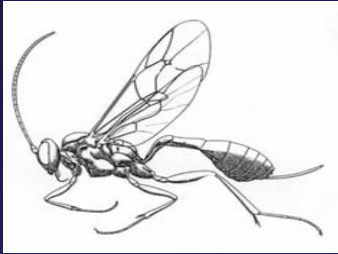


# Tritrophic Interactions and the Evolution of Diet Breadth in Insect Herbivores

John T. Lill

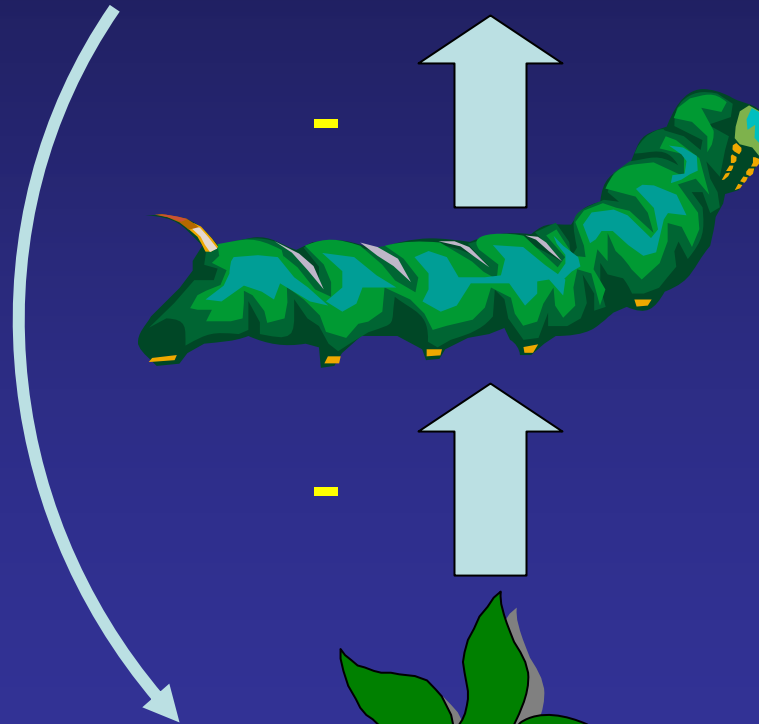
Department of Biological Sciences





3<sup>rd</sup> (Carnivores)

+



2<sup>nd</sup> (Herbivores)

1<sup>st</sup> (Producers)

# Plants as Protection

## The Devil and the Deep Blue Sea

“Plant-feeding insects live in a world dominated on the one hand by their natural enemies and on the other by a sea of food, that at best, is often nutritionally inadequate and, at worst, is simply poisonous” (Lawton and McNeil, 1979)

Recognized that for many insects, choice of host plant (individual or species) may have important repercussions for its risk of attack by enemies

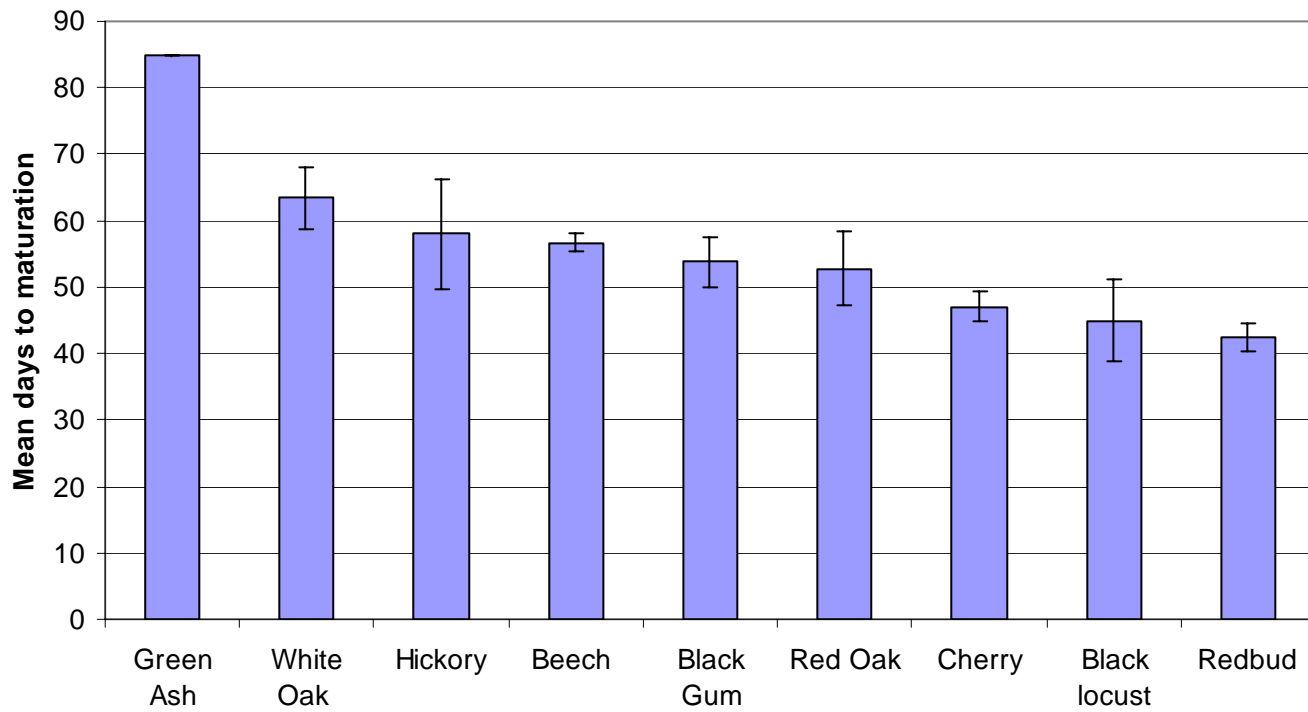
# Ecological Tradeoff







*Euclea delphinii* development time



**ANOVA:**  
 $F_{7,83} = 14.08$ ;  $P < 0.0001$

# Host plant-specific Parasitism

