Five New Records of Ants (Hymenoptera: Formicidae) From Morocco

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Key Words: Formicidae, Morocco, checklist, distribution, faunistic

ABSTRACT. A recent catalogue of the rich ant fauna of Morocco included 214 species, with later studies adding an additional 12 species. Following recent fieldwork in the north of Morocco, we report five new records for the country (Plagiolepis pygmaea Latreille, 1798, Poner a testacea Emery, 1895, Strumigenys tenuilis Emery, 1915, Temnothorax parvicolus G. Cagniant & Bensusan, 2009) and we present new data on the distribution and natural history of six additional species. This work brings the total number of ants known from Morocco to 233, taking into account two species which were omitted in the list of Cagniant.

Methods

We sampled ants in three regions of Morocco: First in the North-West, in the region of Tangiers-Tetouan where we focused on several areas: (1) Mediona and Cap Spartel within the province of Tangiers, (2) Al Hamra and Balota within the province of Tetouan, and (3) Dardara, Fif, Talassente National Park, and Bouhachem Natural Park within the province of Chefchaouen. Second, we surveyed the eastern region where we focused on two areas: (1) Site of Béni Snassen within the province of Berkane and (2) Temsamane within the province of Driouch. The third region of interest was Marrakech-Tensift-El Haouz situated in the South-West of Morocco, where the Okaimden Mountain in the province of Al-Haouz, was surveyed (Fig. 1).

For collections of ants from nests, specimens were collected under direct vision using an aspirator and forceps. A Berlese funnel technique was also utilized for extracting ants from soil and leaf litter and at a few sites we used pitfall traps. Specimens were studied under a Leica S4D stereomicroscope and identified using available keys (Cagniant 1996, 2009)

Taxonomic nomenclature follows Bolton (2014).

Results

Below, our collections are organized as follows: A2808: (3w, 1q); where A2808 refers to the collection code of Reyes-López, and where (3w, 1q) refers to 3 workers and 1 queen. This information is followed by the date, locality, GPS coordinates, and altitude in meters above sea level.

New records

Plagiolepis pygmaea, Formicinae

Material and Data: A2816: Nest: 11 June 2011; Talassente National Park, Tazaout; 35° 7.95' N, 05° 06.76' W; 1,680 m; A1627: (1w); 15 July 2010; Talassente National Park, Jbel Boulimame, Spanish Fir, Abies pinsapo, forest; pitfall trap; 35° 07.05' N, 05° 08.16' W; 1,500 m.

This species was found in Rabat and Casablanca by Cagniant (1962). Although it was described as a rare exotic of European origin, introduced to Morocco through human activities, Cagniant has never mentioned this species again. The workers that we examined, correspond to the latest description of this species (Sharaf et al. 2011), in having funicular segments 2 and 3 of equal length, and distinctly broader than long, and 9 ommatidia in the longest row of the eyes. As Jbel Boulimame is in a protected area, very remote from human settlements, we suspect P. pygmaea is indigenous to Morocco.

Monomorium lememarei, Messor medioruber striaticeps, Strumigenys tenuipilis, Temnothorax pardoi, Tinaut, 1987, and Strumigenys membraniventris, a n d Temnothorax semilimbatus, Cagniant (1996, 2009)

This article deals with five species that are new records for the country and six species for which there is interesting additional information about their natural history and distribution.

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**Ponera testacea**, Ponerinae

Material and data: A2808: (3w, 1q); 16 May 2011; Talassennate National Park, Achkour; 35° 15.88' N, 05° 08.83' W; 566 m; A2807: (18w); 05 June 2011; Talassennate National Park, Tazaout; 35° 15.90' N, 05° 08.19' W; 1,475 m; A2743: (1w); 11 September 2011; Bouhachem Natural Park; 34° 59.51' N, 04° 49.21' W; 1,390 m; A2676: (4w, 3q); 5 June 2011; Talassennate National Park, Tazaout; 35° 15.90' N, 05° 08.19' W; 1,475 m; A2673: (2w); 29 May 2011; Talassennate National Park; 35° 04.78' N, 05° 10.10' W; 890 m; A2618: (10w); 12 July 2011; Bouhachem Natural Park; 35° 16.33' N, 05° 29.47' W; 1,152 m.

It seems this species is widespread in the North of Morocco. We found a multitude of them, including whole nests, in leaf litter and soil samples, and under rocks and moss. The main place where we found this species is the Talassennate National Park (Chefchaouen). Dr. X. Espadaler (unpublished data) previously collected it in Morocco at: (1) Bab-bou-Idir, 25 May 1986, 1,500 m, *Q. canariensis*, *Q. ilex*; Espadaler leg.; and, (2) Tazzeka, Taza, 29 March 1997, 1,400 m, C. Hernando leg.

**Strumigenys tenuipilis**, Myrmicinae

Material and data: A2596: (1w); 13 July 2011; Chefchoauen, *Quercus suber* forest; 35° 06.10' N, 05° 18.20' W; 488 m; A2598: (4w); 14 June 2011; Dardara, *Quercus suber* forest; 35° 07.24' N, 05° 17.60' W; 374 m. Extracted from leaf litter and soil samples using the Berlese funnel method. At Dardara, several workers of *S. baudueri* were collected simultaneously with *S. tenuipilis*.

This species was originally described as *Strumigenys baudueri* var. *tenuipilis* Emery, 1915, from workers collected in Italy and southern France. It was given species status by Brown (1953, p. 132) as *S. tenuipilis*. After further changes in generic placement, however, Baroni Urbani and de Andrade (2007) have argued that it, along with many dacetines, should revert to the original *Strumigenys*. There are no reports from the African continent. In Morocco, *S. baudueri*, *P. argiola* (Cagniant 2006) and recently *P. membranifera* (Taheri and Reyes-López 2011), all of which are now placed in *Strumigenys*, have been recorded from Morocco.

**Temnothorax parvioculum**, Myrmicinae

Material and data: A2599: (19w); 14 June 2011; Chefchoauen, Dardara, cork oak forest; 35° 07.24' N, 05° 17.60' W; 374 m; A2597: (6w); 13 July 2011; Bouhachem, *Quercus suber* woodland; 35° 06.10' N, 05° 18.20' W; 488 m; A2605: (2w); 11 July 2011; Chefchoauen, Dardara, cork oak forest; 35° 06.10' N, 05° 18.20' W; 488 m.

*T. parvioculum* was described only recently from Gibraltar, on the southern tip of the Iberian Peninsula (Guillem and Bensusan 2009). It has since been found on both sides of Gibraltar, namely in Spain and in Morocco (Guillem et al. 2011). This species is not easy to find because of its hypogaeic habitat. It is found under stones and by sifting soil and leaf litter.
New Data on Distribution and Natural History

Aenictus vaucheri, Dorylineae

Material and data: A2602: (10 w) Nest; 13 July 2011; Chefchaouen, Akerrat forest, cork oak forest; 35° 06.10’ N, 05° 18.20’ W; 488 m; A2197: Nest; Tetouan, Al Hamra; 35° 23.83’ N, 05° 22.27’ W; 139 m; A2866: Nest; 30 April 2011; near Balota; mosaic of scrub and open woodland with Pistacia lentiscus, Quercus suber, Calicotome villosa, Cistus spp.; 34° 57.13’ N, 05° 31.66’ W, 140 m.

This species is common in three separate locations in Morocco. Two are from the Atlantic coast area of the Tingitane Peninsula and the other from the Atlas of Beni Mellal (Cagniant 2006). Despite its hypogaeic habitat, Cagniant considered this species to be very common in two species given below:

Discussion

The ant fauna of Morocco is particularly diverse with 233 species, when compared to only 180 species in both Algeria and Tunisia (Cagniant 2006), but it remains less than the recorded 295 species in the Iberian Peninsula (Roig and Espadaler 2010). The rate at which ant species are added to the list of the Moroccan fauna would suggest that there remain more to be discovered. Our investigations also suggest that several species previously thought to be restricted in distribution or in choice of habitat are in fact more widespread and less selective (such as T. pardoi or T. parvioculum). It is difficult to speculate how climate change and an array of anthropogenic factors including farming practice will influence the ant fauna. For this reason, frequent and regular field work is required, with accurate data particularly of the macro and micro habitats where ant species are thriving, if we are to understand ant ecology in Morocco.

Acknowledgments

We are grateful to Dr. Brian Taylor (Grazingfield, UK) for helpful comments and suggestions on this manuscript. We also thank Dr. Martin Ebejer (Cowbridge, UK) for some help with the English language.

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Received 20 September 2012; accepted 26 January 2015.