Book Reviews

Bulmer, M.G.: The Mathematical Theory of Quantitative Genetics. Oxford: Clarendon Press 1980. 254 pp., 9 figs., 50 tabs. Hard bound £ 27.00

Falconer's well known text book of quatitative genetics has been very successful for student teaching but we have been needing for some time an adequate textbook of quantitative genetic theory at a more advanced level. Bulmer's new book is to be welcomed as bringing together much of the recent mathematical developments in this field. It is concerned primarily with theory though with frequent references to experimental results. I have found very little to fault in it except that I would have liked more treatment of the results of the Birmingham school – in particular an effort to compare that approach with that associated with the names of Wright and Lush. And what can I say of an index which does not contain the entry 'heritability'?

A. Robertson, Edinburgh

Stryer, L.: Biochemistry. 2 Ed. San Francisco: W.H. Freeman and Company 1981. 949 pp., 983 figs. Soft bound £ 9.95

Textbooks of biochemistry have evolved almost as rapidly as biochemistry itself. Until ten years ago, they looked more like handbooks in which huge amounts of data were compiled. Illustrations were in black and white only and most of them were charts of metabolic pathways. The two editions of Lehninger's 'Biochemistry' (1970 and 1975) were a welcome improvement with their illustrations in two colors and the more integrated way in which various topics were dealt with. Readers of Lubert Stryer's 'Biochemistry' (first edition 1975, second 1981) will easily recognize the frame work and style introduced by Lehninger. They will also notice that Stryer made a further step in modernizing biochemical education. More details were omitted and more general insight is given to the student. For instance, in the chapter on degradation of amino acids Stryer no longer presents 20 separate pathways with the names of all enzymes and coenzymes involved. Instead, he confines himself to a few basic principles. All he says on the degradation of cysteine is this one sentence 'Cysteine can be converted into pyruvate by several pathways with its sulfur atom emerging in H_2S, SO_3^{2-} or SCN^-' (p. 416). One glance at that same page shows that four amino acids (ala, ser, cys and thr) have pyruvate as their entry point in the central metabolism. I suppose that students can at least memorize this while they probably would forget every bit of the detailed information given by other textbooks.

With much imagination the author uses illustrations (in many colors) to clarify experiments, structures, working mechanisms etc. For instance, a figure presenting the basic structural design of a collagen fiber is printed next to a passage from the Fugue in D Major by J.S. Bach to emphasize the quarter-staggered array in both cases.

Throughout the book the author stresses 'the increasing interaction between contemporary biochemistry with medicine' as promised in the Introduction. Thus, much attention is paid to such recent developments as recombinant DNA, the splicing of genes, immunoglobulins and the cytoskeleton. Even Z-DNA is not forgotten. Moreover, there is an excellent chapter on viruses. Necessarily, other topics were ignored. This may sometimes lead to unintended oversimplifications. For instance, nitrogen fixation is mentioned in the chapter on biosynthesis of amino acids. However, in the chapter on photosynthesis no cross reference is found and the existence of organisms lacking photosystem II is not clearly mentioned. One other example: The very instructive 24 page chapter on immunoglobulins could give the false impression that it covers the complete field of immunology unless when one has grasped the two sentences on cellular immune response.

Despite these minor shortcomings, Lubert Stryer has written the best and the most up to date Biochemistry textbook presently on the market. It is likely to make undergraduate students of biology and chemistry much more enthousiastic about biochemistry than any other previous textbook ever has.

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