

bridge, and who was excellently qualified for the task, should take Sullivant's place in the undertaking, but he died in 1882, and Lesquereux, in old age with his sight failing, was again left alone. The book might have altogether collapsed if it had not been for the kind intervention of Dr. Sereno Watson, who now has charge of the Harvard Herbarium, and who, although not specially a bryologist, has taken upon himself the needful critical and editorial labour that was required to complete it.

The book as now published includes all the mosses which are known on the North American continent within the limits of the United States and northwards. There is already a "Manual of the Mosses of Tropical America," by Mitten, in the twelfth volume of the *Journal* of the Linnean Society, and there are special monographs by Bescherelle on the mosses of Mexico and the West Indies. Sullivant has published figures of most of the endemic types, and Drummond, Austin and Sullivant and Lesquereux have issued extensive sets of dried specimens with numbers and printed labels. In the present work 900 species are included. A very large proportion of them are European, and as the close identity of the moss-flora of the temperate zone in the two continents is so interesting and important from a geographical point of view, we should have been glad if the example of Dr. Gray in marking those species which are common to Europe and America had been followed. Of the six plates five are those which were sketched out by Sullivant, and the sixth is devoted mainly to the sections of Hypnum. The classification does not differ materially from that of Bruch and Schimper, familiar to us in England from being used in Wilson's "Bryologia." The definitions of species and genera are commendably full and clear, and in not establishing or admitting species upon a slender foundation of differential character, the authors have followed the excellent example that has made Dr. Gray's manual, which has now reached its fifth edition, one of the most popular and practically useful of botanical handbooks.

At the end there is a useful glossary of the technical terms used in the descriptions. As it is such a good and cheap book and includes such a large proportion of the British species, it is well worthy of the attention of our home collectors.

J. G. BAKER

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 insure the appearance even of communications containing interesting and novel facts.]

The Diffusion of Species

DURING a recent cruise among the Hebrides two circumstances came before me, both of which are of some interest in natural history—one of them illustrating the curious conditions attending the diffusion of species, and the other illustrating the not less curious conditions affecting the multiplication of particular species in particular seasons.

The celebrated Island of Iona is separated from the nearest part of the Isle of Mull by a sound which is three-quarters of a mile wide. It is the channel of very strong tidal currents, and

when the winds blow in certain directions a heavy sea runs through it. This sound has been an effectual isolator of Iona from the access of several species common in Mull. Among others are to be numbered snakes and other reptiles. Tradition ascribes the immunity of the sacred isle to the blessing of St. Columba. Certainly it has been complete. Yet, strange to say, this immunity has been this year endangered. During the late very hot August an adder attempted the passage to Iona, and was in the act of effecting a successful landing, when, fortunately, it was seen by a boy and a girl who were occupied among the stones on the sea-shore. The adder was tired by its long swim, and the boy killed it without difficulty by stamping on its head. This is surely a very curious case of migration; and it is difficult to conceive the impulse under which the snake committed itself to the tides and currents of a channel so broad and dangerous. The hot weather of this year has no doubt developed in all reptiles an abnormal activity; and I saw a youth in Mull who had recently very nearly lost his life from the bite of an adder. The description given me of his condition for many hours brought home to my mind almost for the first time that we have in our own island a veritable member of the terrible "Thanatophidia." But it seems quite unaccountable why such a reptile should have attempted to cross the Sound of Iona.

The other circumstance to which I have referred is the marvellous development of the Salpidæ this year in the Hebridean seas. I have cruised on those seas every year for fifteen years regularly, and I have been often on the look-out for these curious organisms; yet I have never seen them at all except once, and then only rarely and locally. Whereas this year the water was laden with them almost everywhere, and in some places it was rendered almost foul with their enormous quantity. In the Sound of Iona my tow-net was soon half filled with them; and the long chains of beautiful pattern which passed under the yacht lent an additional charm to the exquisite colour of that pure oceanic water. In the Sound of Raasay, near Portree, the number was still greater. But the maximum development appeared in Loch Scavaig, where, as far down as the eye could reach, there was nothing to be seen but Salpæ in every variety of concatenation and decatenation—long chains, short chains, and countless myriads of separated individuals—making the whole sea little more than a thick soup of Salpæ.

On being placed in a glass of water the muscular contractions of their bodies were beautifully exhibited, and their darting movements were very striking. Their exquisite crystalline material allowed every detail of structure to be seen; and on being placed in numbers in a bucket of water, and on being stirred at night, their phosphorescence was brilliant.

I should be glad to know from any of your correspondents whether there is any explanation of this exceptional development of these creatures.

ARGYLL

Inveraray, September 6

Meteor-Moon-and-Sun-Shine

DESCENDING the Calton Hill from the Royal Observatory on Tuesday night, I was much struck with the appearance, though momentary only, of a fine meteor of Venus-like brightness, passing in a short course from south-east to north-east nearly horizontally, and at a height of about half a degree above the Pleiades, at 3 minutes past 12 G.M.T. The yellowness of the meteor's light was very conspicuous, contrasted with the blueness of the faint stars and of the sky about them in that direction, shimmering in pale blue reflected moonlight; and seemed to speak of abundance of sodium, as well as a low temperature of incandescence, in that particular meteor.

But very different was the colour in the opposite quarter of the sky, or just west of south, where the moon, within a day of the full, was shining brilliantly, in white light immediately around and above it, but producing between it and the horizon, and for a considerable distance on either side, exactly and most perceptibly that faintly claret-coloured haze, which I have been remarking about and beneath the sun all this year. Precisely too as with the sun, the colour was shown on this occasion with the moon to be in the very highest regions of the atmosphere by any cumulus clouds, at heights of 3000 or 4000 feet, that floated past, being pre-eminent on that warm-coloured backing, by the pearly whiteness of their lights and blueness of their shadows. In so far quite agreeably with Mr. Backhouse's recent and very interesting letter in NATURE (p. 359), stating that he had