

the subject is decidedly one of those social acquirements of highly transmissible nature, its present features being more the result of the national intercourse than that of the race-affinity.

KUMAGUSU MINAKATA.

15 Blithfield Street, Kensington, August 31.

#### Mr. Love's Treatise on Elasticity.

HAVING now returned to England, I have had an opportunity of examining my paper on wires (Proc. Lond. Math. Soc. vol. xxiii.), and I find that the discrepancy between my results and those given by Mr. Love, on p. 169 of his book, is due to a slip in my own work. On comparing my equations (11 and 15), it will be seen that in the latter equation the term  $-\rho(\sigma\rho - \sigma r \cos \theta)^{-1} dw/d\theta$  has been omitted. The value of  $w'$  is correctly given by equation 31, and when the omitted term is inserted in equation 32, the resulting value of  $g$  will be found to lead to values of the couples identical with those given by Mr. Love.

As I am strongly of opinion that the best way of constructing a satisfactory theory of shells and wires is to use the method of expansion, coupled with the hypothesis that all stresses which vanish at the surface may be treated (to a certain degree of approximation) as zero throughout the substance of the shell or wire, I am exceedingly glad to find that the apparent discrepancy is due to a small slip in my work, and not to any defect in the principles upon which the investigation is based. The question as to the values of the couples may now be considered to be completely settled.

A. B. BASSET.

September 28.

#### New Caledonian Pottery.

I AM extremely anxious to be informed on a little matter, and you are my only resource. In the *Journal of the Anthropological Institute*, August, 1893, vol. xxiii. page 90, Mr. J. J. Atkinson describes the making of New Caledonian pottery. The ingenious device of the pebble as a pivot is interesting. But Mr. Atkinson always says *he*. Do the men make pottery in New Caledonia, or is this a case of what the country school teacher termed the men embracing the women?

Washington, September 17.

OTIS T. MASON.

#### SCIENCE IN THE MAGAZINES.

AMONG the articles of scientific interest in the magazines received by us, is one in the *Contemporary Review*, in which Prof. Weismann replies to Mr. Herbert Spencer's attack upon his views as to the distinction in the Metazoa between somatic and reproductive cells, and on the immortality of the latter, and of unicellular organisms. With regard to the experiments that have been made with a view to proving the occurrence of telegony, Prof. Weismann says:—

Herr Lang, of Stuttgart, has for twenty years experimented with dogs, without, however, ascertaining "a single fact that could be made use of for the advancement of the infection theory." Of course, in such a case negative results prove nothing; and the attempt must be made to determine the truth by new experiments. But as hitherto there have been no positive results from the observations that have been made; and as the most competent judges, namely, breeders who have a scientific knowledge, such as Settegast and Nathusius, and the late head of the Prussian Agricultural Station at Halle, Prof. Kühn, spite of their extensive experience in breeding and crossing, have never known a case of telegony, and therefore have great doubt as to its reality; it seems to me that according to scientific principles, only the conformation of the tradition by methodical investigation, in this case by experiment, could raise telegony to the rank of a fact.

In "A Note on Panmixia," Dr. Romanes attempts to remove any doubt that may exist in Mr. Spencer's mind as to whether Panmixia is a *vera causa* of degeneration, by showing that there are not excessive *plus* variations of an organ. Mr. Spencer had said, "If there are not excessive *plus* variations, the hypothesis of Panmixia is valid"—*ergo*, accepting Dr. Romanes' proofs, the doctrine is triumphant.

Mr. Robert H. Scott writes on "Weather Forecasts"

in the *New Review*. He describes the difficulties that beset the weather prophet on all sides, and the various proposals that have been made for gathering in information which would increase their trustworthiness. Some of the proposals, *e.g.* the mooring of signal-ships in mid-Atlantic, are purely visionary, and intelligence directly received from stations in the United States or Canada is practically useless, for the condition of the atmosphere is constantly changing, and the rates at which storms cross the Atlantic vary considerably. The fact that the storms that visit us pass to the northward of the Azores would render those islands of little use to the Meteorological Office, even if a cable were laid to them; and all anticipations as to the advantages to be derived from mountain observatories remain unfulfilled, according to Mr. Scott. However, an examination of the results of forecasts prepared at 8 p.m. from 1879 to 1891 is fairly satisfactory. Taking the eleven districts of Great Britain and Ireland, for which forecasts are made, it appears that, during the period mentioned, an average of 45.5 per cent. of the forecasts were entire successes, and 34.8 partial, thus giving a total of 80.3. Of the failures, an average of 6.6 per cent. were total and 13 per cent. partial. England (South) showed the highest rate of fulfilment, viz. 85 per cent., counting entire and partial successes together. "The least successful districts are, in order of their figures, the West of Scotland, the South of Ireland, and then the North of Ireland, and the North-west of England. The least successful forecasts are therefore our exposed west and north-west coasts."

Other articles of a scientific character in the *New Review* are: "Are we Prepared to Resist a Cholera Epidemic?" by Mr. Adolphe Smith, and "The Increase of Cancer," by Mr. H. P. Dunn.

Under the title "Atoms and Sunbeams" Sir Robert Ball gives, in the *Fortnightly Review*, a description of Helmholtz's shrinkage theory of the maintenance of the sun's heat, with particular reference to the "precise *modus operandi* by which, as the active potential energy vanishes, its equivalent in available heat appears." "Electric Fishes" is the subject of an article by Dr. McKendrick, and in it we find the investigations carried out by Fritsch, Bois-Reymond and Sachs, Burdon-Sanderson, and Gotch explained in an interesting manner. Before describing the minute structure of individual electrical organs the author makes the following remarks:—

About fifty species of fishes have been found to possess electrical organs, but their electrical properties have been studied in detail only in five or six. The best known are various species of *Torpedo* (belonging to the skate family), found in the Mediterranean and Adriatic Seas; the *Gymnotus*, an eel found in the lagoons in the region of the Orinoco, in South America; the *Malapterurus*, the räash, or thunderer-fish, of the Arabs, a native of the Nile, the Niger, the Senegal, and other African rivers; and various species of skates (*Raia*) found in our own seas. It is curious that the Nile is rich in electrical fishes, several species of pike like creatures (*Mormyrus* and *Hyperopisus*) possessing electrical organs the structure of which has been quite recently investigated by Fritsch. The electrical fishes do not belong to any one class or group, and some are found in fresh water, while others inhabit the ocean.

Two distinct types of electrical organs exist. One is closely related in structure to muscle, as found in the torpedo, gymnotus, and skate, while the other presents more of the characters of the structure of a secreting gland, as illustrated by the electric organ of the thunderer-fish. Both types are built up of a vast number of minute, indeed microscopical, elements, and each element is supplied with a nerve fibre. These nerve fibres come from large nerves that originate in the nerve centres—brain, or spinal cord—and in these centres we find special large nerve-cells with which the nerve fibres of the electric organ are connected, and from which they spring. We may, therefore, consider the whole electric apparatus as consisting of three parts: (1) electric centres in the brain or spinal cord; (2) electric nerves passing to the electric organ; and (3) the electric