

# Caste plasticity in the *H. saltator* ant: Social context influences dominance and reproduction-related gene expression

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**Research Question:** How does reproductive status relate to expression of Corazonin and Vitellogenin in *Harpegnathos Saltator*?



*Harpegnathos Saltator*



All *Harpegnathos* equipped with stingers to hunt food

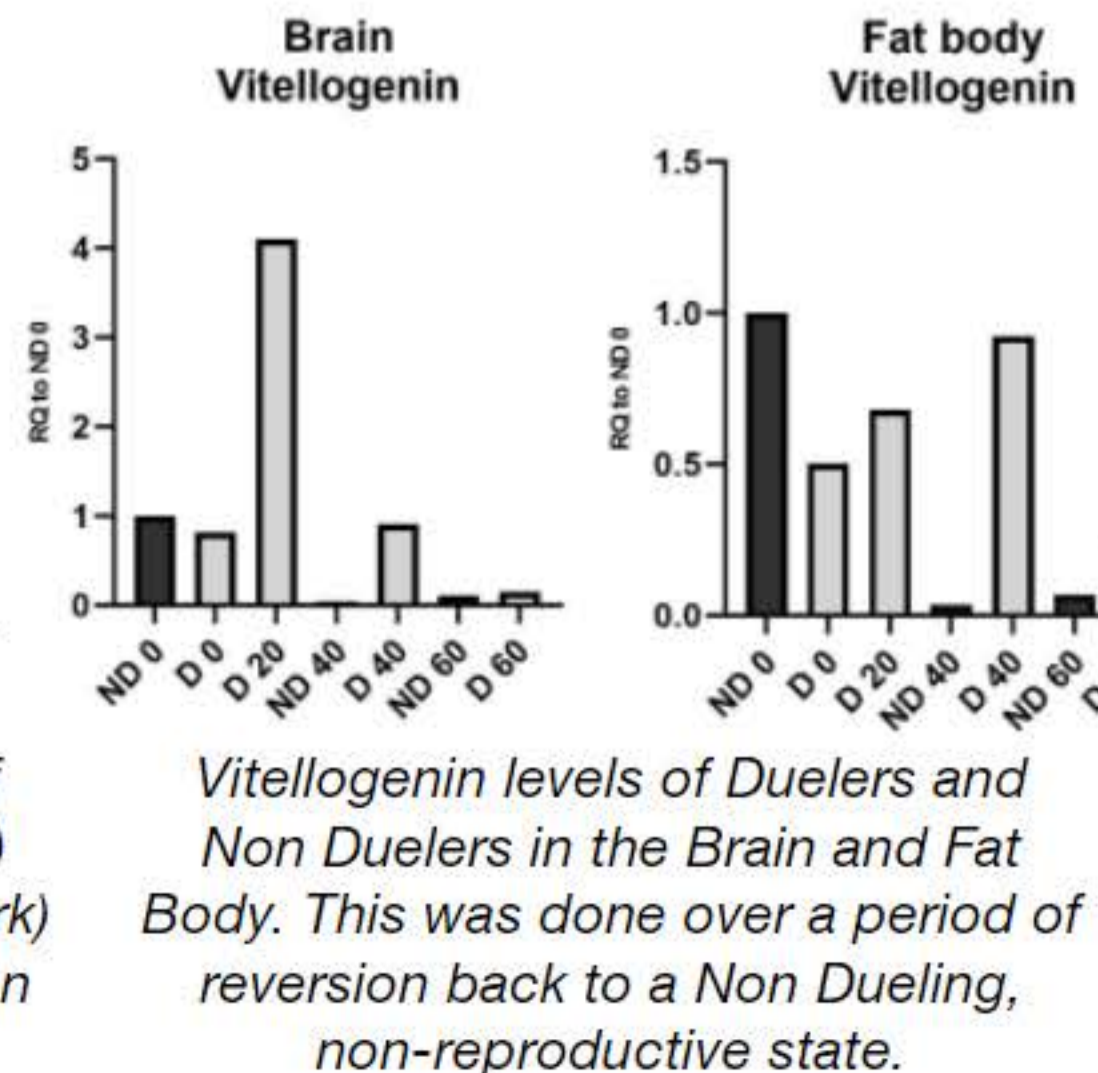
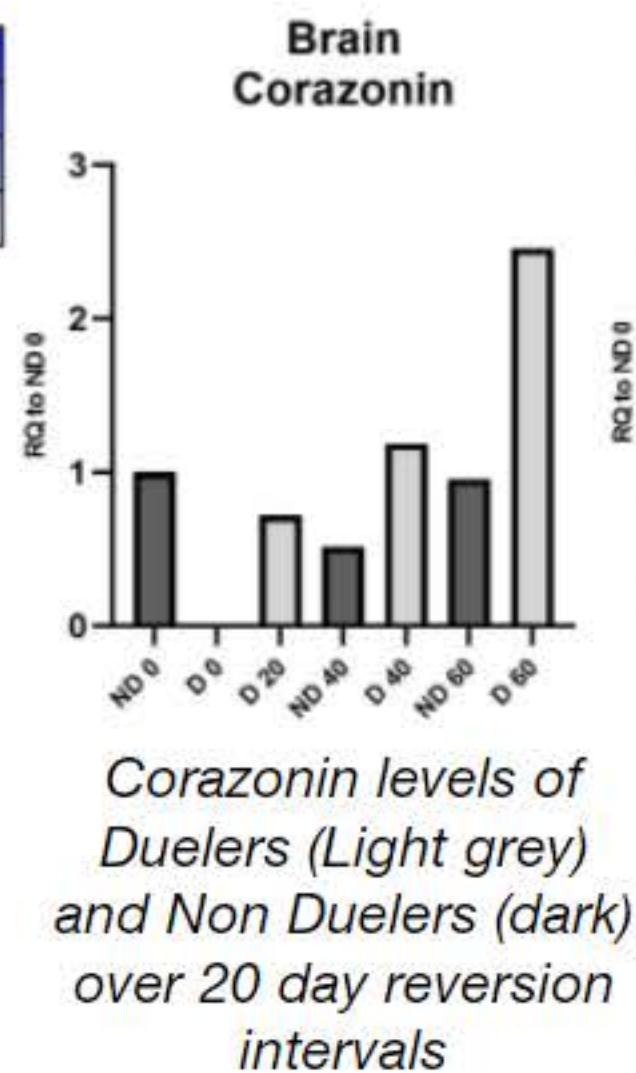
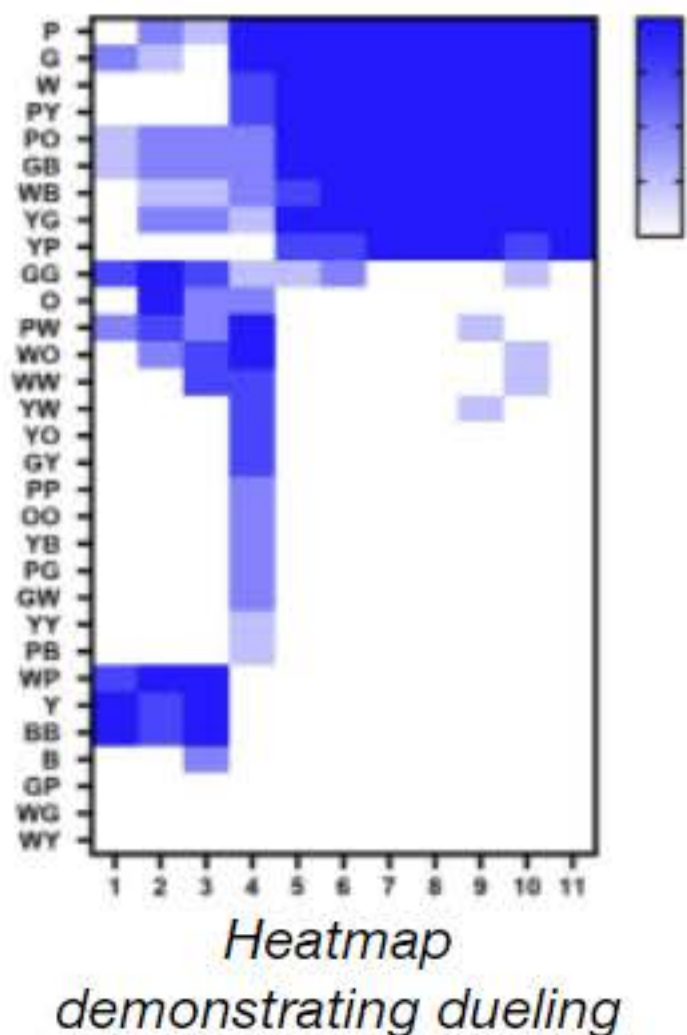


Ants Marked for easy identification

## Methodology

- 3-4 Month Study involving two main colonies of ants
  - Each colony contains 30 ants
- Ants allowed to form social order and hierarchy in the first transition, lasts 1.5 months
  - Behavior tracked during this phase
- Once reproductives are established, they are removed and isolated to convert them back into non-reproductives
- Reproductives and non reproductives tested for expression of Corazonin and Vitellogenin on 20 day intervals
  - Testing is done by extraction of cells/brain
- Egg laying is observed and eggs are counted 2-4 days

## Results



## Results Interpretation

- Dueling ants became reproductive ants given 2-3 weeks
- Reproductives showed lowered levels of corazonin
  - Corazonin acts as a barrier to becoming reproductive
- Vitellogenin was much higher in reproductive ants
  - Vitellogenin is necessary for some means of egg prod.
- Policing occurs when reproductives introduced into an established colony
  - This involves biting and stalking
- Colonies will do very well if the workers focus on addressing the needs of larvae, and proper treatment of pupae.