

***Stenonemobius gracilis* (Jakovleff, 1871):
an addition to the orthopteran fauna of the Maltese Islands
(Orthoptera: Gryllidae)**

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ABSTRACT. *Stenonemobius gracilis* is recorded for the first time from the Maltese Islands on the basis of two specimens taken at light in 1993 at Mellieħa Bay, and subsequent records of specimens, collected between 1999 and 2004, from various sites located on the 'northwest' region of Malta and one site on Gozo. It is suggested that this species may well have been overlooked previously due to its diminutive size and nocturnal habits.

KEY WORDS. Malta, Orthoptera, Gryllidae, *Stenonemobius gracilis*.

INTRODUCTION

During the last seven decades or so, the list of Maltese Orthoptera has been periodically reviewed and up-dated, mostly but not exclusively by Maltese authors (BORG, 1939; VALLETTA, 1954, 1955; LANFRANCO, 1955, 1957; BACCETTI, 1973; CILIA, 1975; SCHEMBRI & EBEJER, 1983, 1984; SCHEMBRI, 1984; CASSAR, 1990). The present report adds another species to the orthopteran fauna of the Maltese Islands.

Stenonemobius gracilis (Jakovleff, 1871) belongs to the Subfamily Nemobiinae and Tribe Pteronemobiini. In the West Palaearctic Region, this genus is represented by two species, of which *Stenonemobius gracilis* (Jakovleff) is fairly widespread within the Mediterranean Basin, while *Stenonemobius bicolor* (SAUSSURE, 1877) is restricted to the northern Black Sea region.

Stenonemobius gracilis is a small light-coloured nocturnal gryllid, with an overall length that does not exceed 6.5 mm. It is noted to be quite common in *oued* systems across the Maghreb and is readily attracted to artificial lights (CHOPARD, 1943; HARZ, 1969; FONTANA *et al.*, 2002).

MATERIAL AND METHODS

The records on which this contribution is based are the result of general light trap sampling. The light trapping in which the first recorded specimens were collected was conducted on 4th August 1993 within the remnant coastal sand dune area at Ghadira within the precincts of the Ghadira Nature Reserve. Two large white sheets were utilized, one held vertically by poles and the other laid over the sand in a clearing within an otherwise heavily afforested dunal area. A 160 W Mercury Vapour lamp powered by a portable generator was used. The light trap was set up at around 20h30 and dismantled at 23h30, during which time a constant vigil was kept for any

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insects landing on the sheets. A similar set-up was also used at Ghar Barka in July of 1999 and Wied il-Bahrija in August of 2003, while an actinic moth trap was used during the Ramla and Bingemma sessions, respectively, in June of 2001 and June of 2004. The light trapping session at Wied l-Isqof during which the 2002 specimen was taken, was conducted on August 2nd on a rural road immediately adjacent to the valley bed, using an ultra-violet light source.

Stenonemobius gracilis (Jakovleff, 1871)

Material examined: MALTA: Melliha Bay, Ghadira Nature Reserve, 4.viii.1993, 1 ♂ & 1 ♀, leg. L.F. Cassar; Rabat, Ghar Barka, 20.vii.1999, 1 ♀, leg. P.M. Sammut; Rabat, Wied l-Isqof, 2.viii.2002, 1 ♂, leg. D. Mifsud; Rabat, Wied il-Bahrija, 6.viii.2003, 1 ♀, leg. A. Seguna; Mgarr, Bingemma, 28.vi.2004, 1 ♀, leg. A. Seguna. GOZO: Xaghra, Ramla, 16.vi.2001, 1 ♀, leg. A. Seguna. All specimens were collected at light.

Distribution: *Stenonemobius gracilis* has a relatively widespread distribution, ranging from the western Mediterranean (including Spain and the Maghreb) (Harz, 1969), Malta (Fig. 1), Sicily, central and northern Italy (FONTANA *et al.*, 2002; FONTANA *et al.*, 2005) and Macedonia (Harz, 1969), to the eastern Mediterranean and the Near East (Egypt and Palestine) and to Asia Minor and beyond (Mesopotamia, Turkestan, the Caspian Sea region), as well as eastern Africa (northern Sudan) (CHOPARD, 1943; HARZ, 1969).

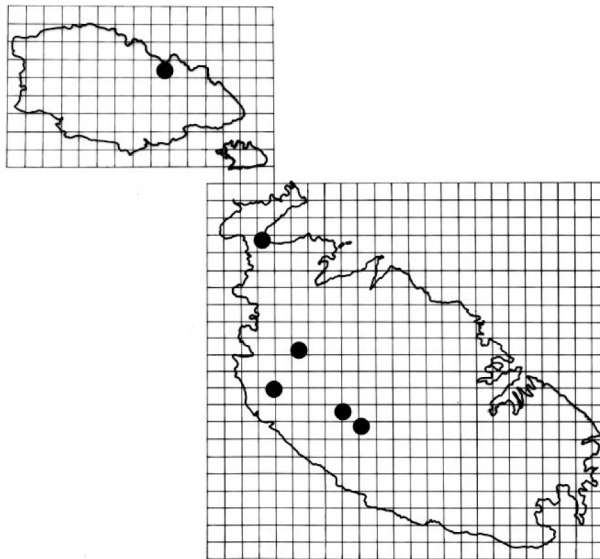


Figure 1 – Distribution of *Stenonemobius gracilis* in the Maltese Islands.

DISCUSSION

Notes on habitat: The Ghadira specimens were taken on the remnant coastal sand dune, which, in recent decades, was subject to considerable modification through heavy planting of an assortment of trees, both indigenous and alien, that consequently created a dense canopy over a habitat typical of open coastal landscapes. At the time of capture, the Ghadira dune comprised isolated

patches of relatively consolidated sand, colonized by a remnant dune flora that characterised the entire dune prior to afforestation, together with a host of planted trees, ranging from *Tamarix* and *Pinus* species to *Eucalyptus* and *Acacia* species, among others. The precise area on which the light trap was set-up consisted of a parcel of bare sand with patches of *Lotus cytisoides* L., *Pancreatium maritimum* L., and *Juncus acutus* L.

The Ghar Barka specimen was taken within the urban-rural fringe of the town of Rabat, where fairly extensive cultivation is still practised. Crop types in this area comprise those often encountered on more arid farmlands, such as onions and cereals in the main, since groundwater is apparently not as plentiful within this part of Ghar Barka as in other localities nearby (Sammut, P.M., *pers. comm.*, 2008). Some small-scale orchards, largely stone-fruit, also occur. There are no natural or semi-natural assemblages other than the ubiquitous suite of ruderal species often encountered along field margins.

The Ramla (Gozo) specimen was taken on the coastal sand dune, a habitat which, although still geomorphologically active, is relatively quite small compared to other similar biotopes in the Mediterranean. The Ramla dunes, which support a reasonably well developed dune flora, are located between the beach and encroaching agricultural parcels inland. A seasonal watercourse forms in this locality during the wet season, cutting through beach sands to form a temporary, small estuarine environment.

The Wied l-Isqof specimen was taken on the rural secondary road that lies close and immediately adjacent to the valley bed. This seasonal watercourse, which functions as a freshwater run-off conduit, is mainly colonized by *Arundo donax* L. and is almost entirely surrounded by farmland. In general, the landscape within this region consists of a mosaic characterized by extensive cultivation and parcels of semi-natural and natural vegetation.

The Wied il-Bahrija specimen was taken on the adjacent banks of the valley proper. The Bahrija watercourse supports a perennial source of freshwater which maintains fairly high levels of humidity all year round, as a consequence of which, dense riparian vegetation colonises the valley-bed and its immediate surroundings.

The Bingemma specimen was taken on an elevated parcel of land, largely karstic, with an adjacent valley system nearby, which in-part is heavily cultivated. The original biotope, remnants of which still persist, was based on thickets of *Rubus ulmifolius* Schott together with a variety of garrigue and steppe assemblages on the upper, more exposed reaches of the area.

As indicated above, all the specimens recorded herein were taken at light, using Mercury Vapour, UV or actinic light sources. The species was encountered between the latter part of June and early August. Overall, every locality lies within a rural setting in which aquatic habitats and/or humid environments, natural or man-made (valleys, marshland, artificial pools and reservoirs), ranging from fresh to brackish waters, occur within or in close proximity to the record sites. Moreover, the one common factor for all the sites in which *S. gracilis* was taken is agriculture within perched aquifer zones; each locality (Ghadira, Ghar Barka, Ramla, Wied l-Isqof, Wied il-Bahrija and Bingemma) harbours actively cultivated farmland that lies, in every instance, on the younger stratigraphic layers that comprise exposures of the Upper Coralline Limestone and Blue Clay, the latter of which is characteristic of high water retention capabilities.

Stenonemobius gracilis is widely distributed across the Mediterranean basin and, as a result, it would be reasonable to assume that the species has been overlooked locally. In particular, its small size and slender form, as well as its nocturnal habits, render the species relatively inconspicuous. Species with similar physical characteristics and habit generally only attract attention when they are associated with agriculture and economic implications. Thus, the fact that *S. gracilis* is not noticeably associated with farmland or cultivation and is not a conspicuous pest, may be the reason why this species has gone unnoticed for so long, including by country folk from whom, typically, vernacular names and indigenous rural knowledge most often originate. There is no doubt that only through thorough searches for the species in appropriate habitats could the actual status of *Stenonemobius gracilis* in the Maltese Islands be ascertained; indeed, it is likely that this species is commoner than immediately evident.

ACKNOWLEDGEMENTS

Thanks are due to Dr Martin J. Ebejer, for re-examining the specimens taken at Ghadira and for corroborating their determination. The author is particularly grateful to Dr David Mifsud for bringing to light the occurrence of other specimens in local collections, for arranging the loan of such material for examination and for communicating with Dr Armin Coray, to whom the author also extends his thanks for his contribution towards confirming the identification of some of the specimens. The author is also indebted to Mr Anthony Seguna, Mr Paul Sammut and Mr John Borg for making specimens of *S. gracilis* in their collections available for taxonomic examination, together with data and other relevant information for inclusion in this contribution. The author is further grateful to Mr Charles Gauci of Birdlife for facilitating entry and, consequently, research within the Ghadira Nature Reserve at Mellieħa. Thanks are also due to Dr François Dusoulier, curator of natural history collections (entomology), in Gap, France, for taxonomical advice. Finally, the author wishes to thank Mr Alex Camilleri for advice on toponyms.

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ISSN : 2070-4526

Date of Publication : 31st August 2008

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Received: July 28, 2008

Accepted: August 15, 2008