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CITATION

Kappel, E.S. 2015. Review of *Plankton: Wonders of the Drifting World*, by C. Sardet. *Oceanography* 28(2):265, http://dx.doi.org/10.5670/oceanog.2015.53.

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is concentrated in both marine organisms and land plants. The authors also provide important insights into the symbiotic associations critical for life in the oligotrophic oceans, the physiological characteristics of seagrasses and how they evolved to be different from land plants once they migrated from the terrestrial environment back into the ocean 90 million years ago, the growth of epiphytes on algae, the rugged life that occurs in the intertidal zone, and the calcification of many of the algae and how that will be impacted by elevated atmospheric CO_2. A very valuable chapter describes many of the basic photosynthetic parameters that researchers measure and the various instruments and technologies they use, including Pulse Amplitude Modulated (PAM) Fluorometry, Fast Repetition Rate (FRR) Fluorometry, and $^{14}CO_2$ isotope labeling.

Overall, the book provides a concise and very readable excursion into the habitat of marine photosynthetic organisms, guided by the extensive research, teaching experience, and thoughtfulness of the three authors. It conveys the scope of many of the issues concerning photosynthesis, the degrading health of the marine environment, and our impact on that health ("We mess with the oceans at our own peril"), and provides practical insights into the ways in which photosynthesis in the ocean is measured (and the advantages and limitations associated with the different procedures). Extensive images of marine organisms and graphs and figures showing real data help clarify the discussions for both students and teachers, while the text also provides some lighter moments and highlights areas that would immediately benefit from additional work. This attempt to give direction to young scientists is evident in various sections of the text and enunciated when the authors say, in a somewhat wry statement, "Since we, the authors of this book are aging out of science (but still remain good hearted) we will try to point out where progress can be made by others, and possibly how." When speaking of desiccation and our lack of understanding of mechanisms by which intertidal macroalgae survive desiccation and rapidly regain their ability to photosynthesize upon rehydration, they simply recommend "Young scientists: go for it!" I think that the same exclamation could be applied to the purchase of this book.

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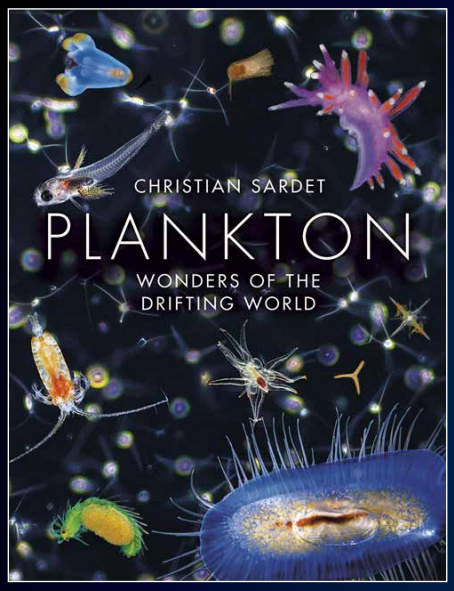

NEW AND NOTEWORTHY

Plankton: Wonders of the Drifting World by Christian Sardet, 2015, The University of Chicago Press, 224 pages, 550 color plates, ISBN 978-0-226-18871-3, $45US hardcover, $27US e-book. Written by Christian Sardet, cofounder and scientific coordinator of the Tara Oceans Expedition, *Plankton: Wonders of the Drifting World* assembles hundreds of stunning color photographs and concise descriptions of the ocean's fascinating and important floating organisms. One of the most wondrous is the dinoflagellate *Ceratium ranipes*. At sunrise, this plankton grows fingers filled with chloroplasts to optimize its surface area for photosynthesis, which retract at nightfall. An attention-grabbing series of seven photos shows two *Liriope tetraphylla* capture and ingest a fish hatchling, expelling the residue once the jellyfish had sucked out all of the juices of the tiny fish. A page with three large photographs of pteropods clearly display the different orange, yellow, and green colors of the organisms' hepatic glands and digestive organs, which the text tells us reflect what these mollusks ate.

Beautiful and informative, and written for a broad audience, *Plankton: Wonders of the Drifting World* should be on everyone's gift list this year. While older readers may still prefer flipping through a hard copy of this large-format book, the e-book version may be more appealing to the mobile-nimble generation.

– Ellen S. Kappel, Editor