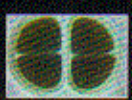
Charles Darwin described the evolutionary origin of flowering plants, which seem to have appeared abruptly during the Cretaceous Period, as an "abominable mystery." We know that the first seed plants appear in the fossil record about 350 million years ago, and the first flowering plants 220 million years after that, but the transitions between these major forms of plant life remain undocumented in the fossil record. The origins of photosynthesis and the early evolution of land plants are two more of Earth's most mysterious breakthroughs.

In *Plant Life: A Brief History*, botanist Frederick B. Essig traces how familiar features of modern plants emerged over hundreds of millions of years of evolution as various environmental challenges and opportunities were met. This chronological narrative begins with the origin of photosynthesis and the rise of cyanobacteria, explores the events that shaped the photosynthetic cells that were eventually able to survive on land and the development of terrestrial reproductive strategies, and concludes with the diverse growth forms of dicotyledonous plants and the highly distinctive monocots. As different groups of photosynthetic organisms are introduced, Essig examines the hypothetical scenarios by which each adapted to gain dominance in existing habitats or to move into new ones. Through this journey, readers will acquire a deeper understanding of the diverse assembly of photosynthetic organisms that humans depend upon for food, oxygen, medicine, building materials, and aesthetic pleasure.

Plant Life: A Brief History is a valiant step in the quest to unravel the "abominable mysteries" of plant evolution, and offers a compelling introduction to the exciting and complex world of evolutionary biology.



Frederick B. Essig is an Associate Professor Emeritus of Biology at the University of South Florida.

OXFORD
UNIVERSITY PRESS

www.oup.com

Cover design: Eve Siegel | Cover images: The images represent three stages in the evolution of plant life: a cyanobacterium, *Chroococcus turgidus* (photo courtesy Dr. Klaus Wonderath), a moss, *Octoblepharum albidum*, and a flowering plant, *Epidendrum radicans*.

ISBN 978-0-19-936264-6