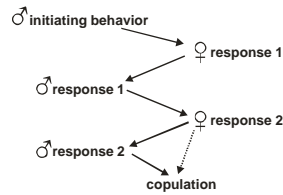


### Courtship and Mating (behavioral or ethological premating RIMs)



Males in particular must answer a series of questions in order to pass the test (the essence of sexual selection)

"Quick & dirty:" midges  
(Diptera: Chironomidae)



"Slow dancers:" *Euxestus* sp.  
(Coleoptera: Cerylonidae)



Comparing courtship modalities: information content, propagation, blocking, and privacy

#### A. Visual (vision)

1. visible
2. ultraviolet

#### B. Chemical/Olfactory (pheromones)

1. substrate-borne (incl. cuticular hydrocarbons)
2. airborne

#### C. Mechanical (movement)

1. tactile (touch)
2. vibrational (periodic signals)

#### Visual cues: simple aggregation



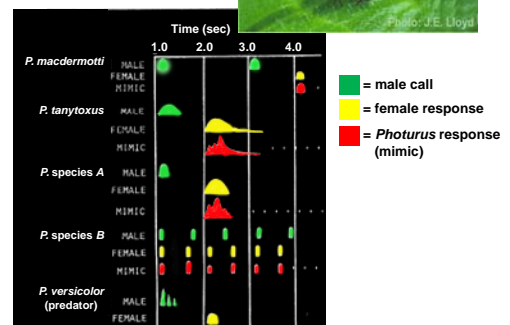
Visual cues: complex courtship interactions --  
*Photinus* flash patterns



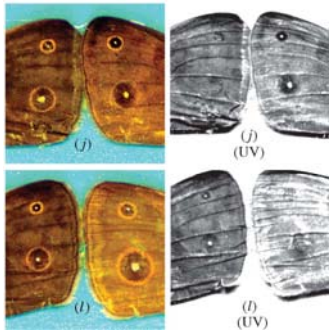
*Photinus* "femme fatale" eats male *Photinus*



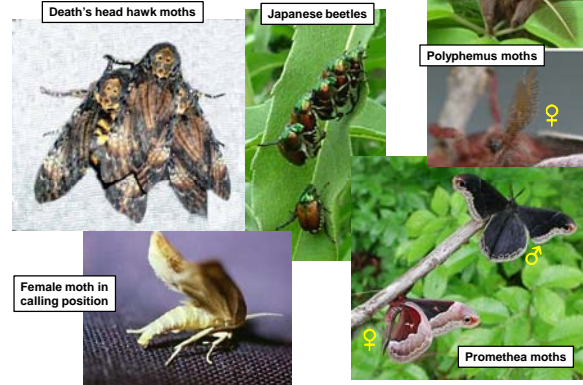
Visual cues: *Photinus* femmes fatales producing the correct female response for different *Photinus* hosts



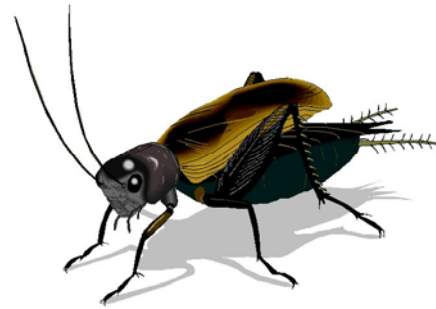
## Ultraviolet reflectance ("hidden" visual cues)



## Chemical (pheromonal) cues: aggregation



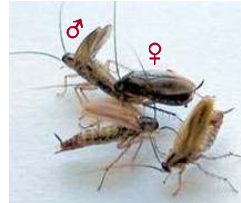
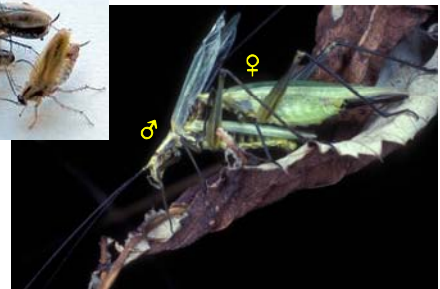
## Acoustical cues: inter- and intrasexual competition (more later)



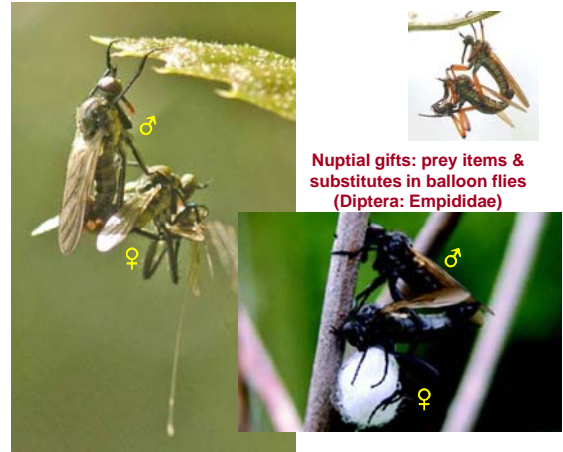
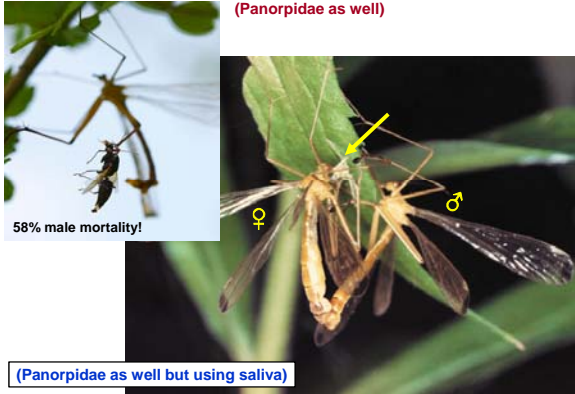
## Acoustical cues (more later)

Snowy tree cricket (*Oecanthus fultoni*)*Ormia* fly parasitizing a singing gryllid cricket male

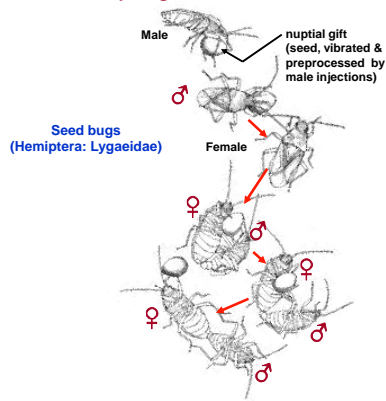
## Courtship feeding

German cockroach (*Blattella germanica*)Tree cricket (*Oecanthus nigricornis*)

**Nuptial gifts: prey items in hanging flies (Mecoptera: Bittacidae)  
(Panorpidae as well)**



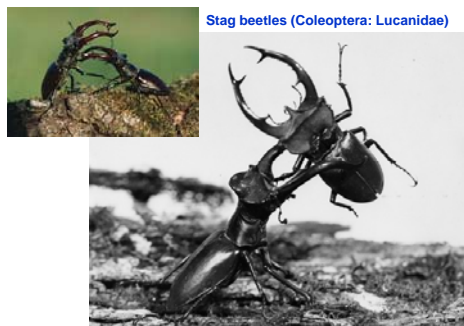
**Nuptial gifts: other food items**



**Nuptial gifts: regurgitated food & deceit**

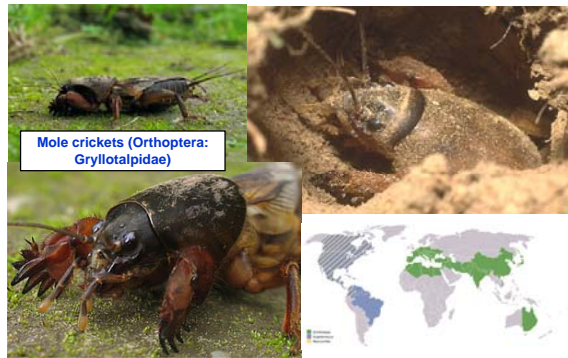


**Male-male aggression (intrasexual sexual selection)**

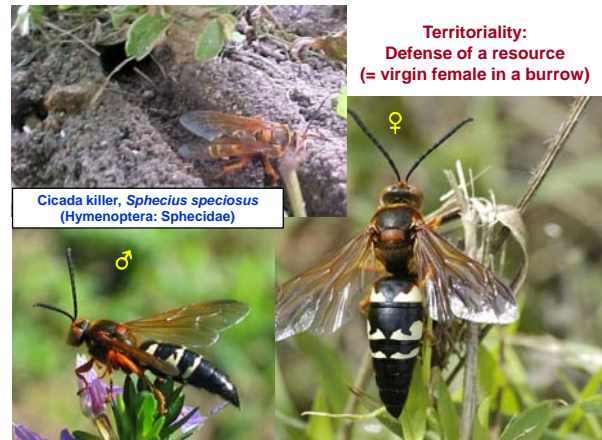




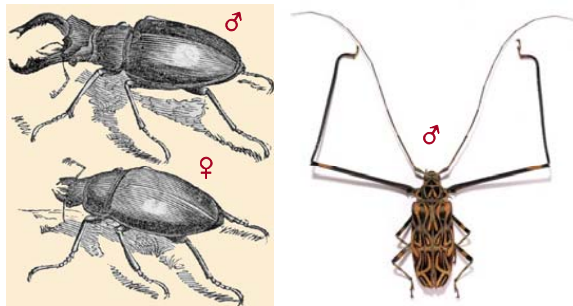
### Territoriality: Defense of a resource (burrow)



### Territoriality: Defense of a resource (= virgin female in a burrow)



### Consequences of sexual selection: Sexual size & shape dimorphism



### Biparental care and sexual role reversal



### Eusociality

Hymenoptera: bees, wasps, & ants

Dictyoptera: Isoptera: termites

