LETTERS

Edited by **Jennifer Sills**

Federal barriers to Cannabis *research*

ALTHOUGH THE MAJORITY of the general public (*1*) and the professional medical community (*2*) in the United States support the therapeutic use of *Cannabis sativa* as a pharmacological agent, the U.S. federal government's *Cannabis* research policies have blocked externally valid, randomized clinical trials on the effects of *Cannabis*. To conduct research on *Cannabis*, scientists must submit to a lengthy and arduous application process, often lasting for years. The research requires permission from multiple governmental agencies, including some with expressly stated opposition to any therapeutic uses, such as the Drug Enforcement Agency (*3*).

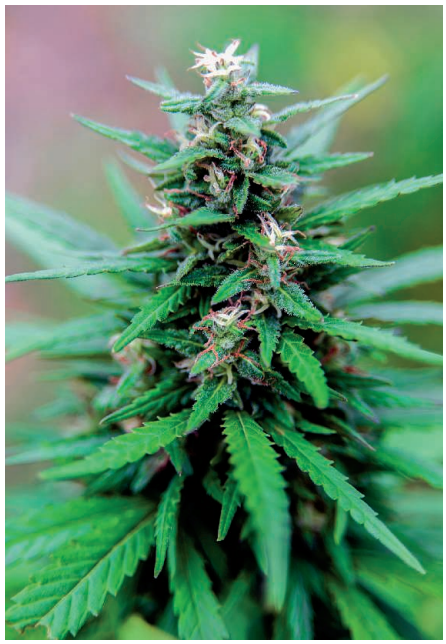
However, the application process is a mere nuisance compared with the biggest obstacle presented by the federal government: All *Cannabis* used for research purposes must be purchased through the National Institute on Drug Abuse (NIDA) (*4*). The tetrahydrocannabinol (THC) potency levels in the *Cannabis* available through NIDA are much lower than those in *Cannabis* products used by medical patients. The highest THC level available to researchers is 12.4% (*5*). The only two clinical studies funded by NIH in 2015 used products with potency levels between 3.5 and 7.0% THC (*6*, *7*). In contrast, the *Cannabis* sold in Colorado now averages 18.7% THC, with some strains registering as high as 35% THC (*8*), and no potency limits exist for the concentrates and ingestible products sold in most states where medical *Cannabis* is legal at the state level.

The scarce research the U.S. government has approved thus offers little insight into the effects actually experienced by patients and recreational users. As long as clinical research on *Cannabis* is controlled by regulators expressly opposed to any increase in its consumption, health care cost reductions may be missed, and intoxication and long-term effects will remain unknown. Most important, many severely ill patients may suffer unnecessarily because no one knows the true risks and benefits of consuming *Cannabis sativa*.

Sarah See Stith*[1] *and Jacob Miguel Vigil*[2]*

[1]Department of Economics, University of New Mexico, Albuquerque, NM 87131, USA. [2]Department of Psychology, University of New Mexico, Albuquerque, NM 87131, USA.

*Corresponding author. Email: vigilJ@unm.edu



***Cannabis sativa*.**

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10.1126/science.aaf7450

No surprise that comb jellies poop

AS ONE OF the organizers of the recent meeting on comb jellies (ctenophores), I feel obliged to comment on the News In Depth story "Comb jelly 'anus' guts ideas on origin of through-gut" (A. Maxmen, 25 March, p. 1378), published online on 23 March with the title, "Why watching comb jellies poop has stunned evolutionary biologists." I was stunned that videos showing defecation of waste through the anal pores of ctenophores astonished anyone. Those who have looked closely at comb jellies have seen and reported this process for well over a century.

In 1850, Louis Agassiz found that waste products were expelled from comb jellies through sphincter-like anal pores, which open and close during bouts of defecation (*1*). Thirty years later, the German zoologist Carl Chun used injected dyes and tracking of waste particles to expand on Agassiz's results in great detail (*2*). Since then, scientists have amply confirmed Agassiz's and Chun's findings and studied how the process of defecation works (*3*). Nearly every invertebrate textbook in the 20th century shows the anal pores of ctenophores. This literature was omitted or grossly misrepresented in the News story to erroneously claim a novel discovery of a through-gut in comb jellies.

It is now recognized that ctenophores expel waste from both ends. They eject bulky indigestible food fragments, which do not enter the stomach or food canal system, through the mouth. Meanwhile, unused or small waste particles in the food canals are periodically shunted into the stomach and anal canals, where they are expelled through the anal pores (*3*). In contrast to the implication of the News story, the two exit methods of waste products are not contradictory or mutually exclusive. It should not surprise anyone that comb jellies poop and have a through-gut.

Sidney L. Tamm

Eugene Bell Center for Regenerative Biology and Tissue Engineering, Marine Biological Laboratory, Woods Hole, MA 02543, USA. Email: tamm@bu.edu

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10.1126/science.aaf8170

Digital identifiers for fungal species

SPECIES-LEVEL CLASSIFICATION OF life has been a cornerstone of biology for centuries. Most macro-organisms are described soon after discovery, but species of prokaryotes, micro-eukaryotes, and fungi often lag far behind in formal description because they are small, extremely diverse, and difficult to cultivate and often lack discriminatory morphological characteristics.

D. Hibbett ("The invisible dimension of

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