

subject of immunity equally attracted the diligence of the pupils whose work Nencki controlled and directed.

To attempt even an enumeration, still less a review, of the papers contained within the book would be out of place in a brief appreciation of its value. One can only recommend those interested in such subjects as have been indicated to procure this treasure-house of information for themselves.

W. D. H.

OUR BOOK SHELF.

Essais des Matériaux. By H. Bouasse. Pp. 150. (Grenoble: Gratiot and Rey; Paris: Gauthier-Villars, 1905.) Price 5 francs.

THE ordinary mathematical theory of elasticity consists mainly in the examination of the consequences of the general principle involved in the statement of Hooke's law, "ut tensio sic vis," or, in other words, the proportionality of stress to strain. In many cases, however, this assumption is far from being satisfied, and the state of strain in a body at any instant depends not only on the actual stresses, but on the changes which have previously occurred in that body.

Prof. Bouasse's treatise consists in large measure of a classification of the various properties arising from the study of strains and stresses, such as permanent deformations, perfectly elastic deformations, viscosity, hysteresis, reversible and irreversible deformations and limits of elasticity. As the author points out, many of the phenomena are of common occurrence, and he instances the displacement of the zero reading of the galvanometer as a simple example. The various effects are illustrated by curves showing the relations between strain and stress. The ordinary theory of elasticity is of course touched on.

The printing of the preface in italics does not favourably impress the English reader at the outset, but everyone must agree with the conclusions at the end, in which the author points out that the subject has not received the attention it deserves, and this at a time when rapid advances have been made in most branches of physics. There is abundant evidence that Prof. Bouasse has given much careful thought and study to the subjects of which he treats, and even if his book does no more than attract attention to a neglected branch of physics it will fill a useful purpose.

The Scientific Roll and Magazine of Systematised Notes. Conducted by Alexander Ramsay. Bacteria. Vol. i. Pp. 528. (Acton, London, W.: R. T. Sharland.) Price 16s.

It is difficult to comprehend exactly what place this work is designed to occupy. The author must have expended an enormous amount of time and labour upon it, but we regret to say we cannot help feeling that much of his work is misapplied. For example, the 200 pages or thereabouts occupied by the tables of bacteria, arranged according to size, can be of little or no value, because the size of bacteria is extremely variable, and because the finer measurements must be very rough. Had this space been devoted to a summary of bacterial characters and reactions, abstracted from original papers, a great deal of scattered material would have been gathered together, and the result would have been most valuable. The bibliography in the earlier parts should be useful, but the summary of characters contained in the later ones is too brief and scrappy to be of much value.

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LETTERS TO THE EDITOR.

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Another New Vesuvian Mineral.

IN NATURE of May 31 I gave a preliminary note on a new mineral species *chlormanganokalite*, in speaking of which I made reference to its association with fine crystals of halite that I suggested were likely to prove rich in potash. The latter crystals occur as beautiful cubes often more than a centimetre in diameter, and of a transparent to a milky, opaline tint. They afford on analysis the following results as to their composition:—

KCl ...	87.57	KCl	87.93
NaCl ...	12.02	equal to	NaCl 12.07
Moisture	0.412		
	100.002		100.00

If we adopt the formula $(\text{KCl})_n\text{NaCl}$, we should theoretically expect the following composition:—KCl 88.5, NaCl 11.5, which is sensibly the composition found by analysis as above, especially when we consider the errors inherent to the estimation of these substances.

I think, therefore, we are justified in considering this mineral as a definite double chloride, which I propose provisionally to call *chlornatrokalite*. It is my intention to submit to analysis a number of similar minerals that I have collected at Vesuvius during the last twenty-six years to see if we have to deal simply with mixtures or definite chemical compounds. Spectrum analysis failed to show even traces of calcium, caesium, rubidium, or lithium.

The great amount of potassium compared to sodium is not astonishing when we consider that potash is the dominant alkali in the paste from which Vesuvian lava and its other products are derived.

June 13.

H. J. JOHNSTON-LAVIS.

The Discovery of Logarithms.

IN the review of a book, "Letters from the Dead to the Dead," which appeared in your number of May 31, your reviewer says:—"As another example we may take the notes to Henry Briggs's letter, in particular the supposed proof (p. 75) that Napier's true base is the reciprocal of e and not e itself. As the difference depends entirely on whether $\log \sin 45^\circ$ has a plus or a minus sign attached to it, it is interesting to speculate on how many readers will be deceived by what is after all a somewhat clever hoax." (The italics in the above extract are mine.)

I take it by the use of the words *supposed*, *deceived*, and *hoax*, your reviewer intends to intimate that the formula on p. 75 of "Letters from the Dead to the Dead" is faked, or made by the author to suit his own purposes. Nothing could be further from the truth. I have had the curiosity to make the calculation *de novo*, and I venture to submit that no fair or genuine criticism can be passed upon it. The expression $\log 1/\sqrt{2}$ must have the minus sign. Indeed, I almost wonder whether your reviewer has read the book he is reviewing, because in that book the author quotes from Macdonald's translation of Napier's "Constructio" the statement that e^{-1} is the base required by Napier's reasoning.

I am not concerned whether the book in question is a hoax or not. For my part, I do not believe that it is. On the contrary, I believe it will prove to be one of the great books of history. It raises too many fascinating questions to be non-suited in your summary manner, and the reason why John Napier, knowing in 1614 that logarithms computed to base 10 must supersede all others, went on computing his to the surd $1/2.7182818283$ as base, is an historical mystery that demands a solution. It is ridiculous to suppose—nay, it is impossible to suppose—that the inventor of logarithms did not know that they must have a base.

CECIL SEYMOUR-BROWNE.