We require either striated rock surfaces or boulders, or undoubted *roches moutonnées*, or erratics, which can be proved not to exist sufficiently near to have been brought by "creep" or landslides. In view of these liabilities to error, we may be almost sure that the supposed evidences of glaciation described by the late Mr. Belt in his "Naturalist in Nicaragua" (p. 260), are explicable in the same manner as the Brazilian evidences, since he nowhere found glacial striæ or any boulders that could be proved to be true erratics; and this is the more certain because he himself states (p. 265), "I have myself seen, near Pernambuco, and in the province of Maranhão, in Brazil, a great drift deposit that I believe to be of glacial origin."

All students of the past and present history of the earth are indebted to Prof. Branner for having relieved them of a great difficulty—a true glacial nightmare—that of having to explain the recent occurrence of glaciation on a large scale far within the tropics and on surfaces not much elevated above the sea-level.

ALFRED R. WALLACE.

Telegony.

DR. ROMANES' letter inviting a discussion concerning the remarkable phenomenon of telegony will be welcomed by many who have felt that too little notice has been paid by men of science up till now to one of the most obscure problems of heredity. At the conclusion of his remarks, Dr. Romanes rejects Prof. Weismann's hypothesis that sperm elements are capable of penetrating into the ovary, and fertilising immature ova *in situ*, on the ground of their obvious incapability of doing so. It seems, however, possible to doubt whether the spermatozoa are so incapable of penetrating such tissues as the stroma surrounding an ovarian follicle. Although, as far as I am aware, the actual penetrating of spermatozoa through ovarian tissues has in no case ever been shown to take place, yet we are bound to take it for granted that in some cases this actually occurs, from facts observed in many Invertebrata.

Prof. Whitman, in an exhaustive paper published in the *Journal of Morphology*, January 1891, has collected a considerable mass of evidence to show that in many widely-differing animal groups the spermatozoa make their way through the external body wall at many different points, usually a large number being bound together to form spermatophores. Perhaps the best examples of animals where this occurs are found among the Turbellarians and Leeches. In these forms the spermatozoa pass directly through the epidermis, basal membrane, and the layers of muscular and connective tissue till they reach the body cavity. Here the spermatophores break up, and in some instances the individual spermatozoa undoubtedly must penetrate the wall of the ovary in order to fertilise the ova *in situ*.

As in many mammals, the immature ova lie very near the surface of the ovary, it does not seem to be beyond possibility that even in the higher vertebrates some similar process may occur.

On the other hand, as Prof. Weismann points out, if such be the case we should expect to find animals pregnant several times in succession after once being crossed, of which no instance has ever been recorded.

Dr. Romanes' suggestion that the followers of Weismann may explain the facts of telegony by supposing the spermatozoa to disintegrate and that their "ids" and "determinants" somehow enter the unripe ova, must for the same reason be dismissed as impracticable, unless it be assumed that enough "ids" never reach one egg to supply the place of those "ids" which have been got rid of by the reducing division of the egg nucleus, and would be replaced in the ordinary course of things by the spermatozoon. Such an assumption would be obviously unscientific and unwarrantable.

It seems, therefore, unsafe, until more definite experimental work has been done with regard to this obscure and interesting problem, to attempt to give any very definite explanation of the facts as they now stand, if we adopt Prof. Weismann's, views as to the continuity of the germ plasma. The facts, as Dr. Romanes very rightly insists upon, show that telegony is on the whole, of very rare occurrence, and on this account it is premature to go so far with Mr. Spencer as to maintain that the few isolated instances of telegony are sufficient to knock down at a blow the far-reaching theories of heredity which Prof. Weismann has put forth.

M. D. H.

September 29.

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The Use of Scientific Terms.

PROF. LODGE has made a valuable statement regarding scientific terms in last week's *NATURE* as follows:—"The words used in the current language of biology are extremely classical and as unlike the language of daily life as can be contrived. This is done to keep free from the misunderstandings arising out of the attempt to give to popular words a scientific, *i.e.* an accurate meaning." Botanists have not always been as careful as Prof. Lodge would have us believe, and as an instance to the contrary I would cite the following: I was recently lecturing on forest utilisation, and used the word bark in its ordinary meaning of the outer envelope of a tree. One of the students in the class interrupted me to point out that I was speaking loosely, as *bark* is now a scientific term, meaning the transformed outer envelope of a plant, the German *Borke*, after the growth in it of corky or stony tissues.

I appealed to the sense of the class as to whether botanists have any right to adopt a common English word for something beyond its ordinary meaning, and the class took my view of the subject unanimously, carrying eventually even the objector with them.

The substance now scientifically termed *bark* might be styled *rhytidome*, as is done in France (*vide* "Flore Forestière," by A. Mathieu, edition 1887, p. 595); or can any reader of *NATURE* propose a better term?

W. R. FISHER.

Coopers Hill, October 16.

Rustless Steel.

SOME months ago I noticed, in *The Field*, the statement that steel containing twenty per cent. of nickel was free from rust and, on that account, very suitable for the manufacture of small arms of high quality. From its use in the manufacture of ordnance and armour-plate I presume, moreover, that the nickel alloy does not compare unfavourably with ordinary steel in point of tenacity and hardness.

If this proves to be the case—and it is the object of this letter to elicit the information from some of the numerous readers of *NATURE*—nickel-steel would form an invaluable material for the construction of certain parts of astronomical and geodetic instruments, notably the pivots and axes, which, as made at present, slowly deteriorate from rust when of steel, or from wear when of bronze. With geodetic instruments, continually set up as they are in exposed situations, sometimes near the sea, it is seldom there is not, after a few years' use, evidence of rust enough on the pivots to have destroyed much of the extreme perfection of figure attained by makers like Repsold or Ertel. The wear of bronze pivots is even worse. I am informed that the earlier meridian observations at a leading observatory are not comparable in accuracy with those taken after the original bronze pivots had been replaced by steel ones.

Cape Town, September 27.

H. G. FOURCADE.

RESEARCH LABORATORIES FOR WOMEN.¹

THE session which we inaugurate to-day will in the future be regarded as of prime importance in the history both of Bedford College and of the higher education of London at large.

It will be remembered in the history of London, for in the course of it the Gresham Commissioners will issue their long-expected report. Whatever the nature of that report may be it will be important; most important if the Commissioners succeed in solving the difficult problem which has been proposed to them, and enlist in favour of their recommendations so strong a sentiment of public approval that a teaching university is at length established on the lines which they lay down. Important, though no doubt less important, if they add to the long list of failures to find the true solution, and thus only prove that another route to the desired end is barred.

As regards Bedford College itself, we meet this session under the shadow of a loss. Miss Martin, for many years the Lady Resident, who has done so much in helping to

¹ Inaugural address delivered at the Bedford College for Women, by Prof. A. W. Rucker, F.R.S.]