

Perhaps the ability of some lizards to produce sounds such as I have here described may not be new to some of your readers.

1, Burlington Road, W., October 31 FRANCIS P. PASCOE

SEALS IN LAKE BAIKAL.—A. H. Keane wishes to know what authority there is for the statement made by E. Réclus ("Géographie Universelle," vi. 741) that seals outwardly resembling the *Phoca fetida* of Spitzbergen are found in Lake Baikal; also what theories have been advanced to explain the presence of these Cetaceans in a freshwater lake over 1300 feet above sea-level.

NAPLES ZOOLOGICAL STATION.—For the terms on which permission can be obtained to work at the Naples Zoological Station, W. B. should write to Dr. Anton Dohrn, Stazione Zoologica, Naples.

MELAPTERURUS ELECTRICUS.—Keep it in an aquarium of fresh water, not too cold.

REV. J. F. T.—See the notice prefixed to our Correspondence Columns.

CHARLES W. HARDING.—You should communicate with the widow.

### SEA FROTH

IN a letter written by my nephew, Mr. Ernest Gladstone of Aberdeen, describing the recent storms, he says: "When we got within a quarter of a mile of the sea we were astonished to see great flocks of foam, like snowballs, flying in all directions. A little further on we came to one of the large hollows in the links, and we saw a sight none of us had seen before; for the whole hollow, about 100 yards long and 50 broad, was one sea of slimy foam, of which a great part must have been about 10 feet deep. This was tossing up and down as if it were the sea itself. The waves of water broke far out at sea, but great rollers of foam kept rolling in towards the links, making it impossible to come near the sea without wading up to your waist in foam for nearly a quarter of a mile, and occasionally meeting a foam-wave up to your neck."

There is nothing unusual in this phenomenon, except the large scale upon which it took place. Almost every visitor to the seaside during rough weather must have observed the formation of a persistent sea froth, which is often carried great distances by the wind. The account, however, recalled to my memory some observations on the cause of the phenomenon which I made last year at Ilfracombe.

The white foam of a breaking wave, under ordinary circumstances, disappears almost as quickly as the small bubbles of entangled air can rise through the water and burst at the surface. It occurred to me that there must be something dissolved in the sea water which gave rise to the formation of the more persistent froth, and the broken and bruised sea-weed suggested itself to my mind as a probable source of such a substance. A quantity of it was therefore gathered, allowed to stand for several hours, till in fact it had run down to a liquid, and then filtered from the dirt and organic *débris* with which it was mixed. The clear water thus obtained gave a persistent froth, like that of beer, whenever it was shaken, and I subsequently found that it contained a considerable amount of organic matter. There was no distinct indication of anything albuminous.

In order to ascertain whether this property was due to broken sea-weed, two bottles were filled with ordinary sea water. Into one of these was put freshly-torn pieces of those kinds of fucus and other marine plants which were found growing between high and low water-mark, and in the other were placed strips of healthy laminaria freshly gathered from the lower zone. The bottles were violently shaken for a few minutes. The first gave a foam which quickly disappeared, while the second produced a froth which would remain more than twenty-four hours before

all the bubbles broke. It may be observed in passing that this sea-froth, whether naturally or artificially prepared, becomes very iridescent on standing.

It seems fair to conclude, therefore, that the formation of this persistent froth is due to the destruction of the sea-weed—not of that which is tossed about by every tide, but of the laminaria which is uprooted and torn by the waves only when the violent agitation of the sea reaches a sufficient depth.

J. H. GLADSTONE

### OUR WINTER REFUGES—VENTNOR

IT is now upwards of half a century since Sir James Clark's classic work "On the Influence of Climate" in the prevention and cure of chronic diseases appeared, and among the more important results which followed its publication was the establishment of stations in this and other countries for meteorological observations, by which alone the climates of various sanatoria might be accurately compared. To Sir James is due to a great extent the merit of having placed the investigation of this important department of practical meteorology on a sound basis.

The late Dr. Martin of Ventnor was one of the most intelligent and active of the co-operating band of observers whose services were enlisted in the inquiry. A valuable series of observations was begun by him in the end of 1839, in establishing which Mr. Glaisher kindly gave his assistance and advice. The observations have since been carried on uninterruptedly, and they are evidently, particularly those of temperature and rainfall, of such a quality as quite to meet the objects aimed at. The results are presented and summarised in a just-published volume<sup>1</sup> by Dr. Whitehead with ability, in their bearings on the climatology of Ventnor.

The Isle of Wight occupies a high place as a favourable and commodious residence throughout the year for a large class of invalids, owing to the variety which it presents in point of elevation, soil, and aspect, and to the configuration of its hills and shores, which give distinctive climatic peculiarities to certain districts, notably to the Undercliff. These peculiarities are of no inconsiderable value in the treatment of those diseases which require a mild, equable temperature, a comparatively small rainfall, and protection from certain noxious winds.

The Undercliff extends for nearly seven miles from Bonchurch to Blackgang, with an average breadth of a third of a mile, and is completely sheltered from the north-east, north, north-west, and west winds of the Uppercliff—a range of lofty downs of chalk and sandstone which rise boldly behind the successive terraces in elevations varying from 400 to 600 feet. Since the Undercliff terminates in an unbroken perpendicular sea-cliff from 60 to 80 feet in height along its whole extent, the situation is not close or confined, but open and airy, and affords, besides, certain material advantages in the mitigation of sea fogs and low night temperatures. The broad belt of the Solent and Spithead separating the Isle of Wight from the mainland, and the position of the Undercliff in the extreme south of the island, considered with reference to the prevailing winds of the Channel, are also important factors in the climate of the district.

In more recent years several other meteorological stations have been established in other parts of the island and on the adjacent coast of Hampshire, from the observations of which a comparison may be made of the climatologies of this part of the South of England.

On an average of the last twenty-one years the annual rainfall of Ventnor was 30.00 inches, being all but identical with that of Osborne and Bournemouth. The amount rises successively at Hurst Castle, Ryde, and Newport, the rainfall at the last place being 34.20 inches,

<sup>1</sup> "The Climate of the Undercliff, Isle of Wight, as Deduced from Forty Years' Consecutive Meteorological Observations," by J. L. Whitehead, M.D.