Apus or *Lepidurus* to plants as seen in this or any previous season.

A detailed illustrated report of the damage and results of experimental work on control will be published elsewhere.

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Asphyxiate and "Anoxiate"

I have had occasion to review the literature on anoxia (*Anoxia: its effect on the body.* Univ. Chicago Press, 1942). One chapter, albeit a short one, was entitled "Definition of Terms." In this chapter exception was taken to the unfortunate misuse of the terms asphyxia and anoxia, and an earnest effort was made to distinguish clearly between them. I contended strongly that during anoxia there is no accumulation of CO_2 in the alveolar air or, presumably, in the tissues of the body, because the hyperpnea produced by anoxia washes the CO_2 out of the lungs. In the conditions of asphyxia exactly the opposite obtains. Precision of explanation requires us not to use the same word for two distinctly different conditions. Accordingly I summarized my view as follows:

"The author believes that it is understood by many that in asphyxial conditions there is an accumulation of carbon dioxide in the lungs and in the tissues of the body. If this actually is the concept that many biologists have of asphyxia, it is not difficult to accept the distinction between anoxia and asphyxia previously mentioned; that is, anoxia designates a diminished supply of oxygen to the tissues, and asphyxia a condition of anoxia combined with an increase of carbon dioxide tension in the blood and tissues. If this distinction were generally accepted, it would do away with much misconception and would distinguish sharply between asphyxia and anoxia" (p. 6).

My distinguished friend and fellow physiologist, the late Yandell Henderson, did not entirely agree with me in the distinctions I made between anoxia and asphyxia. In his stimulating manner he took me mildly to task. One of his criticisms was that the term asphyxiated is firmly established in the literature and that there is no equivalent for this term when a condition of anoxia is actually meant. Granted that this be true, then let us create one: the equivalent would be "anoxiated."

It has seemed to me for some time that the term "anoxiate" (to "anoxiate" or "anoxiated") should have a definite place in our scientific language. It is, for example, quite incorrect to say that a man was asphyxiated because he ascended to such a great height that the oxygen tension was too low to sustain life. This man was not asphyxiated; he was "anoxiated."

I wish, then, to make an earnest plea that the term "anoxiate" be accepted by scientific writers (and perhaps later by laymen). In order for them to do so it is quite necessary, of course, for the editors of scientific journals not only to recognize this descriptive term but actually to encourage its proper use.

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Book Reviews

Principles of physics II: electricity and magnetism. **Francis Weston Sears. Cambridge, Mass.: Addison-Wesley Press, 1946. Pp. 434. (Illustrated.) $5.00.**

This book completes Sears' trilogy of texts for the two-year elementary course in physics at the Massachausetts Institute of Technology. Volume I, on Mechanics, Heat, and Sound, and Volume III, on Optics, were published last year. The present volume, like the others, is intermediate in difficulty and scope between the usual one-year elementary physics texts used at other schools and the specialized, advanced, undergraduate texts. At the beginning of this volume the proofs involve vector equations and integration; at the end, solution of simple differential equations.

A genius for clear explanation runs through the discussions, the derivations, and the beautiful diagrams in Sears' whole series. It falters only once in Volume II, in the half chapter on chemical emf's, which was not written by Sears himself but by a collaborating author. The treatment of the troublesome E and D, B and H, and their relation to atomic behavior and to surface and bulk effects, is the clearest the reviewer has yet seen in a text and should be used for reference by every physics teacher who has ever got lost among these vectors.

The book keeps roughly the traditional order of subject matter, proceeding from electrostatics and steady currents to magnetism, alternating currents, and electromagnetic waves and optical reflection and refraction. But the usual welter of units and viewpoints is brought here into a lucid, teachable orderliness. This improvement comes, first, from putting the fundamental particles at the focus of attention and deriving all from them—fields from electron interactions, poles from fields and currents, and so on; second, from holding to the rationalized mks system of units throughout; and third, from the fine approach to the electric and magnetic vectors noted above.

The reviewer was less pleased by the poorly organized wastebasket chapter on "Electronics" at the end of the book and by the tabloid introductory paragraphs centered around nuclear energy. The latter were evidently hastily inserted just before publication and are, of course, already out of date. They contain several mistakes, such as the invention of the mythical element "triterium."

There are many typographical errors in the book, and Volta's first name is consistently misspelled. The treatment of discoverers in both text and index is capricious and shows a poor sense of values. The various right- and left-hand mnemonic rules seem more confusing than helpful. The phrase "seat of emf" and the unnecessary neologism "microhm" (sic) are annoying, though terminology is usually treated carefully and sometimes with illuminating asides.

The paper used in the book does not do justice to the half tones, but the page format is pleasingly open and readable.

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Pure cultures of algae: their preparation and maintenance. **E. G. Pringsheim. Cambridge, Engl.: At the Univ. Press; New York: Macmillan, 1946. Pp. xii + 119. (Illustrated.) $1.75.**

Students of the algae will welcome the appearance of this valuable little work on the methods and techniques of preparing and maintaining pure cultures of algae. The author's experience over a period of many years, involving thousands of experiments, and his close familiarity with the literature make this book an authoritative account in this little-explored field.

The subject is introduced by an historical summary of the development of culture methods. This is followed by chapters dealing with the choice and use of materials, selection of various liquid and solid media, methods of isolating bacteria-free cells, suggestions for the maintenance and use of pure cultures, and the culture of species belonging to the several taxonomic groups.

The book is especially valuable because of the critical discussion of the advantages and shortcomings of different methods, procedures, and media employed in pure culture work. The use of soil-and-water cultures as a preliminary step in securing bacteria-free cultures is highly recommended. The influence of such factors as temperature, illumination, glassware, and character of the water used in media on the growth of algae is given adequate space.

On the whole, the book is stimulating and suggestive of numerous problems yet to be solved, many of which have an important bearing on the ecological relations in the world of microorganisms.

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A textbook of biochemistry. **Philip H. Mitchell. New York: McGraw-Hill, 1946. Pp. xv + 640. (Illustrated.) $5.00.**

In about 600 pages of text material the author has included a surprisingly large and well-balanced body of information. Aside from a chapter on photosynthesis and a brief treatment of plant hormones, the emphasis is almost exclusively on animal biochemistry, with a definite clinical slant. Accordingly, the book would be well suited for medical school courses in biochemistry, but less so for more general courses.

The presentation is, in the main, quite clear. It was felt, however, that for a book of this nature too many names of uncommon substances of minor importance (e.g. robinose, stachyose, brassicasterol, etc.) were included in the early parts of the text, thus making it more difficult for the beginning student to assimilate the "meat" of these sections.

For the most part, the more recent developments in the field up to two years ago have been adequately covered. The newer concepts of metabolism gained through the use of plasmapheresis, isotopes, tissue-slice studies, etc. are well presented. Such rapidly expanding subjects as biological oxidations, chemotherapy, vitamins, hormones, and dietetics have been discussed in a concise, up-to-date manner. No mention is made, however, of the important work of Beadle, Tatum, and others with X-ray-induced mutations of *Neurospora*. These studies have provided valuable information on the intermediary stages of metabolism, and the genetically different strains have proven exceptionally useful for microassays of many vitamins and amino acids.

Relatively few errors, typographical or otherwise, were noted. The author consistently misspells riboflavin, niacin, and biotin by adding a terminal "e" to each. Also, niacin is stated to be synonymous with nicotinic acid and/or its amide; actually, niacin should designate only the acid, whereas the amide is properly termed *niacinamide*. In one instance free (elemental) iodine is called *metallic* iodine.

The book contains many charts and tables and a lesser number of diagrams and photographs. Subject and author indexes are included. Very few references are cited in the text, but at the end of each chapter the author lists various monographs, review articles, and a few selected papers on topics discussed in that chapter.

All in all, this text can be recommended as a readable, up-to-date first course in biochemistry.

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The principles and practice of tropical medicine. **L. Everard Napier. New York: Macmillan, 1946. Pp. xvi + 917. (Illustrated.) $11.00.**

World War II has been a great stimulus to the study of diseases in the tropics as well as to the publication of books on tropical medicine. Some have been comprehensive works covering the entire field, by single authors or groups of authors; others have been brief compendiums for rapid reference. Dr. Napier's book comes between these extremes. In his own words, he wishes it considered a textbook for students, practitioners, and public health workers.

The author justifiably explains his omission of smallpox, typhoid fever, tuberculosis, and diseases of the eye, and his inclusion of tularemia and certain cosmopolitan helminthic infections. He has kept the description of