On the occurrence of the genus *Leptanilla* Emery, 1870 in Sardinia

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The genus *Leptanilla* (Hymenoptera Formicidae), represented worldwide by 47 species, shows a very peculiar geographical distribution. It is found in Africa, Spain, Italy, Corsica, Russia, India, Ceylon, Malaysia, Java, Japan and in the southwest of Australia. Currently, no species has been discovered in North and South America. Scarcity of records, mainly due to the difficulty in collecting the female castes, leaves many aspects of *Leptanilla* biology still poorly known. The ecology and behaviour of all castes have been studied only for *L. japonica* Baroni Urbani, 1977 so far. Among 21 described species of *Leptanilla* occurring in the Mediterranean area, rare records of 5 species are reported for the islands of Sardinia, Pantelleria and Sicily. Unlike the wingless and eyeless workers and queens, the males have the associated characteristics of flying Hymenoptera, including well developed wings, muscular mesosoma and large eyes, and can be easily captured by light traps. In this study we report the results of a monitoring programme conducted in agro-silvo-pastoral systems of Sardinia. During the years 2004-2015 several males of *Leptanilla* were collected from early March to October by using suction light traps fitted with a blacklight tube (Philips TL 4W/08) and a downdraught suction motor. The species resulted distributed in 29 sites from the North to the South of the island and at an altitude ranging from the sea level to 1002 meters. Morphological analysis of diagnostic traits, i.e. genital capsules and the three paired valves (*parameres*, *volsellae*, and *penisvalvae*), permitted to discriminate two morphospecies (*L.* sp. SAR-1 and *L.* sp. SAR-2), which were also very different in general characters and size. Although it was not possible to display a clear pattern of male emergences, *L.* sp. SAR-1 resulted very common and abundant (530 specimens collected from 27 sites) whereas only 56 males of *L.* sp. SAR-2 were caught in 18 sites. During the entire survey the two species were collected together 27 times at 16 sites. The records are surprising for abundance and number of sites and show that *L.* sp. SAR-1 could be considered an ubiquitous species. The patchiness of geographical distribution and the rarity of these enigmatic ants are probably more apparent than real as a consequence of the tiny size of workers and queens as well as their extremely cryptic lifestyle making them difficult to observe and collect in field. Unfortunately it was not possible to associate the two morphospecies of males with the two species *L. revelierii* Emery, 1870 and *L. doderoi* Emery, 1915 reported in literature as occurring in Sardinia. With new records of female and male castes, it should be possible to shed light on the taxonomical chaos in this genus and to discriminate species based on both morphological and genetic traits, which in turn will significantly help to improve its ecological knowledge. This research was partially supported by the Autonomous Region of Sardinia (L.R. n. 7/2007, tender 2013).

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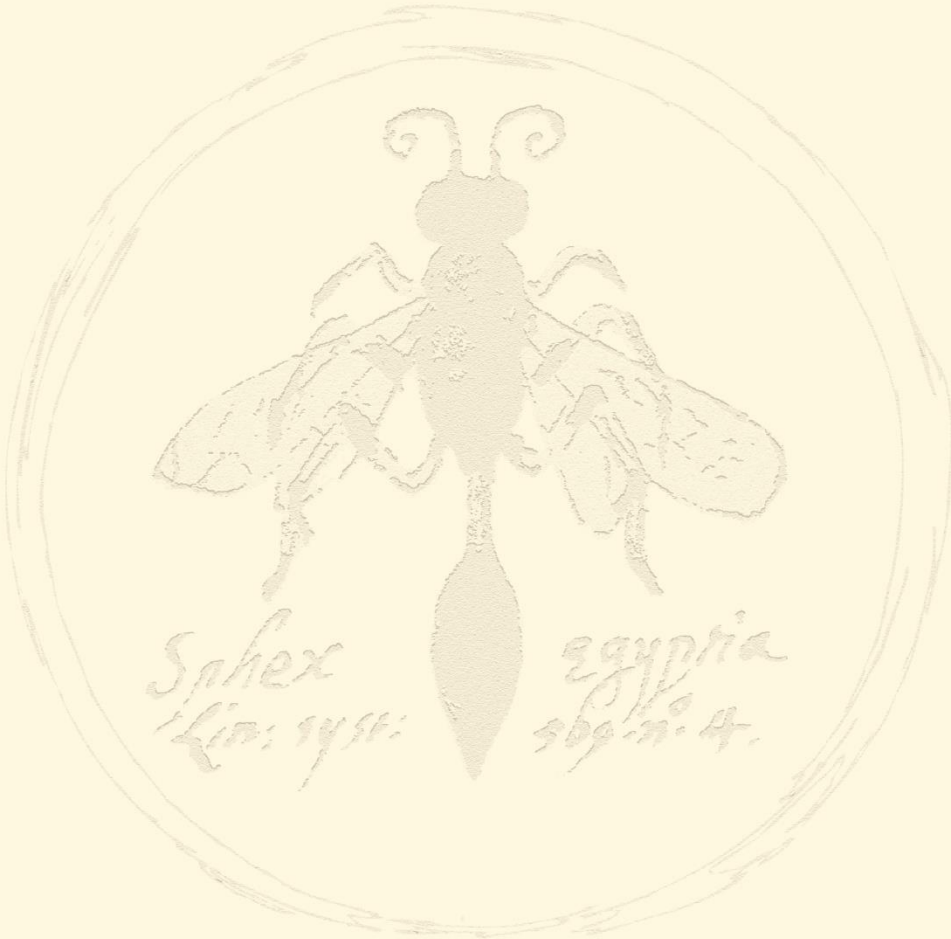

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