im Zustand des Gleichgewichts." Gauss. Translated by R. H. Weber. Edited by H. Weber. (Pp. 73, price 1.20 marks.)

No. 138.—"Über die Bewegung der Körper durch den Stoss. Uber die Centrifugalkraft." C. Huygens. Edited by F. Hausdorff. (Pp. 79, price 1.40 marks.)

No. 20.—"Abhandlung über das Licht." C. Huygens. Second Edition. Revised by A. von Oettingen. This is a translation of the famous essay in which the wave theory of light was developed and the peculiar refraction of Iceland spar was investigated. (Pp. 115, price 2.00 marks.)

No. 134.—"Experimental-Untersuchungen über Electricität." Faraday. Edited by von Oettingen. Sixteenth and seventeenth series, in which the source of the E.M.F. of a voltaic cell is investigated. (Pp. 103, price 1.60 marks.)

No. 136.—Ditto. Eighteenth and nineteenth series, describing his investigations on the development of electricity by the friction of water and vapour in other bodies, and on the relations of magnetism and light. (Pp. 58, price 1.20 marks.)

No. 21.—"Über die Wanderungen der Ionen während der Elektrolyse." Hittorf. First Part. Edited by Ostwald. Second Edition. (Pp. 115, price 1.60 marks.)

No. 137.—"Abhandlungen zur Thermodynamik chemischer Vorgänge" (1869–1881). Horstmann. Edited by van 't Hoff. (Pp. 72, price 1.20 marks.)

No. 139.—"Thermodynamische Abhandlungen über Moleculartheorie und chemische Gleichgewichte" (1867–1872). C. M. Guldberg. Translated and edited by R. Abegg. (Pp. 85, price 1.50 marks.)

The last three numbers represent treatises which are familiar by quotation to all students of physical chemistry, and ought to be welcomed in this new form.

Principii di Stereodinamica. By Gian Antonio Maggi, Professor at Pisa. Pp. 264. (Milan: Ulrico Hoepli, 1903.)

STARTING with the formulæ connecting the coordinates of a particle of a rigid body referred to axes fixed in space with its coordinates referred to axes fixed in the body, the equations of motion of a rigid body moving in three dimensions are deduced from D'Alembert's theorem. The applications include the problems of motion under no forces, in which the equations are integrated by elliptic functions, the simple and compound pendulum, motion of a billiard ball, &c., and Lagrange's equations are also treated in this part. The second part deals with Hamilton's principle in its various forms, and the third with Jacobi's theorem. The work differs in many respects from the conventional English text-books, in which special attention is given to the properties of moments of inertia and numerical examples rather than to rigorous deductions of the fundamental equations. Those whose lot it is to lecture on "three dimensional rigid" will find a study of this book very useful and suggestive. G. H. B.

The Fields of France. Little Essays in Descriptive Sociology. By Madame Mary Duclaux (A. Mary F. Robinson). Pp. vii + 318. (London: Chapman and Hall, Ltd., 1903.) Price 5*s.* net.

THIS little book reveals the writer's love for rural France, and her anxiety "to set down chiefly the things I have seen for myself, or which have come under my own knowledge" (p. 13), is reflected in the reality of the descriptions and in their sustained interest. Though there is little of an exciting character in the pages, readers who value word pictures of the habits and customs of country folk will find pleasure in this book.

LETTERS TO THE EDITOR.

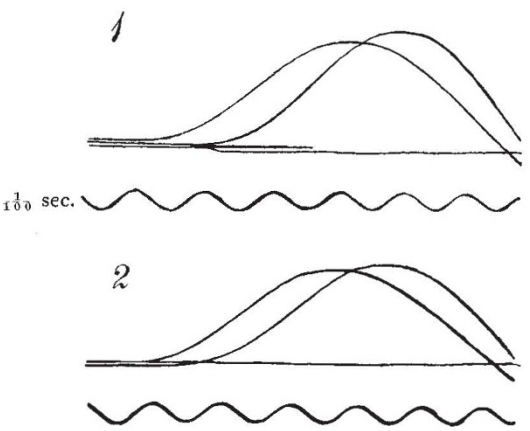
[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

The Velocity of a Nervous Impulse.

SIR W. GOWERS's dilemma (p. 105) is of the library rather than of the laboratory, and I should hardly care to appeal to differing book-data by different observers in evidence of an acceleration of nervous processes during the last fifteen years, either in the same or in different individuals.

I happen to possess records taken on myself in 1882 and in 1903, as well as upon my son, *aet.* fifteen, in May, 1903. In all three cases the velocity comes out at about 50 metres per second, as I read the records, but can easily be taken as indicating 60 metres if the rise of each curve from the base line is spotted a little differently. It is, in fact, advisable to examine the original data very closely before quoting velocities deduced from them, since very small differences in measurement along the abscissa multiply out to large differences of velocity expressed in metres per second.

Thus in the instances enclosed, taken from my son last May in an interregnum from Greek roots, the times, as I read them, are 0·0063 and 0·0053 sec., and the velocities 51·5 and 61·75 metres per second.



May 3, 1903.—W. W. Waller, *aet.* 15; nerve-transmission velocity; excitation above clavicle and at bend of elbow; distance = 0·325 metre. Time-diff. 1, 0·0063 sec.; 2, 0·0053 sec. Velocity 1, 53 metres per sec. 2, 62 metres per sec.

The more carefully the records are taken and read the less inaccurately do the velocities come out. I think that Dr. Alcock's estimate of 66 metres per second is a somewhat closer approximation to the truth than my estimate of 50 metres, and *a fortiori* than the still lower estimate of 33·9 metres, which is that originally made by Helmholtz and Baxt in 1867. A. D. WALLER.

A Useful Empirical Formula.

THE very neat construction given by Prof. Perry in NATURE, December 3, p. 102, leads at once to the equation

$$\frac{\Delta y}{y-a}=\frac{\tan\beta}{\tan\alpha}\frac{\Delta x}{x};$$

and the assumed equation $y-a=bx^n$ gives $\frac{dy}{y-a}=n\frac{dx}{x}$

Hence, approximately, $n=\frac{\tan\beta}{\tan\alpha}$.

Why does Prof. Perry prefer to write

$$n=\frac{\log(1+\tan\beta)}{\log(1+\tan\alpha)},$$

which is less simple for computation?

11 Leopold Road, Ealing. J. D. EVERETT.