

Sphaeromyxa cannolii n.sp.
(Myxosporea: Spheromyxidae) a
Parasite of Lined Seahorses,
Hippocampus erectus, from the
Gulf of Mexico

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Genus *Sphaeromyxa*

- 39 species
- Parasitic in gall bladders of marine fishes
- Spores distinctly fusiform with polar capsules located at opposite ends
 - Non-pathogenic?
- 2 functional groups
 - “balbianii”
 - “incurvata”



Sphaeromyxa balbianii

from Lom & Dykova 1996 *Folia Parasitologica*



Sphaeromyxa hellandi

from Fiala 2006 *Internat. J. Parasitol.*

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Genus *Sphaeromyxa*

- *Sphaeromyxa sabrazesi* (Laveran et Mesnil 1900)
 - *Hippocampus gutturalis* & *brevirostris*
- “*Sphaeromyxa* sp.” reported by Vincent & Clifton-Hadley (1989)

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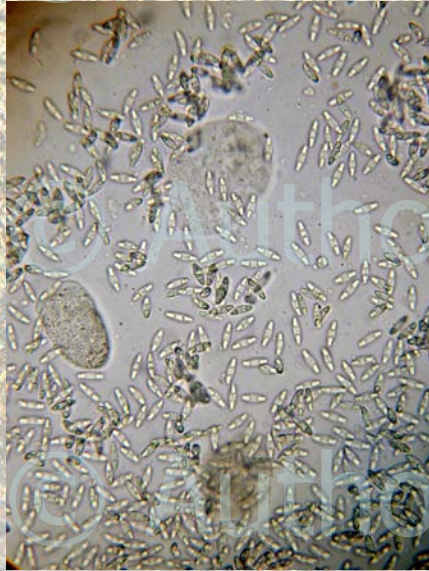
Materials & Methods

- Lined seahorses collected from Gulf of Mexico in 2005 and 2006
- Necropsied in 2006
- Parasitized livers preserved in NBF



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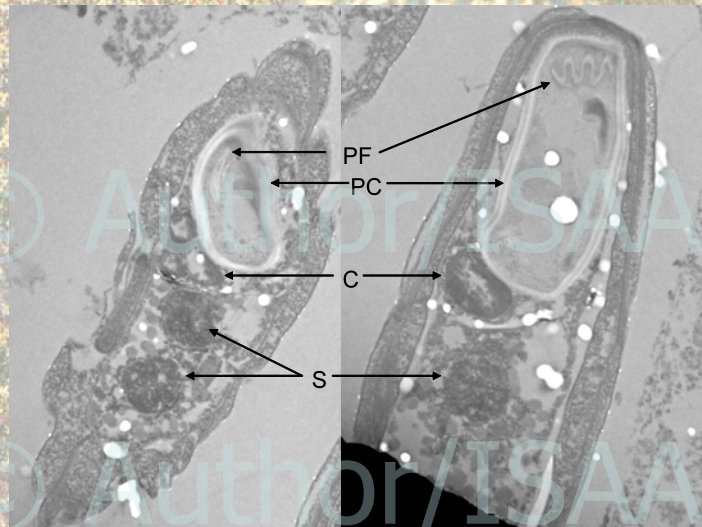
Materials & Methods



- Organs dissected
- Myxozoan plasmodia transferred to ethanol
- Measured with ImageJ
- TEM

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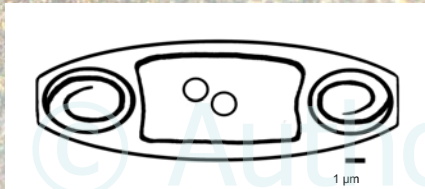
TEM Results: *Sphaeromyxa* sp.



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Results

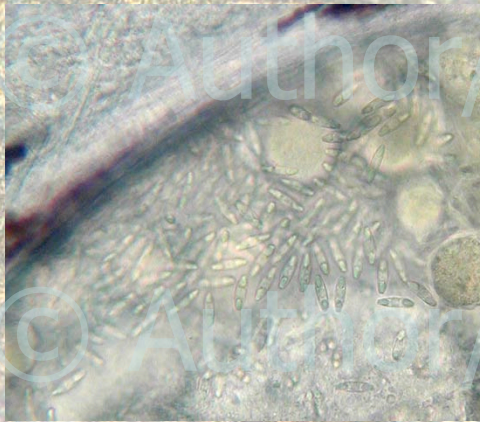
- Spores
 - $17.56 \pm 0.20 \mu\text{m}$ long
 - $5.70 \pm 0.15 \mu\text{m}$ wide
- Polar capsules unequal
 - $4.78 \times 2.96 \mu\text{m}$
 - $5.18^* \times 2.85 \mu\text{m}$



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Results

- A new species!
- *Sphaeromyxa cannolii*



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Remarks

- Prevalence
 - Total: 11/44, or 25%
 - Prevalence by sex:
 - Females: 11/28 = 39.3%
 - Males: 0/16



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Remarks: similar species

- *Sphaeromyxa zaharoni*
Diamant et al. 2005
 - Smaller: 14.5 x 4.8 μm
 - Geographically, phylogenetically different host species
- *Sphaeromyxa sabrazesi*
Laveran et Mesnil 1900
 - *Hippocampus gutttatus* & *brevirostris*
 - Larger: 22-28 μm x 3-4.3 μm
 - **incurvata**

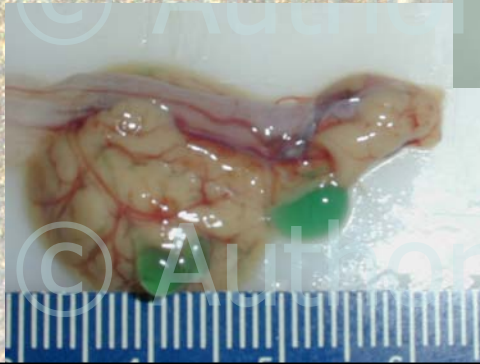
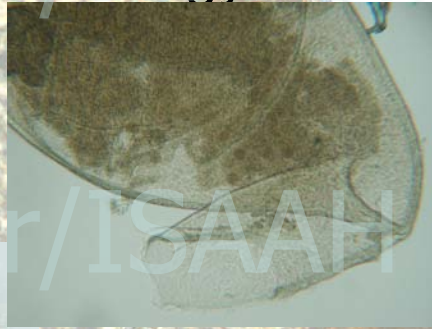


17.56 x 5.70 μm

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Remarks: Pathology

- In 9/10 *S. cannelii*-infected animals
- Indicative of **any** liver/gall bladder parasite?
 - 30/33 otherwise-infected



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Remarks: liver parasites

- Trematodes
- Encysted nematodes



Larval trematode

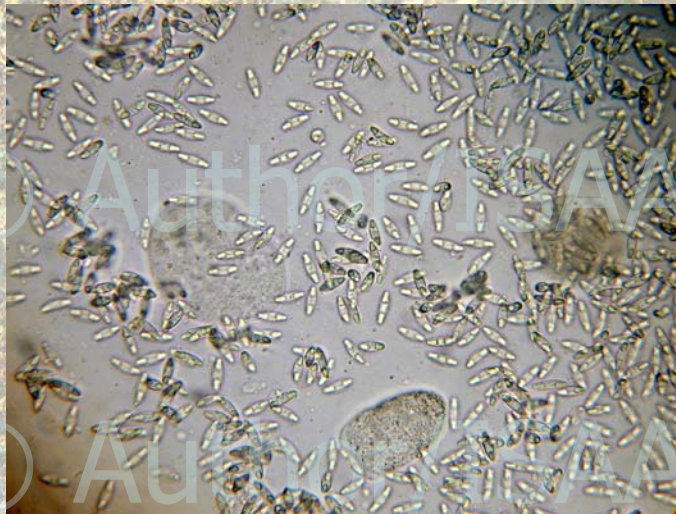
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Acknowledgements

- University of Florida
 - T. Crosby, D. Petty, F. Fogarty, J. Holloway, and J. Miller: photography, dissections
 - K. Kelley: TEM images
- Florida Aquarium
 - P. Perkins and S. Kovacs: illustration preparation

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Questions?



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