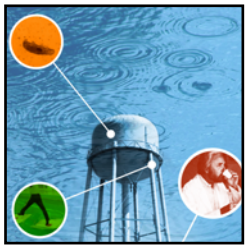
Contents

The features marked with a star (*) are based entirely on material taken straight from standard research (and other Official and Therefore Always Correct) literature. Many of the other articles are genuine, too, but we don't know which ones.

ANNALS OF IMPROBABLE RESEARCH

On the Front Cover

A photomontage of different aspects of research on, in, or with water.



On the Back Cover

Humans standing in water at a beach in 1914.

Special Section: Water

Improbable Research Reviews*

News & Notes

Where There's More

There's always new improbable — it's not what you expect! — stuff on the **Improbable Research blog** at IMPROBABLE.COM

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Some Coming Events

The Covid-19 pandemic has introduced excitingly boundless uncertainty as to whether, when, and where public activities will happen in the near future. In 2023 some will happen teledistantly.

(See IMPROBABLE.COM for details of these and other events.)

March 5, 2023
— AAAS Annual Meeting, Washington, DC, USA

March 2023
— Stanford University, Palo Alto, CA, USA

August 15, 2023
— American Chemical Society, San Francisco, CA, USA

September 14, 2023
— The 33rd First Annual Ig Nobel Prize Ceremony

Ig Nobel Limericks: Clams on Prozac, Fly in Wine

Ig Nobel achievements distilled into limerick form

by Martin Eiger, Improbable Research Limerick Laureate

The Ig Nobel Prizes honor achievements that first make people LAUGH, then make them THINK. For details of all the Ig Nobel Prize-winning achievements, see each year's special Ig Nobel issue of the magazine, and our web site www.improbable.com/ig/winners.

1998 Ig Nobel Biology Prize

The prize was awarded to Peter Fong of Gettysburg College, Gettysburg, Pennsylvania, for contributing to the happiness of clams by giving them Prozac. The research is documented in the study "Induction and Potentiation of Parturition in Fingernail Clams (Sphaerium striatinum) by Selective Serotonin Re-Uptake Inhibitors (SSRIs)," Peter F. Fong, Peter T. Huminski, and Lynette M. D'urso, *Journal of Experimental Zoology*, vol. 280, 1998, pp. 260-264.]

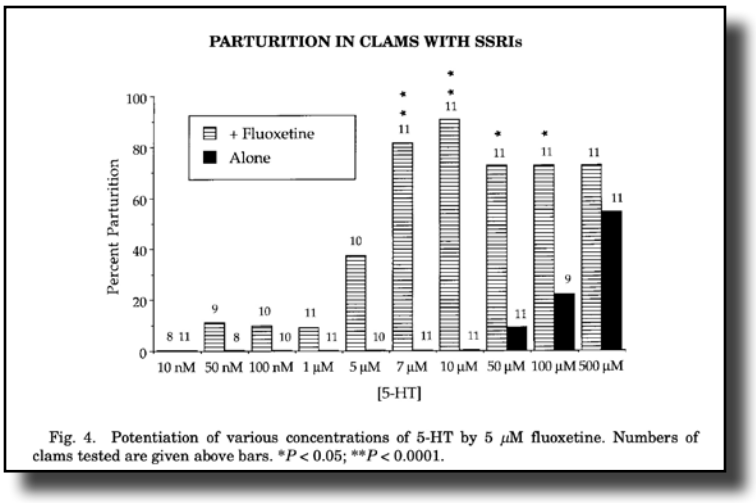
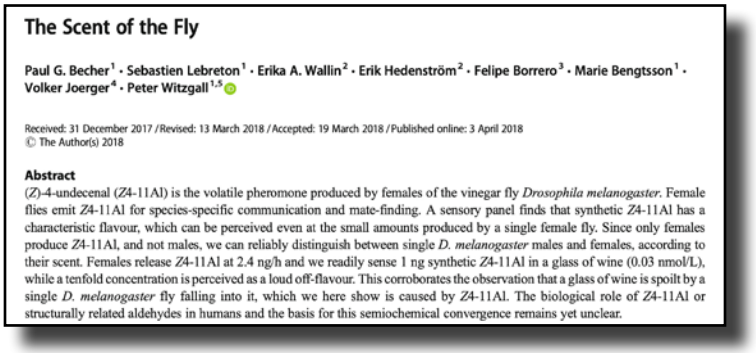


Fig. 4. Potentiation of various concentrations of 5-HT by 5 µM fluoxetine. Numbers of clams tested are given above bars. *$P < 0.05$; **$P < 0.0001$.

There's a simile, pithy and snappy.
It's wrong. Sometimes bivalves feel crappy.
But help's on the way.
Give it Prozac today
To make a clam really feel happy.

2018 Ig Nobel Biology Prize

The prize was awarded to Paul Becher, Sebastien Lebreton, Erika Wallin, Erik Hedenstrom, Felipe Borrero-Echeverry, Marie Bengtsson, Volker Jorger, and Peter Witzgall for demonstrating that wine experts can reliably identify, by smell, the presence of a single fly in a glass of wine. The research is documented in the study "The Scent of the Fly," *Journal of Chemical Ecology*, vol. 44, no. 5, 2018, pp. 431-435.


The Scent of the Fly

Paul G. Becher[1] · Sebastien Lebreton[1] · Erika A. Wallin[2] · Erik Hedenström[2] · Felipe Borrero[3] · Marie Bengtsson[1] · Volker Joerger[4] · Peter Witzgall[1,5]

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Abstract
(*Z*)-4-undecenal (*Z*4-11Al) is the volatile pheromone produced by females of the vinegar fly *Drosophila melanogaster*. Female flies emit *Z*4-11Al for species-specific communication and mate-finding. A sensory panel finds that synthetic *Z*4-11Al has a characteristic flavour, which can be perceived even at the small amounts produced by a single female fly. Since only females produce *Z*4-11Al, and not males, we can reliably distinguish between single *D. melanogaster* males and females, according to their scent. Females release *Z*4-11Al at 2.4 ng/h and we readily sense 1 ng synthetic *Z*4-11Al in a glass of wine (0.03 nmol/L), while a tenfold concentration is perceived as a loud off-flavour. This corroborates the observation that a glass of wine is spoilt by a single *D. melanogaster* fly falling into it, which we here show is caused by *Z*4-11Al. The biological role of *Z*4-11Al or structurally related aldehydes in humans and the basis for this semiochemical convergence remains yet unclear.

There's no way I'm a wine connoisseur.
I can't tell by the smell if wine's pure.
If my wine has a fly
And I'm blind, then will I
Drink the wine with the fly in it? Sure!