

are described as if they dropped down ready made from the sky into their appropriate place.

Many superior designs could at this rate be made for the Forth Bridge; but then this ignores an important controlling element, that the bridge was to stand, not only when completed, but at every intermediate stage of the erection.

Even the operation of hoisting or rolling into place a forty-foot girder is not a simple matter; during the process the ordinary stresses are mostly reversed, and the structure runs the risk of "cockling."

We find no mention of the Tower Bridge, the most important experiment of a drawbridge *à bascule*. G.

The Amphioxus and its Development. By Dr. B. Hatschek. Translated and edited by J. Tuckey. (London: Swan Sonnenschein and Co., 1893.)

THIS is a translation of Dr. Hatschek's well-known paper on the subject published twelve years ago. It will no doubt enable those who cannot read German to follow Dr. Hatschek's statements. But unless the rest of the translation is more accurate than that of the title, readers will be deceived and disappointed. This book is not correctly called "Amphioxus and its Development." That is a salesman's title. There is nothing in it about Amphioxus, except an account of the earlier part of the development. The important facts of the larval development discovered by Willey, as well as the adult structure, are not dealt with. The original plates have not been reproduced in this translation, but very small and often obscure reductions of them are substituted.

E. R. L.

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 Use of Scientific Terms.

I AM glad that so distinguished a physicist as Dr. Lodge has found certain matters relating to the history of physiology, which I discussed, I fear very imperfectly, in my Nottingham address, to be of sufficient interest to induce him to read and criticise it. Fully appreciating the geniality with which his criticisms are expressed, I will ask your permission to comment on one or two points in his letter, which may not be uninteresting to the readers of NATURE.

One of the principal objects which I had in view in my address was to promote that intercommunication between the physical and physiological sciences which Dr. Lodge thinks so desirable, and I am no less sensible than he is that this solidarity is much impeded by inconsistency in the employment of words. Your correspondent avers that whereas the language of Physics consists in "simple English phrases" and "common words made definite by connotation," our biological words are "polysyllabic," and our modes of expression as unlike those of daily life as can be contrived. We say "devitalising," for instance, when we mean killing, just as the chemist says "desiccating" when he means drying.

It is difficult to express the complicated relations which exist between the phenomena of life without using terms which are themselves complicated. Thus, I venture, notwithstanding Dr. Lodge's good-natured pleasantry, to think that the word "chemiotaxis," bad as it may be, serves better to express the little that we know about the "particular go" of certain processes than any simple English phrase we could substitute for it.

Two words, "life" and "energy," are specially referred to by Dr. Lodge as examples in illustration of the inconveniences which are to apt to arise from their improper use. In Physiology the word "life" is understood to mean the chemical and physical activities of the parts of which the organism consists together with their co-ordination—not the processes only, nor their co-ordination only, but both at the same time. Dr.

Lodge uses the word life without making it "definite in connotation," but from what is said about it, it is evident that the life which he has in view is not made up of processes, but merely consists in their co-ordination or adaptation for the purposes of the organism; for it is defined as the "power of directing (the italics are mine) energy into otherwise unoccupied channels." This being understood, all that Dr. Lodge says about life, and particularly his statement that it is *not* a form of energy, seems to me to be in accordance with the views that I endeavoured to set forth in my address. The only difference, therefore, that exists between us relates to the sense in which the word life is to be used for scientific purposes. Next follow some trenchant observations as to the misuse of the word "energy." I do not think that I am accused of such misuse. Nevertheless it may be useful to note that in referring to the sense in which J. Müller and his illustrious pupil had used the term "specific energy," it was expressly stated that their use of it was in a sense entirely different from that in which it is employed in physical science; and further, that the words quoted from the "Physiological Optics," viz. "energies of the nerves of special sense," were written in 1886, not "long ago," as Dr. Lodge suggests.

I can assure your readers that to the best of my knowledge the word "energy" is never used in the old sense by physiological writers, excepting, so to speak, between inverted commas; and with reference to the historical importance of Müller's doctrine, and still more of Helmholtz's earlier physiological writings, the words "normal activity," or others of similar import, are substituted for "specific energy," not as necessarily meaning anything quantitative, but simply the mode in which the organ normally reacts.

To the suggestion that "subjective light" should in future be designated by an impressive-looking word beginning with *photo* and ending with *axis*, I have no objection to make, excepting that it might turn out to be rather sesquipedalian. May I add, that I hope to have the opportunity of recurring to the subject of the vision of the totally colour-blind.

J. BURDON SANDERSON.

The Thieving of Antiquities.

A RECENT case, which has occupied some space in NATURE, raises much larger issues than the character of individuals, and issues which must be faced sooner or later.

The present conditions of the laws and practice regarding antiquities is most unhappy, both in the interests of science and in the interests of museums. Two matters require much revision: (1) The modes of excavating; (2) the laws regarding excavation and exportation.

As to the mode of excavating it is still generally the custom to leave much in the hands of native overseers, and often the European in charge does not live on the work. Until it is recognised that it is unjustifiable to disturb antiquities without recording everything that can be observed, we shall remain in the state of mere plunderers, without a claim much higher than that of the treasure-hunting natives. In Egypt, hitherto, nearly all official excavations have been made by trusting entirely to uneducated and dishonest native overseers; and while the laws are strict concerning Europeans working, the natives plunder almost at their will under one pretext or another. With suitable regulation it has been proved practicable to entirely excavate a site without any loss or pilfering of the smallest objects by the natives; and such excavation, entirely under trained and educated observers, either native or foreign, should be the aim in all future work.

But in the matter of the legal position it is far more difficult to reach a satisfactory basis. Baldly stated the case stands thus. Every country in which there is anything much worth having, stringently prohibits exportation and excavation; and nearly all the growth of museums of foreign antiquities is in direct defiance of the laws. Most countries are engaged in thieving from others on a grand scale, by various underhand agencies; a form of thieving which is as much tolerated by public opinion as smuggling was in former days. According to law, no antiquities of any kind can possibly leave Turkish or Greek territory, and nothing that is of great importance can leave Italian or Egyptian territory. Yet museums grow.

The actual course of affairs is that some private agent, or museum official, hears of something important, and buys it up