

---

 Book reviews
 

---

**Bielka, H. (ed.): The Eukaryotic Ribosome.** Berlin Heidelberg New York: Springer 1982. 338 pp., 36 figs., 29 tabs. Hard bound DM 76,-/US \$ 31.70.

Although the overall architecture and functioning of eukaryotic ribosomes looks similar to that of their well-studied prokaryotic counterparts, many less details are known about the eukaryotic protein synthesizing machinery with its greater complexity. The book "The Eukaryotic Ribosome" reviews the state of knowledge up to early 1981. It chiefly deals with the cytoplasmic type of ribosomes in chapters with the following main topics: morphology and assembly of the ribosomal subunits; ribosomal RNAs and proteins with regard to their structure, biosynthesis, localization and mutual interactions; the protein synthesizing function of ribosomes and their interaction with membranes in secretory processes; non-ribosomal components involved in the mechanism and regulation of translation. Corresponding aspects of ribosomal systems in mitochondria and chloroplasts are just briefly mentioned.

A great help in consulting the literature is that the titles of the papers have been included in the reference lists.

In my opinion the editor has succeeded in his aim to give a clear and comprehensive representation of the vast amount of experimental results and conclusions. As such the book will be valuable as a guide to newcomers as well as an aid in jogging the memory of experts in the field. Less successful, however, is that for technical reasons the contents are divided in two parts. The major first part (250 pages, 2200 lit. ref.) comprises 10–15 years of literature up to autumn 1979. The second but not the least interesting part is headed by "Notes added in proof" (50 pages, 560 lit. ref.). This section contains additional information on the preceding chapters with literature up to the beginning of 1981. It illustrates the rapid evolution of this branch of molecular biology.

B. Kraal, Leiden

**Gottlieb, O. R.: Micromolecular Evolution, Systematics and Ecology. An Essay into a Novel Botanical Discipline.** Berlin Heidelberg New York: Springer 1982. 170+XI pp., 80 figs. Soft bound DM 79,-/\$ 33.00.

Within the last 2 decades chemical characters have been increasingly used as taxonomic markers and as tools for solving taxonomic and evolutionary problems. Many symposia have been organized in order to study and discuss the application of data from macro- and micromolecular chemistry to taxonomical purposes, and several books have been published on this topic since the sixties. This new one, although not very voluminous, offers an entirely new approach to the discipline known as chemosystematics. It does not add simply presence or absence of compounds of the secondary metabolism as chemical characters to the arsenal of the taxonomic (mainly morphological) data in order to get better classifications or well-defined circumscriptions of taxa, but it puts forward a methodological framework by which eco-evolutionary interpretations can be achieved independently from the area of natural products chemistry. This is done by analysing the biosynthetic pathways of the secondary metabolites, establishing evolutionary advancement parameters (based e.g. on oxidation values, oxygenation patterns), expressed in formulas, culminating in some basic principles of micromolecular systematics. By the synthesis of these results and data from traditional taxonomy and eco-geography, extremely useful and convincing ideas could be obtained for the systematic-evolutionary pattern of different plant groups. The principles and methods mentioned above are exemplified in an essay-like manner for different compounds and groups, e.g. flavonoids in Embryobionta, polyacetylenes in Sympetalae, xanthones in Gentianaceae and Guttiferae, chemosystematics of Papilionoideae, etc. The examples have been selected mainly from the studies of the author and his students and reflect the basic principles in a masterful manner. The book clearly represents a major break-through and is one of the most important recent publications on chemosystematics. It is a little bit embarrassing, as K. Kubitzki states in his foreword, "that an outsider has achieved what systematists themselves have always claimed as forming the basis for systematics and taxonomy: to bring together in a systematic fashion the available data from different fields of study".

P. Hanelt, Gatersleben