

## Behavioral Isolation Continued

Example: Lacewings

3 species are identical but they produce different sounds. The sound they make determines if a female will mate with them. The wrong sounds means the female will not mate with the male.

Example: Firefly

Males flash lights in a particular way. Each species has a different sequence. The flashing lights also attract predators, like a female from a different species.

Example: Anole Lizard

They have dewlaps or gular fans. Male anoles pump their fans and do push-ups. The pattern is specific to the species. This can also attract predators

## Temporal Isolation

- Breeding of similar, closely related species at different times of the year
- Wild lettuce → late summer/early spring

Example: Gryllus Cricket

## Prevention of gamete fusion (still pre-zygotic)

- Sperm cannot penetrate egg
- Toxic uterine environment- sperm killed by biochemical agents

## Post Zygotic Isolation

### Hybrid inviability/hybrid infertility

- Inviability
  - Accumulation of genetic defects in zygote → the offspring dies in utero/in egg or after birth
- Infertility
  - Offspring survive, become adults but infertile/sterile
  - Can also be partially infertile (will be discussed later)
    - Horse + Donkey = Mule → better work animal but is incapable of reproduction
    - Tiger + Lion = Liger and Tigon → can sometimes produce viable offspring

### Leopard Frogs

- Clear geographical isolation
- Temporally isolated
- Behavioral isolation → different calls
- Ecological isolation → breed in different habitats

There is usually more than one type of isolation acting on different populations → all lead to genetic divergence → as it increases there is an increase in the likelihood of speciation

### Speciation

- Requires multiple steps
  - Populations of a single species become isolated from each other and over time these populations begin to diverge genetically
  - Changes in each gene pool relating to changes in allele frequency driven by natural selection, loss of gene flow, genetic drift, population specific mutations.
  - If divergence has occurred and they can no longer mate they're now separate species

Beetle Example

