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First record of *Lasius paralienus* SEIFERT, 1992 (Hymenoptera: Formicidae) from France and Andorra

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Abstract

Lasius paralienus SEIFERT, 1992 was collected for the first time in France and Andorra. The numbers of species of the subgenus *Lasius* s.str. known from France and Andorra are now twelve and four, respectively.

Key words: Ants, Hymenoptera, Formicidae, *Lasius paralienus*, France, Andorra.

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Introduction

Ants of the genus *Lasius* FABRICIUS, 1804 (Hymenoptera: Formicidae), with approximately a hundred species described so far (BOLTON & al. 2007), are among the most abundant and commonly found species of the Holarctic ant genera (WILSON 1955). They are present in wooded, open or urban environments (SEIFERT 1992) and can locally dominate the myrmecofauna (WILSON 1955). Most species of this genus feed on honeydew produced by aphids and on small animal prey. Despite the importance of this genus in temperate environments in terms of relative abundance and ecological impact (HÖLLDOBLER & WILSON 1990, SEIFERT 2007), it has long been problematic from a taxonomic point of view: A high number of specimens were first described as different species which were thereafter placed in synonymy. In 1955, WILSON proposed a clear definition of the genus *Lasius* and of its four subgenera (*Cautolasius* WILSON, 1955, *Chthonolasius* RUZSKY, 1912, *Dendrolasius* RUZSKY, 1912 and *Lasius* s.str.; note that in its current definition the genus *Lasius* contains seven subgenera: MARUYAMA & al. 2008). In his revision, however, Wilson identified only five species of the subgenus *Lasius* s.str. for the Palaearctic region (WILSON 1955). YAMAUCHI & HAYASHIDA (1970), VAN LOON & al. (1990) and, more recently, SEIFERT (1991, 1992) significantly increased this number. Based on morphological measurements, Seifert distinguished in 1992 33 species within the subgenus *Lasius* s.str. for the Palaearctic region (SEIFERT 1992). This number has now risen to 52 (SEIFERT 2009).

Lasius paralienus SEIFERT, 1992 (Figs. 1 - 2) is a Palaearctic species widely distributed from Northern to Southern and from Western to Eastern Europe (Sweden to Asia Minor) (SEIFERT 2007, GÓMEZ & al. 2008). The distinctive features of *Lasius paralienus* workers are their profuse pubescence, in particular on the clypeus, which strongly contrasts the blackish cuticle and produces a silky surface appearance, and the low number of setae on the scape and on the hind tibia (SEIFERT 1992).

This paper reports the first records of *Lasius paralienus* from France and Andorra. With these new records, the numbers of species of the subgenus *Lasius* s.str. now reach 12 for France (including four species of the "*L. alienus*" group, see: BERNARD 1968, SEIFERT 1992, GALKOWSKI 2008) and four for Andorra (including two species of the "*L. alienus*" group, see: SEIFERT 1992, BERNADOU & al. 2006, ESPADALER & al. 2008).

Material and methods

The material presented in this study originates from different field sampling campaigns conducted from 1995 to 2008. Different types of environments were sampled during these campaigns: urban areas, grassland and forest environments. Several sampling methods were used: baits, hand sampling and pitfall traps. During hand collecting, ants were searched on the ground or on vegetation (on branches, bark); potential nesting sites were also inspected (dead wood, under stones / bark). Following the sampling protocol recommended by AGOSTI & ALONSO (2000), pitfall traps were used in the Madriu-Perafita-Claror valley (Andorra) and in the Pique valley (France) and were left in place for 6 - 7 days.

Our conception of *L. paralienus* relies specifically on (1) the original description, (2) one sample already identified by B. Seifert (Senckenberg Museum für Naturkunde Görlitz), and (3) samples of *L. paralienus* from Hungary, Greece, Kosovo Macedonia, and Turkey. Using the keys produced by SEIFERT (1992, 2007) we based our identification on: (a) very dense pubescence over the body, especially on the clypeus; (b) SL / HL (SEIFERT 1992); (c) comparison with the sample identified by B. Seifert; (d) comparison with samples of *L. piliferus* and *L. psammophilus* from France and Spain (leg. and det. C. Galkowski and X. Espadaler). An additional support is the robustness of workers in *L. paralienus* as compared with *L. piliferus* and *L. psammophilus*. Both the magnification (up to 112.5×) from a Nikon SMZ-U and from a Perfex Sciences Zoom Pro (up to 200×) and the type of illumination (dual arm fiber optic illuminator) we used, give a satisfactory and reliable vision of pubescence length and distance.

The specimens collected from the Pique valley are deposited in the Museum of Natural History in Paris and in the Museum of Natural History in Toulouse.

Results and discussion

The material examined in this study stems from a single locality in Andorra and from twelve localities in France.

1. Andorra: Madriu-Perafita-Claror valley (42° 30' N, 1° 33' E), 11.VIII.2006, leg. A. Bernadou, det. X. Espadaler, several workers collected, 1370 m a.s.l., meadow valley floor.
2. France: Dordogne, Périgueux (45° 11' N, 0° 43' E), IX. 1995, leg. and det. C. Galkowski, several workers collected, 106 m a.s.l., tended lawn downtown.
3. France: Pyrénées-Atlantiques, Orthez (43° 29' N, 0° 46' W), IX.1998, leg. and det. C. Galkowski, several workers collected, 120 m a.s.l., tended lawn downtown.
4. France: Gironde, Pauillac (45° 11' N, 0° 44' W), 22. IX.1999, leg. and det. C. Galkowski, several queens collected, 15 m a.s.l., banks of the Gironde.
5. France: Corrèze, Nespouls (45° 02' N, 1° 30' E), 01.X. 2006, leg. and det. C. Galkowski, several workers collected, 320 m a.s.l., grassland.
6. France: Saône-et-Loire, Vergisson (46° 18' N, 4° 42' E), 20.V.2007, leg R. Delahaye, det. C. Galkowski, several workers collected, 450 m a.s.l.
7. France: Haute Garonne, Vallée de la Pique (42° 44' N, 0° 37' E), 09.VIII.2007, leg. A. Bernadou, det. X. Espadaler, several workers collected, 1007 m a.s.l., meadow valley bottom.
8. France: Gironde, Saint Aubin de Médoc (44° 54' N, 0° 43' W), 29.IX.2007, leg. C. Galkowski, det. B. Seifert, several queens, males and workers collected, 37 m a. s.l., tended lawn.
9. France: Ardèche, Rochepaule (45° 04' N, 4° 27' E), V.2008, leg. and det. C. Degache, several workers collected, 900 m a.s.l., dirt road.
10. France: Cher, La Chapelle Saint Ursin (47° 03' N, 2° 19' E), 01.VII.2008, leg. A. Chorein, det. C. Galkowski, several workers collected, 265 m a.s.l., limestone hills.
11. France: Aveyron, Millau (44° 05' N, 3° 04' E), 25. VII.2008, leg. C. Lebas, det. C. Galkowski, several workers collected, 379 m a.s.l., gorges of the Durbie.
12. France: Gard, Pompignan (43° 53' N, 3° 51' E), 27. VII.2008, leg. R. Blatrix, det. C. Galkowski, several workers collected, 190 m a.s.l., grove of young ashes.

Fig. 1: *Lasius paralienus*: body of worker in left lateral view.

Fig. 2: *Lasius paralienus*: head of worker in frontal view.

13. France: Pyrénées-Atlantiques, Lembeye (43° 27' N, 0° 06' W), VIII.2008, leg. C. Granchet, det. C. Galkowski, several workers collected, 300 m a.s.l., limestone hills.

Lasius paralienus was mainly found in open areas with low vegetation density (altitudinal distribution from sea level to 1370 m, mean = 419 ± 416 m, n = 13) and in natural as well as urban areas. Some samples stem from xerothermic grassland, a habitat already indicated by SEIFERT (1992). During field work, the activity of the workers was relatively low. The nests had simple entrances without apparent mound constructions. Nuptial flights were mainly observed in September. *Lasius paralienus* was often found in the presence of the following species: *Camponotus aethiops* (LATREILLE, 1798), *C. piceus* (LEACH, 1825), *Formica cunicularia* LATREILLE, 1798, *F. rufibarbis* FABRICIUS, 1793, *Lasius emarginatus* (OLIVIER, 1792), *L. niger* (LINNAEUS, 1758), *Myrmica specioides* BONDROIT, 1918, *Tapinoma erraticum* (LATREILLE, 1798). These species are characteristic of open and sunny areas.

Given its distribution in France and in other countries, *Lasius paralienus* seems to be widespread in Europe. In the Iberian Peninsula, *L. paralienus* is found in the Pyrenees and the Atlantic climatic region, north of 42° N. Except for a single sample collected in a garden from a very small town, other samples are from meadows located from 350 m to 1470 m a.s.l. (GÓMEZ & al. 2008). Given the scarcity of its observation in Southern Europe, it is therefore difficult to know whether the distribution of this spe-

cies is slowly shifting, from Northern to Southern countries, or from natural to urban habitats. This species could have long passed unnoticed due to the discrete activity of its workers and the inconspicuousness of its nests. Moreover, the lack of a consistent taxonomic revision of the subgenus *Lasius* s.str. during several years has contributed to confusions of this species with other *Lasius* s.str. species (probably *L. alienus* and *L. psammophilus* SEIFERT, 1992). It is likely therefore that the collections found in museums, including that of BERNARD (1968), contain a number of *L. paralienus* specimens identified under the name "*alienus*". It would be interesting to examine these collections to obtain additional locations for *L. paralienus* and to draw a more accurate map of the distribution of this species.

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Zusammenfassung

Lasius paralienus SEIFERT, 1992 wurde erstmals in Frankreich und Andorra gesammelt. Aus Frankreich sind somit zwölf Arten der Untergattung *Lasius* s.str. gemeldet, aus Andorra vier.

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