view. The first of these were made at Peradeniya, Ceylon, in 1885, and were continued for about two months: pieces of the fronds of *Polypodium aureum*, *Adiantum peruvianum*, *Angiopteris evecta*, and *Aneimia*, sp. were selected, with immature sori, and laid on damp soil; but they simply rotted, without any further development. From October, 1888, similar experiments have been made for me by Mr. Sherry in the Glasgow Botanic Garden, the subjects being selected from over twenty genera, and forty-six species and varieties: portions of fronds of various ages were laid, for periods up to six months, on and among *Sphagnum*, which was kept constantly moist, and at an equable temperature. The results have been, that in no single case has any outgrowth of an oophytic nature been observed, except such as could be traced in origin to spores which had not escaped from the sporangia.

It is well, I think, to record these unsuccessful attempts, partly because it may suggest to others to make similar experiments under different conditions, but chiefly because they point to this conclusion, that there is a marked disability on the part of Ferns to bridge over the limits of the two generations by other means than by the formation of spores: the phenomenon of apospory is then by no means a promiscuous one, occurring readily and often, but a rare process, which seems to appear spontaneously, under conditions not yet understood, and is not readily induced. These observations decidedly enhance the importance of those examples of aposporous growths which have hitherto been recorded.

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A LILY DISEASE IN BERMUDA.—For several years a disease has been prevalent in the lily fields of Bermuda, and has seriously damaged the crop, which is there quite an important one. During the past two winters I have devoted a good deal of my time to the study of this disease, and by means of a long series of experiments, both in the fields and in the laboratory, I have been able to prove that a fungus growing upon the leaves and flowers of the plants is the cause of all the trouble. This fungus is similar in all points to that described by Professor Marshall Ward in a recent number of this journal¹ as having caused a Lily disease in England, and from a specimen sent to him he has identified it as the same.

¹ A Lily-disease, by H. Marshall Ward, *Annals of Botany*, vol. ii, No. xii, November 1888.

The lily attacked in Bermuda is not the same as that which suffers in England, but a dwarf variety of the *longiflorum*, the so-called *Lilium Harrisii*, while that attacked in England is the *Lilium candidum*. The environment required by the fungus, and its method of growth, are, however, the same in both cases. It flourishes only in warm moist weather, being readily checked either by cold or by dry heat. In the ordinary course of events the fungus-spores germinate upon the surface of the leaves or flowers, soon penetrating and ramifying through the tissues, until, the conditions continuing favorable, both flowers and foliage droop and rot away, leaving only the bare stalk.

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THE ONION DISEASE IN BERMUDA.—In the Kew Bulletin, No. 10, Mr. A. E. Shipley published an account of the onion disease, of which he had made a careful study in Bermuda. He attributes the disease to the ravages of a parasite (*Peronospora Schleideniana*). More lately Mr. Kingo Miyabe, having worked with material sent from Bermuda, published in the ANNALS OF BOTANY¹ a paper on *Macrosporium parasitium*. In the appendix of this latter article Prof. Farlow states that in making these investigations it was desired to show 'whether the *Macrosporium* was merely a fungus which had attacked plants previously suffering from *Peronospora*, as most botanists would suppose, or whether it might not of itself cause a disease of onions.' Whether this is so or not is most important both from an economic and from a scientific standpoint. Mr. Shipley does not, however, seem to consider that Mr. Miyabe's experiments on this subject are entirely conclusive².

It is not my intention to discuss this question, but only to say, that while in Bermuda in the winters of 1888 and 1889 I studied the disease, and my observations correspond with those of Mr. Shipley, who says that, though he examined many hundred diseased onions in all states of attack, he never saw one suffering from the black mildew (*Macrosporium*) which had not previously been attacked by the white (*Peronospora*). So that it would seem to me that whatever are the possibilities of *Macrosporium* growing as a parasite,

¹ No. ix, 1889.

² Annals of Botany, No. x, 1889.