Stalk-Eyed Flies

- Meiotic Drive
  - The flies seem to have a "driving X chromosome.
  - F's might choose males to avoid a F-biased sex ratio

- More on "Selfish genetic elements"
  - PSR
  - MEDEA
  - CMS

- Conflict Between the sexes.
  - Rice - Chase away selection
  - Zeh & Zeh: VIVAPRITY-DRIVEN CONFLICT

Genetic correlations
- (Selection on males produced a correlated response in females)

Plants
- Lynda Delph's Data
  - 1. Selection on F floral traits produced correlated responses in male traits, and vice versa
  - 2. But she was able to break the correlation by artificial selection

Birds
- Galapagos Finches
  - Correlated responses in beak traits in response to natural selection
WASP (Nasonia)

**Maternal Sex Ratio (MSR)**
1. Maternally inherited
2. Causes $\Phi$ s to produce $\Phi$ biased sex ratio

**Paternal Sex Ratio (PSR)** See Skinner's paper

**Normal Offspring Production**

$$\text{Haploid} \xrightarrow{\psi} \text{Diploid} \quad \Phi + \text{diploid}$$

$$\text{Diploid Daughter} \quad \downarrow \quad \downarrow \quad \text{Haploid Son}$$

**Offspring Production with PSR**

$$\text{Diploid daughter} \quad \downarrow \quad \downarrow \quad \text{Haploid male}$$

PSR kills paternal set of chromosomes

Why?

**MEDEA Gene** = *Maternal Effect Dominant*  
**Flour Beetles** = *Embryonic Arrest*

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- Offspring that do not have the M gene in a mom containing m die.
CHASE - Away Sexual Selection

Experiments by Rice (1996)

1. Experimental Group: O3 compete with each other for #s. Females mate with multiple partners → only males selected from these Exp lines for the Next Gen.

2. Control Lines: No competition for mates

3. MALES from the Experimental Lines were selected to mate w/ females from the Control Line

Results

a) M's from experimental lines had higher net fitness. They were also more likely to remate and they were more successful in “defense”

b) #s mated to males from the Exp Lines had a much higher mortality rate.

Why?