
Charles Darwin’s voyage on the Beagle from 1831 to 1836 was, in his view, “by far the most important event in my life,” which “determined my whole career.” Few scientists are as important to biology as Darwin, and few periods in his life were as formative, so it is hardly surprising that a significant segment of the Darwin industry is devoted to recounting, contextualizing, and analyzing these five years. Yet, despite the ample opportunities for storytelling and illustration afforded by the voyage, HMS Beagle, Aux Origines de Darwin (2016) is apparently the first graphic novel devoted to following Darwin and his scientific contributions would be sufficient to prompt him to write

Darwin: An Exceptional Voyage is its English translation.

The illustrator, Jérémie Royer, makes the most of his opportunities, using the ligne claire style familiar from the Tintin books of Hergé, with generally cartoonish characters against generally realistic backgrounds. Tall panels accommodate the layers of tropical rainforests; wide panels provide scope to seascapes and landscapes; a series of small panels reflects daring eyes and shifting attention in a tense social encounter. A number of the full-page panels are particularly memorable, such as Darwin standing wordless in the nautical Brazilian night amid a swarm of flies. Regrettably, the lettering throughout is not crisp, impeding the legibility of Fabien Grolleau’s text.

In his foreword, Grolleau warns that the book presents “a subjective, perhaps even romanticized[,] vision of Darwin’s voyage,” adding, in a note at the end of the book, “We made the choice to merge some characters, visits[,] and journeys in order to focus on others.” None of these editorial choices compromises the scientific and historical content, however. (A minor error worth mentioning: the description of the origin of species as the “mystery of mysteries” is misattributed to the Prussian naturalist Alexander von Humboldt. It was coined by the British astronomer John Herschel, who actually appears in the book when Darwin visits him in Cape Town in 1836.)

Darwin’s early scientific interests are on full display here, from geology to paleontology to biogeography, with a few anticipations of his mature work on evolution. Cleverly, the narrative occurs within the frame of the forty-nine-year-old Darwin relating stories from his voyage to his children in 1858. Once he is through, the book ends with his receiving the letter from Alfred Russel Wallace sketching the idea of evolution by natural selection, which would prompt him to write On the Origin of Species in the following year. It is easy to imagine that a reader not previously familiar with Darwin might have been more likely (although perhaps artistic license is to blame) Moreover, Darwin and FitzRoy, a notorious martinet, would not have addressed each other by their given names in front of the crew. But these are obviously minuscule flaws in what is overall a valuable resource for anyone looking for a lively and appealing introduction to Darwin and the voyage of the Beagle.


Norman Ellstrand’s informative book presents a detailed, and in places humorous, way of telling us how much of our food results from the sex acts of plants. As the title suggests, the author wants to educate while entertaining us by teaching us that
many of our foods are the result of plants having sex. Sounds intriguing. He is specifically referring to fruits, seeds, and nuts as products of plant sex. Using detailed botanical terms, he explains how foods such as the tomato, the banana, the avocado, squashes, and others are produced through a plant’s reproductive processes. As he presents information about plant sex, the author takes the opportunity to amaze and sometimes shock the reader with the often complex and sometimes bizarre strategies that plants use to reproduce.

For those who have not studied botany, the book explains enough about plant anatomy and physiology that the reader can follow the complexities of the widely varying reproductive processes that plants employ. In this respect, the book is a good primer for readers who are not botanists. Most of the botanical explanations are focused on plant reproductive structures; however, the author includes other plant systems when relevant to the main topics of the book. Be prepared to learn many new anatomical terms related to plants. You may find it somewhat challenging if this is your first dive into botany.

The book is full of “fun facts” that can be used in teaching botany. For example, we learn that most of the bananas commercially grown are of just one variety – a variety that is sterile. Meanwhile, there are hundreds of other varieties of bananas growing in the wild, but they are less desirable because they have large, hard seeds that would crack our teeth if we carelessly ate one. We also learn that avocado trees are both female and male – the trees produce both kinds of flowers. There are two kinds of avocado trees: “A trees” and “B trees.” When A trees are producing female flowers, in the morning, B trees are producing male flowers to pollinate the A trees. Likewise, B trees are pollinated when the A trees are producing male flowers. Only rarely does a tree self-pollinate.

Each chapter provides little-known but detailed information about a particular plant we eat and how it reproduces. The author goes beyond discussing only reproduction by including fascinating details about each plant group, including uses by humans and other organisms, history of discovery, and other facts of interest. The author’s extensive use of scientifically correct plant terminology makes this a technical read in some places. Yet, if you have the interest, it is worthwhile to take the time to learn the new terms and thereby make the book more comprehensible. As a reward, when a chapter has been read, one has a new and greater appreciation for each plant group. Overall, this book is a meaningful and enjoyable read for those interested in botany who do not have time to pursue a degree in the field.

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THE CHEMISTRY OF CLIMATE CHANGE


Carbon comes from the stars. It is made when a star violently explodes into a super nova. Carbon is the fourth-most-common element, behind hydrogen, helium, and oxygen. (Next comes neon!) Yet carbon is found to make up only five parts per thousand of all the elements in our universe. And on Earth, carbon makes up only about 200 parts per million. Even at this low level, carbon plays a central role in many of the countless chemical cycles that take place on our planet. The most important of these is the central role carbon plays in the biochemistry of life. An entire field of chemistry, named organic chemistry, is based on the interactions carbon has with the other elements, as long as hydrogen is included. But organic chemistry doesn’t include the vast number of inorganic reactions of carbon. This book explains in depth the origins, history, and roles that the element carbon plays on our planet and in our universe.

Virtually everyone reading this review will have studied carbon numerous times while moving through their chemistry and biology courses in high school and college. However, this book does a brilliant job of bringing together much of our learning and understanding of carbon and then takes us further by explaining the complex ways in which carbon affects everything about life and our planet. Reading a book dedicated to just one element provides an enjoyable and informative experience. The easy-to-read chapters present many familiar facts about carbon in a way that greatly increases one’s appreciation for the element. I found that after reading the book I have a more complete, in-depth understanding of how carbon enables life and of the many other roles it plays in the universe.

The book presents a thorough explanation of the many ways that carbon chemistry affects every aspect of Earth, including the atmosphere, the biosphere, and geology. Carbon’s interactions with other elements such as oxygen, nitrogen, phosphorus, and hydrogen are explored in this context. All of these interactions are what create the world that we are familiar with. But the natural cycles of carbon are being disrupted by human activity. The author is very concerned about carbon’s role in climate change, and a whole section of the book addresses this topic. As a species, we are tampering with the natural and ancient cycles of carbon, causing our planet to shift away from this life-supporting equilibrium to one that is not favorable to life as we currently know it.

I found the book to be wonderfully informative, carefully researched, and highly enjoyable to read. While its warnings about climate change are terrifying, humans need to be aware of carbon’s many roles and cycles so that our species can