need confirmation. Our material from Balkan countries suggests occurrence of another species of this complex in eastern part of Mediterranean Basin. In Portugal known from Beira Litoral, Beira Alta, Estremadura and Alto Alentejo. New to Algarve.

Temnothorax recedens (NYLANDER, 1856)

Localities: 1, 5, 8, 12, 18, 20, 21.

Distribution. Whole Mediterranean area. In Portugal known from Beira Alta, Estremadura and Baixo Alentejo. New to Algarve.

Myrmoxenus krausseii (EMERY, 1915)

Locality: 1.

Distribution. Whole Mediterranean area and Germany. Nest parasite of various *Temnothorax* species. We collected one gyne in nest of *Temnothorax recedens*. New to Portugal.

Aphaenogaster gibbosa (LATREILLE, 1798)

Localities: 1, 6, 10, 12, 15, 18, 20.

Distribution. Without doubts occurs in the western part of Mediterranean Basin, records from the eastern part need confirmation and probably based on misidentification with other taxa of this group. In Portugal known from Douro Litoral, Trás-os-Montes, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo and Algarve. New to Baixo Alentejo.

Aphaenogaster iberica EMERY, 1908

Localities: 1, 2, 6, 10, 11, 12, 15, 16, 17.

Distribution. Iberian endemic. In Portugal known from Beira Litoral, Beira Alta, Beira Baixa, Estremadura and Algarve. New to Baixo Alentejo.

Aphaenogaster senilis MAYR, 1853

Localities: 2, 4, 5, 10, 12, 13, 14.

Distribution. Iberian Peninsula, France, Sardinia and Morocco. In Portugal known from Douro Litoral, Trás-os-Montes, Beira Litoral, Estremadura, Alto Alentejo, Baixo Alentejo and Algarve.

Goniomma blanci (ANDRÉ, 1881)

Locality: 1.

Distribution. Iberian Peninsula and France. From Portugal recorded only generally by COLLINGWOOD & PRINCE (1998). New to Baixo Alentejo.

Goniomma baeticum REYES & RODRÍGUEZ, 1987

Locality: 2.

Distribution. Hitherto known only from Spain. New to Portugal.

Messor barbarus (LINNAEUS, 1767)

Localities: 1, 2, 5, 12, 14, 16, 17.

Distribution. Western part of Mediterranean Basin. In Portugal known from Beira Litoral, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo and Algarve.

Messor bouvieri BONDROIT, 1918

Localities: 4, 10.

Distribution. Western part of Mediterranean Basin. In Portugal known from Minho, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo and Baixo Alentejo. New to Algarve.

Messor hispanicus SANTSCHI, 1919

Locality: 2.

Distribution. Iberian Peninsula and Morocco. From Portugal recorded only generally by COLLINGWOOD (1978), CAMMELL *et al.* (1996) and COLLINGWOOD & PRINCE (1998). New to Algarve.

Messor lusitanicus TINAUT, 1985

Locality: 13.

Distribution. Iberian Peninsula and Morocco. In Portugal known from Trás-os-Montes. New to Algarve.

Pheidole pallidula (NYLANDER, 1849)

Localities: 1, 7, 8, 10, 15, 17, 18, 21.

Distribution. Mediterranean Basin, especially its western part. In Portugal known from Minho, Douro Litoral, Beira Litoral, Baira Alta, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo and Algarve.

Solenopsis lusitanica EMERY, 1915

Locality: 13.

Distribution. Distribution unclear as it belongs to a group of species that needs revision. Without doubts known from Iberian Peninsula, France and Morocco. In Portugal known from Beira Litoral, Alto Alentejo and Algarve.

Tetramorium forte FOREL, 1904

Localities: 16, 19.

Distribution. Iberian Peninsula, France, Morocco and Algeria. In Portugal known from Trás-os-Montes, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo and Baixo Alentejo. New to Algarve.

Tetramorium semilaeve ANDRÉ, 1883

Localities: 5, 6, 10, 15.

Distribution. Western part of Mediterranean Basin. In Portugal known from Beira Litoral, Beira Alta, Alto Alentejo, and Baixo Alentejo. Recorded from Algarve by ZINA (2008). Our record confirms its occurrence in this region.

Tetramorium biskrense FOREL, 1904

Locality: 14.

Distribution. Without doubts recorded from Spain and northwestern Africa, records from eastern parts of Mediterranean Basin need confirmation. Recently recorded from Portugal, Baixo Alentejo (ESPADALER & GÓMEZ 2014). New to Algarve.

Hypoponera eduardi FOREL, 1904

Locality: 12.

Distribution. Cosmopolitan, tramp species. Recorded only generally from Portugal by COLLINGWOOD & PRINCE (1998). Recorded from Algarve by ZINA (2008). Our record confirms its occurrence in this region.

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STRESZCZENIE

Nowe stwierdzenia mrówek (Hymenoptera: Formicidae) z południowej Portugalii

Podano nowe stwierdzenia dla 42 gatunków mrówek zebranych w prowincjach Algarve i Baixo Alentejo południowej Portugalii. *Goniomma baeticum*, *Myrmoxenus krausseii* i *Temnothorax luteus* są nowe dla fauny Portugalii, 11 gatunków jest nowych dla prowincji Algarve i trzy gatunki nowe dla prowincji Baixo Alentejo. Gatunki nowe dla Portugalii przedstawiono na kolorowych fotografiach. Aktualna liczba gatunków mrówek znanych z Portugalii wzrosła do 124.

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