

*Gnathostoma lamothei:*  
a new species found in México

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11 recognized species of *Gnathostoma*  
worldwide (Miyazaki, 1991)

3 reported in México:

*Gnathostoma turgidum*

*Gnathostoma procyonis*

*Gnathostoma binucleatum*

(*G. spinigerum*)

Also

*Gnathostoma* sp. I (= *G. procyonis*; Almeyda-Artigas et al. 2000)

*Gnathostoma neoprocyonis* (USNPC)

NO morphological description

Ongoing project to study  
*Gnathostomiasis* in Mexico

collection of fish and mammals  
in several localities in México

helminthological examination

morphological study

light microscopy, SEM

molecular study

DNA extraction,  
amplification &  
sequencing

*Gnathostoma lamothei* n. sp.

Bertoni-Ruiz et al. 2005. J. Parasitol. 91: 1143-1149

*Procyon lotor hernandezii*  
stomach

Veracruz & Oaxaca

*Gobiomorus dormitor*

Tabasco

prevalence 5.4%

based on DNA sequences

Intermediate host

Hernández et al. 2009. Parasitol. Int. in press



Veracruz

Oaxaca

Tabasco

## Description

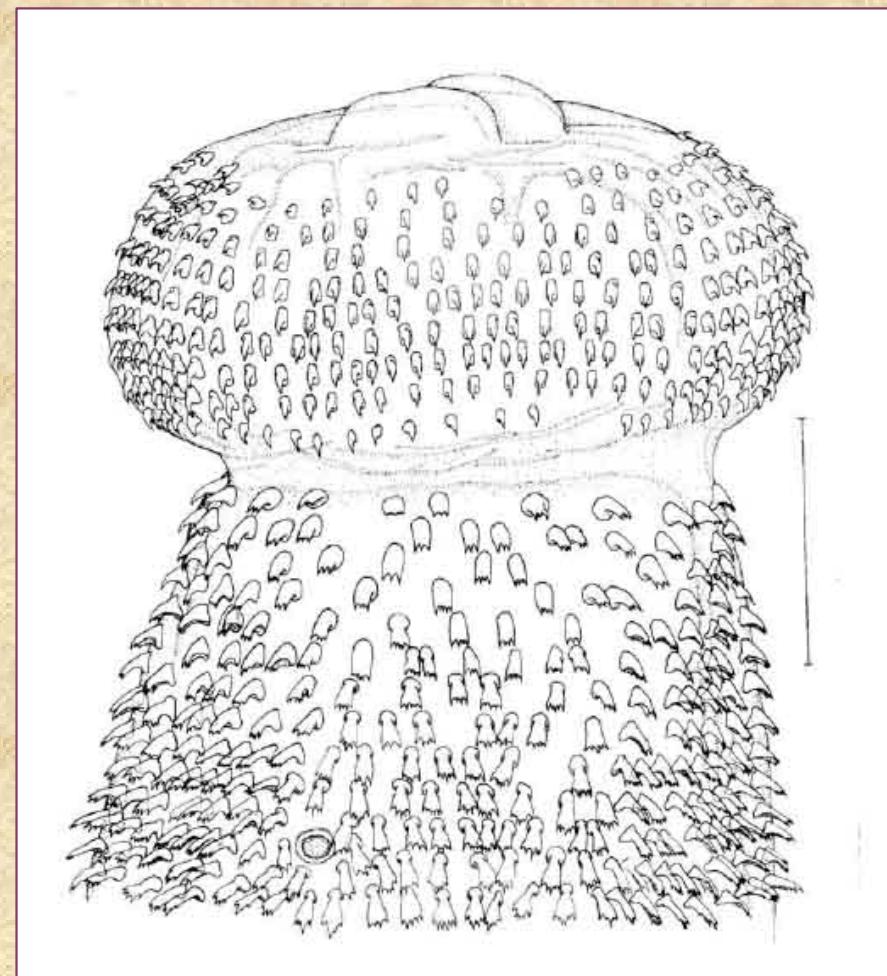
*Gnathostoma lamothei*

Cephalic bulb armed with 8-9 complete rows + 2 incomplete rows of uncinate hooks.

1 pair of trilobulate lips, with 2 simple papillae on each lip.

Anterior half of body covered with spines.

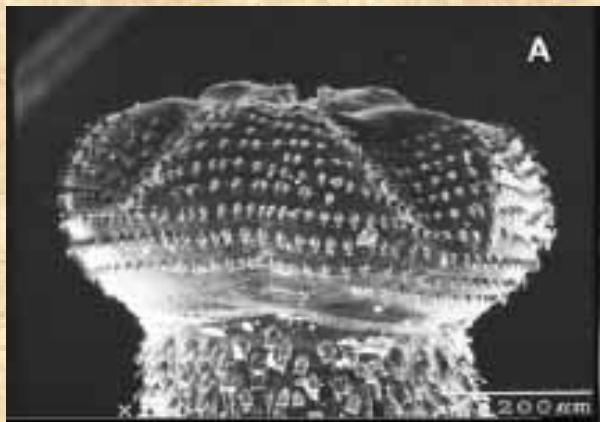
Cervical papilla located at the first quarter of body.



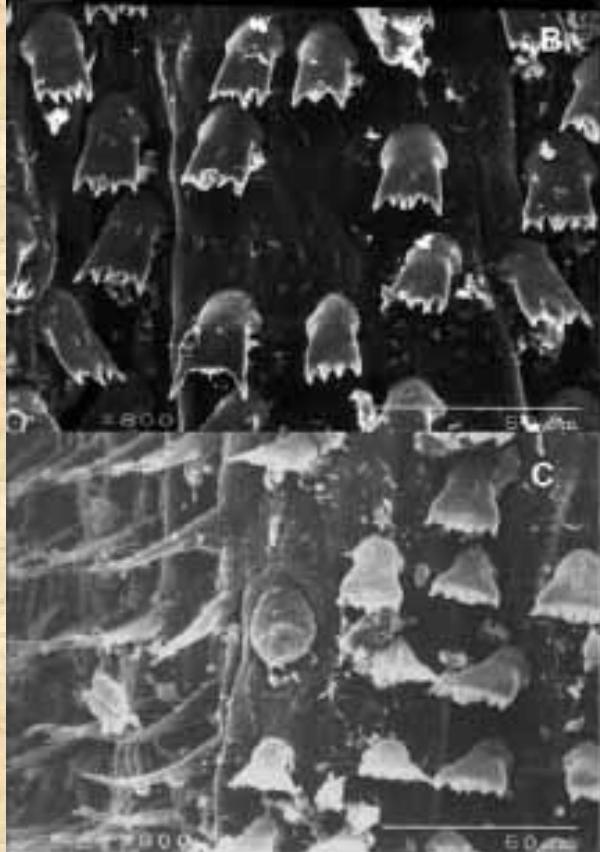
# Description

*Gnathostoma lamothei*

cephalic bulb



neck  
short  
3-6 points

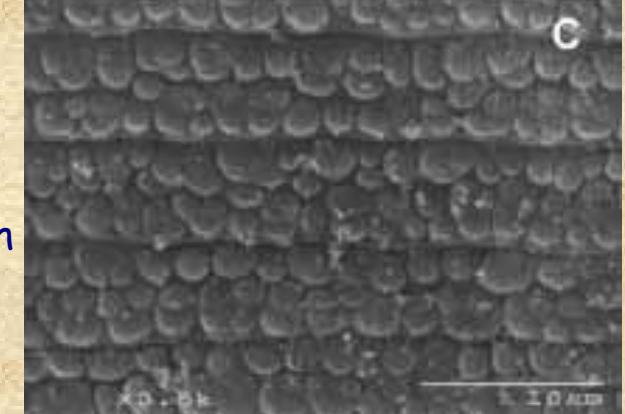
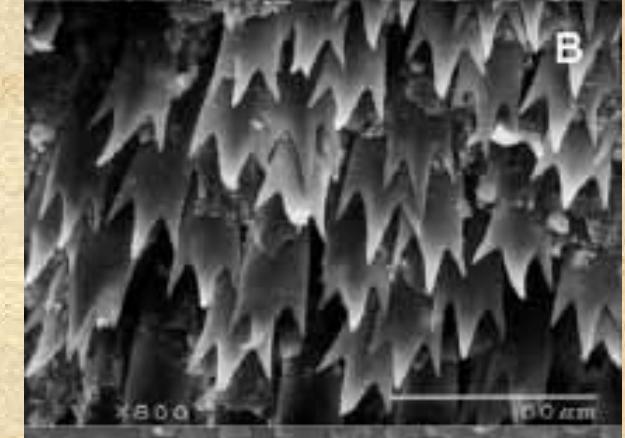
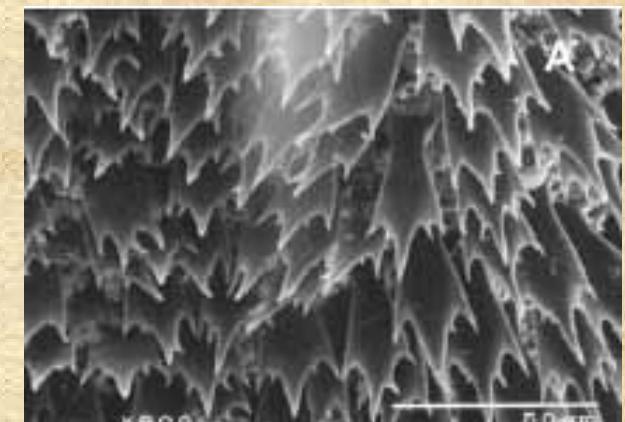


cervical papilla  
4-6 points  
central larger

esophagus  
3 principal  
1-3 secondary  
points

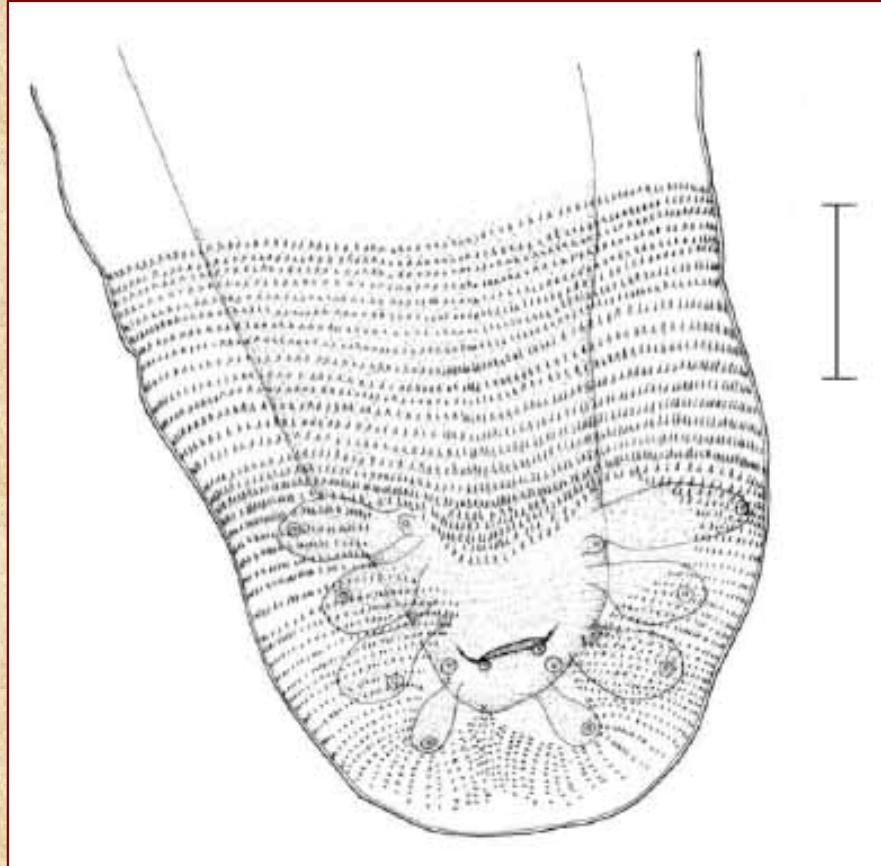
esophagus-  
intestine  
3 points

posterior  
half of body  
rows of roundish  
bosses

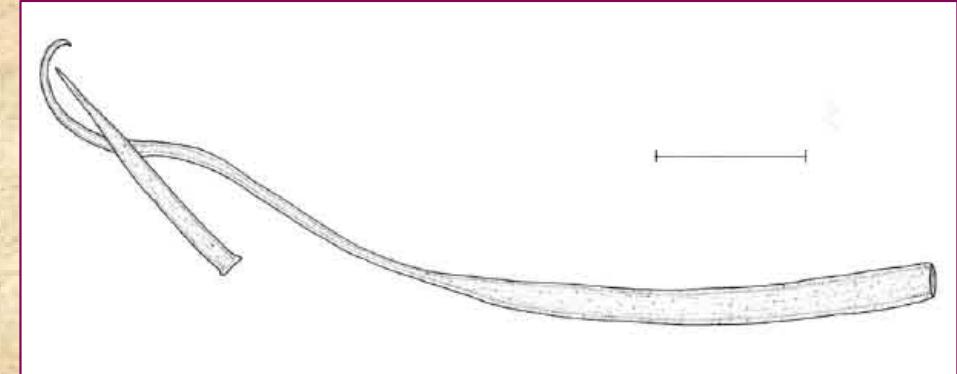


# Description

*Gnathostoma lamothei*



Caudal extremity  
ala with 4 pairs of pedunculate papillae,  
4 pairs of umbilicated ventral papillae



Spicules  
Left 0.40  
Right 1.38

Unipolar  
eggs

*G. americanum*

bipolar eggs

*G. turgidum*

lack ornamentations  
on 2nd half of body

*G. nipponicum*

bifurcated spines  
at cervical level

*G. vietnamicum*

posterior  
end widened

*Gnathostoma lamothei*

*G. doloresi*

bipolar eggs

*G. malaysiae*

bifurcated spines  
at esophageal region

*G. hispidum*

entire body covered  
with spines

*G. spinigerum*

spines at neck level more dense  
bifid in *G. binucleatum*  
cervical papilla level 3 points

*G. binucleatum*

*G. procyonis*

right spicule larger 13.1 vs 8.9%  
serrated ridges in posterior  
half of body;

*G. miyazakii*

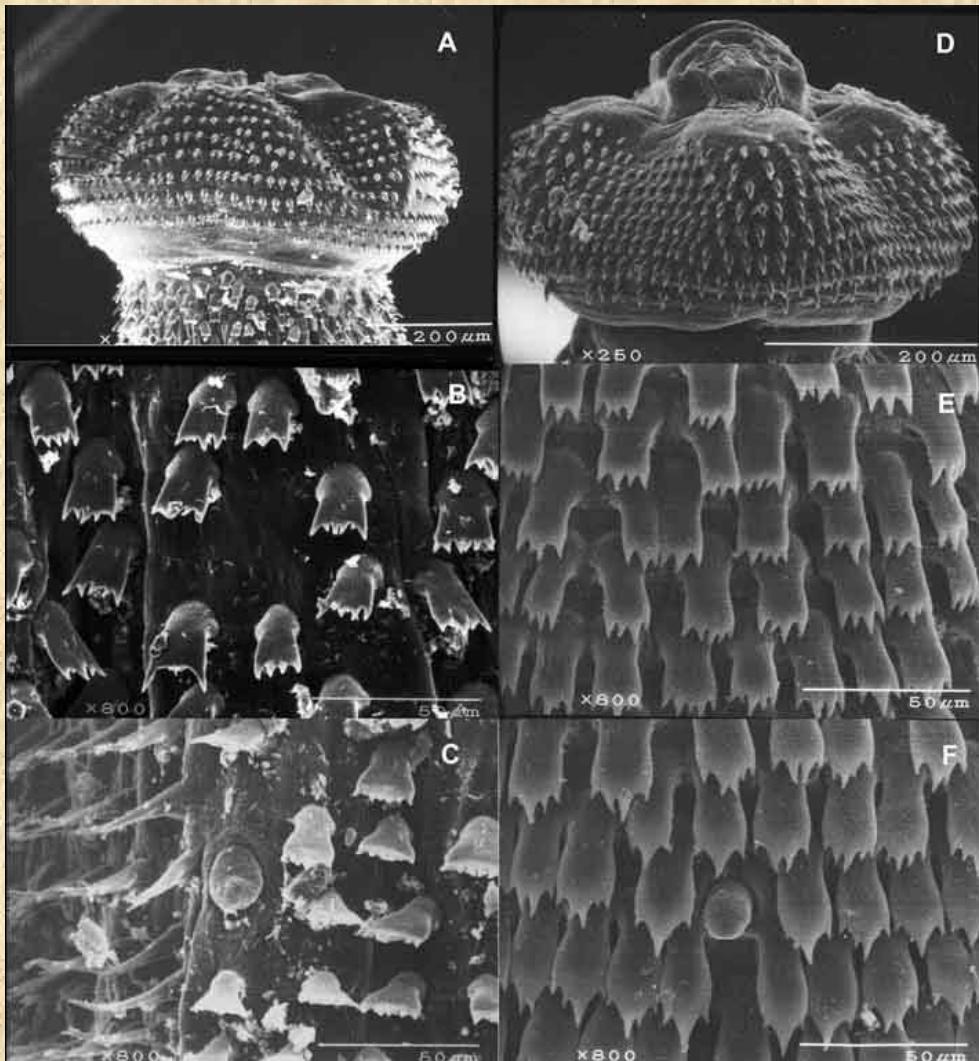
bosses on 2nd half of body only in males; caudal region  
without spines; terminal digitiform appendage in males;  
long tapering tail in females



# Taxonomic remarks

*Gnathostoma lamothei*

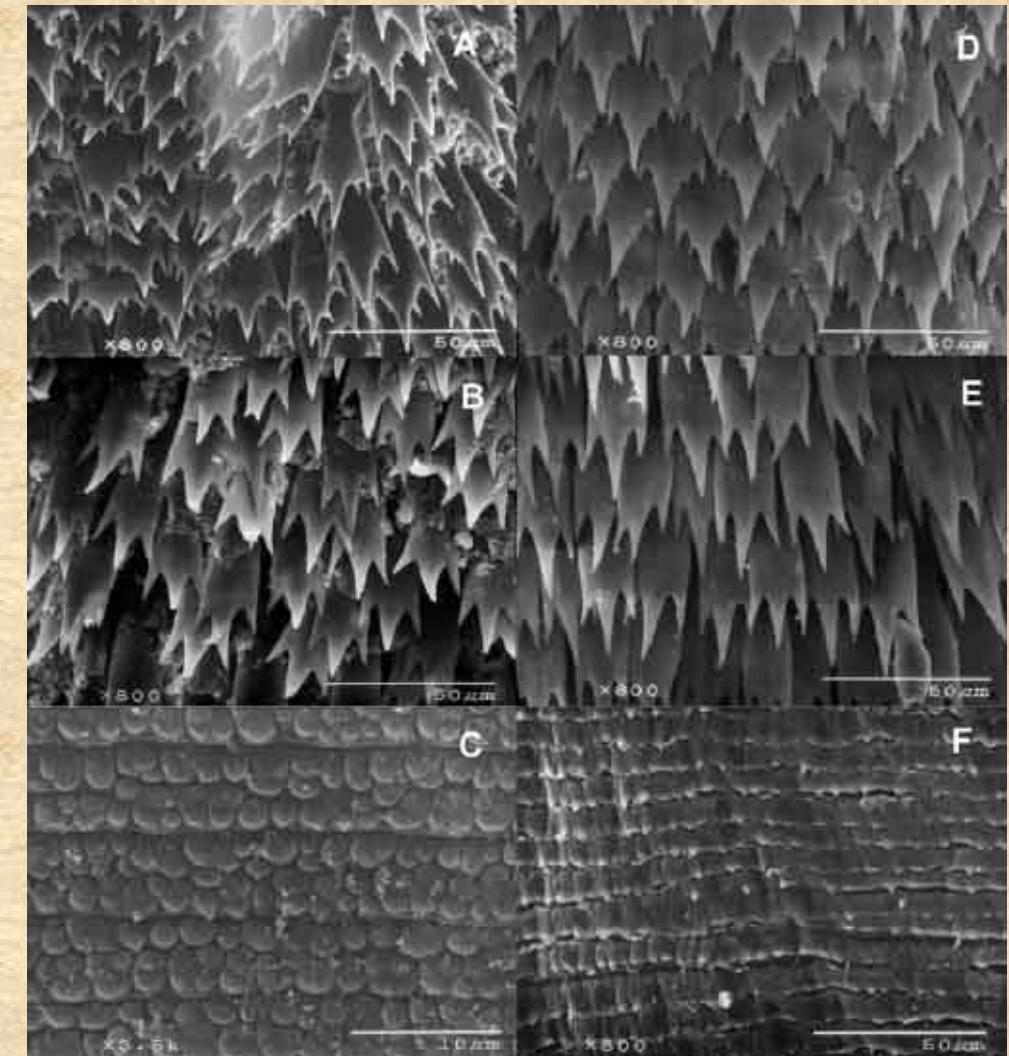
*G. lamothei*



*G. procyonis*

*G. lamothei*

*G. procyonis*



## ITS2 rDNA % divergence

### *G.lamothei*

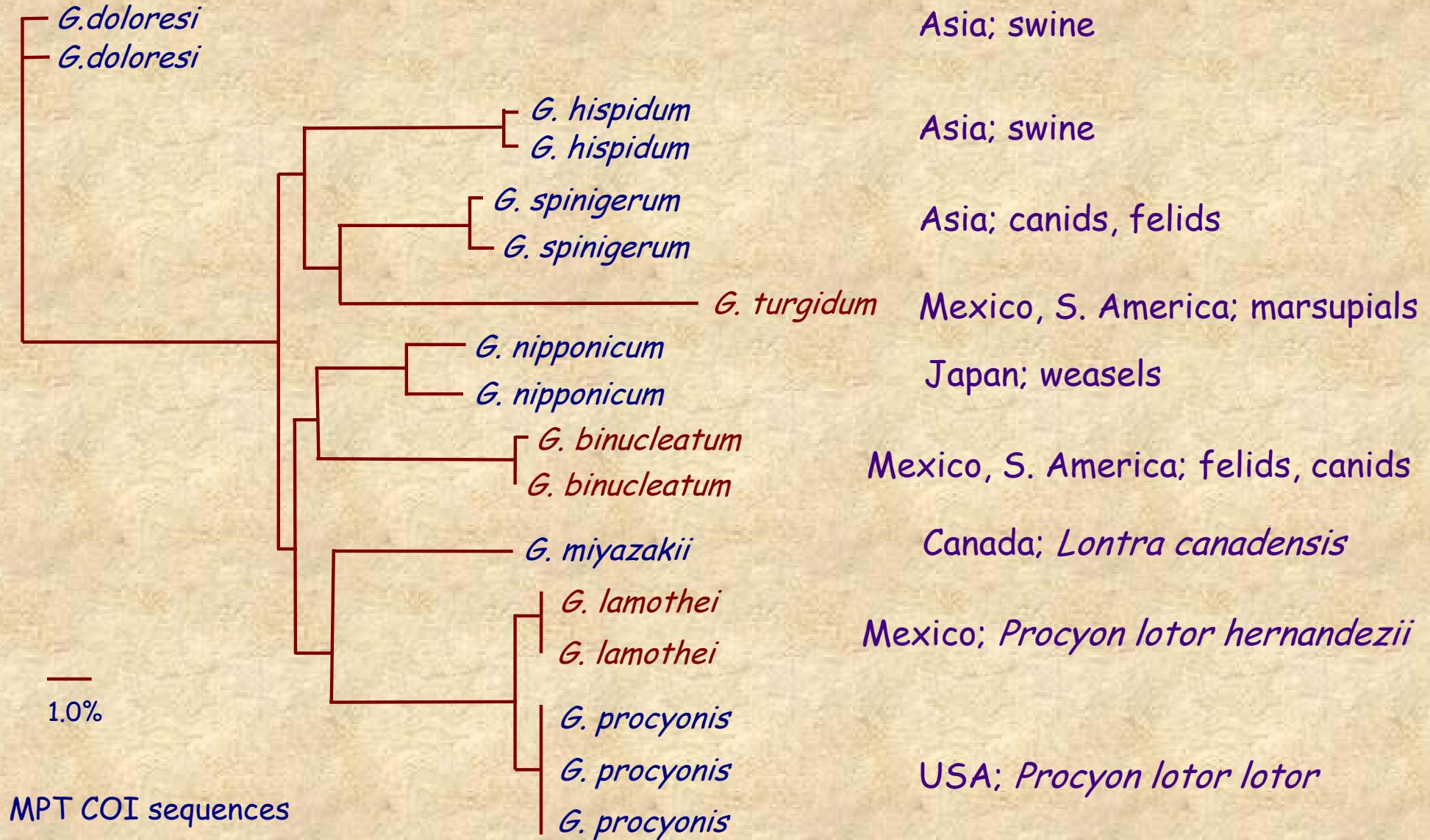
<i>G. procyonis</i>	2.3
<i>G. miyazakii</i>	35.3
<i>G. binucleatum</i>	49.0
<i>G. turgidum</i>	65.5
other species	34 - 75

Previous records of  
*G. procyonis* in México  
correspond to *G. lamothei*

<i>Gnathostoma</i> sp. I ( <i>G. neoprocyonis</i> USNPC)	0.08	→ = <i>G. lamothei</i>
		→ <i>nomem nudem</i>

# Phylogenetic affinities

*Gnathostoma lamothei*



# Acknowledgments

*Gnathostoma lamothei*

For donation of specimens

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