







## Beyond Imitation & Attraction

- Spawning behavior – highly unusual
- Minimal feeding – energy maintenance only
- Red/orange coloration – induces agonistic responses



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## Beyond Imitation & Attraction

- Orange Nymph has supernormal stimuli
  - Nymph body shape with exaggerated thorax → feeding response
  - Bright orange coloration → agonistic behavior
- Stimulus overlap
  - Complimentary cues trigger similar behaviors = enhanced response
  - Ambiguous cues trigger dissimilar behaviors = suppressed response



B.W. Kent

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## Case Study

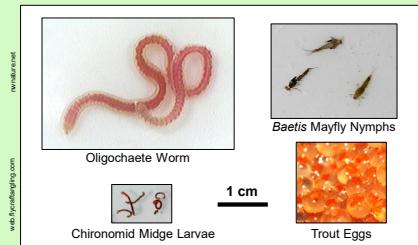
- Dec. 2019: translucent green water due to runoff from rain – altered visibility & hydrodynamics



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## Case Study

- Dec. 2019: available prey

www.flyfisher.org.com  
www.flyfisher.org.com  
www.flyfisher.org.com  
photofish.com

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## Case Study

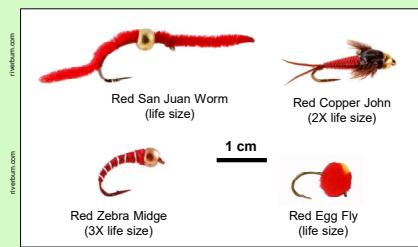
- Dec. 2019: natural flies of available prey



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## Case Study

- Dec. 2019: red flies of available prey



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## Case Study

- Dec. 2019:** results ( $X^2 = 4.76$ ;  $P = 0.028$ )
  - red flies = 16 trout
  - natural flies = 5 trout

	4 trout
	5 trout
	3 trout
	4 trout

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## Further Research

- So far...
  - Triggering cues
  - Supernormal stimuli
  - Perceptual blindness
  - Assessment time
  - Stimulus overlap

Prey Availability → Perception → Attention → Memory → Learning → Hunger → Social Rank → Prey Choice

www.indigofox.com

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## Further Research

- Many unresolved issues – e.g., blue egg flies
  - Ginetz & Larkin (1973) *J. Fish. Res. Board Can.*, 30: 229-234.

upstreamessentials.com  
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## Further Research

- Many unresolved issues – e.g., 'white larva'
  - White abdomen with black thorax & head
  - Very old pattern – late 1930's?
  - Imitates?

Original Version

Quirk (1930)

Modern Interpretations

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## Suggested Reading

DATUS PROPER  
WHAT THE TROUT SAID  
About the Design of Trout Flies and Other Myths

What Trout Want  
The Educated Trout and Other Myths  
Bob Wootton

UNDERSTANDING TROUT BEHAVIOR  
Solutions for Better Fly Fishing and Why  
for the Success of the Trout and Fly

trout SENSE  
A Fly Fisher's Guide to What Trout SEE, HEAR & SMELL  
Jason Kammel

CURTIS CREEK MANIFESTO  
A Fully Illustrated Guide to the History, Strategy, Flies, Techniques, and Perseverance of Fly Fishing

LAKE ELY-THON MANIFESTO  
An Entirely Synthetic Fish  
Augusta Hollingshead

Beyond Catch & Release  
Enhance the Future of Fly Fishing  
Paul German

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## Self-Test

- Black Ghost streamer
  - Originated in 1927 as imitation of Rainbow Smelt (*Osmerus mordax*)
    - Only 4 colors – black, white, yellow & silver
    - No real similarity to shimmering iridescence of rainbow smelt
  - BUT... a very successful streamer
  - **What triggers can you identify in this fly that could explain its success?**

