# The Laboratory Gerbil

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Many thanks to these individuals for their extensive
previous work in compiling this material:
Dr. Diane Forsythe
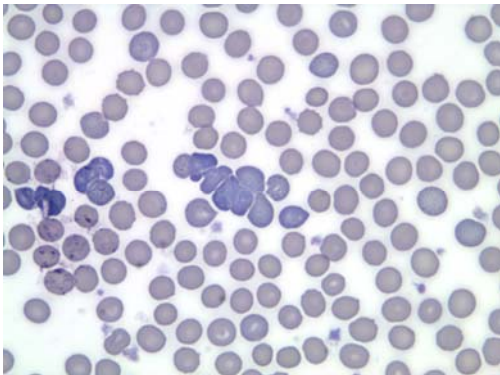Dr. Mary Grant
Dr. Marti Hanes

## Disclaimer

- Not ACLAM-sanctioned
- No specific knowledge of material on the 2009 ACLAM exam



## Gerbil hematologic features

- High proportion of RBCs with polychromasia, basophilic stippling, and reticulocytosis
  – Esp. in gerbils <20 wks of age
  – RBCs have a 10-day half-life
- Lymphocyte is predominant blood leukocyte, at 3:1 or 4:1 over granulocytes



Gerbils have been used as a model for which of the following infectious diseases:

a. *Brugia malayi*
b. *Schistosoma mansoni*
c. *Echinococcus* spp.
d. *Onchocerca volvulus*
e. Rift valley fever virus
f. *Helicobacter pylori*
g. All of the above

Gerbils have also been used as models for the following:

- Epilepsy (seizures)
- Stroke (incomplete Circle of Willis)





Nasal dermatitis in a mongolian gerbil. What is(are) the most-often implicated etiologic agent(s)?
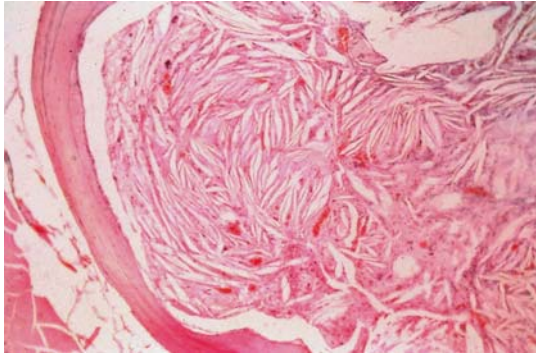


Cystic ovaries in gerbils

Nearly 50% of gerbils >400 days old may be affected.

Cysts range 1-50 mm in diameter





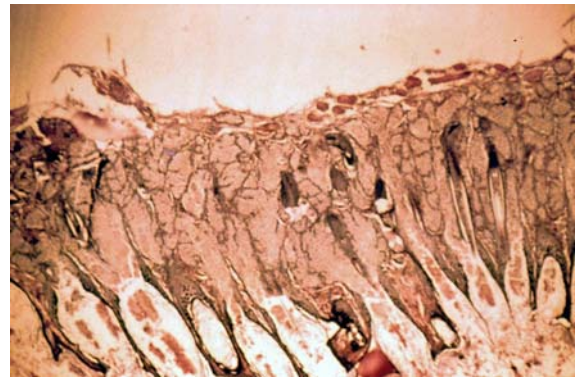Aural lesion in a gerbil. Slide 1 of 2

Histopath of the aural lesion. Most likely diagnosis?
(slide 2 of 2)

Spontaneous aural cholesteatoma

- Incidence 50% in adult gerbils >2 yrs age



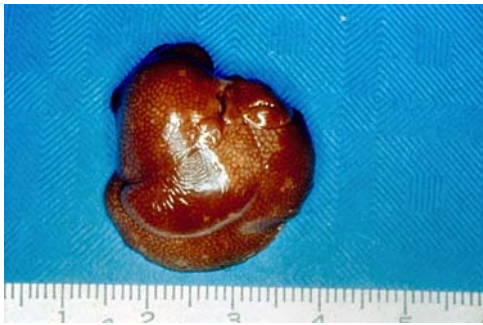Ventral gland in gerbils. In males, it is orange and more prominent.
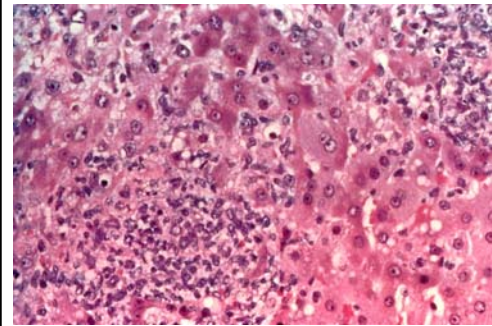




Diarrhea in a gerbil



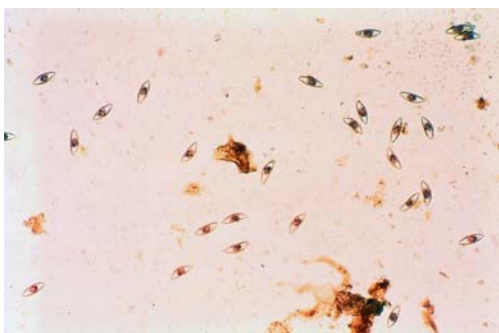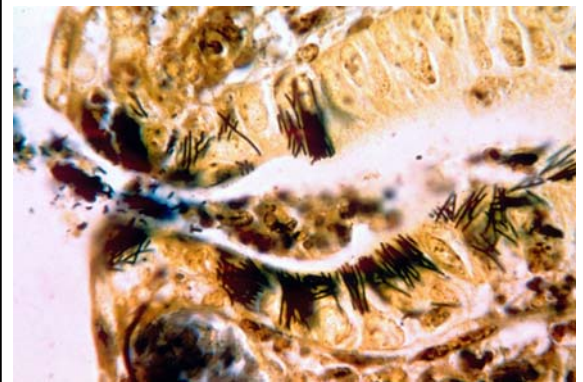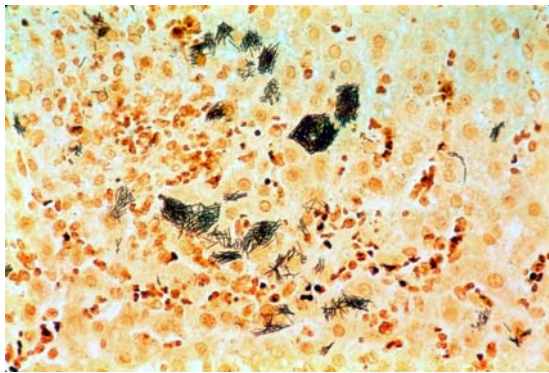Colitis, markedly distended large intestine in a gerbil

Differential diagnoses for colitis in gerbils?

Appearance of liver from the same gerbil.


Necrotizing hepatitis from same animal.  Most likely etiologic diagnosis?
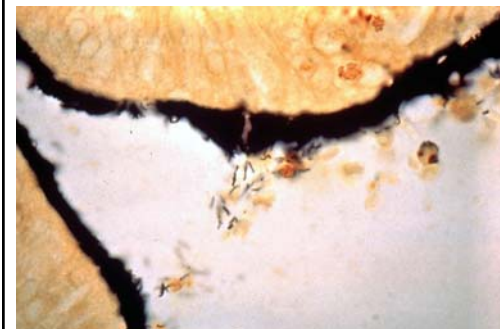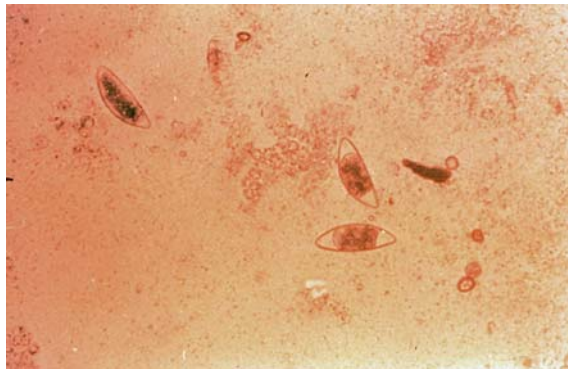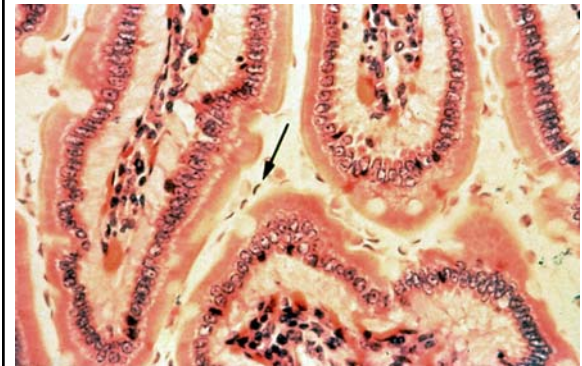





Most likely etiologic agent from intestinal contents of a gerbil?

Can Syphacia obvelata infect gerbils?

What is the prepatent period of *Dentostomella translucida*?







Respiratory epithelium from a gerbil.  What is the most likely etiologic agent?

In a recent study, eradication of enteric *Helicobacter spp* in Mongolian gerbils was complicated by enterotoxemia associated with what organism?

a. Enterotoxigenic *E. coli*
b. *Salmonella enteritidis*
c. *Clostridium difficile*
d. *Clostridium perfringens*
e. *Clostridium piliforme*

CM 55(3): 255-268, 2005.