Previous Research

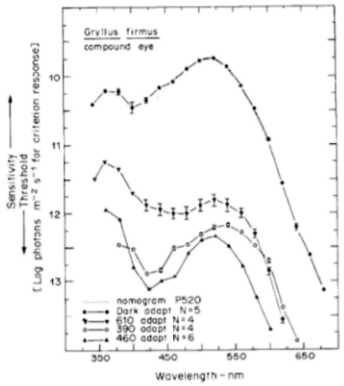

Fig. 3. A comparison of the spectral sensitivity of the compound eye in *G. firmus* under dark (●) for 250 μV response and under chromatic adaptation of u.v.: 390 nm, (○) blue: 460 nm (▲), and orange: 610 nm (▼) for 50 μV response. Bars when present represent ±1SE of the mean. Dotted line is a nomogram curve (Dartnall, 1953) for a hypothetical visual pigment with a maximum at 520 nm.

- Electroretinography measures electrical responses in various cells of a retina.
- In this case, we were looking at the response to different colors, which is based on variable wavelengths of light.
- Two main receptors of light were found,
  - one at a long wavelength,520 nm, that corresponds to green light
  - one at a short wavelength, 355 nm, that corresponds to the edge of violet/ultraviolet light (Lall 1985).
- Later research has found three receptors at 332 nm (UV), 445 nm (blue) and 515 nm (green) (Zufall 1989).

Fundamental Questions

How do eyes process light stimuli of different wavelengths?

What are the cellular mechanisms that create differences in spectral sensitivity?

Are electroretinograms (ERG) affected by the specific opsin genes present in a species?