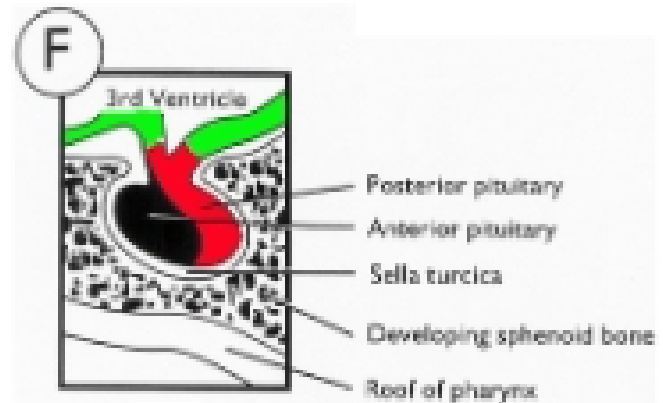
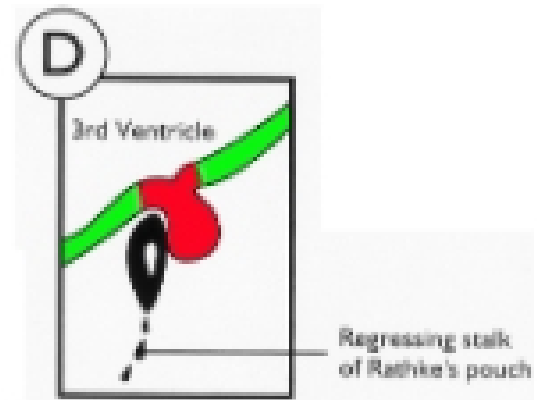
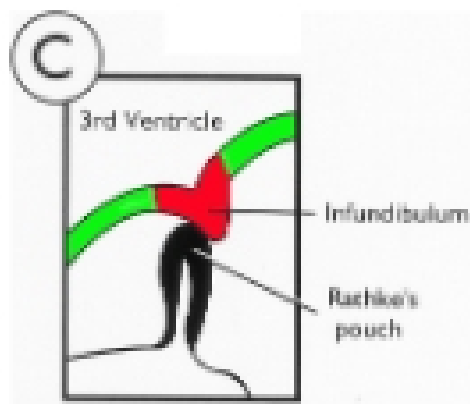
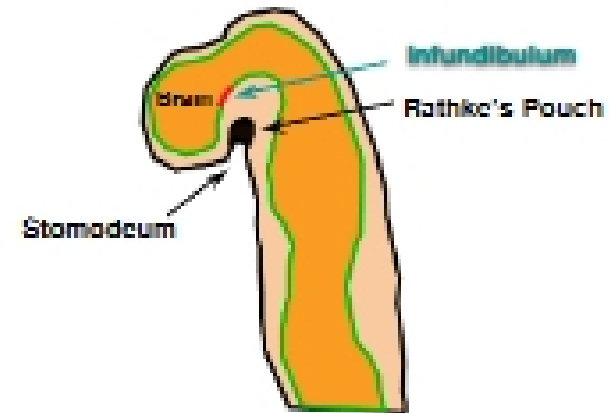


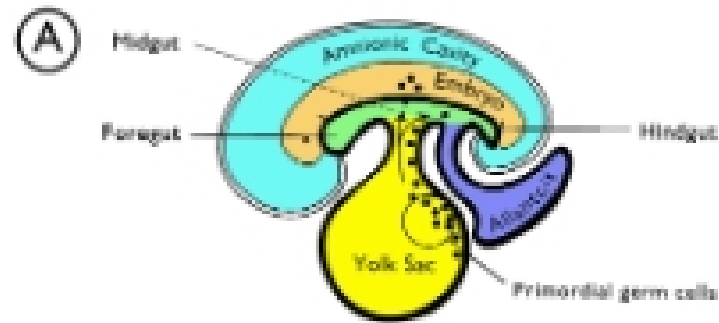
**Animal Science 434**  
**Reproductive Physiology**

**Lec 5: Embryogenesis of the Pituitary and Sexual Development**

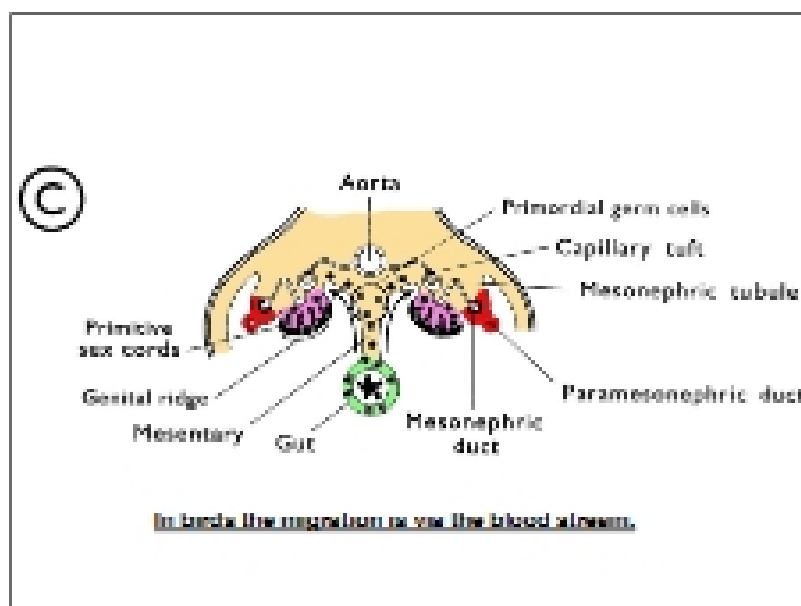
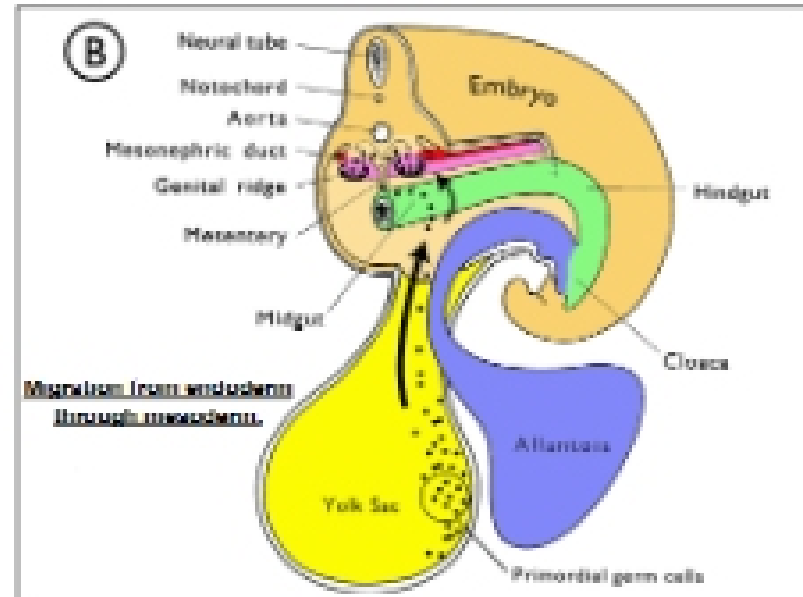
**Development of the Pituitary Gland**



## Germ Cell Migration



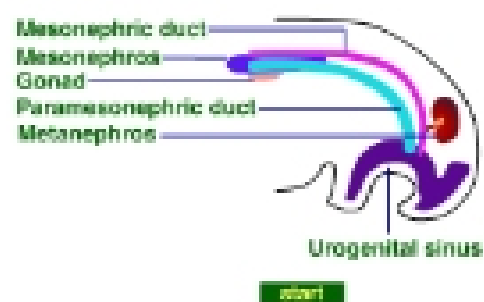
Migration begins by the 4 week of gestation in cow and human.



## Fetal Kidneys

- **Pronephros**
  - ✦ regresses
- **Mesonephros**
  - ✦ portions of reproductive tract
- **Metanephros**
  - ✦ Adult kidney and urinary ducts

## Development of Mesonephros and Metanephros



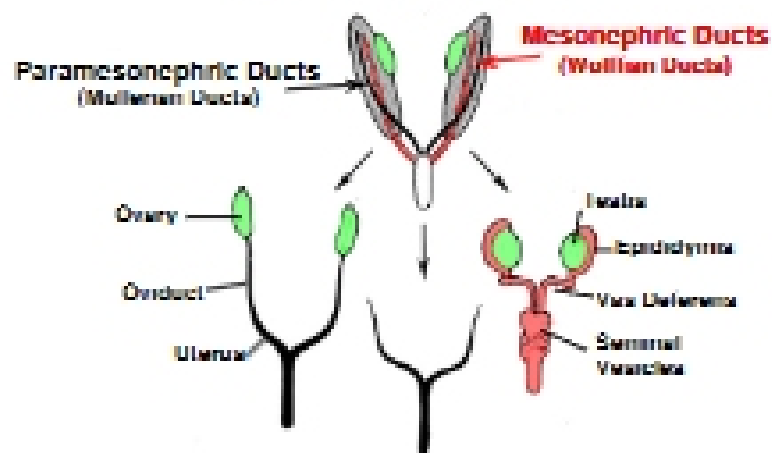
## Development of Mesonephros and Metanephros

[Early Development Flash Movie](#)

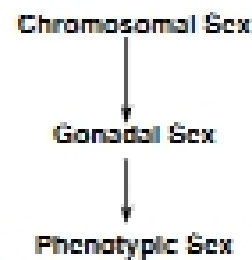
[http://www.ansci.wisc.edu/jjg1/aa434/powerpoint/ea07/early\\_dev.swf](http://www.ansci.wisc.edu/jjg1/aa434/powerpoint/ea07/early_dev.swf)

Requires the free flash player which can be downloaded from: [www.adobe.com](http://www.adobe.com)

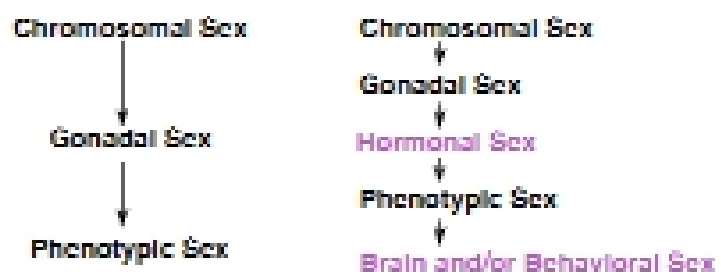
### Jost Experiments



### Sex Determination: The Jost Paradigm



### Sex Determination: The Jost Paradigm



### Chromosomal Sex

- Single Pair of sex chromosomes
  - mammals- some but not all vertebrates
- Sex is environmentally determined
  - sea worms- fish- reptiles
- Multiple sex chromosomes
  - invertebrates- insects- reptiles
- Haplodiploidy
  - bees- soldiers

### Chromosomal Sex

- A. *Drosophila*
- Sex depends on the number of X chromosomes
  - X or XY or XO = Male
  - XX or XXX or XXY = Female

### Chromosomal Sex

- A. *Drosophila*
- Sex depends on the number of X chromosomes
  - X or XY or XO = Male
  - XX or XXX or XXY = Female
- B. Human (mammals)
- XY or XXY or XXYY or XXXY = Male (testis)
  - XX or XXX = Female (ovary)
  - XO = Female with incomplete ovarian development
  - XXY or XXYY or XXXY or XXXXY = testis but impaired sperm production