is due to buried meteoritic material. Not that meteorites large enough to produce this anomaly never fall upon the earth, but rather that giant meteorites are largely back-fired from their craters. Moulton[2] has calculated that a swiftly moving meteorite may produce a pressure of fifteen million atmospheres at the time of its impact. No one knows how earth rocks would be affected by fifteen million atmospheres of pressure, for this is far beyond our experiments and in fact beyond our comprehension. However, it seems quite certain that rocks of all kinds would be greatly compressed by this amount of pressure. If this be true a terrific explosive rebound must follow the impact, lifting strata far above their original level. This uplift of the deeper strata might well produce a gravitational anomaly. Rebounds of elastic solids is not a matter of speculation. It seems to be characteristic of all great impacts that are not able to break through the material that receives the impact.

Can any one suggest how structural bilateral symmetry with overtilted beds on one side of the structure can be produced by volcanic explosions that come solely from within the earth? It is this kind of symmetry that is found in Meteor Crater, Sierra Madera, Flynn Creek structure and a number of the cryptovolcanic structures. Oblique meteorite impacts offer a satisfactory explanation of this symmetry.

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VITAMIN C (ASCORBIC ACID) CONTENT OF THE BUFFALO-BERRY

THE buffalo-berry, *Lepargyrea argentea* (Nutt.) Greene, a native fruit of North Dakota, has been found to contain an abundance of vitamin C, as determined by the method of Bessey and King,[1] as adapted for the Evelyn photoelectric colorimeter by Bessey[2] and Morell.[3] The ripe fruit, on a fresh basis, apparently contains well over 150 mgs of vitamin C per 100 grams. One sample of fruit, picked on October 15, 1942, contained 184 mgs of vitamin C per 100 grams.

This fruit is usually consumed in the form of a jam or a jelly. Although destruction of vitamin C occurs, samples of buffalo-berry jam contained 80 to 90 mgs of vitamin C per 100 gms.

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SCIENTIFIC BOOKS

VITAMINS

Chemistry and Physiology of the Vitamins. By H. R. ROSENBERG. xix + 674 pages. New York: Interscience Publishers, Inc. 1942. $12.00.

THIS is an encyclopedic monograph treating practically all the substances commonly called vitamins; and, in general, each of them on the same comprehensive plan—nomenclature, chronology, occurrence, isolation, properties, specificity, synthesis, industrial methods of preparation, determination, "standards" (units of quantitative expression), metabolism and requirements in nutrition. Different aspects are, however, obviously treated with very different degrees of fullness; and, in the opinion of this reviewer, of critical acumen as well. In his preface the author introduces himself as having "been connected, at some time or other, with the development of many of the vitamins known to-day"; and this phrase well foreshadows the strength and weakness of the author's handling of the broad and many-sided subject he has undertaken. The book gives a relatively complete account of the "development" of each vitamin from a biochemical discovery into a commodity to be patented, if possible, and manufactured for commerce; while the treatment of the significance of the vitamins in nature, and in the scientific undertaking "to render more intelligible the world in which we live," is disappointingly sketchy; and the generalizations as to vitamin values of foods are unwarrantably dogmatic in form and, at least in this reviewer's opinion, excessively pessimistic in substance.

The volume contains the materials for a useful reference handbook on the industrial chemistry of the vitamins. It seems unfortunate that in so many of the chapters this useful material is intermingled with compilations of material from the physiological or nutritional literature of the vitamins which latter can hardly be said to be handled with a firm grasp nor with freedom from errors and inconsistencies, *e.g.*, on pages 34; 57 and 60 *vs.* 75; 100; 123; 180; 190; 198; 199; 338. Whether all these will be obvious to the reader will naturally depend largely upon the knowledge of vitamins which he already

[2] F. R. Moulton, "Astronomy," 1931, p. 305.

[3] In the absence of the junior author, C. C. Albritton, Jr., the senior author should be held responsible for this reply.

[1] O. A. Bessey and C. G. King, *Jour. Biol. Chem.*, 103: 687, 1933.

[2] O. A. Bessey, *Jour. Biol. Chem.*, 126: 773, 1938.

[3] S. A. Morell, *Indust. and Eng. Chem., Anal. Ed.*, 13: 793, 1941.

possesses. Any that are not obvious are, of course, the more unfortunate on that account.

Although they were published early in 1941, the "Recommended Allowances" of the National Research Council's Committee on Food and Nutrition (now Food and Nutrition Board) do not appear in Dr. Rosenberg's sections on "requirements." This omission not only impairs the value of these sections but illustrates further the unevenness of the book.

On the other hand, the sufficiently advanced and critical reader may find this book useful for its conveniently summarized chronologies, its many footnote references to original sources, its comprehensive compilations of the series of synthetic steps leading to industrial production of individual vitamins, and its extended listing of patents.

H. C. SHERMAN

ORGANIC CHEMICAL EXPERIMENTATION

Semimicro and Macro Organic Chemistry. By NICHOLAS D. CHERONIS. 388 pp., 63 illustrations, 12 tables, 40 pages of questions, 15 report forms. Thomas Y. Crowell Company. 1942. $2.75.

THIS laboratory manual, containing semimicro and macro methods of 70 organic preparations, constitutes the first systematic and practical application of semimicro methods of experimentation to general organic preparative methods. The author, beyond any doubt, demonstrated "that it is possible to attain all the objectives of laboratory practice in elementary organic chemistry, using the semimicro technic. In addition, this method offers the following advantages over the traditional method: (1) it permits better adaptation of the laboratory work to the varying needs of the students; (2) it teaches students greater care, cleanliness and manipulation; (3) it is more economical; and (4) it reduces substantially the seriousness of possible accidents since the quantities of reagents and size of equipment are only some 10 to 20 per cent. as great as with macro methods." The author also appears to have made the substantially correct observation that over-all application of the classical organic micro preparative methods of Behrens and Kley, Emich, and others, appear as yet not practical enough for general organic preparative laboratory practice and that for this purpose semimicro methods constitute the ideal solution, thus substantiating similar observations made by the reviewer in the teaching of qualitative organic analysis.

This laboratory manual, although still retaining one macro method for each procedure, must be heralded as a landmark in the field of organic chemical experimentation which may be expected to lead eventually to a complete replacement in the teaching of macro methods used heretofore in this field, thus paralleling the successes of semimicro methods in qualitative inorganic and of the micro methods in quantitative organic analysis.

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AMATEUR SCIENCE

The Amateur Scientist: Science as a Hobby. By W. STEPHEN THOMAS. Pp. 291. New York: W. W. Norton and Company, Inc. 1942. $3.00.

As long ago as 1890 the writer and another boy in second-year high school arranged with a devoted teacher, who didn't consider her day's work over at four P.M., to remain after school and assist them in some simple chemical experiments in which they had become interested. They had never studied "high school chemistry." A very few years later, one of these boys continued his chemical studies by taking evening courses in the Massachusetts Institute of Technology. Eventually he became chief metallurgist in one of the laboratories of the General Electric Company. Probably few of the staff of university-trained chemists and metallurgists who served under him realized that he owed his position chiefly to the encouragement of a boy's spontaneous amateur interest in chemistry.

Doubtless instances similar to the above could be multiplied many times. One can never forget that the electrical process of making aluminum was discovered by a young man twenty-two years old, Charles M. Hall, whose boyish scientific interests were encouraged. For the advancement of science it is a fundamental thing to stimulate and encourage an interest in any aspect of science wherever it manifests itself, and especially in young people.

Dr. Frederick P. Keppel, while president of the Carnegie Corporation of New York, instituted an inquiry into methods of promoting an interest in science among amateurs, and a committee on organization, with Dr. Edwin G. Conklin as chairman, made a survey of the Philadelphia region. One result of Dr. Keppel's work was that the American Philosophical Society, at Philadelphia, cooperating from the beginning, appointed a Committee on Education and Participation in Science, with Dr. Conklin as chairman. This committee organized an executive staff with W. Stephen Thomas as executive secretary, on a full-time basis, beginning on June 1, 1939. This committee began to issue a series of bulletins on "Activities in Science in the Philadelphia Area." The bulletin for February 1, 1942, contained the disappointing notice that the work of the Committee on Education and Participation in Science had to be discontinued because Mr. Thomas had entered the Army.

Fortunately, however, before he terminated his work with the Philosophical Society, Mr. Thomas had prepared for publication a book of 291 pages, "The