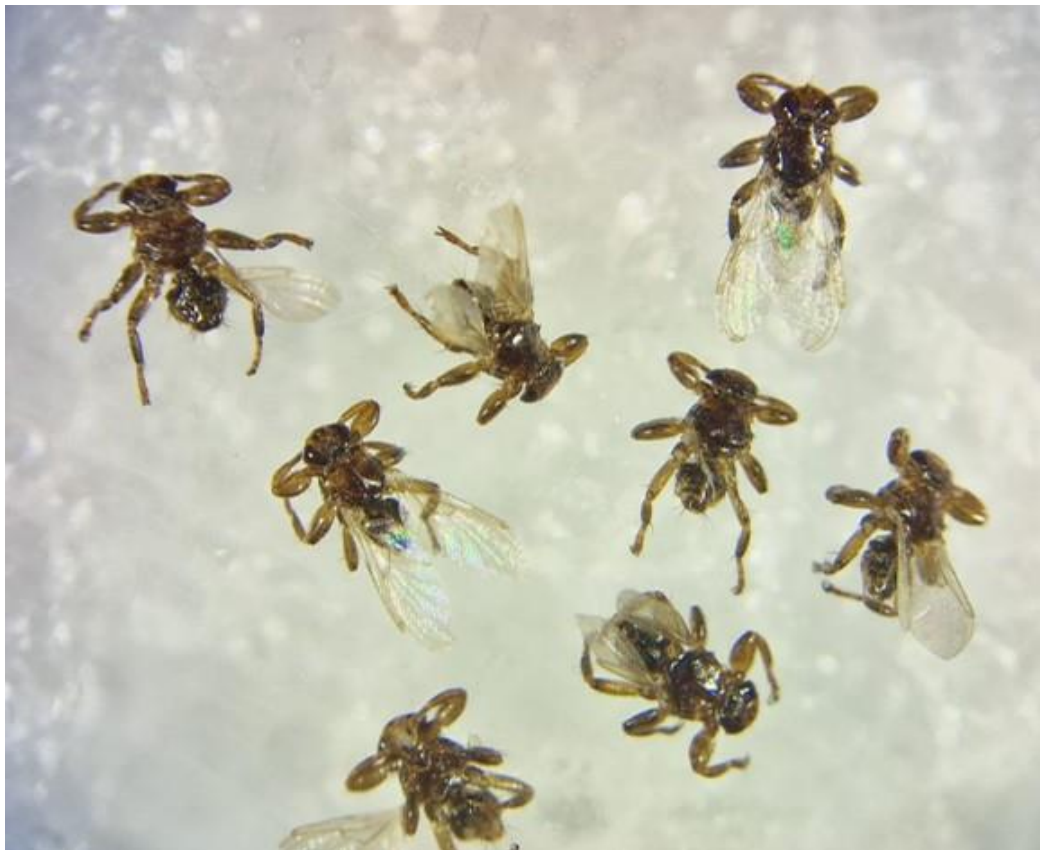




PRESS RELEASE

New fly species parasiting deers discovered in southern Spain

- The new species was named *Lipoptena andaluciensis*, after the region where it was found, Andalusia.
- Of all specimen analyzed, three harboured pathogens of public health significance such as *Coixella burnetti* and two bacterial endosymbionts.



Specimens of *Lipoptena andaluciensis*. Captured utilizing carbon-dioxide baited traps in Andalusia (Spain) Credit: Mikel A. González.

Sevilla, 12th November 2024. Discovering new insect species is still possible, as proved a team from the Doñana Biological Station (EBD-CSIC) in collaboration with the *Todavía es posible descubrir nuevas especies de insectos, como lo ha demostrado un equipo de la Estación Biológica de Doñana (EBD-CSIC), en colaboración con el Centre of Rickettsiosis and Arthropod-Borne Diseases (CRETAV) from CIBIR in Logroño (Spain) and the University of Prešov (Slovakia).* This is a new species of ectoparasitic fly, -living on the surface of other animals and feeds on them-, belonging to the genus *Lipoptena*. The team has named it *Lipoptena andaluciensis*, after the region where it was discovered, in the southwestern part of Spain, in Andalusia.

This discovery was coincidentally produced after an exhaustive mosquito sampling campaign in almost 500 points distributed in the provinces of Seville, Huelva and Cadiz. In these samplings, traps using carbon dioxide were used to attract the insects. In total, 84 specimens of this new species of fly were collected, suggesting that it may be widely distributed and relatively abundant in the region. They were subsequently characterised both morphologically and molecularly.

The new species differs from other similar species in size and morphology. According to researcher Mikel Alexander González, who led the study, 'the new species is morphologically very similar to an exotic species called *Lipoptena fortisetosa*, which is spreading rapidly across Europe. However, molecular analysis using the COI gene confirmed our suspicions that it was a new species'.

Although their hosts are unknown, this genus of flies commonly parasitises mammals such as deer and other ungulates. In addition, the study revealed the presence in one specimen of DNA from the bacterium *Coxiella burnetii*, which causes a zoonotic disease known as Q fever or coxiellosis. Wildlife acts as a reservoir for the infection and is of particular importance as it can cause abortions and perinatal deaths in infected animals. Two endosymbiont bacteria were also detected whose biological role requires further investigation. The study also highlighted the efficacy of carbon dioxide traps as a method for the study of these flies.

'This finding underlines the need to evaluate the role of *Lipoptena andaluciensis* in the transmission of pathogens that can have an impact on both human health and the health of other animals,' says Jordi Figuerola, leader of the research group. Given the limited number of published studies on *Lipoptena*, it is possible that many species of this genus have yet to be discovered.

The study has been funded thanks to the ARBOPREVENT project of the 'La Caixa' Foundation.

Reference:

Mikel Alexander González, Ignacio Ruiz-Arrondo, Sergio Magallanes, Jozef Oboňa, María José Ruiz-López, Jordi Figuerola. **Molecular and morphological analysis revealed a new *Lipoptena* species (Diptera: Hippoboscidae) in southern Spain harbouring *Coxiella burnetii* and bacterial endosymbionts.** *Veterinary Parasitology*. <https://doi.org/10.1016/j.vetpar.2024.110300>



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Ejemplar de Liptena andalucensis nov sp. sobre la yema del dedo índice, mostrando su diminuto tamaño.
Créditos fotográficos: Mikel A. González.



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