Elemente der Vector-Analysis. Von A. H. BUCHERER. 2te Auflage, Leipzig, B. G. Teubner, 1905. viii + 103 pp.

SINCE the first edition of this book, two years ago, there have appeared several books on vector analysis and yet a second edition of this one is called for. This is an indication of the rapidly spreading use of vectorial methods in physics and a testimony to the completeness and compactness of Bucherer's little book. As the first edition was recently reviewed in the BULLETIN,* it will merely be necessary to point out the changes in the new edition. The Heaviside-Föppl notation has been abandoned for that of Lorentz and Abraham — an evident effect of the usage of the Encyklopädie. A few sections have been inserted here and there — one on division of vectors, another on the motion of an electron; but generally speaking the increase of twelve pages is due to minor alterations. As the author is very anxious to keep his book within small bounds he still resists the temptation to enter on the study of linear vector functions. So many authors do this same thing that the use of linear functions in the theory of elasticity and light, where they are a great convenience, is seriously hampered.

E. B. WILSON.

Annuaire du Bureau des Longitudes pour l'An 1906. Paris, Gauthier-Villars.

THERE have been no changes in the *Annuaire* this year to call for special remark. The notices are all devoted to eclipse literature, with special reference to the phenomenon which occurred last August. M. G. Bigourdan, however, goes into much detail on the question of the different kinds of observations which can be made during the few minutes duration of a total eclipse of the sun. To professional astronomers this summary will be found useful as containing in a handy form facts and ideas with which they are familiar, and to amateurs it will be of equal value as showing and explaining easily the many observations which it is possible for them to undertake and carry through with success. In a second article the same writer gives a brief account of the numerous expeditions which were made last summer to observe the eclipse. M. Janssen contributes an article on his own share of this work in Spain.

In reading through these articles in the *Annuaire* during the

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last ten years, the reviewer has been frequently struck with the lucidity and ease shown by the writers in explaining even the most technical parts of mathematical and physical problems. Is it impossible to do this in the English language? And if not, why are such summaries so rarely seen? Or, if published, why do they seem to be heavy and unattractive? Surely it cannot be the fault of the language when we have before our eyes such a master of scientific style as Huxley. Perhaps there is something to be learned from France amongst the methods which she uses in teaching her sons to write their mother tongue. ERNEST W. BROWN.

Astronomical and Historical Chronology. By W. L. JORDAN. London, Longmans, Green & Co. 8vo. 70 pp.

THE object of this little book will be sufficiently gathered from the author's statement on page 9: "My argument shows that through a misunderstanding on the part of comparatively modern historians they treated as 1 B. C. the year which, when the era was first established, was called 1 A. D. by those who used ordinal, and the year 0 by those who used cardinal numbers; and that the manner in which the centuries are considered to be divided is therefore erroneous." The question is discussed historically and much space is given to an examination of the authorities. Mr. Jordan comes to the conclusion that if the year 0 be inserted, January 1, 1900 is the beginning of the new century as decreed by the English Prayer Book and the German emperor; but that with the 'vulgar' chronology, which makes 1 B. C. immediately precede 1 A. D., the new century began a year later. The author's physical ideas seem somewhat vague: he alludes (page 33) "to the absence of any common measure between days and years as being due to the fact that the motions which they respectively measure are due to the action of two independent forces — the sun's and the earth's revolving force — etc." But perhaps this is unfair: he has written an essay on the action of astral gravitation in natural phenomena. ERNEST W. BROWN.

NOTES.

AT the meeting of the London mathematical society held on January 11 the following papers were read: By Mr. J. W. NICHOLSON "On the diffraction of sound by large cylinders"; by