

NEW RECORDS OF SCYMNINI (COLEOPTERA: COCCINELLIDAE) TO MADEIRA ISLAND

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ABSTRACT. The presence of two new species of Scymnini was noticed in Madeira Island, *Scymnus (Scymnus) abietis* (Paykull) and *Nephus (Sidis) hiekei* Fürsch. They were collected during a scientific expedition organised by the Biology Department of Azores University, made in Madeira and Porto Santo islands, between the 22nd and 29th of September, 1997.

RESUMO. Damos nota da presença de duas novas espécies de coccinelídeos da tribo Scymnini para a ilha da Madeira, são elas *Scymnus (Scymnus) abietis* (Paykull) e *Nephus (Sidis) hiekei* Fürsch. O presente artigo resulta do trabalho de campo efectuado pela Secção de Ecologia durante a Expedição Científica às ilhas da Madeira e do Porto Santo, organizada pelo Departamento de Biologia da Universidade dos Açores, entre os dias 22 e 29 de Setembro de 1997.

INTRODUCTION

The knowledge of Coccinellidae faunal composition in ecosystems, including agro-ecosystems, is very important because this family includes many predators used as natural enemies on biological control. Of the predatory species most feed on either aphids or coccids, with few feeding on both types of prey. Some species feed on other phytohagous species as mites, aleyrodids, ants, chrysomelid larvae, cicadellids, pentatomids, fungi and psyllids (DIXON, 2000; HODEK & HONEK, 1996). Thus the food of ladybirds in a particular region is likely to reflect the faunal composition of the potential prey in that area (DIXON, 2000).

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On Madeira archipelago 17 Scymnini species were already reported: *Clitostethus arcuatus* (Rossi, 1794); *Stethorus punctillum* (Weise, 1891); *Stethorus tenerifensis* (Fürsch, 1987); *Stethorus wollastoni* Kapur, 1948; *Scymnus (Pullus) haemorrhoidalis* Herbst, 1797; *Scymnus (Pullus) testaceus* Motschulsky, 1837; *Scymnus (Mimopullus) mediterraneus* Iablokoff-Khnzorian, 1972; *Scymnus (Pullus) Wollaston*, 1854; *Scymnus (Pullus) epistemoides* Wollaston, 1871; *Scymnus (Scymnus) subvillosus* (Goeze, 1777); *Scymnus (Pullus) suturalis* (Thunberg, 1795); *Scymnus (Scymnus) rubromaculatus* (Goeze, 1777); *Scymnus (Scymnus) interruptus* (Goeze, 1777); *Scymnus (Scymnus) levaillanti* Mulsant, 1850; *Scymnus (Nephus) flavopictus* (Wollaston, 1854); *Nephus (Sidis) depressiusculus* (Wollaston, 1867); *Pharoscymnus decemplagiatus* (Wollaston, 1857) (BIELAWSKI, 1963; BORGES, *pers. comm.*; ERBER, 1990; ERBER & WHEATER, 1987; ERBER & AGUIAR, 1996; FRANQUINHO AGUIAR, *pers. comm.*; FÜRSCHE, 1987; RAIMUNDO & ALVES, 1986).

The aim of the scientific expedition to Madeira and Porto Santo islands was to provide a contribution on the knowledge about the presence in this Archipelago of biological control agents of Coccinellidae family.

MATERIAL AND METHODS

Twenty-three sites in Madeira and Porto Santo islands were selected. A total of 30 samples were made [MADEIRA: Funchal (1), Camacha (1), Santo da Serra (2) Caniçal (1), Câmara de Lobos (1), Quinta Grande (1), Anjos (1), Laranjeiras (1), Porto Moniz (1), Seixal (1), Chão da Ribeira (1), Santana (2), Faial (1), Curral das Freiras (1), Fajã da Rocha do Barco (1); PORTO SANTO: Pico do Castelo (1), Fonte da Areia (1), Aeroporto (1), Portela (2) and Pedregal (1)].

Depending on the type of vegetal cover, we used direct observation, beating and sweeping methods, collecting ladybeetle adults with a suction tube aspirator. We never took more than an hour in each plot sampled. The collected specimens were preserved in 70% alcohol and afterwards mounted and identified. The specimens collected were deposited on the Ecology Section of the Biology Department from Azores University (ref. CC-UA-SE-MAD).

RESULTS

FAMILY COCCINELLIDAE

SUBFAMILY SCYMNINAE

TRIBE SCYMNINI COSTA, 1984

GENUS *SCYMNUS* KUG. (SENSU LAT.)

SUBGENUS *SCYMNUS* KUG. (SENSU STRICT.)

1794, Neus Magazin Liebh. Ent. 1, 5, pp. 545-546

Scymnus (Scymnus) abietis (Paykull.)

1798, Vetensk, Akad. Handl., p. 154

Synonymy: *S. semilimbatus* Flsch.

Host Records: (1 female) Santana 26.IX.97 (on citrus), Coccinellids Collection ref. CC-UA-SE-MAD no 12.

Main morphological external characteristics: 2.2-3 mm length. Long, oval and highly convex shaped body. Colour of the body yellow brownish with long and whitish hairs. Ventral body side red brownish with darker mesothorax (RAIMUNDO & ALVES, 1986).

Feeding habits: mainly aphids (GOURREAU, 1974).

Geographical distribution: Rare species. Present in the North and central Europe and mountain regions from the south of Europe and North Africa (GOURREAU, 1974). Present also in Portugal mainland (HEYDEN, 1870 *in* RAIMUNDO & ALVES, 1986).

GENUS *NEPHUS* (*SIDIS*) MULS., 1850

SUBGENUS *SIDIS* MULS.

1850, Spec. Trim. Sec., p. 975

***Nephus (Sidis) hiekei* Fürsch**

1965, Mitt., Münchner Entomolol. Ges. 55, p. 201

Host Records: (1 female) Caniçal 23.IX.97 (on *Canica* sp.), Coccinellids Collection UA-SE-MAD no 7.; (3 females) Anjos 24.IX.97 (on ruderal vegetation), Coccinellids Collection ref. CC-UA-SE-MAD no 7.

Main morphological external characteristics: 1.8 mm length. Adult body shape elongated and thin. Colour varying between brown and black. Elytron with longitudinal yellow marks on the most part of its surface, with a slightly expanded apical margin (RAIMUNDO, 1992).

Feeding habits: *Planococcus citri* Risso [Homoptera: Pseudococcidae] (RAIMUNDO, 1992).

Geographical distribution: Greece, Spain, Israel, Lebanon (FÜRSCH, 1965; FÜRSCH, 1967) and Portugal mainland (RAIMUNDO, 1992).

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BIBLIOGRAPHY

BIELAWSKY, R.:

1963. Coccinellidae (Coleoptera) von Madeira. *Comm. Biol.*, **25**: 72-102.

DIXON, A. F. G.:

2000. *Insect Predator – Prey Dynamics: Ladybirds Beetles & Biological Control*. Cambridge University Press, Cambridge. 257 pp.

ERBER, D.:

1990. New and little known Coleoptera from Madeira. Results of excursions to Madeira

in the years 1986-1990. *Bol. Mus. Mun. Funchal*, **42**: 147-181.

ERBER, D. & A. M. F. AGUIAR:

1996. New remarkable species of the coleopterous fauna of Madeira. *Bol. Mus. Mun. Funchal*, **48**: 41-62.

ERBER, D. & C. P. WHEATER:

1988. The coleoptera of the selvagem islands, including a catalogue of the specimens in the Museu Municipal do Funchal. *Bol. Mus. Mun. Funchal*, **39**: 156-187.

FÜRSCH, H.:

1965. Die palaearktischen arten der *Scymnus bipunctatus* – Gruppe und die europäischen Vertreter der untergattung *Sidis*. *Mitt. Münchner Entomol. Ges.*, **55**: 178-213.

1967. *Scymnus (Sidis) hiekei* Fürsch, als feind von *Pseudococcus citri* Risso. *Entomophaga*, **12**: 309-310.

1987. Die Scymninae der Kanaren, Azoren und Madeiras. *Acta Coleopterologica*, **3**: 1-14.

GOURREAU, J. M.:

1974. Systematique de la tribu des Scymnini (Coccinellidae). *Ann. Zool. Ecol. Animale* (INRA), no hors-serie, 221 pp.

HODEK, I. & A. HONEK:

1996. *Ecology of Coccinellidae*. Kluwer Academic Publishers, Dordrecht. 464 pp.

RAIMUNDO, A.:

1992. Novas espécies de *Scymnini* para a fauna de coccinélídeos de Portugal. Actas do V Congresso Ibérico de Entomologia. Suplemento no 3. *Bol. Soc. Port. Entomol.*, **3**: 373-384.

RAIMUNDO, A. A. C. & M. L. L. G. ALVES:

1986. *Revisão dos coccinélídeos de Portugal*. Universidade de Évora. Évora. 103 pp.