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BOOK REVIEW

D. Cavallini, G. E. Gaull and V. Zappia (Editors): *Natural Sulfur Compounds. Novel Biochemical and Structural Aspects*, Plenum Press 1980. XVI + 552 p., \$49.50 in USA, \$59.40 elsewhere.

The number of low-molecular weight sulfur compounds in nature is just right to make them a subject of symposia; enough to gather a fair number of scientists and not so high as to make it doubtful what it all is about. Thus, the third international meeting on "Low Molecular Weight Sulfur Containing Natural Products" was held in Rome in 1979 with 114 participants. The 47 contributions have been published in one volume by Plenum Press.

The contributions have all been printed as delivered by the authors ("camera ready"). The publishing of papers by photographic reproduction of manuscripts is of course easy, fast, and cheap. On the other hand, the technical quality of the various contributions is uneven. The only editorial effort is a subject index and a list of abbreviations. No author index is present, not even an index for the contributors. So it is not possible to locate the paper of a given person without working through the 5 pages list of contents.

The volume gives a cross section of the current activities in the field, but the reader will have to make his own synthesis. The synthesis which may have been accomplished at the meeting is not reflected in the papers.

This is not surprising, also because the 47 contributions represent only a fraction of what is going on in the field, and because both review type contributions and contributions very close to original papers are present. It must also be borne in mind that even though the number of natural sulfur compounds is small, the number of sulfur-containing functional groups is relatively high. The various compounds are therefore not all obviously related chemically or biochemically.

Scientists do not always consider symposium contributions as final publications—and this attitude is often justified because symposium contributions can be very difficult to locate. Most of the material in the present volume can also be found elsewhere in the scientific literature. Some of the contributions are also available in regular scientific journals. And in a paper on homocysteine biosynthesis in plants, the authors inform us: "This summary is based on a more extensive treatment of this subject in a review on sulfur amino acids in plants (in press)". The present book makes a collection of much widely scattered sulfur literature, but the justification for publishing it can be questioned, and the book is not very coherent.

On the other hand, the individual contributions generally are of high quality. It is impossible to describe them all or even to indicate all the different subject areas. The emphasis is mainly on biochemical or even physiological problems, and only in a few cases on organic chemistry. Fifteen papers have taurine in animal systems as their subject. The mechanisms of biological methylations and the role of S-adenosylmethionine in animal systems (for example "Involvement of S-adenosylmethionine in brain phos-

pholipid metabolism” and “Effect of S-adenosyl-L-methionine and S-adenosyl-L-homocysteine derivatives on protein methylation”) are considered in 8 papers. Two papers consider sulfur-containing amino acid analogues. C—S lyases for degradation of cysteine and related amino acids are considered in a comprehensive review. Three contributions on sulfur-containing alkaloids, 1,2-dithiolanes from mangrove plants and sulfur compounds in mustelids (skunks with relatives) present the sulfur-containing secondary natural products. Sulfur-containing vitamins and related compounds (biotin, lipoic acid, and pantetheine among others) are the subject of 6 contributions, including for example a paper on “Stimulation of fatty acid metabolism by panth(e)ine”. A couple of papers on cyanoepithioalkanes and cephalosporins are mainly concerned with organic synthesis. Three contributions are centered on mercaptopyruvate and rhodanese. Among the remaining contributions can be mentioned papers on the role of cysteine and glutathione in animal pigmentation, on thiocystine, and on lanthionine. The final paper on “Ambiguities in the enzymology of sulfur-containing compounds” by Cavallini (one of the symposium organizers) and coworkers considers important questions on enzyme specificity and concludes: “Many sulfur compounds arise in fact by the action of enzymes used also for reactions not involving sulfur. Since it is frequent that the enzymatic product of a compound containing sulfur is more labile than the product of the original substrate, the product may undergo further non enzymatic changes to other compounds. This fact helps explain why a limited number of specific enzymes are able to produce such large number of sulfur compounds as those found in living organisms”. This may also explain why it is difficult to arrange natural sulfur compounds in a rational and simple framework.

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