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A new mute species of the genus *Nemobius* Serville (Orthoptera, Gryllidae, Nemobiinae) discovered in colluvial, stony debris in the Iberian Peninsula: A biological, phenological and biometric study

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Abstract

Sampling of a Mesovoid Shallow Substratum (MSS) of a scree in the Guadarrama mountains (Madrid, Spain) revealed a population of crickets of the genus *Nemobius* Serville. A detailed morphological study revealed that the cricket was a new species, *Nemobius interstitialis* **sp. nov.**, which is principally characterized by the absence of a tympanum in the outer margin of the foreleg tibiae and a peculiar design of venation of the forewing of the male. Sampling of this environment over 1 year using surface and MSS pitfall traps, set at a depth of one meter, allowed study of population dynamics. A population maximum is attained in August. Abiotic (temperature and humidity) and biotic (accompanying fauna) data are given to contextualize the habitat of this new species.

Key words: *Nemobius interstitialis* **sp. nov.**, biology, Mesovoid Shallow Substratum (MSS), Guadarrama mountains, Iberian Peninsula.

Resumen

El muestreo de un Medio Subterráneo Superficial (MSS) en un canchal de la Sierra de Guadarrama (Madrid, España), ha permitido el hallazgo de una población de grillos del género *Nemobius* Serville. Un detallado estudio morfológico ha revelado que se trata de una nueva especie, *Nemobius interstitialis* **sp. nov.** que se caracteriza, fundamentalmente, por la ausencia de tímpano en el margen externo de la tibia anterior y un diseño muy singular de la venación de las tegminas del macho. Se estudia la dinámica poblacional de esta nueva especie utilizando los datos de captura de trampas de caída de superficie y en el subsuelo, a un metro de profundidad, durante un año de muestreo. Se ha observado que la especie presenta un máximo poblacional en el mes de agosto. Se aportan datos abióticos (temperatura y humedad) y bióticos (fauna acompañante) que contribuyen a contextualizar en su hábitat a esta nueva especie.

Introduction

The genus *Nemobius* Serville has included a maximum of 147 species/subspecies in the time since its description. Subsequent revisions have regrouped several of these species into new genera (Hebard 1913). Years later, Chopard (1956) included all American species in the genus *Pteronemobius* Jacobson and stated that *Nemobius* was not present on that continent. Vickery & Johnstone (1970) raised the subgenera proposed by Hebard (1913) for the North American species to genus level and described a new genus. In later papers, most (82) species were relocated in these or other related genera, or even in other subfamilies such as Trigonidiinae, and another 57 taxa were synonymized. Therefore, the genus *Nemobius* would include only six species: *Nemobius sylvestris* (Bosc) from Europe and North Africa; *Nemobius grandis* Holdhaus, from Samoa; *Nemobius karnyi* Chopard, from Java; *Nemobius strigipennis* Chopard, from India; *Nemobius elegans* Otte, from Costa Rica; and *Nemobius piracicabae*