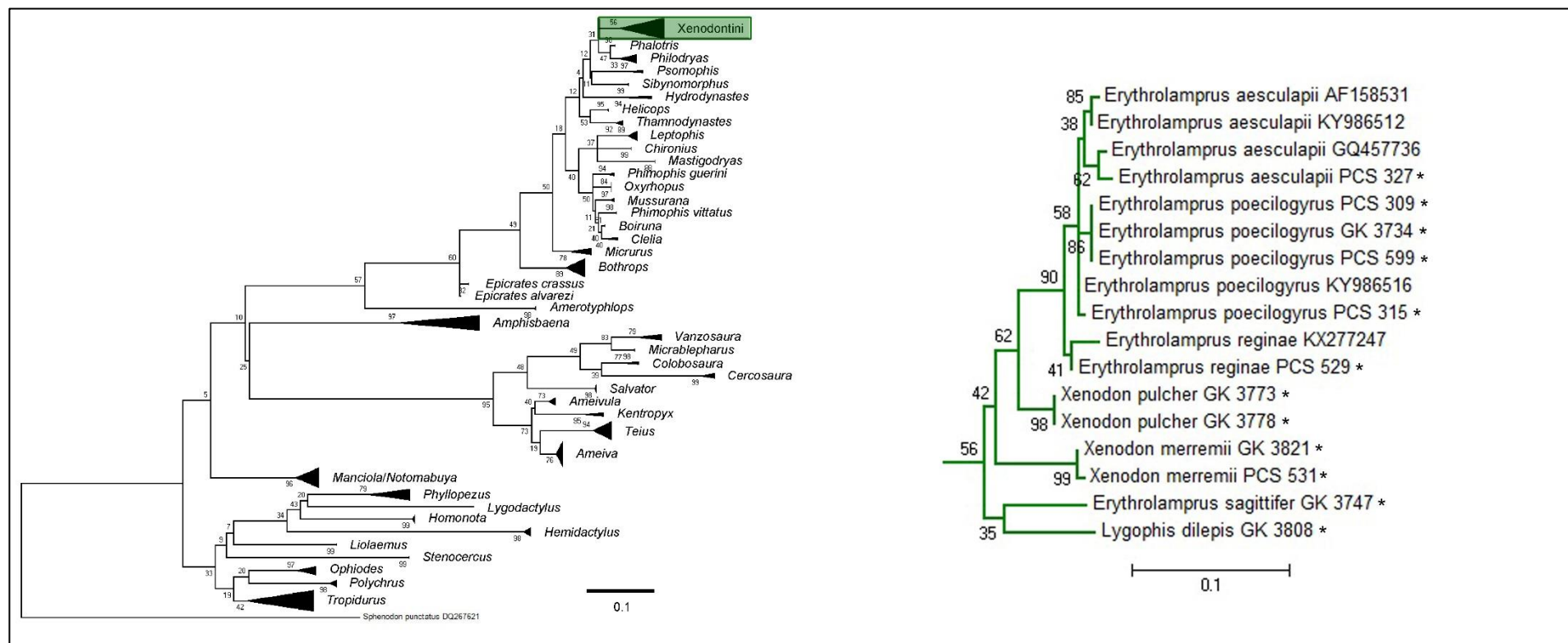


Figure S1

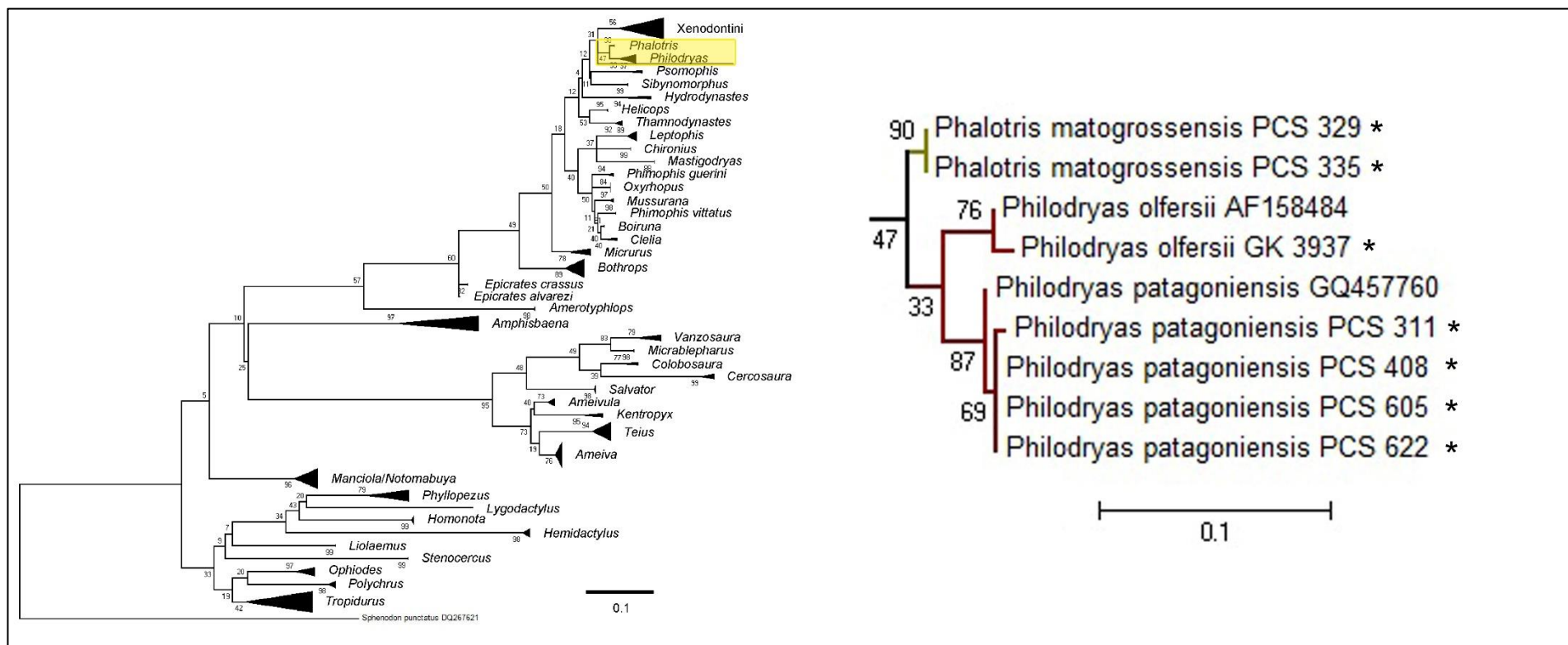
Xenodontini



Maximum Likelihood tree based on mtDNA 16S sequences of Squamata from Paraguay. Left: General view of the barcoding analysis. Right: detail of the relationships among specimens of the Xenodontini tribe. Specimens marked with asterisk were sequenced by us.

Figure S2

*Phalotris* / *Philodryas*



Maximum Likelihood tree based on mtDNA 16S sequences of Squamata from Paraguay. Left: General view of the barcoding analysis. Right: detail of the relationships of the genera *Phalotris* and *Philodryas*. Specimens marked with asterisk were sequenced by us.

Figure S3

*Psomophis* / *Sibynomorphus*

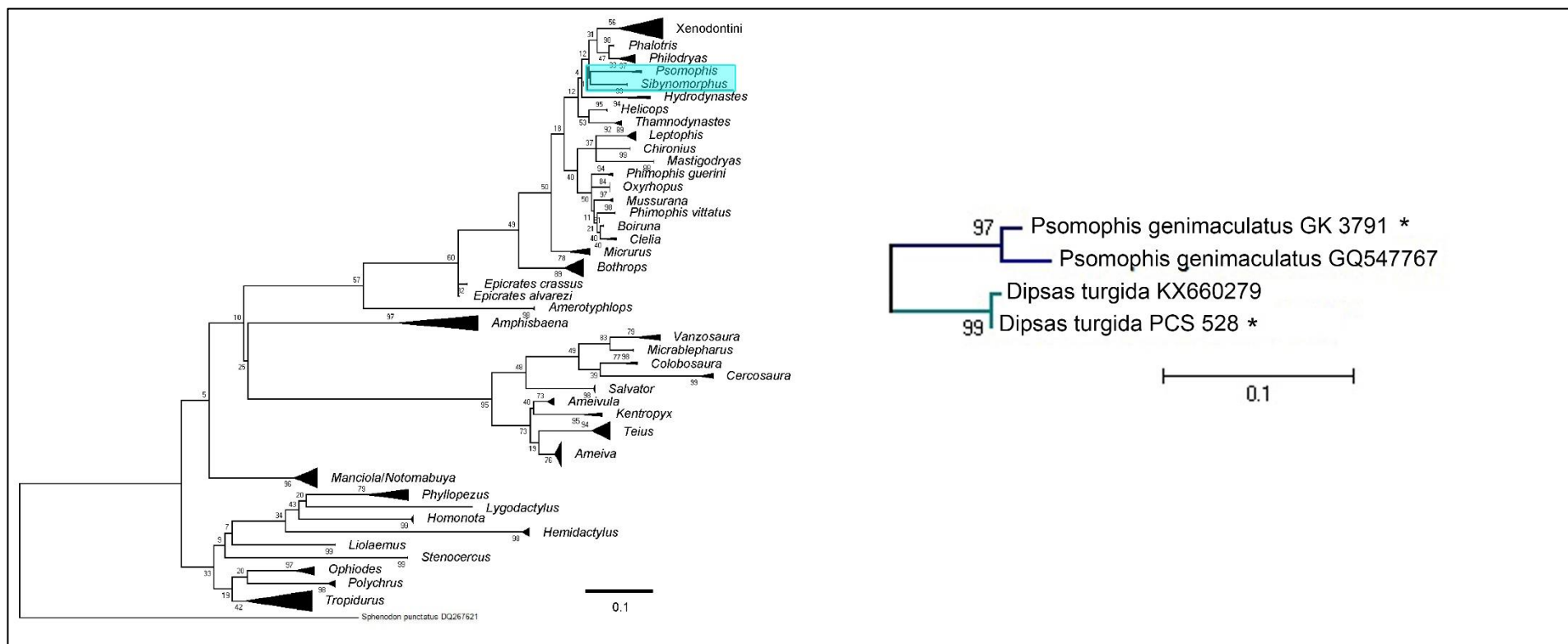
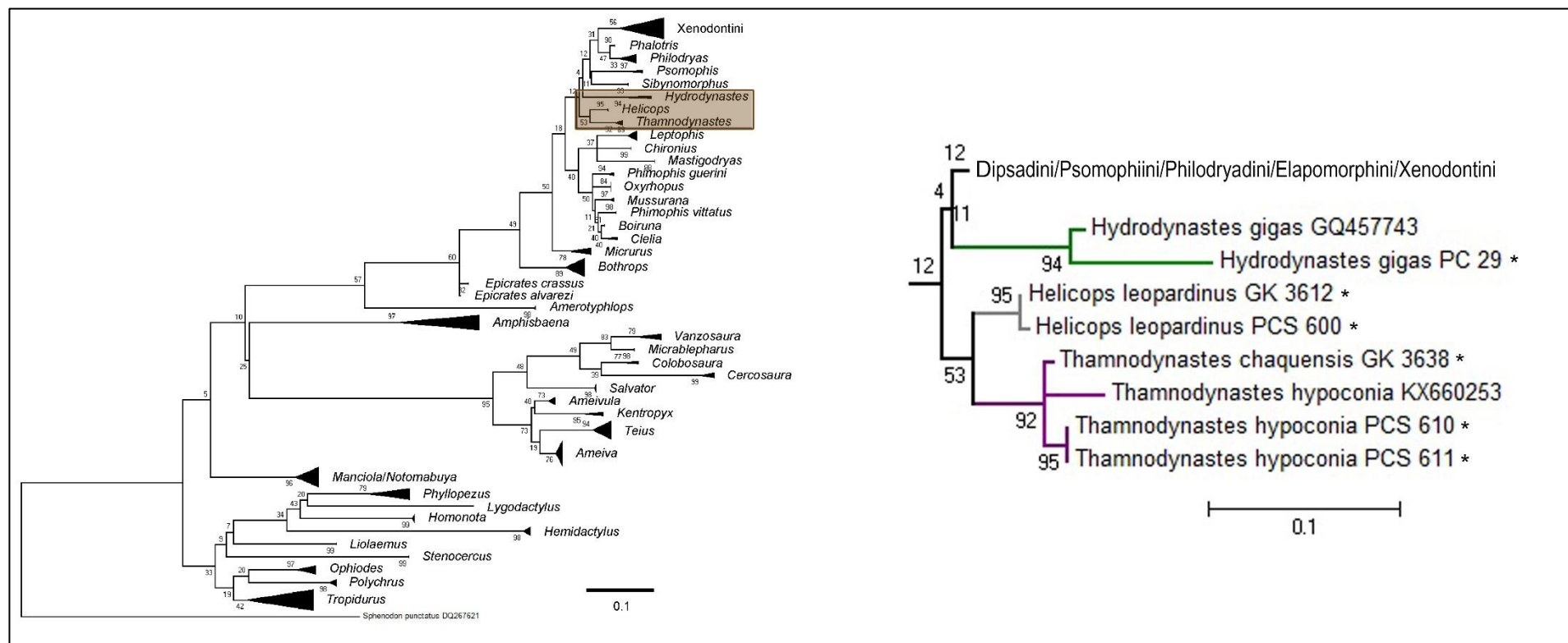


Figure S4

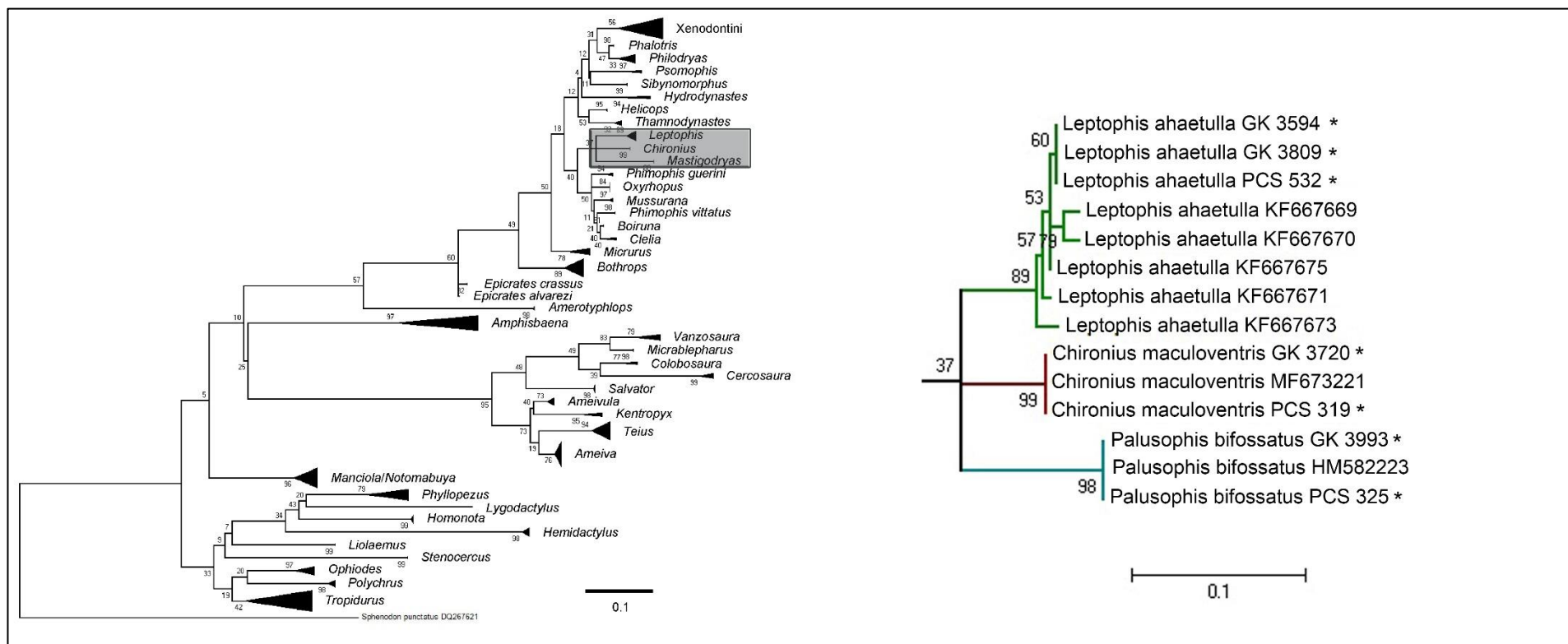
*Hydrodynastes* / *Helicops* / *Thamnodynastes*



Maximum Likelihood tree based on mtDNA 16S sequences of Squamata from Paraguay. Left: General view of the barcoding analysis. Right: detail of the relationships of the genera *Hydrodynastes*, *Helicops* and *Thamnodynastes*. Specimens marked with asterisk were sequenced by us.

Figure S5

Colubrinae



Maximum Likelihood tree based on mtDNA 16S sequences of Squamata from Paraguay. Left: General view of the barcoding analysis. Right: detail of the relationships of the genera *Leptophis*, *Chironius* and *Palusophis*. Specimens marked with asterisk were sequenced by us.

Figure S6

Pseudoboini

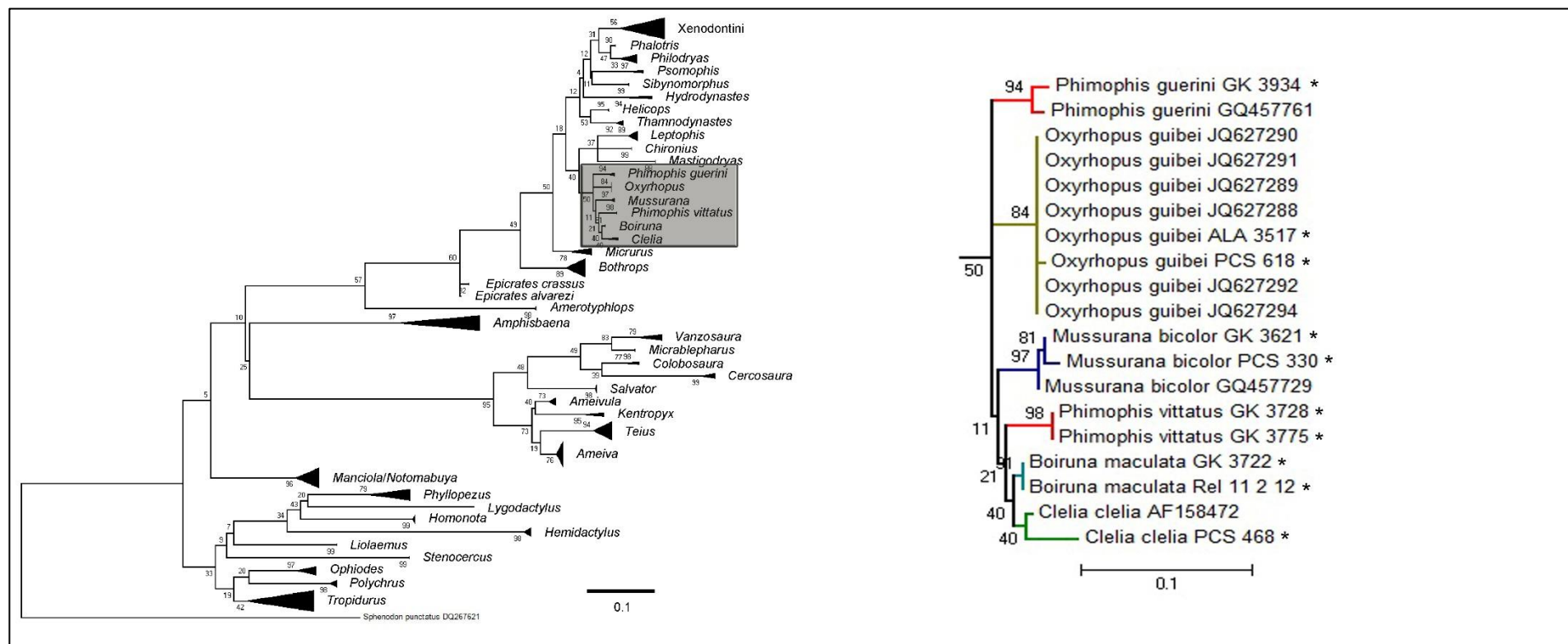
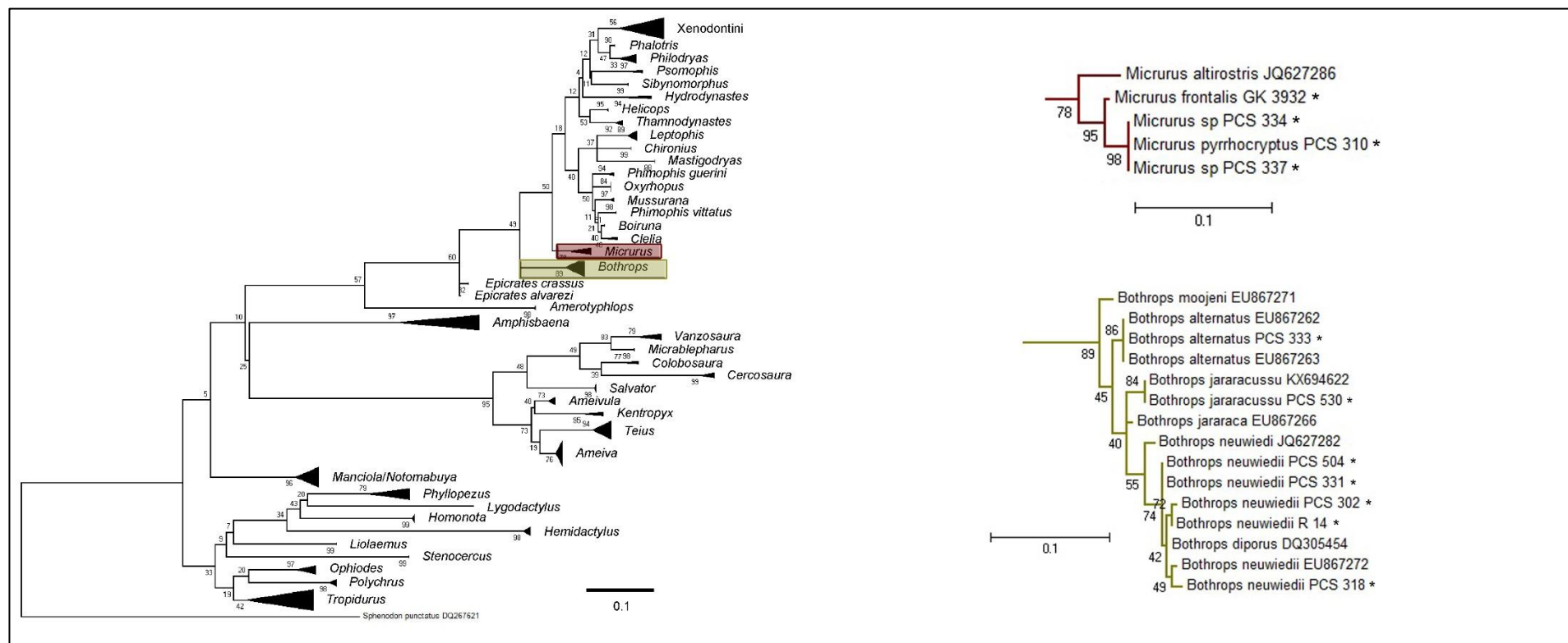




Figure S7

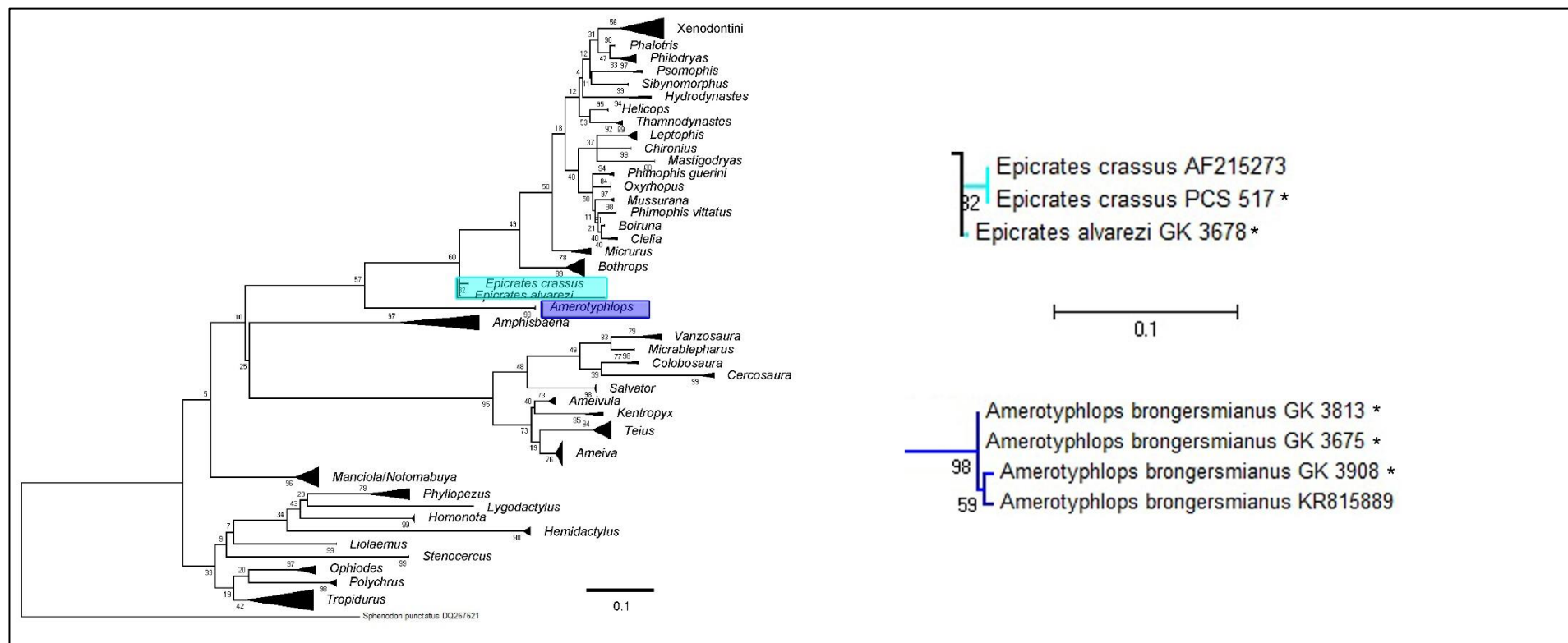
Elapidae / Viperidae



Maximum Likelihood tree based on mtDNA 16S sequences of Squamata from Paraguay. Left: General view of the barcoding analysis. Right: detail of the relationships of the venomous snakes of Paraguay. Specimens marked with asterisk were sequenced by us.

Figure S8

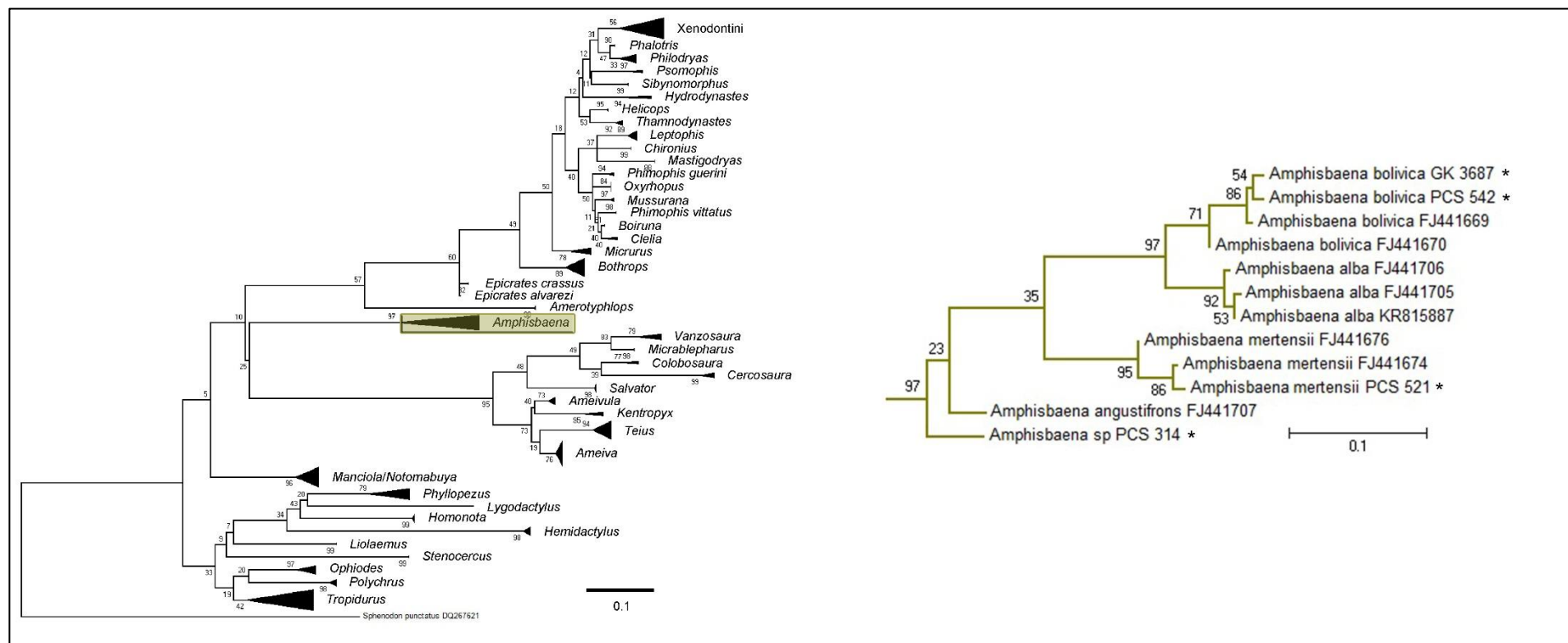
Boidae / Typhlopidae



Maximum Likelihood tree based on mtDNA 16S sequences of Squamata from Paraguay. Left: General view of the barcoding analysis. Right: detail of the relationships of the genera *Epicrates* (Boidae) and *Amerotyphlops* (Typhlopidae). Specimens marked with asterisk were sequenced by us.



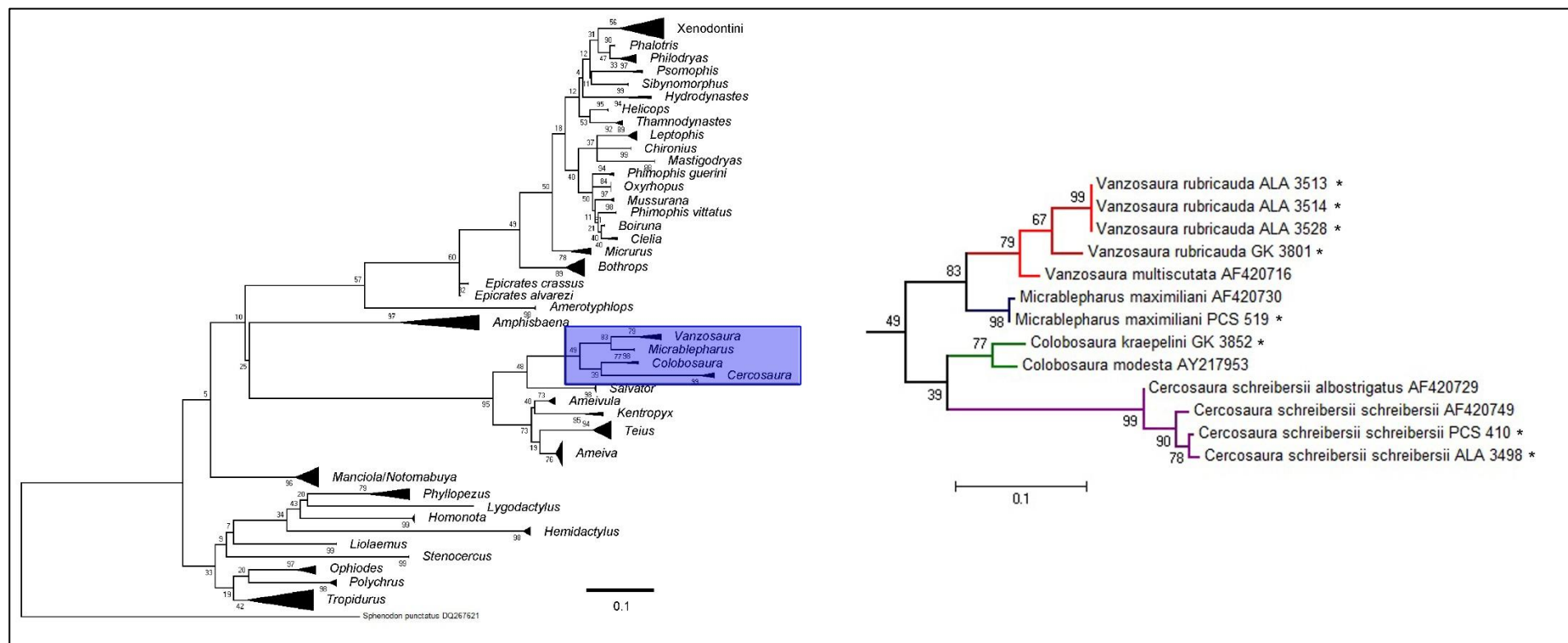
Figure S9  
Amphisbaenidae



Maximum Likelihood tree based on mtDNA 16S sequences of Squamata from Paraguay. Left: General view of the barcoding analysis. Right: detail of the relationships of the species of the Family Amphisbaenidae. Specimens marked with asterisk were sequenced by us.

Figure S10

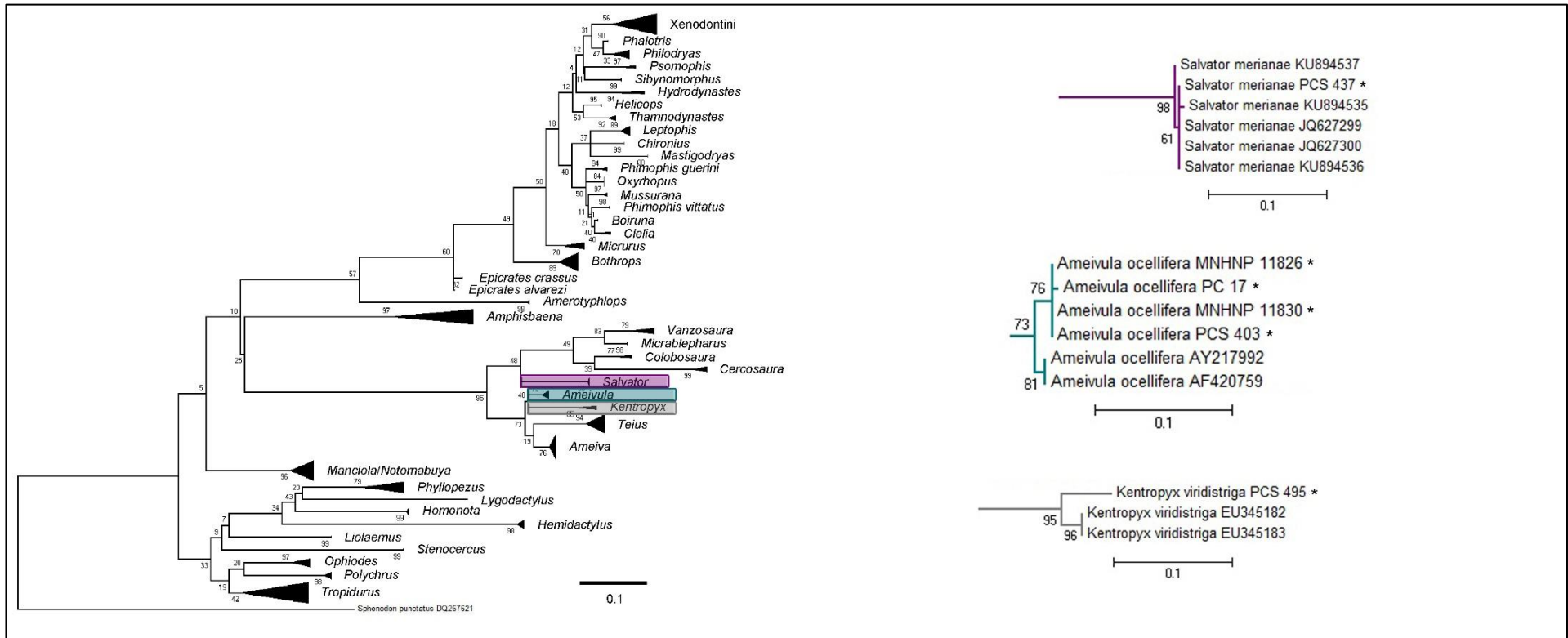
Gymnophthalmidae



Maximum Likelihood tree based on mtDNA 16S sequences of Squamata from Paraguay. Left: General view of the barcoding analysis. Right: detail of the relationships of the species of the Family Gymnophthalmidae. Specimens marked with asterisk were sequenced by us.

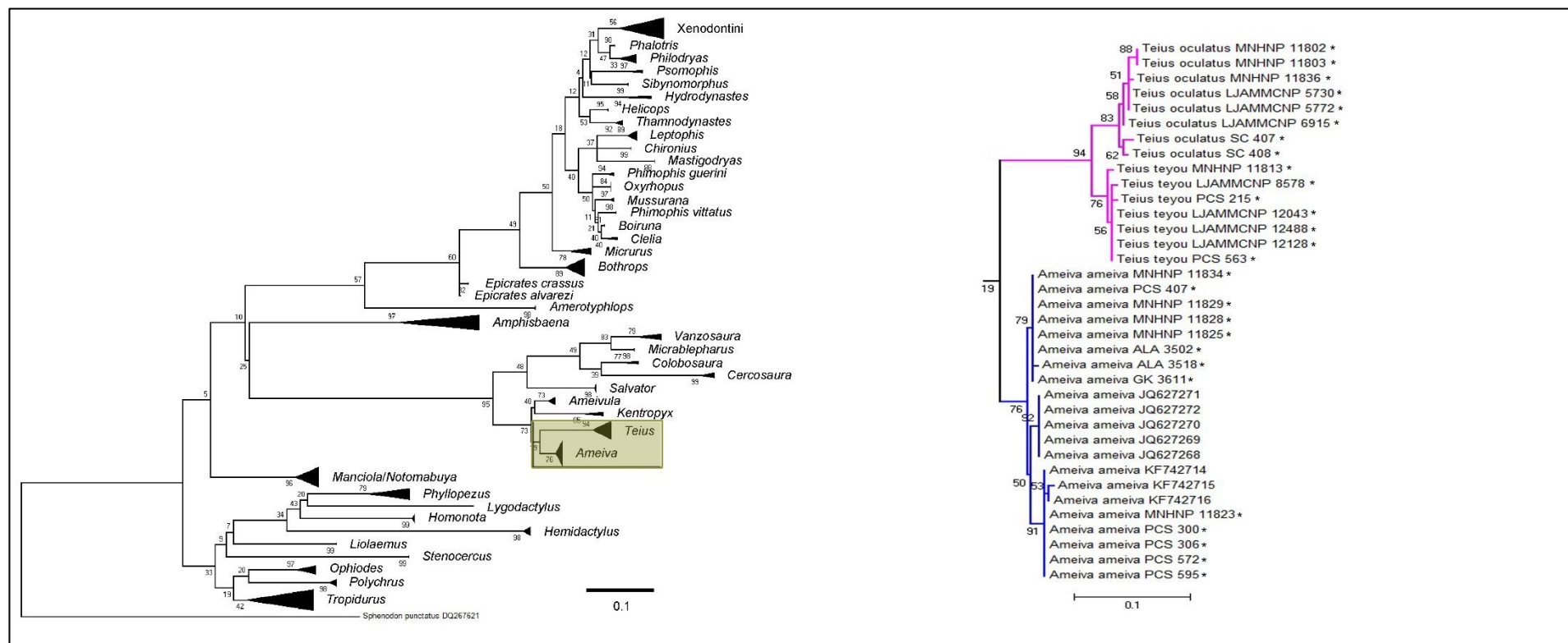
Figure S11

*Salvator / Ameivula / Kentropyx*



Maximum Likelihood tree based on mtDNA 16S sequences of Squamata from Paraguay. Left: General view of the barcoding analysis. Right: detail of the relationships of the genera *Salvator*, *Kentropyx* and *Ameivula* of the Family Teiidae. Note that within the *Ameivula* the specimens AY217992 and AF420759 are *Ameivula* sp. and the remaining specimens belong to *A. apipensis* according to Arias et al. 2018. Zool Scr 47:144–158. DOI: 10.1111/zsc.12277. Specimens marked with asterisk were sequenced by us.

Figure S12

*Ameiva* / *Teius*


Maximum Likelihood tree based on mtDNA 16S sequences of Squamata from Paraguay. Left: General view of the barcoding analysis. Right: detail of the relationships of the genera *Ameiva* and *Teius* of the Family Teiidae. Specimens marked with asterisk were sequenced by us.

Figure S13

Scincidae

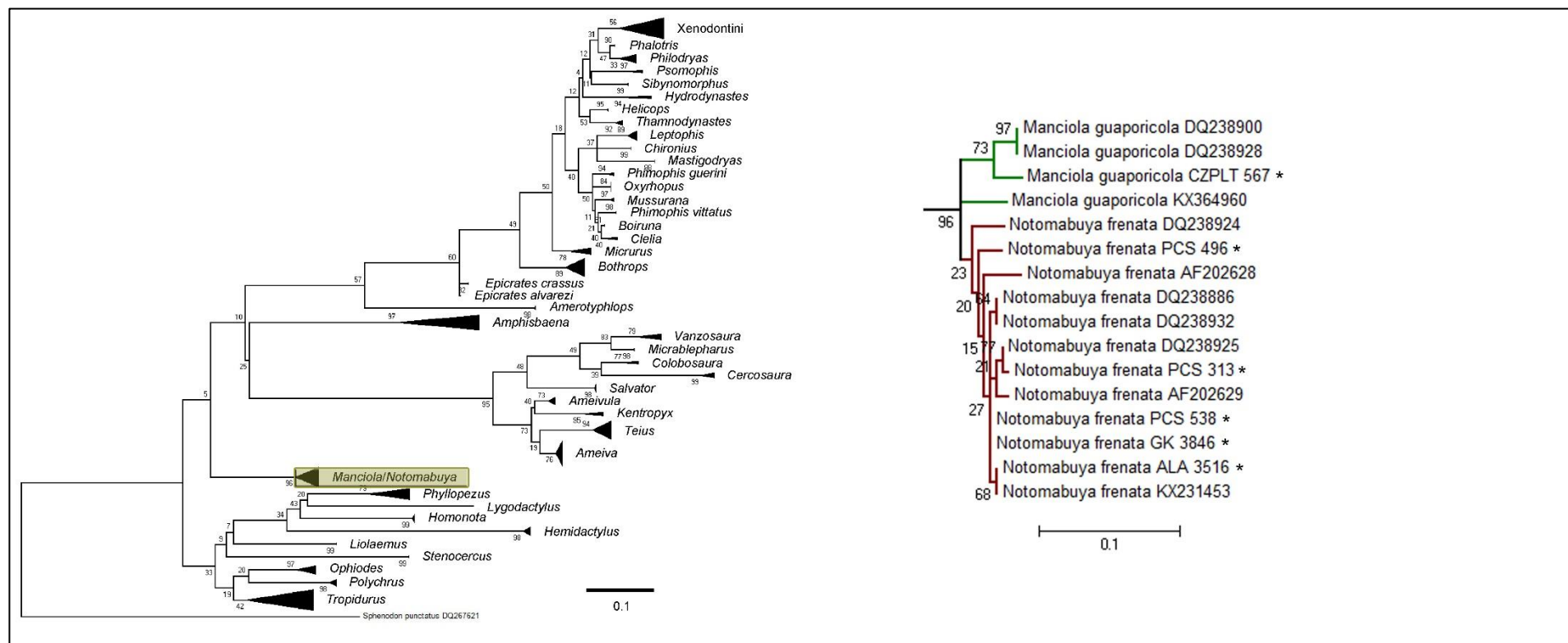
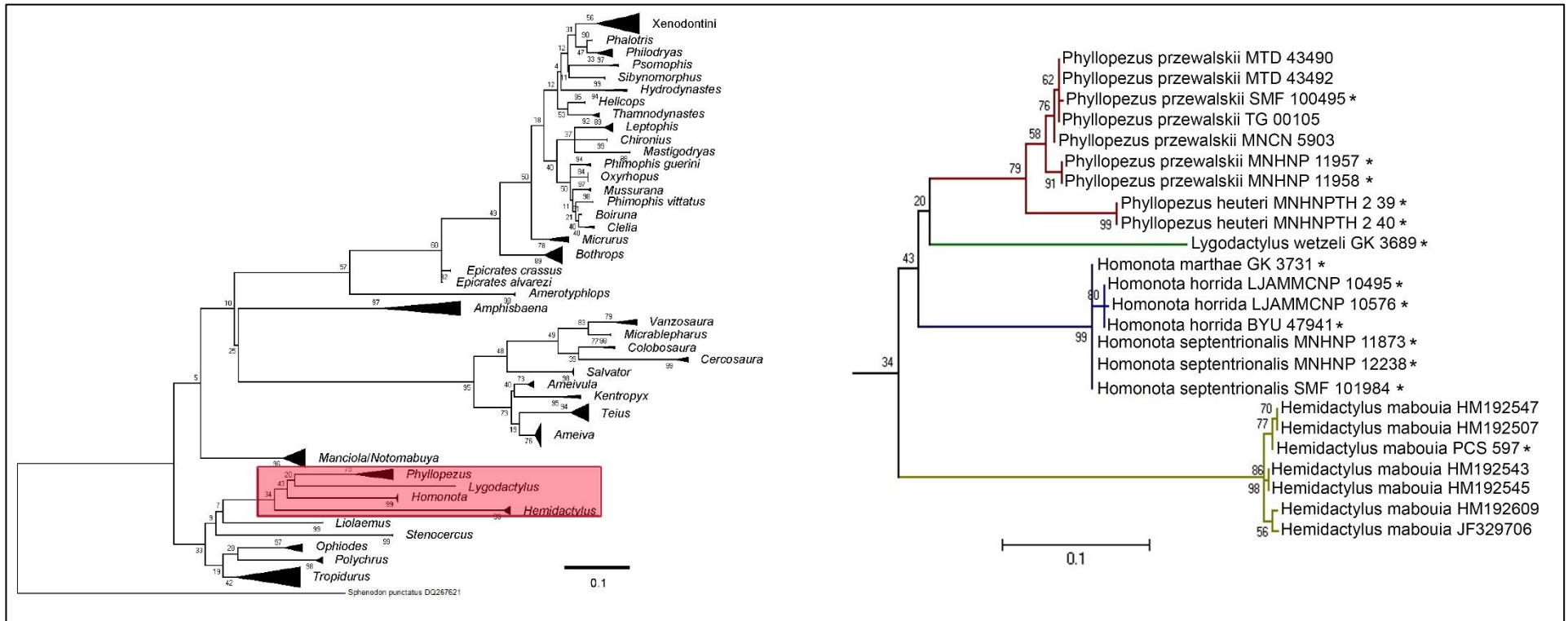


Figure S14

Gekkota



Maximum Likelihood tree based on mtDNA 16S sequences of Squamata from Paraguay. Left: General view of the barcoding analysis. Right: detail of the relationships of the families Gekkoinidae and Phyllodactylidae. Specimens marked with asterisk were sequenced by us.



Figure S15

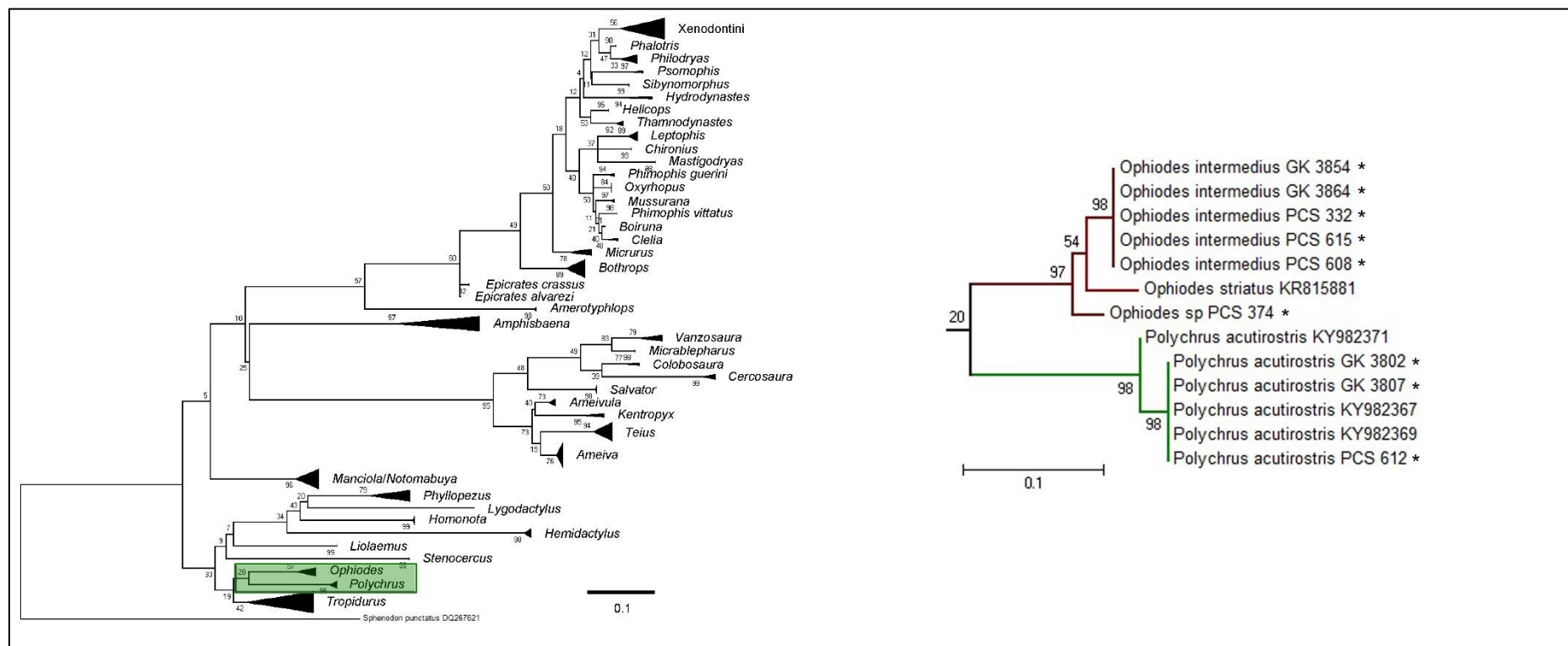
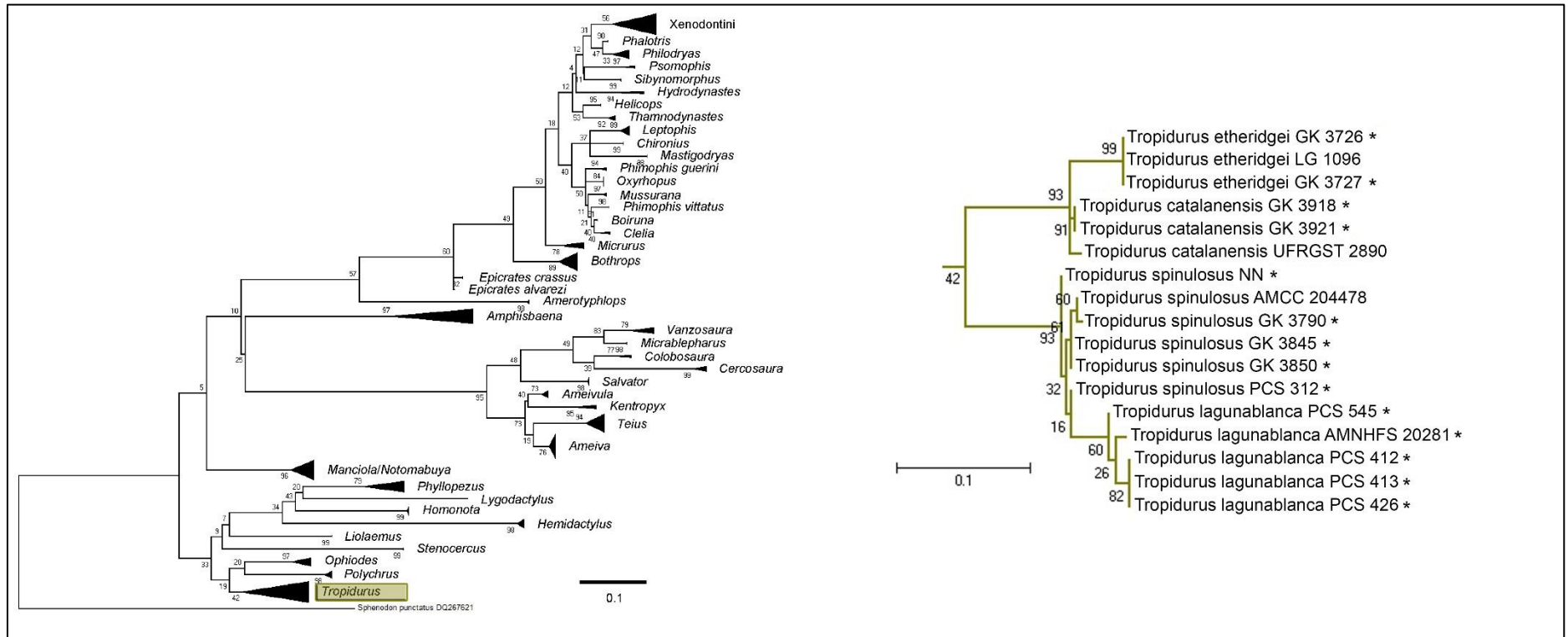
*Ophiodes* / *Polychrus*


Figure S16

*Troidurus*



Maximum Likelihood tree based on mtDNA 16S sequences of Squamata from Paraguay. Left: General view of the barcoding analysis. Right: detail of the relationships of the species of the genus *Tropidurus*. Specimens marked with asterisk were sequenced by us.