

***Lepisiota capensis* (Mayr, 1862), a new exotic ant
(Hymenoptera, Formicidae) in La Gomera (Canary Islands)
[*Lepisiota capensis* (Mayr, 1862), una nueva hormiga exótica
(Hymenoptera, Formicidae) en La Gomera (Islas Canarias)]**

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Abstract: *Lepisiota capensis* is documented for the Canary Islands, as an exotic ant to be added to the fifteen exotic ant species –and ant genus as well– already known in those islands. Its arrival is likely to be recent. The presence of this species in a natural zone calls for a dedicated survey and monitoring of the population, to be followed by an eradication attempt.

Keywords: alien species; ant; *Lepisiota*, Canary Islands.

Resumen: *Lepisiota capensis* se añade a la quincena de especies de hormigas exóticas detectadas en las Islas Canarias. El género también era inédito allí. Su llegada parece ser muy reciente. La presencia en un medio natural aconseja un monitoreo de la población, antes de intentar su erradicación.

Palabras clave: exótica; hormiga; *Lepisiota*; Islas Canarias.

Introduction

Exotic species are an increasing component of the biota in human or human-modified habitats (Elton, 1958). General trade and economic activity facilitates the arrival and establishment of propagules, transported by air, trains, and other vehicles, etc. (Rabitsch, 2010). Islands are precious natural laboratories, although their condition of being isolated is also one of their major weak points when facing eventual invaders (Sax & Gaines, 2008).

Ants are amongst of the most successful invaders: five ant species are listed among 100 of the worst invasive species (Lowe *et al.*, 2001). Those insects are among the species that have most easily negotiated the several filters they encounter, either from their region of origin or from already introduced populations, until they have a possibility to establish at any arrival place (Williams, 1994). Ant size is a key factor for a successful establishment (McGlynn, 1999), and being smaller is an advantage. Social life, too, is a general condition enhancing the possibilities of becoming established abroad (Hölldobler & Wilson, 1990). Here we report the first record of a new exotic ant –not

invasive till now– in the island of La Gomera (Canary Islands, Spain). Although the species has been introduced it is not known if it has reached the established stage (Blackburn *et al.*, 2011).

Studied material

Ants were identified using all available resources: 1) Ants of Africa, at <http://antsof africa.org>; 2) Antweb images, at <http://www.antweb.org>; 3) original references for 13 infraspecific names, as noted in Bolton's Catalogue, at: http://gap.entclub.org/archive/Bolton_NGC_2012_JAN.pdf; 4) Arnold's (1920: 554-578) keys to "*Acantholepis*" species from South Africa; 5) Santschi's (1914) key to "*Acantholepis capensis* races et variétés"; 6) Author's private collections.

Studied specimens (Fig.1) have darkly coloured hairs over the body. Petiolar spines are shorter than the distance at their tips. Body colour entirely black. Its general mesosoma shape in side or dorsal view, pilosity distribution, pubescence density, cuticle surface structure and shininess are coincident with the images corresponding to CASENT0100958 at antweb

(accessed February 2014 at: <http://www.antweb.org>). Voucher specimens are deposited in the Natural Sciences Museum in Barcelona and at the Nature and Man Museum in Tenerife.

The specimens were detected during a general survey by G. Fernández on 12 July, 2011, on a sunny day, in the hiking trail from Cortadero (28°06'55.60"N 17°14'35.30"W) to Alto del Garajonay (28°06'35.04"N 17°14'54.09"W (La Gomera) (Fig. 2), close to a nest of *Messor hesperius* Santschi, 1927. Vegetation belongs to the native monteverde or laurisilva.

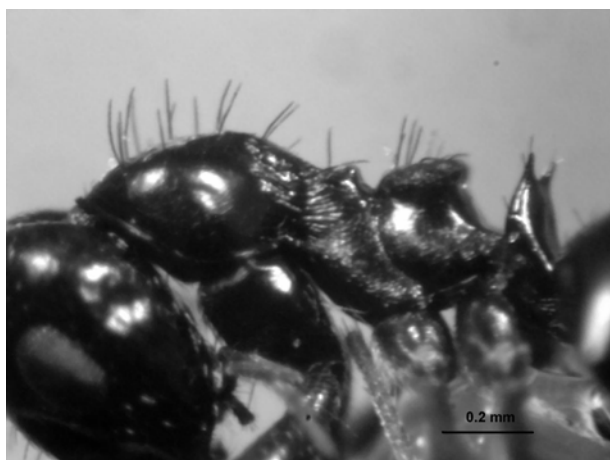


Figure 1. *Lepisiota capensis* specimen from La Gomera (Canary Islands). Side view of mesosoma and petiole. Dark hairs and sharply bidentate petiole are apparent. Line: 0.2 mm.

Figura 1. *Lepisiota capensis* de La Gomera (Islas Canarias). Vista lateral del mesosoma. Nótese las quetas oscuras y el pecíolo bidentado. Línea: 0.2 mm.

Discussion

The species was detected at an undisturbed natural area. Thus, it might be possible to consider the species as a natural –non-exotic– component of the fauna. However, we feel it should be treated as an exotic based on the following indirect evidences. First, the genus, with 81 known species and 51 proposed subspecies (Bolton, 2012), had never been registered for the Canary islands. Second, the track, although crossing a natural area, is heavily used by people and has received road management works. Third, we think that if it was a native species, it would be highly unlikely for the species to be present in a single island, as an isolate within the archipelago. It would be necessary, though, to conduct a detailed search in the surroundings of the specific



Figure 2. View of the site where *Lepisiota capensis* was collected, close to the hiking trail from Cortadero to Alto del Garajonay (La Gomera, Canary Islands). Figura 2. Lugar de captura de *Lepisiota capensis*, junto al sendero que va de Cortadero hasta Alto del Garajonay (La Gomera, Islas Canarias).

collecting point to get information about the extension occupied and other likely nests. *L. capensis* (Mayr) is the first species of the genus to be collected in the Canary Islands, where fifteen other exotic species are known (Espadaler & Bernal, 2003; Högmo, 2003). Except for the Argentine ant (*Linepithema humile* (Mayr)), other exotic ants in the Canary Islands are restricted to gardens, streets or heavily disturbed habitats. The species, outside of tropical Africa, was mentioned by Donisthorpe (1934; as *Acantholepis capensis*), in the A'haggar Mountains, and subsequently by Bernard & Cagniant (1963; as *A. capensis* var. *laevis*), also from the core of Sahara, at the Hoggar (A'haggar) massif. The name has also been used for samples from Cape Verde (Báez *et al.*, 2005). Material from those two locations should be revised to ascertain its identity. Samples from India (Bingham, 1903) were noted as having "...abundant yellowish erect hairs (Bingham, 1903: 316) and are not regarded here as the same species from La Gomera. A similar situation seemingly applies to some samples from China (Wu & Wang,

1995: 129, fig. 225) showing extremely reduced mesosoma pilosity.

Lepisiota capensis is frequent on *Ficus* in South Africa (Schatz *et al.*, 2004) and is considered as a minor or occasional pest in urban and agricultural areas of Southern Africa (Prins *et al.*, 1990). It was implicated as a vector for *Phytophthora* pod rot of cocoa by Evans (1971), and was actively involved in attending to coccids on cocoa pods (Anikwe *et al.*, 2010). Its trophic regime was described as nectarivore and scavenger by Tshiguvho *et al.* (1999). In particular, the reproductive biology (polygyny? budding?), usually correlated in ants with successful translocation and subsequent establishment around the globe (Passera, 1994), is unknown. The elevation range is rather wide in South Africa: from 875 m up to 1625 m (Munyai & Foord, 2012).

The arrival of the species is likely to be recent. Although not proof of this assertion, we note that it was not collected during entomologist visits to the island in 1989 and 2004. *Lepisiota capensis* appears to have been detected at an early stage, and according to the precautionary principle (Cooney, 2004), we suggest the correct actions to undertake would be: i) to produce a detailed map of the extent of the population ii) to preserve specimens for future molecular analysis that could help in tracking the origin of this population. Then, if the area occupied by *L. capensis* is rather small—say a few hundreds of square meters—iii) to attempt a complete eradication of this possibly small population using an intensive, focalized chemical treatment, iv) undertake post-treatment monitoring with non-chemicals baits. Eradication is not an impossible objective, as is being increasingly acknowledged (Genovesi, 2011) and has been easily attained several times (Hoffmann *et al.*, 2011). The probability of eradication success is very high when the area of infestation is small (1-10 ha; Tobin *et al.*, 2014), as is likely to be the case with *L. capensis* in La Gomera.

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