

# What can we learn from the parasitic nematode fauna of the Extinct giant skink of Cabo Verde?



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## INTRODUCTION

The giant skink of Cabo Verde *Chioninia coctei* lived in some islands of this archipelago (Fig. 1) until around 1912.

It was declared Extinct in 1996 although some evidence suggests its possible survival (Mateo et al., 2005).

Nothing is known about its parasitic fauna.

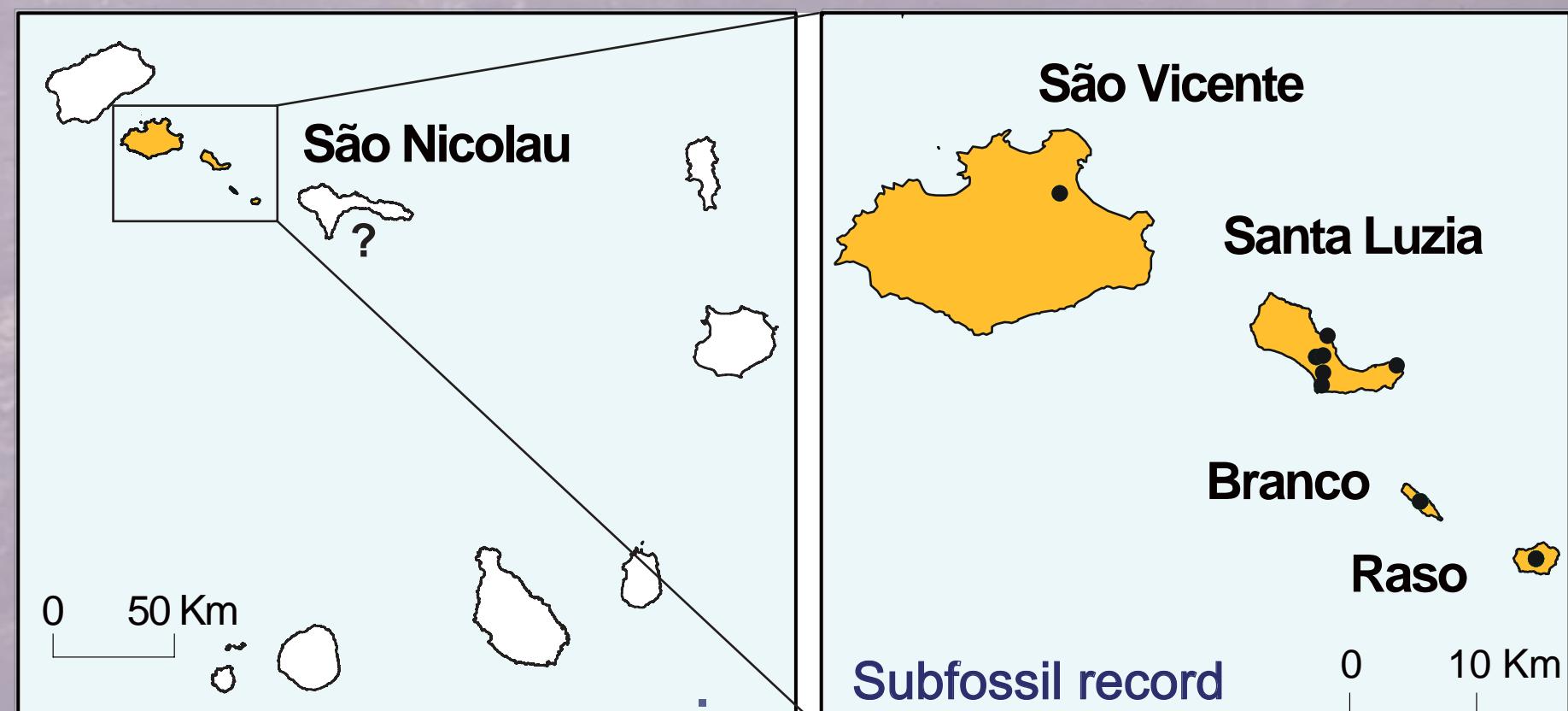


Fig. 1. Possible distribution of *C. coctei* in Cabo Verde Islands (adapted from Vasconcelos et al., 2013).

## METHODS

We dissected three of the five specimens (Fig. 2) from the Musée Oceanographique de Monaco to collect and identify for the first time its parasitic fauna.



Fig. 2. Analysed specimens of *C. coctei* with collection and identification codes VS0000067 and 95311 (Photo M. Dagnino).

## RESULTS

- All these **Pharyngodonidae** nematodes belong to the evolutive lineage of herbivorous reptiles.
- Their **high incidences and morphotypes** are typically found in tortoises and some Macaronesian **herbivorous or omnivorous lizards** (Roca, 1999; Martin & Roca, 2004).

- Based in a morphological analysis (check variables below) we made a preliminary taxonomic identification and found **five different taxa**: *Tachygonetria longicollis longicollis*, *T. longicollis setosa*, *T. numidica*, *T. macrolaimus*, *T. conica* (Fig. 3 A-D).

Variables: oesophagus length, structure of the apical end, structure of the caudal end of the males (including length and shape of the spicule, existence and shape of the gubernaculum, and arrangement of the caudal papillae).

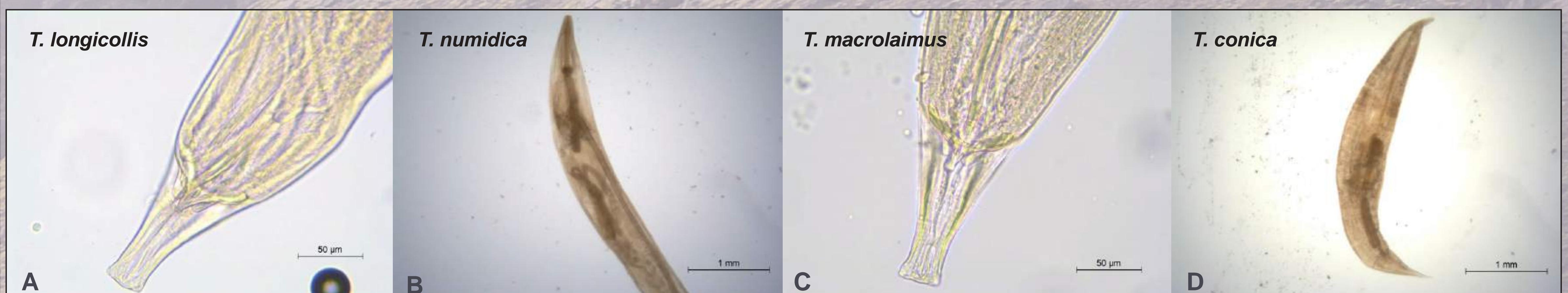


Fig. 3. Ventral views of identified *Tachygonetria* nematodes (Photos V. Roca). A) *T. longicollis*, male caudal end; B) *T. numidica*, female; C) *T. macrolaimus*, male caudal end; D) *T. conica*, female.

## PRELIMINARY CONCLUSIONS

The recruitment of this kind of nematodes suggests an, at least partial, **herbivorous diet** of *C. coctei*, and it can be explained by the possible presence of these parasites in the endemic and Extinct Cabo Verdean tortoise *Geochelone atlantica* or other host. This might have been favoured by the:

- **Large size** of the skinks, with large intestines;
- **Direct life cycle** of the nematodes and **easy dissemination** of their eggs;
- Easy dispersion of the tortoise eggs among islands or **host-switching** with other infected sympatric lizards.

In addition to this morphological approach, we are planning to integrate molecular tools to test our hypothesis.

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