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New insect on Balearic Islands

After 10 years of biochemical and molecular analysis of the *Tyrrhenoleuctra plecoptera* that live in the Western Mediterranean, Spanish and Italian scientists have now demonstrated that one of the insect populations of this group is a distinct and, therefore, new species.

The researchers, including a team from the University of Granada (UGR), used biochemical and molecular techniques for a decade to detail the taxonomical and phylogenetic relationships of the insects of the *Tyrrhenoleuctra plecoptera* genus that are spread across the Western Mediterranean (northern Africa, Iberian Peninsula, Balearic Isles, Corsica and Sardinia). The analyses included three species described using morphological characters as a basis.

IMAGE: This is *Tyrrhenoleuctra antoninoi*.

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"One of the results discovered and published in our studies is that the population of *Tyrrhenoleuctra* on the Balearic Islands is a clearly distinct taxon and demands acknowledgement of its status as an independent species", José Manuel Tierno de Figueroa, co-author of the study and a researcher in the Department of Animal Biology at the UGR explained SINC.

In order to demonstrate that the insect, called *Tyrrhenoleuctra antoninoi*, is really a species in its own right the team of scientists, comprising the Spanish researcher and Romolo Fochetti from the Tuscia University of Studies (Italy), wrote a scientific description in the journal *Zootaxa*, with biochemical (based on studies of enzymatic electrophoresis) and molecular characters (by means of mitochondrial DNA fragment sequencing).

Among the results of the study, Tierno de Figueroa and Fochetti highlighted the fact that insect was genetically distinct and "more closely related to populations on the southern Iberian peninsula and northern Africa than to those found on Corsica and Sardinia". The researchers also highlight that *Tyrrhenoleuctra* evolve molecularly at a "considerably slower rate than other insects distributed similarly in geographical terms.

Very Different Insects

Populations of insects belonging to the *Tyrrhenoleuctra plecoptera* genus can be found in temporary fresh water streams, sometimes at sea level, "which is very unusual for this group of insects, which generally live in highly oxygenated water in the medium or high alps", Tierno de Figueroa clarified. The scientists performed biochemical and molecular analyses to also discern these insects' biogeographical implications.

A study carried out on a larger scale had already shown great variation in almost all the characters that experts use to separate species. "Thus, intra-specific variability was as high as inter-specific variability, rendering morphological characters useless for identification purposes", the biologist said.

The new species of plecoptera takes the name of *Tyrrhenoleuctra antoninoi* in honour of researcher Antonino Sánchez-Ortega, who died in 2002 after devoting the best part of his life to studying these insects on the Iberian Peninsula.

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References:

Fochetti, Romolo; Tierno de Figueroa, José Manuel. "A new species of *Leuctridae* discovered by means of molecular and biochemical approaches: *Tyrrhenoleuctra antoninoi* n. sp (*Insecta: Plecoptera*)" *Zootaxa* 2112: 41-46 2009.