

or call it a nice experiment and bury C-DOT in the name of liberalization?

It is gratifying to read about the heroic efforts on the part of some individuals to prove 'India can do it provided...'. The C-DOT episode touched the conscience of the country in that the IITs and professional societies were provoked to decry what was being done to C-DOT, which stood as a symbol of India trying for a medal in the technology 'olympics'. India must come to grips with the issue of indigenous technology vs MNCs.

The book in some ways reflects the C-DOT culture of treating people as the most important resource, namely the book reads like a vote of thanks, full of names which sometimes reduces the effect of the ideas being presented. There are quite a few pictures, but the reproduction quality is wanting reminding one of a school magazine.

C-DOT story brings out, to quote from the book: 'In technology development projects such as Telecom, competition, subversion or blocking in some devious ways by multinationals is very common. Hence, unless there is a political commitment to support, the chances of success in such technology development are very slim'. Can one ask for a better commitment than at the highest level, but perhaps that was C-DOT's problem. It became too much of Sam Pitroda and the PM affair. Thus reviewer would hasten to add that in landmark projects individuals do make a difference and C-DOT was lucky in that it was every one that worked for C-DOT. C-DOT was lucky in staff but not in friends. Now that Meemamsi has got it off his chest, the reviewer hopes he will write a handbook on how to grow and nurture C-DOT-like organizations and help the new generation of dreamers.

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Textbook of Modern Biochemistry (volume I). Mukhtar Ahmed. Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi. 1995. 296 pp. price not indicated.

The first impression on seeing this book with an attractive cover and printing is a favourable one. It is good to see textbooks produced in developing countries to suit their requirements and to be possessed by their students. What with the high cost of imported books and their multiplicity, it is increasingly becoming difficult to acquire all these in the libraries of universities teaching the courses. Students need to consult an affordable and dependable book for information occasionally, e.g. a formula or a reaction or a value. Any effort towards achieving this needs encouragement.

First for some good features in the book. In each chapter explanation is given for the terminology to help understand how words used were derived e.g. matrix - Latin for womb. Artificial sweeteners are listed. Methodology used in protein sequencing is described. Formulae of a large number of compounds are provided. The chapter on vitamins and coenzymes is particularly informative e.g. vitamin K action in gamma-carboxylation of glutamate. The acidic products derived from the amino acids are shown schematically. The diseases associated with metabolism are dealt with in detail. The layout and quality of print as well as reproduction of figures are reasonably good and makes it easy to read.

The book however needs a lot of editing, proof-reading and verification of facts. In many places the expression is muddled and the actual meaning is lost. The outstanding example of this appears right in the beginning itself. Describing the background title (meaning the cartoon on the cover page) it is stated: The final common metabolic pathway 'the citric acid cycle' for the oxidation of foodstuffs during which energy is produced in mitochondria. Only careful examination will reveal the meaning of the squares, rectangles and circles: acetyl CoA, citric acid cycle, respiratory chain, ATP. Why call it 'final common', or bring in 'foodstuffs' or introduce 'mitochondria' at this stage? The author claimed in preface that he tried 'to intensify the basic ideas... with the help of clinical examples'. It would then have been a more useful work but such

examples are few. A number of printer's errors could easily have been avoided by careful proof-reading. Some factual errors in figures and in the text also crept in. Indeed some figures actually are confusing instead of clarifying. Why some titles of chapters were chosen cannot be deciphered e.g. chapter 12 'The Krebs Cycle (1937)'. Why 1937 in parenthesis? Why allow the common mistake of 's in the name of Krebs?

In a book published in 1993, the references given are old - 1970s or 1980s books and reviews; two most recent are in 1989 (page 268). Yet the book is given the title 'Modern'. None of the new textbooks of biochemistry or reviews have been mentioned, and obviously not consulted.

Given below are some errors or confused statements noted during perusal of the pages.

1. Subtitle 'Impact of biochemistry of medicine' should it not be 'On medicine'? Under section A, the word 'explains' spelled wrong; Leibig's life time should be 1803-1873, not 1973; other errors in item 8-10: Warburgs - Warburg, brought fame - brought fame, Krebs - Krebs, Gyorgi - Gyorgyi, radioisotops - radioisotopes, foundations - foundations, manod - Monod.
2. Contents pages: cell membrane - cell membrane (p. 23). Ketogenesis - Ketogenesis; Krebs's - Krebs' (There are a number of such throughout).
3. p. 3 Vander - van Der.
4. p. 21 Mitochondrial DNA is 'required for synthesis of mitochondrial proteins' - better to qualify 'some mitochondrial proteins', chromosomal - chromosomal.
5. p. 47 'Mucopolysaccharidosis' - This section needs revision/rephrasing.
6. p. 57 Classification of amino acids in Table 4.6 - indispensable - is it not better to use the word 'essential'?
7. p. 58 'If the disulfide linkage (S-S) is not genetically programmed, the protein loses its biological activity' - gives totally wrong perception.
8. p. 72 The concept of absorption was not introduced in dealing with tlc.
9. p. 101 'Enzymes are specialized proteins which are synthesized in the living cells and catalyze biochemical reactions in various organs. They are also capable to catalyse the same reaction even out of the cells in the laboratory' - This is a typical example of improper expressions that mislead the reader. There are more such items in 10 listed 'fundamental facts

about enzymes' that followed.

10. p. 105 Fig. 7.2 and 7.4 on enzyme action and function of enzymes are examples of poor illustrations.

11. p. 108 Fig. 7.6 top section on 'Mechanism of action of NAD' the presentation is wrong—only one proton (H^+) and two electrons participate in the reduction and not $+2H$ as shown and the reduced form will have $2H$ on the carbon and not one as shown (fourth valency on the carbon?). This is correctly given on p. 202.

12. p. 124 Fig. 7.42, the line should start from the origin (no substrate no rate!).

13. p. 135 Title 'Biologic oxidation reduction'—it is common to use the word biological.

14. p. 247 'Glycolysis in erythrocytes will generate ATP that is not used by the erythrocytes'—the purpose of this statement is not clear especially because the formation of 2,3-DPG was being discussed later.

15. p. 259 line 5 'NADPH or NAD^{+} '?

16. p. 265 Regulation through feedback inhibition 'When HMG-CoA is inhibited, the remaining steps in the pathway are stopped'—stopped?. This is a most confusing statement.

17. p. 290 'hydroxylation of phenylalanine in para (3) position'; also in Fig. 15.27 '3-hydroxyphenyl-pyruvic acid'—These should be shown as '4'.

It is disappointing to see the contents of the book after being titled 'Modern'. Some of the recent textbooks produced in the developed countries include developments occurring in the last few years; some examples: peptidoglycan, glycoproteins, cell-wall structures, cell adhesion, plasma membrane, nuclear envelope, cytoskeleton, cell membrane junctions; protein structure including folds, turn, barrel, saddle, loop and sandwich types; stating that all enzymes are proteins with the exception of catalytic RNA; concepts on regulatory enzymes; prenylation and methylation

of proteins.

I am always reminded that a job can never be completed if we wait for perfection. But that cannot be the reason why a dependable book cannot be aimed for. It is pleasure to read the books produced by the well-known publishers, with concise and informative text and excellent illustrations. They have a large market and therefore can bear the high production costs. While having books at low cost in developing countries is desirable, it is counter-productive if they spread wrong perceptions. I am unable to decide between having a poor one and none at all. I do hope the critical comments will elicit a reaction of challenge for improvement and production of good-quality textbooks by authors and publishers. My advice to the readers of this book is to use it after incorporating the many corrections, and to the publishers not to allow printing of a book without rigorous proof-reading and editorial improvement, essential in scientific publications.

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Ghani—The Traditional Oil Mill of India. K. T. Achaya. Olearius Editions, P.O. Box 250, Kemblesville, Pennsylvania 19347, USA. 1992. Price: USA \$ 30. 128 pp.

Ghani (Chekku, Kolhu) is an ingenious bullock-drawn device of India for pressing out oil from oilseeds based on a mortar and pestle principle. Though at the turn of the century, some 500,000 ghanis scattered all over the country were processing about a dozen oil-bearing materials, there

has been a steady fall in the number of ghanis and today, they probably amount to less than 150,000 and the proportion of oils processed in ghanis amounts to less than 4% in this country.

K. T. Achaya's painstaking effort to compile all aspects of ghani operations including its history and terminology, variations in design, principle and practices of operations, recent modifications and data on processing of specific oilseeds such as sesame, rape-mustard, copra, linseed, castor, niger, sunflower, neem, groundnut, mahua and karanja, with data on composition of oil as well as oil cake is of great archival and documentary importance. Authoritative information on the practices of ghani, different stages of addition of water for effecting extraction and releasing of oil and hydrating and precipitating the phospho-lipid to obtain clear oil are given in a very simple style and clear narrative. Apart from technical aspects, the author has also given a historical and epistemological review of more modern developments in ghani as well as shrewd insights into the development of the oil trade in India. The book also contains some 64 drawings and photographs of different ghani designs in various parts of the country and has excellent glossary of terms used, references and convenient index.

'Ghani' is not only a masterly survey of the technical aspects of oilseed extraction but also deals with them *vis-à-vis* the socioeconomic trends over a span of more than 2000 years. I recommend this volume not only to practitioners in oil and oil trade but also to those interested in the cultural and societal aspects of edible oil usage in the country.

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