



June 2007

What's Your Diagnosis ?

Tissue from a
mouse

H&E

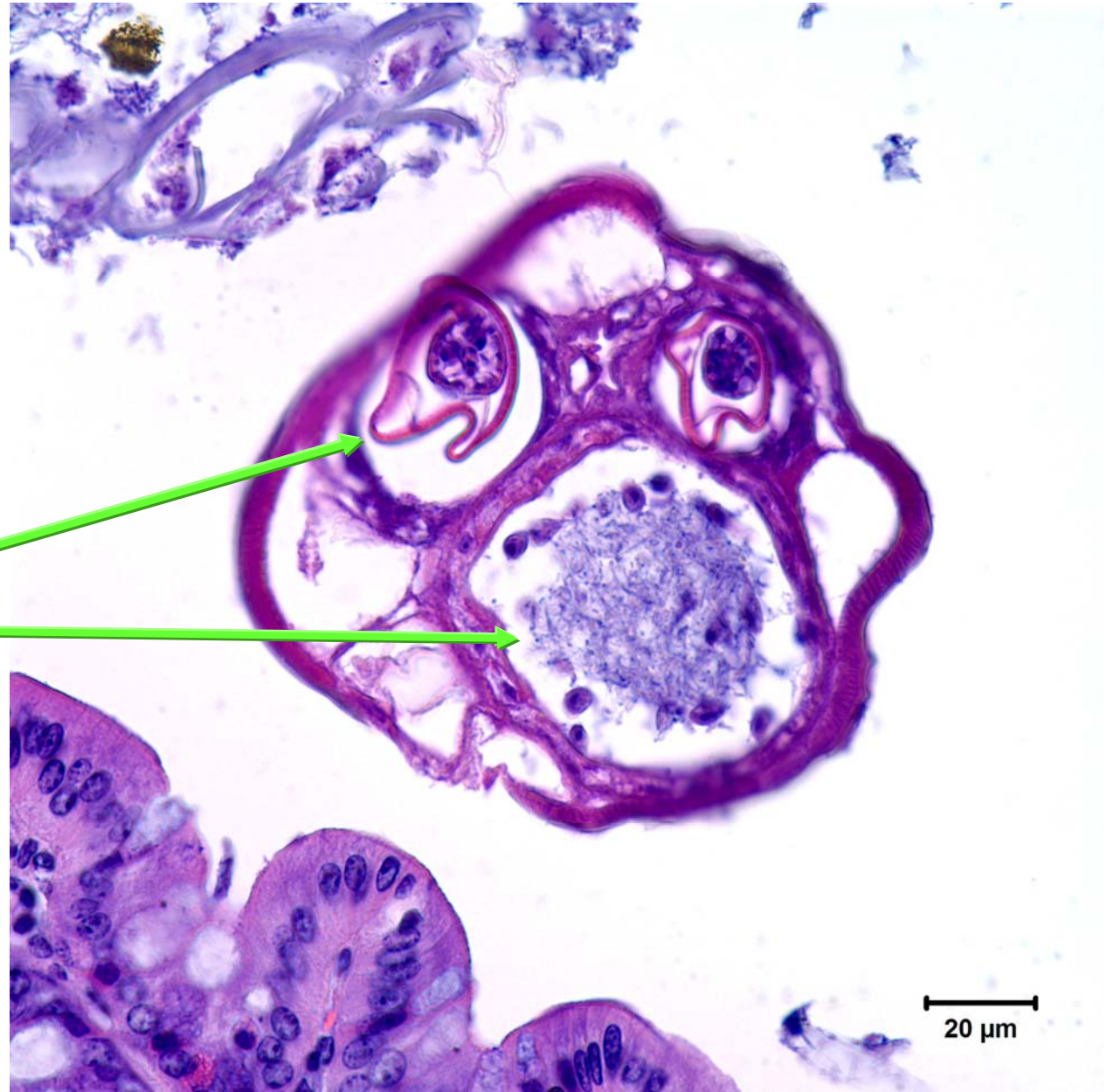




Oxyuriasis - pinworms in mice

Proximal Colon

- Cross section of Gravid female Nematode *Aspicularis*
 - Intrauterine eggs
 - Flagellates in its gut
- In lumen near mucosal surface

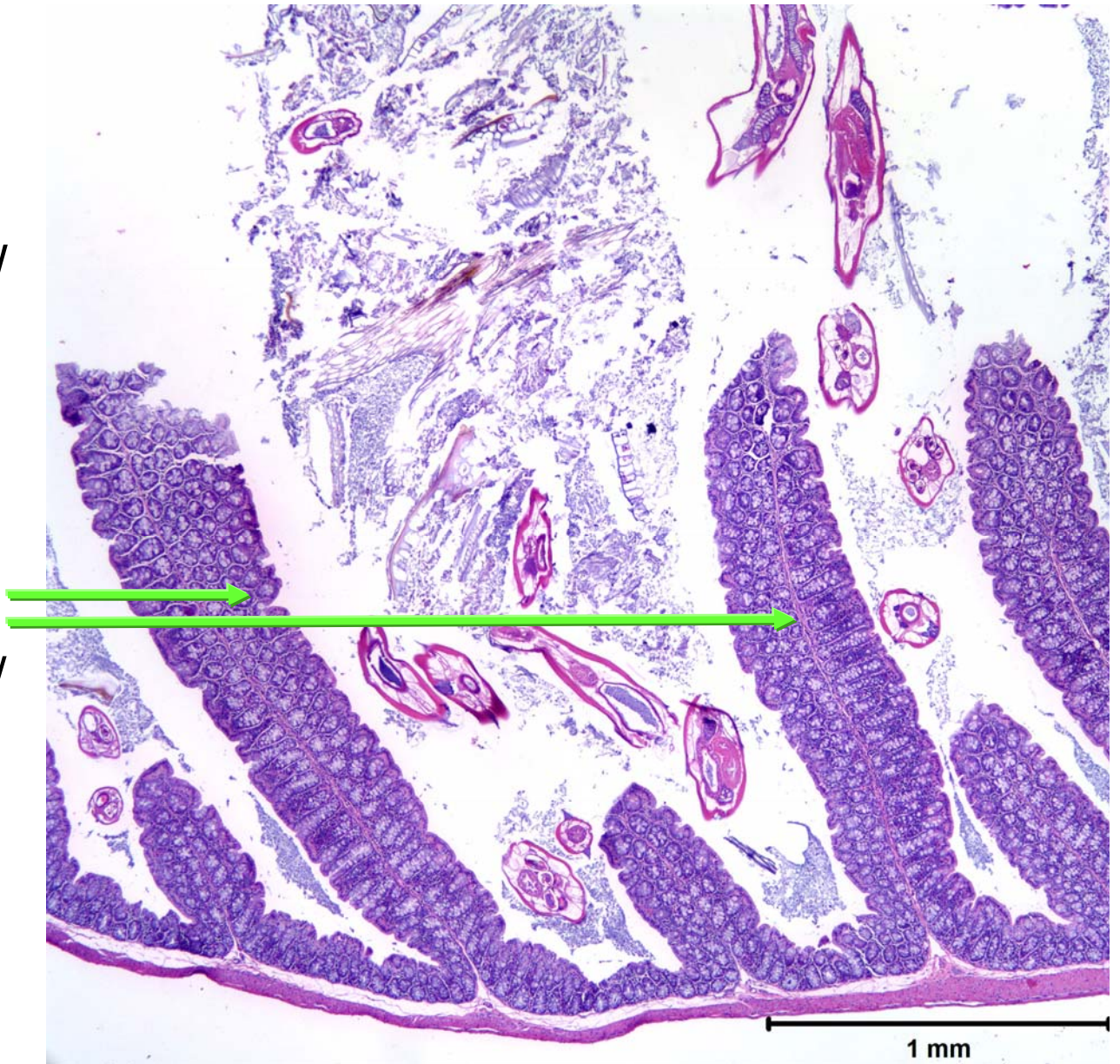




Oxyuriasis - pinworms in mice

Proximal Colon

- Cross sections of adult Nematodes cw *Aspicularis*
 - Intrauterine eggs
- In lumen, between mucosal folds, near mucosal surface
 - may not be found by direct exam of gut contents → examine mucosa too.

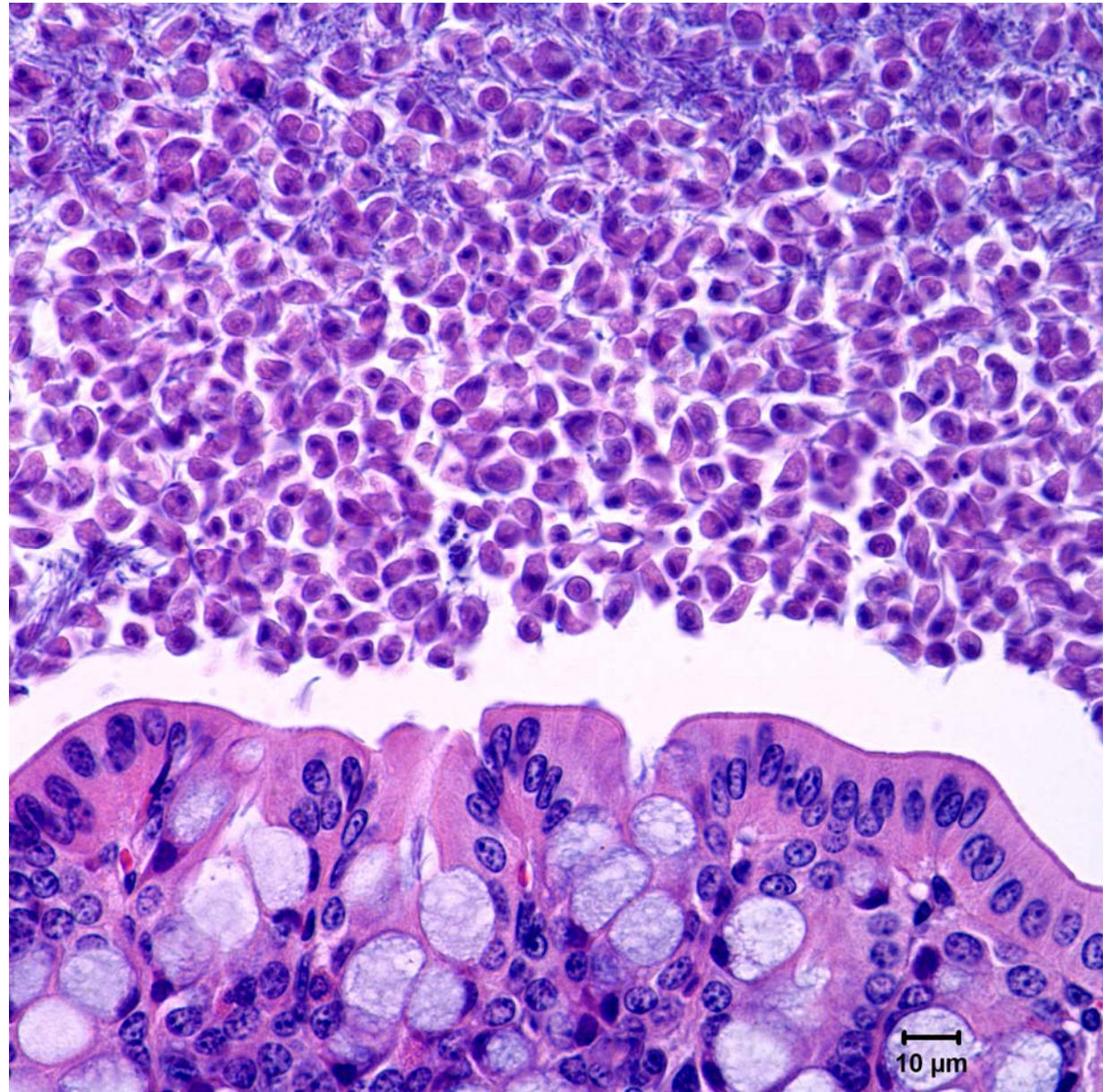




Protozoal flagellates in mouse large intestine

Cecum-colon

- Intraluminal flagellate protozoa
 - Pyriform
 - 4-8 μ diam
- r/o chilomastix, hexamastix, trichomonads
- Considered to be commensal
- NOT in Schaedler's flora
 - Common
 - Conventional housing

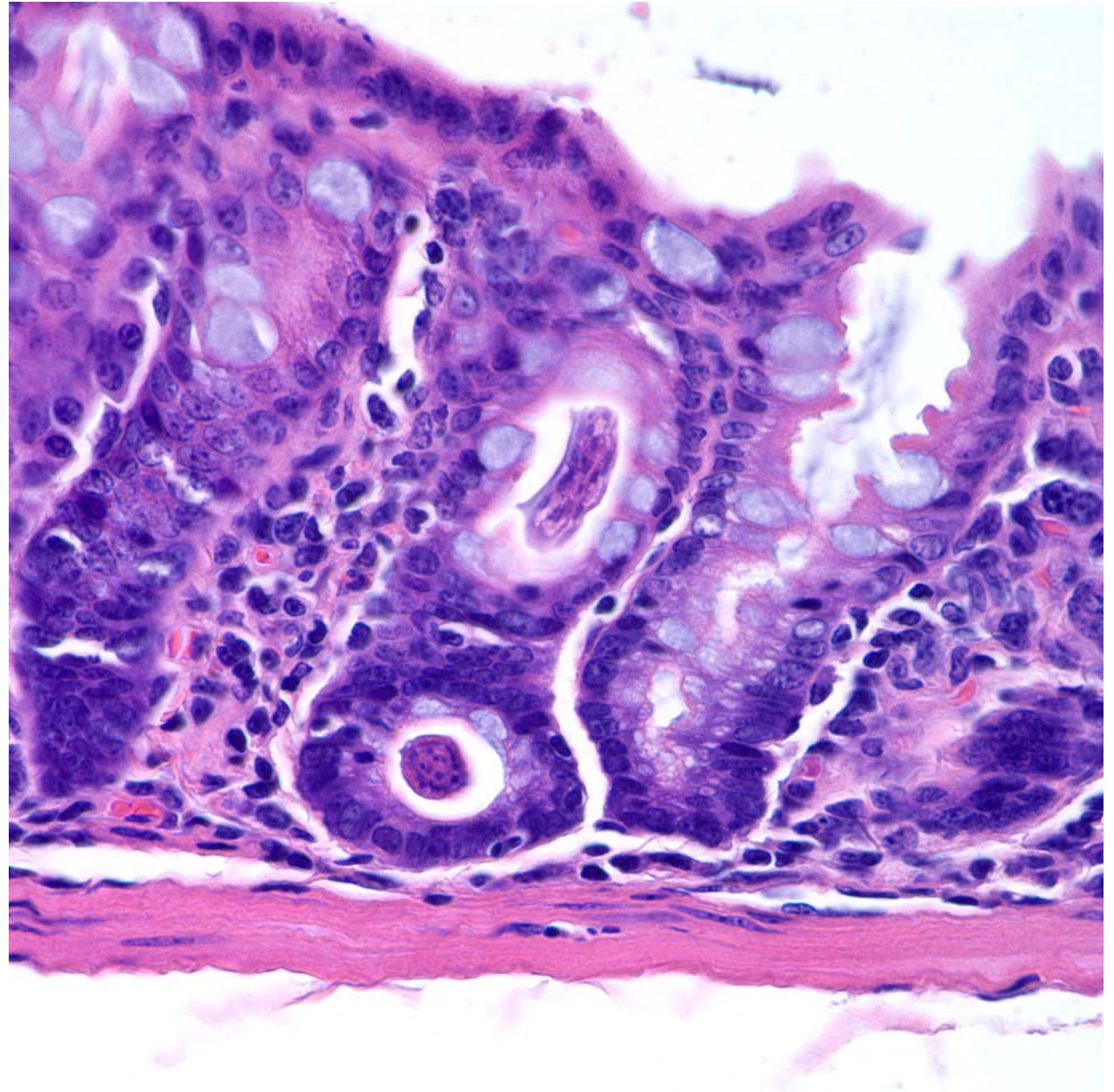




Oxyuriasis - pinworms in mice

Distal Colon

- Nematode larva
cw *Aspicularis*
 - Cross section +
oblique long
section
- Deep in mucosa
(gland/crypt)
- Mild eosinophilic
inflammation



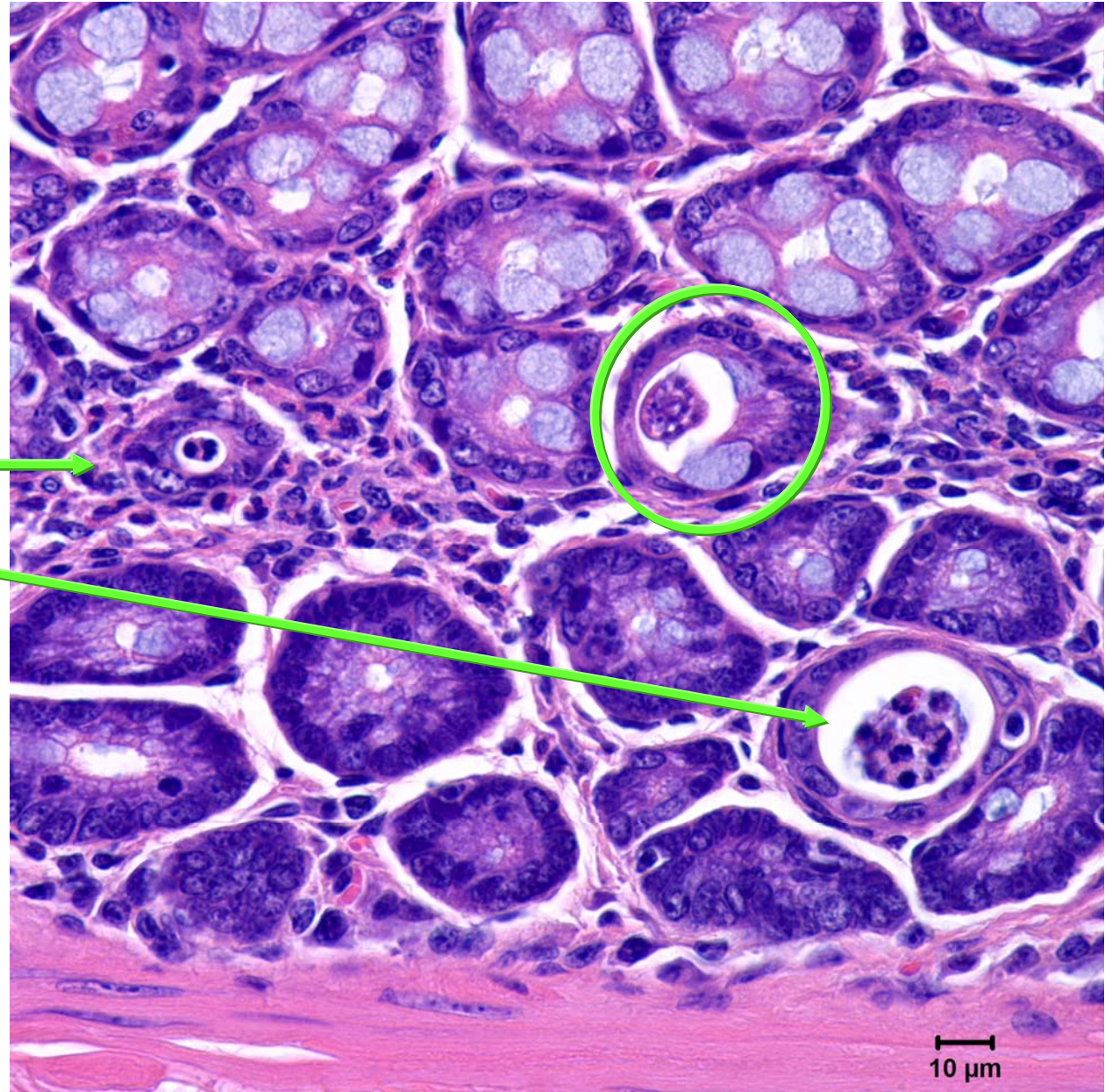


Oxyuriasis - pinworms in mice

Distal Colon

- Nematode larva cw Aspicularis (note alae)
- Deep in mucosa (gland/crypt)
- Mild eosinophilic inflammation
- Crypt abscess

- Note the small size - these can be difficult to find, and only 1-few in distal few mm of colon





Oxyuriasis - pinworms in mice

Syphacia muris, *Aspicularis tetraptera* are expected pinworm species in mice

- Adults / larvae in cecum -colon
- *Syphacia* → asymmetric eggs on perineum → tape test detection
- *Aspicularis* → symmetric eggs in/on feces → fecal float detection

Pinworms shed eggs intermittently. Competent mice can keep the burden down to very low levels if they are not constantly exposed to abundant eggs in their cage environment. If colonies/facilities have been treated for pinworms recently, burdens probably are low. Fecal evaluations should be expected to have low sensitivity, because not every pellet is lucky enough to get an egg. Thus dirty bedding sentinels may not be lucky enough to be exposed, and may be sufficiently competent to clear small burdens effectively, resulting in negative sentinel surveillance results. Immunodeficient mice may sustain high worm burdens, and may represent a problematic source of large numbers of eggs. Pinworm eggs are quite sticky, and highly are highly resistant to adverse environmental conditions. Contaminated multiuser equipment such as weighing machines, procedure boards, gloves used to handle mice from different cage, are potential sources of eggs.

Pinworms, other parasites, and microbial flora should be expected to immunomodulate, and potentially impact various phenotypes.

Flagellate protozoa in large intestine (e.g. tritrichomonads, *Chilomastix* spp, *Hexamastix* spp), generally are considered to be commensal microbes in competent mice. These are not components of contemporary Schaedler's flora, and are consistent with conventional housing.



Oxyuriasis - pinworms in mice

Suggested References

University of Missouri Research Animal Diagnostic Laboratory (RADIL) Diseases of Research Animals (DORA)
<http://www.radil.missouri.edu/info/dora/mousepag/par.htm>

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