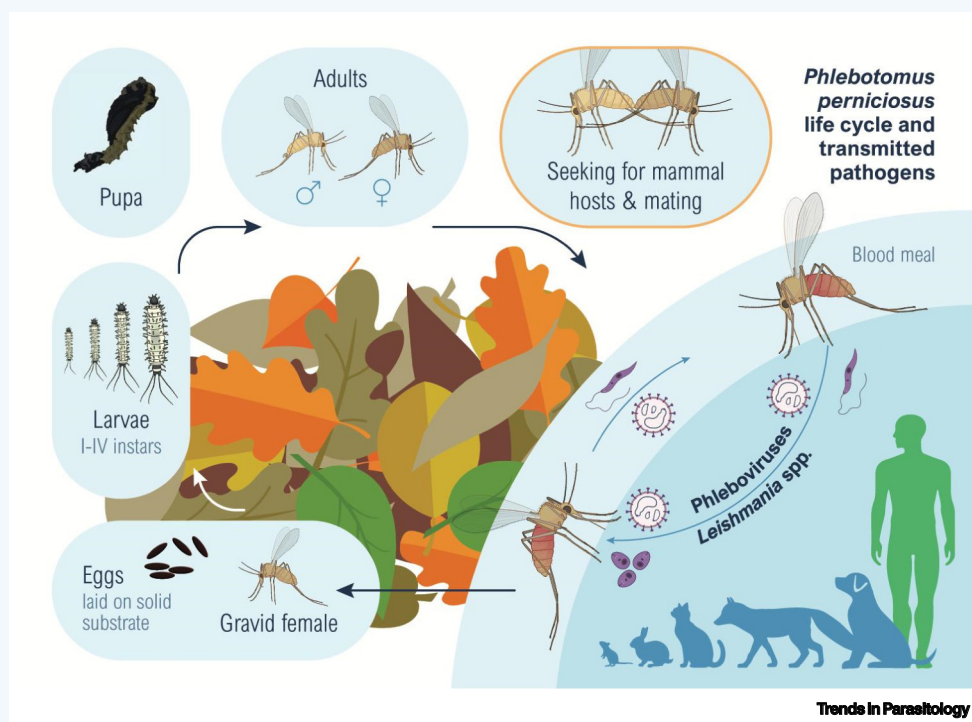


Phlebotomus perniciosus

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TRANSMISSION FACTS:

P. perniciosus is an opportunistic blood feeder, which can impact leishmaniasis epidemiology, since in the absence of other vertebrate hosts, sand flies may feed on humans and dogs more often.

It is a permissive vector to various *Leishmania* species, raising concerns about the establishment of exotic species. Thus, under laboratory conditions, it showed susceptibility to other species of the *Leishmania donovani* complex, suggesting potential involvement in natural transmission.

Phleboviruses from three serocomplexes have been isolated from *P. perniciosus*, highlighting its high susceptibility. The infection occurs in both males and females, indicating transovarian and venereal transmission.

CONTROL FACTS:

Implementing environmental management strategies can disrupt the sand fly life cycle. Simultaneously, using long-lasting pyrethroid-based topical insecticides on dogs is crucial to prevent their exposure to vectors.

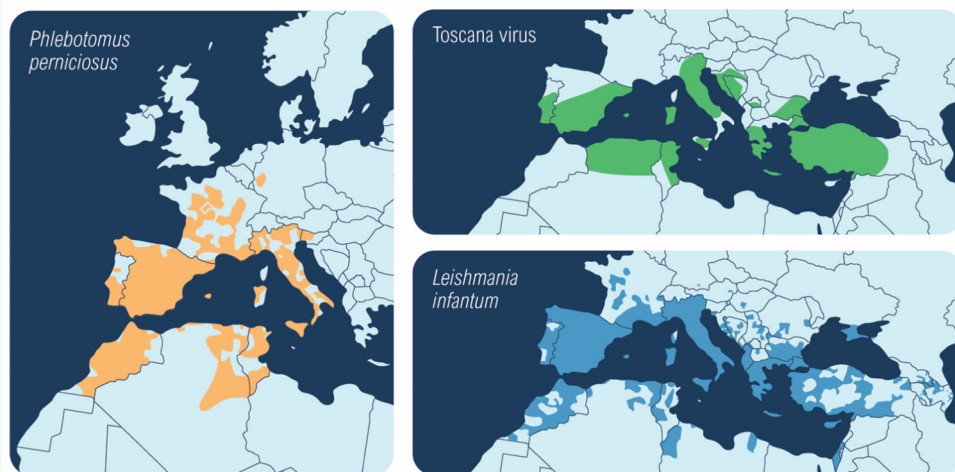
Tackling pathogens transmitted by sand flies requires systemic approaches such as One Health, which address risks to animal-human-ecosystem health.

More recently, citizen science has emerged as an important innovation tool for developing sustainable sand fly control strategies, promoting improved data collection through community engagement.

TAXONOMY AND CLASSIFICATION:

- PHYLUM:** Arthropoda
- CLASS:** Insecta
- ORDER:** Diptera
- FAMILY:** Phlebotomidae
- GENUS:** *Phlebotomus*
- SUBGENUS:** *Larroussius*
- SPECIES:** *P. perniciosus* (Newstead, 1911)

Phlebotomus perniciosus, recognized as the most important phlebotomine sand fly vector in countries of the Western Mediterranean region, is responsible for transmitting the protozoan *Leishmania infantum*, the causative agent of zoonotic leishmaniasis. This species also serves as a vector for various phleboviruses, with the Toscana virus being the most clinically relevant, associated as one of the main causes of meningitis and encephalitis in this region. Detected in 22 countries, *P. perniciosus* has a broad distribution in countries located in the Western part of the Mediterranean basin. However, due to global changes, it is expected that it will expand its endemicity to currently non-endemic regions. In endemic areas, this species is usually considered the most abundant and predominant vector, except in colder and more humid regions. It can be found from May to November, with density trends that may vary with each endemic scenario, making its presence temporally heterogeneous.



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Declaration of interests

The authors declare no competing interests.

Resources

www.ecdc.europa.eu/en/disease-vectors/facts/phlebotomine-sand-flies

www.ecdc.europa.eu/sites/default/files/documents/sand-flies-factsheet-references.pdf

www.ecdc.europa.eu/en/publications-data/surveillance-prevention-control-leishmaniasis-European-Union-and-neighbouring-countries

www.ecdc.europa.eu/en/publications-data/spatial-relationship-between-presence-and-absence-leishmania-spp

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