

Oxalic acid in biology and medicine

by A. Hodgkinson

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xii + 326 pages. £15.80, \$30.25

Dr Hodgkinson's book falls into three distinct sections. The first 103 pages deal with the chemistry of oxalic acid and its derivatives; the following 89 pages describe the biochemistry of oxalic acid and the final 61 pages discuss the importance of oxalic acid in animal nutrition and pathology. Thus in mentioning only biology and medicine, the title is something of a misnomer. However, the long chemical section includes a fascinating historical introduction (I had not realized that oxalic acid played such a prominent part in the early development of chemical theory) and a full account of the analytical procedures available for assaying oxalic acid and its salts in a variety of natural sources, without which other parts of the book would be rendered less valuable.

The author's intention is clearly to bring together the many wide-spread aspects of past and present research on oxalic acid and he succeeds in doing so while giving an interesting and readable account of the subject. The bibliography demonstrates the enormous range of literature that the author used as his source material. The quoted references, numbering more than 1100 are given their full titles, which greatly increases their usefulness. The index is adequate though not particularly detailed, but there is no author index, which would have been especially helpful in a book whose main use will probably be as a reference source. There is a good number of valuable tables of data, which the author has compiled from many sources, thereby doing a great service to his readers.

The major flaw in the work, in my opinion, concerns the sections on metabolism. Metabolism is subdivided into three separate chapters: chapter 4 on Lower Plants; chapter 5 on Higher Plants and chapter 6 on Higher Animals and Man. Unfortunately these chapters read as if they had been written in isolation, and although there are some cross-references in the text, those who read from cover-to-cover as I did will

be aware of duplication and overlap in some areas, which spoils the impact of the writing. In chapter 4 the author takes an historical approach to the problem of oxalate synthesis in lower plants and it is not until 12 pages have gone by that we are introduced to the glyoxylate cycle. It would seem preferable to introduce the glyoxylate cycle at the beginning of the chapter and discuss the earlier work, which is historically interesting, in the light of this metabolic pathway. When oxalate synthesis by higher plants is considered in the next chapter, the glyoxylate cycle is introduced as if it had not been mentioned before! I believe that, had chapters 4 and 5 been amalgamated under one chapter heading, a more logical presentation would have resulted. There are also other, smaller, areas of repetition elsewhere in the book.

The chemical structures are very clearly drawn and the book is well illustrated with photographs and electron micrographs. Some diagrams are disappointing, having been reproduced from dated textbooks. In the metabolic chapters the use of the names of the salt forms of organic acids (e.g., acetate) for reference to diagrams showing the free acid is widespread. Since McGilvery in his book 'Biochemistry — a functional approach' (1970), showed the way in the use of accurate terminology and structures of metabolically important molecules, it seems a pity that his excellent example is not being followed in more modern books on metabolism.

Despite my reservations, which concern mainly the literary rather than the scientific aspects of the work, the book's primary strengths of coverage and readability will be attractive to anyone interested in the subject. Those who dip into the book will not fail to be rewarded and for them the book's literary faults will not be obvious. Recommended!

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