

environment (Chapter 2) and molecular architecture and biological function (Chapter 3) adequately provide the necessary physico-chemical background to the student. The role of enzymes and the regulation of their activity forms the basis for cellular homeostasis and this is explained in detail in a chapter entitled bioenergetics and the regulation of enzymes (Chapter 4). The remaining chapters (Chapter 5-11) give an integrated picture of the structure and functions of the various parts of the cell. They are Genes and their regulation; Membrane structure and molecular transport; The oxidized organelles—mitochondria, Chloroplasts and peroxisomes; Excitable cells (dealing with neurons and nerve cells); Contractility and motility (dealing with muscle cells, cilia and flagella); Bulk transport and cellular recognition (dealing with plasma membrane, endoplasmic reticulum, Golgi body, lysosomes, etc.); and Cell division. The final chapter (Chapter 12) deals with cellular differentiation and problems of malignancy. The book ends with an Appendix which explains the various tools and methods available to the cell biologist namely the electron microscopes and microscopy, X-ray diffraction methods, cell fractionation procedures and isotope methodology. As with the simpler version, each chapter has its own summary, study guide and references laid out in the same manner.

The two books are remarkably produced, error-free, and with profuse illustration. Needless to say most of the illustrations are electron micrographs, produced by every technique of electron microscopy (transmission, scanning, freeze fracture shadowing etc.).

These two books should be prescribed texts for any course in cell biology. With the rapid advances being made in the field both in cell ultrastructure as visualized by high energy electron microscopy and in special areas as chromatin organization, ion pumps and membrane functions, immunology, etc, the book will be due for a revision in a few years (it is already being reviewed four years after its publication in 1978). However, these two text books will be invaluable in teaching elementary or advanced courses in cell biology, biochemistry and molecular biology and they are a 'must' for any natural sciences library.

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Nature's second kingdom—Explorations of vegetality in the 18th century by Frances Delaporte, translated by Arthur Goldhammer. The MIT Press, Cambridge, Massachusetts 02142, U.S.A., pp. 266, 1982, \$ 20 (Asia Price \$ 23).

This work is a concise account of important botanical researches of the 18th century and the author has placed his observations and analysis of researches of that period into four major chapters, viz., the central problems of plant sciences of that period and researches in the areas of Nutrition, Generation (or reproduction) and Movement.

The author has emphasized that the thinking of most plant scientists of that period was to approach the problems of plant sciences on the basis of the knowledge already acquired till that time in animal kingdom. Whereas these analogies helped in several aspects of researches in plant life, in other instances they did not. However, the lead already taken by researches in Animal Kingdom prompted the author of the work to call the Plant Kingdom as Nature's Second Kingdom, obviously giving the first place to the Animal Kingdom.

Studies in plant sciences had not been properly classified or generalised into distinctly definable disciplines like the plant physiology, anatomy, embryology, cytology, palynology, etc., and the author has done very splendid job of placing of significant advances during that period into easily understandable disciplines. The manner in which Dr. Delaporte has handled the merits and demerits of analogies in scientific research is admirable, as also judicious.

Accounts of history of science rarely make interesting reading. However, in the present work, the author has woven the successes and failures of researches of a period of about two centuries in a manner that the plant sciences under the three disciplines, *viz.*, nutrition, generation and movement seem to be evolving in an almost continuous manner indicating no discontinuity anywhere and smoothly blending into the researches of 19th century.

Some writers consider translating academically inferior to original writing. Translation of scientific works is more difficult and often even more satisfying than original writing. The present reviewer's own experience makes him believe that translating successfully the intricate thoughts of some stalwart in the subject into another language can, at times, surely give the feeling of rising up to the stature of the original author.

Dr. Goldhammer has done yeoman service by translating this excellent historical analysis, and the reader is sure to enjoy in this work the fluency of language and cohesion of thought as in an original work.

The book is recommended for the libraries of all biology departments in educational and research institutions.

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