ence for each of these techniques. Also, the description of the use of mixed nonaqueous solvents for the determination of relative acid–base strength is extremely short and reaches overly pessimistic conclusions as to the value of nonaqueous methods.

It is apparent that this book is intended for persons with an almost negligible training in chemistry. For example, detailed instructions are given for calculating the activity of hydrogen ion and of hydroxyl ion from pH, p. 168, and for calculating pK from the equilibrium constant K, p. 8. Numerous minor experimental details which are described could be new only to someone with extremely limited chemical laboratory experience. The equipment described is of British manufacture, and it is apparent that the American novice would be unable to benefit from much of the practical advice given concerning the relative merits of the equipment which is described.

The authors state erroneously on p. 71 that hydrochloric acid and sodium and potassium hydroxide solutions lack buffering capacity. In a similar vein the reader is given to believe on p. 106 that buffering action in sulfuric acid solutions at pH 2 is caused only by the weak acid nature of bisulfate ion.

This book has many good features. The calculations are carried out in detail and are easily followed; the problem of treating the case of closely spaced dissociation constants is not slighted, and the fact that it is possible to obtain a mirage (false constant) if activity coefficients are neglected, as described on p. 41 and 42, is well worth noting. However, I believe that a novice using this laboratory manual would still need to supplement it by considerable outside reading.

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The Nature of Biochemistry. By ERNEST BALDWIN, B.A., Ph.D., Professor of Biochemistry, University College London, Sometime Fellow of St. John's College, Cambridge. Cambridge University Press, 32 East 57th Street, New York 22, N. Y. 1962. xiii + 111 pp. 14.5 × 22 cm. Price, cloth $2.75; paper, $1.45.

This little book, according to a statement in the preface by the author, is meant to be read, not studied. The author attempts to present the essentials of Biochemistry in outline form, chiefly for the benefit of those students who, knowing nothing of Biochemistry, are contemplating a serious study of the subject in a formal course in a university.

The book certainly would be found easily readable by anyone who had some knowledge of chemistry. The topics, which are concerned to a large extent with animal biochemistry, include the importance of a constant internal environment, the respiratory function of blood, the nature and behavior of proteins and enzymes, a glimpse at the metabolism of proteins, carbohydrates, and fats, a little about the generation of energy by the cell and finally a brief outline of recent work on nucleic acid function and protein synthesis.

In writing a book of this sort, it must be difficult to decide how much chemistry should be considered as already known by the reader and what basic chemistry should be included to furnish sufficient background to make the story comprehensible. It would seem that this problem has not been solved in an entirely satisfactory manner in this book since, for example, there is a short section explaining the concept of pH in a chapter which seems to assume prior knowledge of terms such as *normality*, *titration*, and *buffer*. One would be inclined to think that either all or none of these terms should be explained. Similarly, in another section the term *osazone* is apparently assumed as known to the reader, whereas the ring structures of the commoner sugars are taken up in some detail.

The book also contains some errors, such as the erroneous statement that a typical biuret test is given by substances containing two or more peptide linkages. Actually a tripeptide with two peptide linkages does not usually give a typical biuret test, a tetrapeptide with three peptide linkages being the smallest polypeptide in the cases of most of the amino acids that do give a typical biuret test. Another apparent error is the statement that the number of possible proteins would be roughly equal to the number of visible stars in the sky, assuming 500 amino acids in each protein with complete freedom of choice in regard to proportion and sequence arrangement of these amino acids. Actually there are only about 5 or 6 thousand stars visible to the unaided eye in the whole celestial sphere, whereas the number of theoretically possible proteins is superastronomical, probably far greater even than the total number of stars in our galaxy (including those not visible or photographable with the largest telescopes).

There are also some dubious statements. For instance, on page 39 it is stated that enzymes are well on the way towards being infinitesimal in concentration in cells. Actually, important enzymes may occur in concentrations of 0.01 to 0.1% or higher, which would not appear to the reviewer as approaching infinitesimal concentrations. On page 47 it is stated that the deaminated residues (of amino acids) have been put away on one side to await metabolism for energy production when the time comes. This statement certainly is not true without considerable qualification.

Occasionally there is obscurity of style, as in the statement on page 88 that "one molecule of ATP can be formed by a reaction in the direct chain," and on page 98 where there appears to be considerable confusion between RNA-type and DNA-type polynucleotides.

In some areas, more explanation would appear to the reviewer to be needed. For instance, on page 68 the compounds ATP and UTP are introduced in the discussion very casually and with much less explanation than they would seem to deserve.

In spite of the above criticisms Baldwin's book should be of interest and benefit not only to students but also to other persons who have some scientific background and wish to become acquainted with Biochemistry. It can be read easily in a few evenings and to the reviewer would appear to be well worth the modest price.

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