

Nala lividipes (Dufour, 1828), a new earwig for the Maltese Islands (Dermaptera: Labiduridae)

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ABSTRACT. *Nala lividipes* is recorded for the first time from the Maltese Islands. Distributional, ecological and taxonomic notes are included for this species. New distributional data is provided for other earwig species which were locally known from few or single records.

KEY WORDS. Dermaptera, Malta, *Nala lividipes*, *Anisolabis maritima*, *Labidura riparia*, *Labia minor*.

INTRODUCTION

The Order Dermaptera constitutes a group of primitive insects commonly known as earwigs. This common name derives from a supposed predilection for such insects to entering ears, but this is definitely unsupported. They are distributed worldwide with about 1,900 described species. The greatest species diversity is to be found in the tropical regions (Afrotropical, Neotropical, Oriental and Australian) of the World.

Earwigs are mostly cursorial and nocturnal, with most species rarely flying. Feeding is predominantly on dead and decaying vegetable and animal matter, with some predation and some damage to living vegetation. Some Dermaptera groups are highly specialised. The Arixeniinae are commensals or ectoparasites of bats in Southeast Asia and the Hemimerinae are semi-parasites of South African rodents of the genus *Cricetomys*. Earwigs in both these groups are blind, apterous and with rod-like forceps. The forceps of free-living earwigs, strongly sclerotised and unisegmented in the adults, are used for manipulating prey, for defence and offence and in some species for grasping the partner during copulation.

The earwig fauna of Malta is locally represented by five species (SCHEMBRI & SCHEMBRI, 1979). *Nala lividipes* (Dufour, 1828) (Labiduridae) was not previously recorded from Malta. The family Labiduridae has a nearly worldwide distribution and is subdivided into three subfamilies with seven genera and approximately 55 species (KOČÁREK, 2006). The genus *Nala* Zacher, 1910, sole representative of the subfamily Nalinae, accommodates 13 described species distributed throughout the Afrotropical, Oriental, Australian and South Palaearctic faunal regions (KOČÁREK, 2006).

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Nala lividipes (Dufour, 1828)

Material examined: MALTA: Wied tal-Isqof, 16.vii.2002, 1 ♂ (attracted to UV light traps), leg. D. Mifsud; Bidnija, 26.xi.2006, 1 ♀, leg. D. Magro.

Short description: An immediately distinguishable earwig species due to its length (8.5-11.0 mm), blackish colour and well developed wings. Overall body coloration brown, with dull black abdomen bearing short sparse pale hairs; tegmina and wing scales brown, dull, rugose. Male forceps with branches gently arcuate, with some small teeth at the base and a larger tooth at the apical third; female forceps with slender, almost straight, contiguous branches.

Distinguishing features: The genus *Nala* is represented by only one species in Europe, *N. lividipes*. For this reason, this taxon cannot be confused with other Dermaptera species occurring in Europe. This species superficially resembles *Labia minor* (Linné, 1758) which also occurs in the Maltese Islands, but it is easily distinguished by its larger body dimensions, shape of male forceps and darker body colouration.

Ecology: This species is often accidentally transported into new territories where it becomes established. It can survive in different habitats but it needs humid conditions and relatively high ambient temperatures. The species was locally found in a semi-permanent valley system, surrounded by agricultural fields (Wied tal-Isqof) and in agricultural land bordering some high maquis (Bidnija).

Global distribution: *Nala lividipes* was described from Spain, but this species is most likely of Afrotropical origin. It is widely distributed in the Mediterranean Region from the Canary Islands to Portugal and Spain, to North Africa (Algeria, Tunisia), Sicily, Sardinia and Italian mainland (VIGNA TAGLIANTI, 2006); we have examined material from Ethiopia, Uganda, Burkina Faso, Zambia, Mozambique, Madagascar, Bangladesh, Thailand and SW Australia. It is also cited from Afghanistan, India, Ceylon, Java, Sumatra, Sulawesi, China, Formosa, Japan, Philippines, Thailand, Hawaii, and Nearctic and Neotropical regions.

Chorotype: Sub-cosmopolitan.

Additional notes on Maltese Dermaptera

Distributional and other relevant notes are included for three other poorly known earwig species previously recorded from Malta.

Anisolabis maritima (Gené, 1832)

Material examined: MALTA: Mellieha (Ghadira), 27.i.1990, 1 ♂ and 1 ♀, leg. D. Mifsud; Paceville (near Dragonara Hotel), 10.ix.1990, 1 ♀, under stone in coastal sandy area, leg. D. Mifsud; St. Thomas Bay (towards tal-Munxar), 24.ix.2004, 1 ♀, under stone in coastal sandy area, leg. D. Mifsud; Bahar iċ-Ċaġhaq (coastal), 20.viii.2006, 1 ♀, leg. D. Magro. **GOZO:** Qbajjar, 15.viii.1989, 3 ♀♀, under stones in coastal area close to man made salt pans, leg. D. Mifsud; Marsalforn Bay, 29.vii.1989, 1 ♀, under stone in coastal sand dune, leg. D. Mifsud.

This species was reported on the basis of a single female from Salina (SCHEMBRI & SCHEMBRI, 1979) and this was reported as the sole locality for this species (SCHEMBRI *et al.*, 1987; SCHEMBRI,

1989). The above records widen the distribution range of this species, tied to intertidal rocky or pebbly coasts, but it remains a taxon which should be locally protected as indicated in SCHEMBRI (1989).

Labidura riparia (Pallas, 1773)

Material examined: MALTA: Mellieha Bay, 27.i.1989, 1 ♂, under stone in coastal sand dune, leg. D. Mifsud; Il-Ballut (Marsaxlokk), 22.viii.1989, 3 ♂♂ and 4 ♀♀, under stones in sandy gravel near brackish water, leg. D. Mifsud; Il-Qalliet, 3.ix.1989, 1 ♀, leg. D. Mifsud; St. Thomas Bay, 26.viii.1991, 1 ♂, under stone in sandy coastal area, leg. D. Mifsud; Il-Fossa (near Fort San Luciano), 20.viii.1991, 1 ♀, leg. D. Mifsud; Birżebbuġa (coastal), 17.ix.2004, 3 ♂♂ and 2 ♀♀, leg. D. Magro; Bahar iċ-Ċagħaq (coastal), 20.viii.2006, 1 ♀, leg. D. Magro. **GOZO:** Qbajjar, 29.x.2002, 2 ♂♂ and 6 ♀♀, under stones in coastal area close to man made salt pans, leg. D. Mifsud.

This species was reported from Ghadira, Salina (SCHEMBRI & SCHEMBRI, 1979) and Ramla in Gozo (SCHEMBRI *et al.*, 1987). Locally, *L. riparia* is more common than *A. maritima*, but in view of its habitat preferences, tied to sandy coasts, and therefore more susceptible to damage by human activities, this species should also be locally protected.

Labia minor Linné, 1758

Material examined: MALTA: Żejtun, 24.vii.1989, 1 ♀, on freshwater vegetation in a private garden, leg. D. Mifsud; Chadwick Lakes, 26.ii.1997, 1 ♀, leg. D. Mifsud; Il-Balluta (Marsaxlokk), 4.v.1997, 1 ♀, leg. D. Mifsud; Wied tal-Isqof, 2.viii.2002, 3 ♀♀, leg. D. Mifsud; St. Thomas Bay (towards tal-Munxar), 2.iv.2004, 1 ♂, leg. D. Mifsud; Qrendi, Il-Maqluba, 23.iv.2003, 1 ♀, leg. D. Magro. **GOZO:** Sara Valley, 7.vi.1990, 1 ♂, leg. D. Mifsud.

This species was previously reported from Chadwick Lakes on the basis of a single male and a single female (SCHEMBRI & SCHEMBRI, 1979). The species is rather scarce locally. Its preferred habitats seem to be valleys where moist conditions prevail all year round.

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