

Vanadium, Index to the Literature of. By G. JEWETT ROCKWELL. *Annals of the New York Academy of Sciences*, Vol. I., No. 5, 1877. 8vo. Pp. 32.

Zirconium, Index to the Literature of. By A. C. LANGMUIR and CHARLES BASKERVILLE. *Smithsonian Miscellaneous Collections*, No. 1173. City of Washington. 1899. 8vo. Pp. 29.

SCIENTIFIC BOOKS.

JAHRBUCH DER CHEMIE FOR 1900.

THE latest volume of this familiar work, edited by Richard Meyer, with the cooperation of other well-known chemists, contains an account of the progress of pure and applied chemistry for the year 1900. Here are represented some fifteen hundred investigators, of whom, as nearly as can be determined, about fifty-five per cent. are German, over eleven per cent. French, ten per cent. American, and nine per cent. English. From this it appears that America is next to France and Germany in the number of chemical investigators, and the great prestige of Germany stands out very strikingly.

The subject matter of the book is divided into fourteen sections. In a division so nearly complete geological and mineralogical chemistry should find a place. The sense of proportion is, on the whole, well kept. The amount of work done in the organic field still greatly preponderates all others, a fact which may be judged sufficient reason for devoting 104 pages to this section, as against 66 to inorganic, and 50 to physical chemistry, but it may perhaps be questioned whether the coal-tar and color industry deserves, in a work of this kind, a greater space than any other branch of the science.

The preface to the first volume of the *Jahrbuch* (1891) distinctly sets forth that the object of the book is to present a connected account of the work in each field, disclaiming any effort to be exhaustive. It is for the reader, not for the reference hunter. From this view-point, the work meets a well-recognized need. To judge how well the editors have succeeded in their task would require an amount

of labor little less than their own. A comparison of the *Jahrbuch* with the abstracts of the *Centralblatt* in one or two fields, shows that the work is pretty comprehensive—quite so in inorganic chemistry: In the physical section more has been omitted, though presumably not overlooked.

After some experience with the book, I venture to suggest that its use would be greatly facilitated if the names of the authors in the text were printed in a heavy-face type.

E. T. ALLEN.

Leitfaden für das zoologische Praktikum. Von Dr. WILLY KÜKENTHAL. Zweite, Umgearbeitete Auflage. Jena, Verlag von Gustav Fischer. 1902. Mit 169 Abbildungen im Text.

The first edition of this guide for the beginner in the study of zoology was reviewed in *SCIENCE* for November 17, 1899, Vol. X., No. 255.

This, the second edition, does not differ essentially from the first edition though it has been materially improved by abbreviating some of the descriptions of the systematic surveys, rearranging the matter in some of the chapters, making small but more or less important additions here and there and introducing two new chapters of eleven pages on the Cestoda and Nematoda. A number of the figures of the first edition have been discarded and some of the borrowed figures have been replaced by original drawings. The latter are not always equal to those replaced. There have also been added a few good new original figures.

The original 284 pages with 172 figures have become 304 pages with 169 figures. The typographical work is good, what one acquainted with Fischer's work would expect. The price of the book unbound is placed at 6 Marks.

HENRY F. NACHTRIEB.

UNIVERSITY OF MINNESOTA.

SCIENTIFIC JOURNALS AND ARTICLES.

The Popular Science Monthly for September begins with an article on 'Aerography' by Percival Lowell, which gives a résumé of the mapping of the surface of Mars and shows

how the irregular shadows visible with low power telescopes have led up to the present network of lines seen through glasses of high power. J. J. Stevenson discusses 'University Control,' pleading for a reorganization of the present system and for a separation of educational and business management. 'The World-view of a Scientist: Ernst Haeckel's Philosophy,' by Frank Thilly, concludes that so far as philosophy is concerned Haeckel is still in his first childhood. M. C. Marsh treats of 'Eels and the Eel Question,' showing the many misapprehensions that have been held concerning these fishes and their reproduction. It is a pity that he did not round out the interesting article by telling what is actually known regarding their history. Theo. Gill gives 'The Story of a Word—Mammal,' showing that the etymology commonly given is incorrect and that it was coined by Linnaeus to denote that class of animals marked by having mammae. In 'A Year of Weather and Trade in the United States' R. DeC. Ward shows how intimately the two are connected. Frederick Adams Wood continues the discussion of 'Mental and Moral Heredity in Royalty' and there is a reprint of Sir Isaac Newton's 'A New Theory of Light and Colours.' In 'The Progress of Science' is an extremely good article on 'Science in American Journals' which makes plain the need of intelligent supervision of scientific articles of a popular character.

DISCUSSION AND CORRESPONDENCE.

'EFFECTIVE FORCES.'

TO THE EDITOR OF SCIENCE: In a review of 'Some Recent Works on Mechanics,' in SCIENCE, October 11, 1901, reference is made to the use of the terms 'force of inertia' and 'effective forces' in two of the books under consideration, and the opinion is expressed that these terms 'are properly going, if not well nigh gone, out of fashion,' and that 'they seem doomed to be replaced by the more suggestive term "kinetic reaction," or "mass reaction."' It is to be feared that nothing is gained by argumentation upon questions of this kind, and I have no desire to revive a controversy which long ago occupied much space

in the pages of SCIENCE and elsewhere. But since the question has been raised in connection with my own use of the term 'effective forces,' I would be glad to record my reason for preferring this to the more modern and 'suggestive' terms favored by the reviewer. This reason is that it seems unwise to replace an established term by another unless the latter is a better description of the thing designated. And however imperfectly the term effective force describes the quantity to which it is applied, no term has been suggested which serves the purpose any better. 'Kinetic reaction' and 'mass reaction' are, indeed, suggestive, but it is for this very reason that they are objectionable, for they seem to suggest an erroneous conception of the third law of motion. In this respect they must, I think, be classed with the term 'force of inertia.'

May I add a word regarding the reviewer's remarks upon the theory of dimensions. He rightly emphasizes the value of this theory as a means of avoiding and of detecting errors in physical equations, but in citing a sentence from my book as an example of an erroneous interpretation of a constant which is immediately detected by the theory of dimensions he has, I think, been over hasty. The sentence quoted is strictly correct.

L. M. HOSKINS.

STANFORD UNIVERSITY, CAL.,
August 19, 1902.

REFERENCE BOOKS IN NOMENCLATURE.

TO THE EDITOR OF SCIENCE: In the issue of SCIENCE for August 29, 1902 (p. 354), under the heading 'Scientific Nomenclature,' Mr. R. H. Harper gives a list of thirty-two words used in current scientific papers which he was not able to find in Webster's International (1890), the Century Dictionary (1902) or the Universal or Encyclopedic (1897). Being loath to believe that some of the words listed had wholly escaped the lexicographer reference was made to a 1901 edition of the Standard and to the Supplement of Webster's International (1900), resulting in the finding of definitions for thirteen of the terms. Eleven of these definitions are given after the