

THE OFFICIAL MAGAZINE OF THE OCEANOGRAPHY SOCIETY

Oceanography

CITATION

Drazen, J.C. 2011. Review of *Sex, Drugs, and Sea Slime: The Oceans' Oddest Creatures and Why They Matter*, by E. Prager. *Oceanography* 24(4):144–145, <http://dx.doi.org/10.5670/oceanog.2011.109>.

DOI

<http://dx.doi.org/10.5670/oceanog.2011.109>

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informal, and the authors have worked hard to bring out the meaning of the data they've assembled, frequently using boxed and inline case studies from around the world to illustrate the major points. They take the "global" in the title seriously—the examples are nicely balanced around the world. Beyond that, Milliman and Farnsworth do a nice job of conveying, by example, their passion for data—the vagaries of collecting and quality checking data, how to coax insight from them, and the stories they tell about how Earth's surface works and how it is changing. In an era when data collection increasingly refers to various forms of remote sensing, it is worth reflecting on the fact that a lot of the data in this book are collected, or at least

cross-checked, by hand. River discharge remains one of the semi-artisanal corners of the Earth sciences.

Like all high-quality printed books these days, this one is not cheap. By current standards, the price is reasonable for what it provides: an abundance of useful, quality-controlled data; thoughtful analysis and synthesis; and nicely produced figures, mostly in color. Much of the data is available online in various places, but even a quick read of the introductory discussion of sources and quality control makes clear the value the authors have added by putting the data together as they have. In this regard, a nice bonus is that the whole data set can be accessed in tabulated form electronically via the Cambridge University

Press website. Anyone interested in continental- to global-scale particle and dissolved fluxes from the continents to the world ocean will benefit from having this material close at hand—if not on a nearby shelf, then at least in the library. The book also provides the raw material for any number of useful teaching exercises in Earth system science, where land-ocean mass fluxes are critical.

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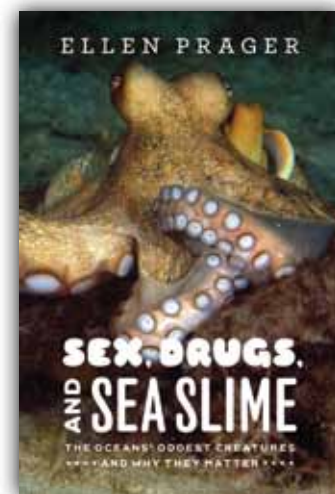
Sex, Drugs, and Sea Slime: The Oceans' Oddest Creatures and Why They Matter

By Ellen Prager, University of Chicago Press, 2011, 200 pages, ISBN 978-0-226-67872-6, Softcover and E-book, \$12 US

REVIEWED BY JEFFREY C. DRAZEN

Ellen Prager's book presents an entertaining account of the lives of many marine organisms. Its stories are understandable, fun to read, and focus on describing the curious attributes and mysterious lives ocean creatures lead. As the title indicates, the stories often concern reproduction, drug development, or the use of slime, but these threads in no way constrained the storytelling. Even though the preface includes the disclaimer that the book is not a comprehensive text, the coverage is

impressive. It begins, quite logically, with a chapter on plankton, aptly named "The Invisible Crowd." Ten chapters follow, including introductions to life on a coral reef, the various predation strategies of marine organisms, and, in a chapter entitled "X-Games," some of the amazing ecological and physiological adaptations that marine animals have evolved for high performance and survival in the ocean. I was impressed with the diversity of life covered. Prager does not focus solely on glamorous marine mammals and fishes, although her stories about these animals are very interesting. There is an entire chapter on snails, a story about the amazing growth potential of kelp, a description of deep-sea bone-eating polychaete worms, and discussion



about microbes at hydrothermal vents, just to name a few of the less-conventional organisms covered.

The book is written for the layperson who has an interest in ocean life. Prager's storytelling is funny and filled with interesting facts that are sure to instill amazement and stimulate curiosity. There are tales of lobsters shooting streams of pee

at their mates, vampire squids emitting glowing showers of particles, small mantis shrimps flinging their fists with the power of a .22 caliber bullet, and hagfishes oozing bucketfuls of slime. Throughout these stories, references to scientists and the scientific process set a tone of ongoing discovery and development of knowledge. Hopefully, this approach will help the layperson appreciate the nature and value of science. Color plates accompany each chapter's stories. The images chosen are beautiful, but inclusion of more photographs of the bizarre animals described, those that the lay reader might not have seen in a coffee table book about marine life, would have enriched the reading experience.

Prager's book should also appeal to scientists. Oceanographers, and certainly marine biologists, probably will know some of the stories but certainly not all. In any case, each chapter includes a section on "why they (the creatures) matter" that even the well-versed marine biologist will find useful. These sections do a wonderful job of placing marine science into the context of everyday life and relating it to our health, food supply, and the economy. For instance, the importance of plankton in the carbon budget and as the foundation of the food web our fisheries tap into is simply and clearly explained. I learned that the painkiller Ziconotide and seven others under development are derived from the venom in the cone snail's harpoon. Deep-sea male anglerfish are parasites that attach to females, degenerate, and fuse their bodies and circulatory systems with those of their mates. This interaction may yield important discoveries about the vertebrate immune system, with implications for

organ transplants and more. Surely, this book will help the lay reader realize some of the many reasons why marine science is so important. Scientists can take lessons from these sections on how to communicate their work and its relevance to the public.

The book wraps up with three important chapters about the status and future of the ocean. The first briefly outlines some of the major perils, such as overfishing, pollution, and global climate change. All too often the media focus on dire predictions of doom and gloom. Refreshingly, the next chapter describes what is being done to avert or remedy the damage done. The final empowering

chapter ends the book with suggestions on what each of us can do to improve the health of the ocean.

Prager does a marvelous job of describing the wonder and mystery of marine creatures and argues convincingly that their health is inextricably linked to our own. I would recommend the book to anyone interested in marine life and to all scientists as a model for communication to the public.

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