Naturalista sicil., S. IV, XLIV (1-2) 2020, pp. 155-160

DOI: https://doi.org/10.5281/zenodo.4095295

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FIRST ITALIAN RECORD OF *NEMAUSUS SORDIDATUS* (STÅL, 1858) COLLECTED IN SOUTHERN SICILY: ACCIDENTAL INTRODUCTION OR EXPANSION OF RANGE? (*Hemiptera Heteroptera Alydidae*)

SUMMARY

The broad-headed bug *Nemausus sordidatus* (Stål, 1858) is reported as a new record for Italian fauna. Several specimens have been observed on and collected from its host plant, *Acacia saligna* (Labill.) H.L.Wendl. (Fabaceae), in the vicinities of Niscemi (Caltanissetta) in Sicily since 2004. The biology and distribution of the species are briefly discussed together with the possible origin of its presence in Sicily.

Key words: broad-headed bug, *Acacia*, accidental introduction, climate warming, zoogeography.

RIASSUNTO

Prima segnalazione italiana di Nemausus sordidatus *(Stål, 1858) raccolto in Sicilia meridionale: introduzione accidentale o espansione dell'areale di distribuzione?* Viene fatta la prima segnalazione dell'alidide *Nemausus sordidatus* (Stål, 1858) per la fauna italiana. Diversi esemplari di questa specie sono stati osservati e raccolti sulla pianta ospite, *Acacia saligna* (Labill.) H.L.Wendl. (Fabaceae), nei pressi di Niscemi (Caltanissetta) in Sicilia a partire dal 2004. Biologia e distribuzione della specie vengono brevemente prese in considerazione e viene discussa la possibile origine della sua presenza in Sicilia.

Parole chiave: Alydidae, *Acacia*, introduzione accidentale, riscaldamento climatico, zoogeografia.

Introduction

Alydidae are a small family of the superfamily Coreoidea (Heteroptera) known to include worldwide 282 species. Its members are elongate and slender, characterized by very short bucculae, distance between eyes greater than

anterior margin of pronotum, corium elongate on coastal margin, membrane with numerous veins, auricles of metathoracic scent-glands well developed. They are subdivided into two subfamilies, Alydinae and Micrelytrinae; generally the first feed on Fabaceae, the second on Poaceae. Many species exhibit a marked mimetic myrmecomorphy, as adults or as larvae only (SCHUH & WEIRAUCH, 2020).

The species of Alydidae already known from Italy are six: *Alydus calcaratus* (Linnaeus, 1758), present in all Italy except Sardinia; *Alydus rupestris* Fieber, 1861, known only from few localities of the Alps; *Camptopus lateralis* (Germar, 1817), common and widespread in the whole country; *Heegeria tangirica* (Saunders, 1877), extremely local along the coasts of Sicily and Southern Calabria; *Micrelytra fossularum* (Rossi, 1790), present in all peninsular and insular Italian regions south of Po river (TAMANINI, 1982); *Megalotomus junceus* Scopoli, 1763, rather local in Northern regions.

A seventh species, discovered in Sicily, is reported in the present paper as a new record for Italian fauna.

RESULTS

Nemausus sordidatus (Stål, 1858) (= *Nemausus simplex* Horváth, 1910) (Fig. 1)

Material examined: Sicily, Niscemi (Caltanissetta), loc. Vituso, 330 m a.s.l., on *Acacia saligna* (Labill.) H.L.Wendl., 7.vii.2004: 1♂, 1♀; 7.xi.2004: 1♂; 24.xii.2012: 1♀, M.A. Zafarana & S. Zafarana lgt., Museo civico di Niscemi.

In addition to the museum specimens listed above, the species has been often observed since 2004 in the same locality by two of us (M.A. Z. & S.Z).

Identification. *Nemausus sordidatus* belongs to the subfamily Alydinae and can be easily distinguished from other Mediterranean Alydidae by the following combination of characters: macropterous, body robust, dorsally glabrous; II article of labium longer than III and IV together; hind femora subcylindrical to moderately spindle-like; hind tibiae straight, provided with strong teeth in apical half; antennae with few fine, pale setae. Redescriptions and illustrations of the species can be found in RIBES (1971) (figures), LINNAVUORI (1987) (key to African genera and species for adults, figures), MOULET (1995) (key to Euromediterranean genera, redescription, larva, figures), GÖLLNER-SCHEIDING (2000) (key to African genera for adults, diagnosis, figures), DURSUN *et al.* (2012) (redescription, figures).

Biology. *Nemausus sordidatus* is known to live on *Acacia* spp. (Fabaceae) in sandy habitats in Africa, Arabian peninsula, Middle East and Iran (LIN-



Fig. 1 — Nemausus sordidatus (Stål), ♀, Tunisia, Jemma du Djerid (A. Carapezza collection).

NAVUORI, 1978, 1987, 1989, 2004; CARAPEZZA, 1997); in particular it was observed on *Acacia nilotica* (L.) Willd. ex Delile in Egypt (LINNAVUORI, 1964), and pods of *Acacia hebeclada* DC. in Namibia (GÖLLNER-SCHEIDING, 2000). In Egypt it was found near acacias, locally in numbers on shady places on the ground (PRIESNER & ALFIERI, 1953). Indications of 'anomalous' plants such as *Salsola bottae* (presently *Halothamnus bottae* Jaub. & Spach) (Amaranthaceae) in Yemen (LINNAVUORI, 1989) and *Olea oleaster* (Oleaceae) in Turkey (DURSUN *et al*., 2012) should probably be regarded as sitting records. In Southern Spain it was reported on cultivated *Acacia karroo* (Hayne) used as hedge (BAENA & COELLO, 2012). It was noticed that it is frequently attracted to lights (LINNAVUORI, 1964; CARAPEZZA *et al.,* 2017; KRÜGER & DECKERT, 2017). European adults were mostly collected between September and December (RIBES, 1971; VIVAS & BURGERS, 2015; present paper).

In Sicily the species was found in a strongly anthropized environment with houses, gardens, and rows of cultivated *Acacia saligna* (this paper).

Distribution. Tropical Africa (Botswana, Congo, Eritrea, Ethiopia, Lesotho, Namibia, Rwuanda, Somalia, South Sudan, South Africa, Sudan), north Africa (Algeria, Canary Islands, Egypt, Morocco, Tunisia), Portugal, Spain, Asian Turkey, Near East (Israel, Jordan), Arabian Peninsula (Oman, Saudi Arabia, UAE, Yemen), and Iran (MANCINI, 1956; LINNAVUORI, 1987; DOLLING, 2006; SCHAEFER & O'DONNELL, 2008; DURSUN *et al.*, 2012; AUKEMA *et al.,* 2013; VIVAS & BURGERS, 2015; CARAPEZZA *et al.,* 2017).

DISCUSSION

Nemausus sordidatus is the type species of the predominantly Afrotropical genus *Nemausus* Stål, 1866, known to include two more species: *N. inornatus* (Stål 1858), known from Chad, Namibia, Somalia, South Africa, Sudan, and Zaire (LINNAVUORI, 1978); and *N. lattini* Schaefer & O'Donnell, 2008 which is endemic of Kenya. A detailed redescription of the genus and a discussion of its relationships with other genera of African genera of Alydidae can be found in SCHAEFER & O'DONNELL (2008).

Nemausus sordidatus is the only species of its genus that has expanded its range out of the Afrotropical region north into Arabian peninsula and the southern Mediterranean. Its presence in northern Africa makes the interpretation of its discovery in southern Sicily rather difficult, considering three elements: the geographical closeness of the Sicilian locality with the North african coast, the fact that Alydidae are excellent flyers and the apparent adaptability of *N. sordidatus* to feed on any plant of the genus *Acacia*. *N. sordidatus* could be one of the many southern climate-driven species which react

to climate warming by expanding their ranges northwards. In this case it could have reached Sicily naturally. However, considering that acacias are frequently imported as ornamental plants, the possibility that the insect was accidentally introduced cannot be excluded. It is interesting to remind that the same two hypotheses were made to explain the presence of *N. sordidatus* in the southern Iberian peninsula (VIVAS & BURGERS, 2015). Currently there are no elements showing with certainty which of the two is correct.

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