BI 358 Discussion 11: Vision Lab w/Eye Dissections

I. **Announcements** Final papers due next Tuesday, March 17th, in Pat’s box, 77 Klamath < 5 pm. Q?

II. **Anatomy & Physiology of the Eye**
LN Dierks & RE Hammond, Carolina Biological 1980
CC Francis & AH Martin 1975
RMH McMinn & RT Hutchings 1977
DA Morton, KD Peterson & KH Albertine 2007
LS Sherwood 2006

III. **Lab Tests + Eye Dissections**
Eye Surface Anatomy

Caruncle = L. wart
Papilla = L. nipple
Sclera = L. hard/white
Limbus = L. margin/border

Lacrimal gland!
Eye Drops Out Nose? Why?
Eye Muscles Superior View

- Superior rectus muscle
- Cornea
- External rectus muscle
- Internal rectus muscle
- Superior oblique muscle
- Pulley of superior oblique muscle
- Optic nerve
- Optic tract
- Optic chiasma
1. Superior oblique
2. Trochlea
3. Tendon of superior oblique
4. Levator palpebrae superioris
5. Eyeball
6. Inferior oblique
7. Lateral rectus
8. Superior rectus
9. Tendinous ring
10. Optic nerve
11. Optic canal
12. Anterior clinoid process
13. Sella turcica (pituitary fossa)
14. Posterior clinoid process
15. Ethmoidal air cells
16. Inferior rectus
"Glass-like" canal: Fetal remnant & adjustable reservoir of mobile liquid to compensate during accommodation!

TPA Stuart, Journal of Physiology, Mar 29, 1904!

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1465472/?tool=pmcentrez
Intermediate Colors Are Produced When $1^0$ Colors Are Superimposed
Smooth Muscles of the Iris

Dilator, Sphincter
The Optic Cup & Optic Stalk are Evaginations of the Diencephalon

“The Eye Backs Out of the Brain”
Conjunctiva folds back on itself!
Eye & External Ear Formation

- Eye (e)
- Mandible
- 1st pharyngeal cleft
- Tragus
- Cymba conchae
- Helix
- Concha
- Antihelix
- Antitragus
Normal vs. Cataract Lens
Cataracts in Child
Detached Retina
Lab Eye Tests + Dissection Overview

1. Eye Dominance
2. Snellen Acuity
3. Astigmatism
4. Blind Spot Mapping
5. Dissection of Cow & Pig Eyes

See pp 11-1, 11-2

Incision through the eyeball

eg Horizontal section, see fig p 11-2
Eye Dominance?
Snellen Visual Acuity Test
Astigmatism Test
Blind Spot Mapping?
Jennifer Finley’s Eye Dissection!

- Ciliary M.
- Lens (½)
- Optic Disc
- Tapetum Lucidum
- Retina
Tapetum Lucidum "Bright Tapestry" Illuminated Due to Flash Photography