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III - BIODIVERSITY, SYSTEMATICS AND PHYLOGENY

ORAL

Gyllotalpa cossyrensis Baccetti & Capra, 1978 microinsular endemism of the Lago di Venere in Pantelleria (*Orthoptera Gryllotalpidae*)

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Gyllotalpa cossyrensis Baccetti & Capra, 1978 is a species discovered and described almost 50 years ago on the basis of specimens collected on the muddy shores of Lake Venus of Pantelleria, also called Specchio di Venere (in the local dialect “u Bbagnu i l'Accua”, literally “the Water Sink”). It is a volcanic lake located in the northern part of the island, falling today within the National Park of the Island of Pantelleria. Fed by three hydrothermal springs (from which hot salty water gushes out at 35-58 °C, together with carbon dioxide) and meteorological precipitation, the basin measures 450 by 350 meters, is located at an altitude of 2 m above sea level and has a maximum depth of 12 meters. The southern shore is alluvial in origin and is characterized by the presence of muddy sediment enriched with organic material, in addition to minerals (like chlorine, sodium, potassium and sulfur). It is precisely in this part of the lake that *G. cossyrensis* is most frequently observed, usually under large stones, and whose burrows dug just below the muddy surface are mainly observed. The species, described on the basis of chromosome study but clearly characterized on a morphological basis as well, since the date of its description has not been found in any other locality on the island, which, moreover, has no other similar, i.e., muddy, environments. The authors of the species had compared the Pantelleria specimens with some from Libya (Homs and Cufra) apparently similar, but the presence the presence of the species in North Africa has not been further verified. As part of entomological research carried out for Pantelleria Island National Park, several visits were made to Lake Venus to search for *G. cossyrensis*. Since this is an endemic species living in a very restricted area, no invasive trapping techniques were adopted, nor were too intensive searches carried out in order not to affect a population that, although never quantified, reasonably appears to be small. Searches for individuals, conducted during daylight hours, were carried out at various times during the year from 2022 to 2025. During these visits juvenile and adult individuals were observed, some of which, on the basis of permits issued by the Pantelleria Island National Park, were collected and placed in breeding or preserved in absolute ethanol for molecular analysis currently underway at the University of Rome3. In addition to the daytime research always since 2022, several nocturnal views have been carried out, between 21:00 and 24:00 but only in July 2024 was it possible to record the sound emissions of the species, which were analyzed and found to be extremely peculiar compared to European and Mediterranean species whose bioacoustics have been studied. The phenology of the species does not appear to be well defined both because generally in species of the genus Gryllotalpa overlapping generations are often observed and because of the particularly mild climate of the habitat in which *G. cossyrensis* lives.
KEYWORDS: Webspinner, microinsularity, bioacoustic