this time the bird went to work promptly, "as if he knew the worms were there."

I had suggested, amongst other experiments, that he should rub a living worm over some substance that the kiwi does not usually eat, such as bread, so that it should be flavoured and scented by the earthworm juice, and then conceal it; but he has not yet, apparently, carried out the experiment.

Previously to my request Mr. Henry had experimented with a roa that he had trained to eat meat. He "planted" pieces of meat in drills three or four inches deep, and next day found them gone, "though the ground was not raked over by the bird, but probed where the meat had been hidden. This was in an enclosure whither other creatures had no access. If, when the bird was at rest, though hungry, he threw a piece of meat or an earthworm near it, it seemed at once aware of the presence of food, would wake up and reach in the right direction, touching the ground from time to time with the tip of its beak until it came in contact with the meat.

Although other and more crucial experiments are needed—and these could more readily be made in England (at Tring, for instance) under careful supervision—yet I think the above affords a certain amount of evidence for the existence in *Apteryx* of a keen sense of smell.

I may add that Resolution Island is quite an unget-at-able place; it is visited about three or four times a year, twice by the Government steamer on its round-trips to supply lighthouses, &c., and occasionally by other vessels at irregular times, so that four or five months may intervene before a reply is received to a letter. For instance, in reply to my letter dated April 30 I only received an answer in October. I once tried to arrange to visit the island, but the uncertainty of getting back to the mainland in any reasonable time was so great that I had to give up the idea. I hope someone in England will undertake further experiments in this direction.

W. B. BENHAM.

Otago University Museum, Dunedin, N.Z., May 6

Molecular Changes in Nickel Steel.

MR. MILNE, chronometer maker in Manchester, has kindly given me permission to send you the following interesting information. About two years ago he made a clock having a rod pendulum of Dr. Guillaume's invar steel (iron nickel alloy). It was carefully adjusted, and was recording time in a most satisfactory manner. Recently the gut of the driving weight tore, and the clock received a shock whereby the rate was altered a few seconds per day. This might be due to some mechanical movement. After re-adjustment had been effected, it was found that the pendulum was undercompensated for changes of temperature, and it appears as if the coefficient of expansion, which was said to be 0.000008 per 1° C., had increased.

The second case is a watch the balance wheel of which was made of invar steel and brass. In March, 1904, it was rated by the National Physical Laboratory, when it was found that there was no middle temperature error. Now, after two years' working, this error is ± 1.08 seconds per day, ordinary steel and brass balances having a middle temperature error of about $2\frac{1}{2}$ seconds per day. The details are as follows:—

Temperature	1904 Rate	1906 Rate
40°	+0.6	+1.08
90°	+1.6	+0.36
Mean	+1.1	+0.72
65°	+1.1	+1.80
Middle temp. error	0.0	1.08

C. E. STROMEYER.

"Lancefield," West Didsbury, June 28.

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MANX ARCHÆOLOGY AND NATURAL HISTORY.

IN the year 1886 the House of Keys passed an Act entitled "The Museum and Ancient Monuments Act." I well remember hearing of it, because in the course of that year I visited the Isle of Man for the first time, in order to see some newly discovered Ogam inscriptions. It proved for me the first of a series of visits to the island with the view chiefly of studying Manx Gaelic and Manx folklore. I got to know the island and its people, and noticed among other things the efforts made by two or three men with taste and zeal for archæology and history to interest the Manx people in the relics of antiquity for which the Isle of Man is famous. On one of my rambles, which led me to a public school, I remember being much struck by finding hung on the walls drawings of hatchets, hammers, and other instruments of the ages of Stone and of Bronze, accompanied with letterpress descriptions of them. They were intended to interest the more intelligent of the children in such objects, and especially to help them to recognise them when accidents exposed such treasures to view. It struck me how desirable it was that the same thing should be done in the public schools of this country, but I am not aware that it has ever been done. This example of the Isle of Man is well worth following, but I fear that the present is not a favourable moment for recommending anything so far removed from the burning question of the day. But the present war of creeds and dogmas will, it is to be hoped, be followed by a period of peace when the promoters of education may be allowed to devote more attention to some of the historical aspects of its more secular side.

The first Manx archæologists I came in contact with were Canon Savage and Mr. A. W. Moore, who has since not only become Speaker of the House of Keys, but established the right to be considered the historian of the island. I found them inspired and led by the experienced hand of Prof. Boyd Dawkins. They have been since joined by other and younger men, such as Mr. Kermode, who has made the study of the runic crosses of the island his own. He published a valuable book on them in 1892, but he chose to call it a catalogue of them and of the inscriptions, and now a larger work of his on the same subject is passing through the press, and will contain as illustrations numerous plates and a great number of outline figures. The list of the trustees of the Manx Museum and ancient monuments includes other men of light and leading in the island, such as Mr. Ring, the Attorney-General, not to mention that they have always had the Bishop on that body, and enjoyed the support of successive Governors of the island, including among them the well-known historian, Sir Spencer Walpole. These men have always endeavoured to interest the Manx people in their ancient monuments, and they have succeeded to a great extent, but a great deal still remains to be done in the same direction. The pride of ownership is very strong in a Manxman: perhaps it is in all small nationalities—at any rate, I have noticed it not only in Man, but also in my own country, the Principality of Wales. What may be the explanation I do not know, but a member of a small nationality is a more considerable portion of that nationality than if he belonged to a larger nationality, and perhaps that has something to do with the greater difficulty which he finds in rising to the idea of giving up to the nation anything of which he is the exclusive owner. That is, however, not what I was coming to, but to the fact that, in