

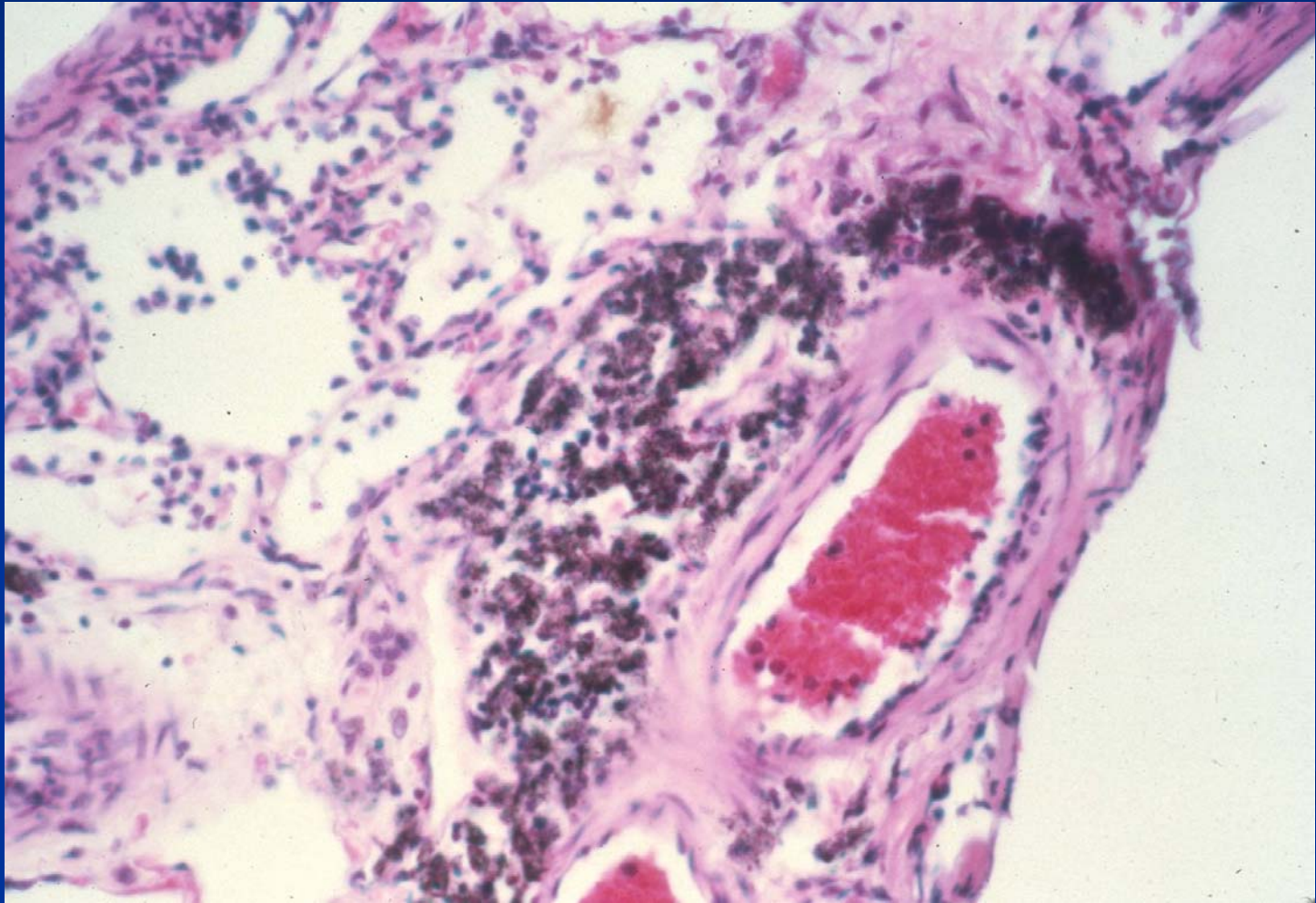
Respiratory Mites

- *Etiology*: *Pneumonyssus* and *Pneumonyssoides* spp. in lungs, *Rhinophaga* in nasal cavity.
- *Pneumonyssus simicola* - nearly 100% incidence in rhesus monkeys until advent of ivermectin
- *Transmission*: Unknown, but close contact required.
- *Clinical*: usually no clinical signs. Rarely pneumothorax due to rupture of a “mite house.” Lung mites can cause serious clinical disease in langurs and proboscis monkeys.

Respiratory Mites

- *Gross pathology*: Focal, yellow, air-filled cysts 1-10 mm in diameter, raised if on pleural surface.
- *Histopathology*: chronic bronchiolitis with bronchiectasis and eosinophilic granulomatous inflammation, cross sections of mites, and golden brown refractile pigment.
- Bronchial lymph nodes pigmented due to mite pigment.

Mite Pigment—Primate



Lungworms

- *Etiology: Filaroides sp* and *Filariopsis sp*
- *Transmission: larvae in feces, rest unknown*
- *Clinical: most common in NWM, no clinical signs*
- *Pathology: 1-2-mm focal brown irregular pleural foci,*
 - small slender adults in terminal bronchioles and alveoli
 - females are viviparous

Strongyloides

- *Etiology: Strongyloides cebus* in NWM, *S. fulleborni* in OWM.
- *Transmission*: orally and by skin penetration
- *Clinical*: usually asymptomatic, but diarrhea can result. Coughing may be associated with larval migration
- *Lung pathology*: hemorrhage of due to migrating larvae.

Anatrivosoma

- *Etiology: Anatrivosoma cutaneum, A. cynomolgi*
- *Transmission:* embryonated eggs deposited in nasal or cutaneous epithelium and sloughed.
- *Clinical:* mild peeling of epidermis of palms and soles. May see serpentine tracks with intense inflammation.
- *Pathology:* Worms and eggs in cross sections of nasal epithelium or skin of face, hands and feet with little inflammation.
- *Comment:* seldom see when routinely treated with anthelmintics.

Pathology of Laboratory Animals

■ Acknowledgements

- <http://www.afip.org/vetpath/POLA2005.pdf>

- Mouse and Rat – Steve Barthold
- Rabbit – Lyn Raymond
- Primates – Gary Baskin

- <http://www.radil.missouri.edu/info/dora/mousepag/resp.html>

■ Resources

- Diagnostic Pathology

- Percy DH and SW Barthold, 2nd Edn (2001) “Pathology of Laboratory Rodents and Rabbits” Iowa State University Press.

- Jackson labs website: jaxmice.jax.org

Resources

- *The Handbook of Experimental Animals: The Laboratory Mouse*, Hedrich, HJ, Bullock, G, Petrusz, P, Eds. 2004. Elsevier Academic Press, San Diego, California. pp.225-243.
- *Pathology of the Mouse*, GA Boorman Ed, 1999. Cache River Press, pp.293 332.
- Hardin JD. *Genetically engineered mice as models for human disease*. P&S Medical Review. 1994.
- Sundberg, JP and Boggess D. *Systematic Approach to Evaluation of Mouse Mutations*, 2000. CRC Press LLC.
- Ward, JM, Mahler, JF, Maronpot, RM, and Sundberg, JP. *Pathology of genetically engineered mice*. 2000. Iowa State University Press, Ames, Iowa. pp. 161-179.

Resources

- AALAC publications e.g. Bennett, BT et al, (1998) “Non Human Primates in Biomedical Research, Diseases” Academic Press. Coming – Biology of the Laboratory Mouse
- Haschek W.M., H. P. Witschi, and K. Nikula. Respiratory system. In: *Handbook of Toxicologic Pathology*. Haschek, W. M., Rousseaux, C.G., and Wallig, M.A. 2nd Ed., 2002. Academic Press, San Diego, California. pp. 3-83