XI Congreso Luso-Español de Herpetología / XV Congreso Español de Herpetología
Anfibios y Reptiles ante el Cambio Global

Invasive species threat: Parasite phylogenetics reveals for the first time parasite host-switching from non-native to native European freshwater terrapins

C. PALACIOS[1*], L. H. DU PREEZ[2]. and O. VERNEAU[1]

Casting

Endemic European Turtles

Mauremys leprosa

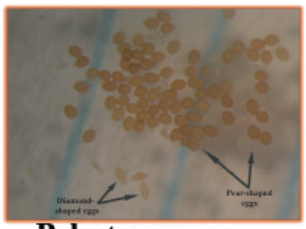
Emys orbicularis

American Exotic turtles

Trachemys scripta elegans

Also Casting

DNA barcoding



Polystome eggs released from turtles

Endemic parasites

***Neopolystoma* sp4 (H18) from the bladder**

Exotic parasites

***Neopolystoma* sp6 (H21) in *M. leprosa* conjuntival sac**

See Figure 1 for other casting parasite species names

Script

- American exotic turtles have been introduced in Europe through the pet trade in the second half of the twentieth century.
- American exotic turtles coexist with two indigenous freshwater terrapins in Europe, *Emys orbicularis* and *Mauremys leprosa* perhaps competing with the native species and transmitting pathogens.
- Because platyhelminth worms of the family Polystomatidae (Monogenea) have been described from American turtles in their native range as well as from wild populations of *E. orbicularis* and *M. leprosa*, they are used as actors to study exotic parasite transfer.
- In this movie, we provide first evidence of parasite host switching from American turtles to *E. orbicularis* and *M. leprosa* in captive (several haplotypes, Fig. 1) and natural environments (haplotype H21 above and in Fig. 1). Also casting, a new species of polystome from a natural population of *E. orbicularis* (H18 above and in Fig. 1)

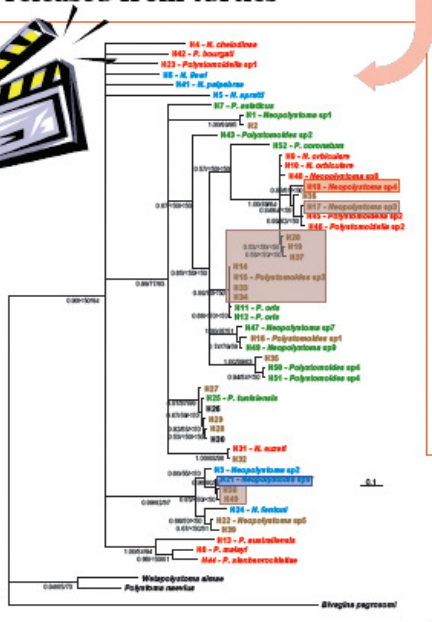


Figure 1. Bayesian phylogenetic analysis of mtDNA cytochrome c oxydase I gene from polystomes. Species in red live in the urinary bladder, in blue in the conjunctival sacs and in green in the pharyngeal cavity of terrapins. Polystome sequence haplotypes of unknown species are in black (for natural populations) and in brow (for captive ones). Values along branches indicate, from left to right, the Bayesian posterior probabilities and the ML bootstrap proportions resulting from analysis of nucleic and amino acids sequences, respectively. N = *Neopolystoma* and P. = *Polystomoides*. Boxes: Polystome transfers from exotic to indigenous (blue) and captive (brown) turtles in natural environments. A polystome species only found in a wild population of *E. orbicularis* (orange).

[1] UMR 5244 CNRS-UPVD, Biologie et Ecologie Tropicale et Méditerranéenne, Parasitologie Fonctionnelle et Evolutive, Université de Perpignan Via Domitia, 52 Avenue Paul Alduy, 66860 Perpignan Cedex, France.

[2] School of Environmental Sciences and Development, North-West University, Potchefstroom Campus, Private Bag X6001, Potchefstroom 2520, South Africa.

* carmen.palacios@univ-perp.fr