square miles as now estimated, to institute efficient systems of observations and warnings, &c., &c. Prof. Riley treats on the natural enemies of the locust, and illustrates the chapter by a remarkably well-executed plate. The general conclusion arrived at is that the evil may be materially modified, although utter extermination is out of the question.

The lengthy appendices give replies to the official circular from those interested, in widely-separated districts, often showing great practical and frequently scientific knowledge, sometimes combined with the illogical conclusions at which agriculturists often jump. Then there is list of species of locusts, &c., collected in the Western States in 1877, with descriptions of new species, worked out by Mr. Scudder; the plate illustrating this is not so good as usual, and scarcely sufficient for scientific purposes. A general bibliography of locusts (chiefly compiled by Mr. B. Pickman Mann), from 1542 forwards, must have occasioned great labour, and is correspondingly valuable. Other appendices treat on the flight of locusts (translated from the Italian); on a journey to Utah and Idaho, by Dr. Packard; and a translation of Yersin's researches on the function of the nervous system in Articulates. The six large folded maps on thick paper seem to be admirably adapted to illustrate the points to which each is directed.

We do not think it is pretended that some of the most useful chapters from a scientific point of view have any special, or even indirect, bearing upon the subject of Economic Entomology. The investigation of a locust's brain, for instance, will hardly reveal the mental condition of the insect, and show us why it is prompted to migrate or be so maliciously inclined towards destroying the hopes of the agriculturist. We prefer to regard these portions of the report as an outcome of a liberal endowment of research, the application of which to the nominal subject for inquiry is not too rigidly enforced.

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. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

Laurentian Gneiss of Ireland

ALLOW me to state that since writing the notice which appears in NATURE (vol. xxiv. p. 81), I have found that white crystalline marble has been described by Sir R. I. Murchison and Prof. Geikie as occurring in the Laurentian gneiss of Loch Maree, in Scotland. I had overlooked this statement, and was under the impression that limestone was absent from the Scottish Laurentian area. Its occurrence in both countries constitutes an additional point of resemblance.

EDWARD HULL

Geological Survey of Ireland, May 31

Resonance of the Mouth-Cavity

WILL you give a place in NATURE to the inclosed letter which has just reached me? The writer is an organist and teacher of music of great repute in the North of England. The experiments which he describes will, I believe, interest many of your readers as much as they do me.

Trinity College, Cambridge, May 20 SEDLEY TAYLOR

MY DEAR SIR,—Travelling the other day by express from Scarborough to London, I found myself unconsciously moving my lips as if whistling a tune, which however I was not actually doing. Without any other action than the simple movement of the lips, I very distinctly heard different sounds in my mouth. Persevering in the practice of this discovered power of producing sound, I soon accomplished a fairly satisfactory performance—audible only to myself—of “Home, sweet home.”

As soon as the train came to a standstill I found myself

powerless to repeat the performance, for there was then no response to the contortions which by this time had attracted the attention of my fellow-passengers, who doubtless thought that I was being conveyed to a lunatic asylum. On resuming our former speed the “power of sound” once more responded to my efforts.

At once I perceived that I had made a discovery of which I had never heard or read in any of the numerous works on acoustics that I have studied. I perceived that I could single out different sounds from the noise of the train by a simple alteration of the size of the resonance-cavity of my mouth.

On my return home it occurred to me that the force of vibration in the air from the note of a harmonium might be able to set up a sympathetic resonance of the mouth. To my delight I found that I was right.

It is known that if a tuning-fork of proper size be held to the open mouth the latter can be so shaped as to give a powerful resonance; but I believe it is not known that the mouth for any sound (above about middle C to f''' or g''') is able to give a very distinct resonance.

Further experiments showed me that not only can the primes of notes within this limit be heard, but that any of these sounds are very clearly heard when they are upper partials of low notes.

This can be tested at the harmonium. Holding down, say, G on the first line of the bass, the third and following partials up to about the fifteenth, can be most clearly heard. The same held good when I experimented with men's and boys' voices.

But the most striking results were obtained at the organ. Holding the low C of the 8 ft. trumpet, the partials from d' to f''' were most bright and clear. Other stops, according to their several qualities, yielded corresponding results. I tried in vain however to obtain resonance for a differential and summational tone.

When the upper partials of a compound sound are generated in the mouth, the sounds are so near that with careful adjustment beats come out very clearly.

It is well however to observe that the force or weakness of any single sound thus obtained depends greatly upon the distance from the source.

JOHN NAYLOR

Scarborough, May 13

Suggestion Relating to the Kew Standard Thermometers

I SHOULD like to suggest, through your columns, two slight changes in the manufacture of the Kew standard thermometers, which I think will commend themselves to any observers who often have occasion to use these beautiful instruments.

1. The calibrating chamber at the top of the thermometer is now made as in the figure, where cab is the capillary column which expands at a into the calibrating chamber. Instead of being rounded off at d the capillary column is continued a short distance to b . This causes serious inconvenience in the transportation of the instrument, or in its calibration, because a small particle of mercury readily detaches itself from that in the chamber a , and once in b with a cushion of air between it and the remainder of the column, nothing but heat will dislodge it.

It does not require very great skill on the part of the glass-blower to form the chamber a by means of the pressure of the

mercury itself against the walls of the capillary column. The glass-blower, as is perhaps well known, can soften the finished tube at a , and while the glass is in this condition the gentle application of the flame to the bulb will force the mercury into the part at a , and the careful application of both flames will then form a pear-shaped cavity of a form which will not retain a particle of mercury, and is exceedingly convenient in use.

2. It is often desirable to hang these thermometers in a comparator or other place, and it would facilitate this if a glass ring were attached to the upper end, as is the case with the ordinary chemical thermometers. It is to be observed that the plane of this ring should be parallel to the enamelling in the tube.

It is often convenient to know the kind of glass used in the