day scientific conceptions a state of self-subsistent spatial activity consisting throughout of uniform, synchronous pulsations or vibrations. Our only alternative is to try to explain scientifically, *without this 'hypothesis'*; (1) how the universe coheres as one whole; (2) how the cohesion of individual bodies is maintained; (3) how different 'potentials' originate; and (4) 'where' or in what kind of rare state of electrical accumulation that which manifests periodically is held in latency—including the *genius* of man.

W. W. L.

Light-Producing Powers of Sponges

IN his letter published in NATURE of February 18, p. 242, Dr. Crossland directs attention to the interesting fact that the most remarkable polychæte worm, *Syllis ramosa*, first discovered by the *Challenger* expedition at a depth of 140 fathoms, was found by him at a depth of only 1 fathom. Dr. Crossland describes how he obtained the worm from a siliceous sponge, stating that his method is the only way by which the bulk of the smaller fauna inhabiting coral reefs and sponges can be obtained. I have used another method with very satisfactory results.

Examining the list of light-producing animals, in which sponges are frequently mentioned, I observed at Villefranche sur Mer the surprising fact that different sponges living in the shallow waters were giving a very beautiful light. By accident I found

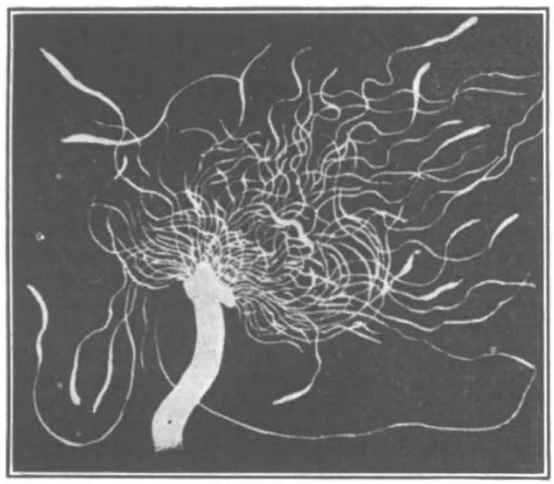

FIG. 1. *Polycirrus aurantiacus.*

one night a phosphorescent sponge of very fragile character; breaking it and separating the two pieces very slowly from each other, I could see a number of very delicate shining threads stretching between the two pieces. I took some of these threads and brought them at once on a slide under the microscope. At the first glance I was able to identify the threads as branches belonging to a small phosphorescent annelid. Considering it probable that the animal, if short of water, would try to get again into its accustomed element, I poured the water out of the bowl, in which the 'light-producing' sponge was lying, and then attached the sponge to the edge of the inclined bowl in such a manner as to allow the water to drip slowly out of the sponge into the bowl. The next night I was amazed to see the abundance of small fauna assembled in the water, which had come out of the sponge, among it two little phosphorescent *Polycirrus aurantiacus* (Fig. 1), scarcely 5 mm. across, which were able to extend their branches to 40 mm. in all directions.

I used the same method to get small animals out of different hiding places such as pieces of porous rock, etc., and could also fix particularly delicate animals, which often suffer under a narcotic, without damaging them.

The question whether the sponges are to be included among the light-producing animals has thus been decided.

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The Dodo and the Aphanapteryx

THE paragraph in NATURE of April 29, p. 615, on the Edwards dodo painting reminds one that this famous picture has a double interest. If one examines it as it hangs in the Bird Gallery of the Natural History Museum, one notes that behind the dodo is figured a long-billed bird referable to no known species of stork or ibis. The unknown is straight-beaked and of a reddish hue varied with black, feebly recalling the plumage of a corncrake; it holds a frog in its bill. The occiput is slightly crested and the legs sturdy as if for swift running.

Now all these characters except the bill occur in the poulet rouge or aphanapteryx as figured by Hoefnagel in his book of drawings of the imperial menagerie at Ebersdorf about 1610. Hoefnagel's bird had the bill curved instead of straight, but this may be due to sex or maturity; the length in both specimens is apparently the same. It seems probable that in the Edwards painting one sees the second known specimen of this long extinct creature, and like the first one drawn from life by a competent artist. This bird, like the dodo, inhabited the Mascarene Islands and a figure of it—long unrecognised—appeared in Strickland and Melville's volume on "The Dodo and its Kindred".

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Fusion of Pycniospores with Filamentous Hyphæ in the Pycnium of the White Pine Blister Rust

THE pycnia of the white pine blister rust are of the sub-corticular type as described by Arthur[1]. They may be characterised as extensive crust-like layers without definite delimitation and not having a well-defined ostiole and paraphyses such as are common to many of the leaf-inhabiting rusts. The pycnial crust consists of a dense layer of stromatic tissue formed by the anastomosing of the rust mycelium. From this layer arise the slender, erect, pycniosporophores, which are closely compacted in a palisade arrangement. Occasionally, a filamentous hypha is seen that projects for some distance beyond the common level reached by the sporophores and, although similar to them in structure, its diameter is usually greater and it is more irregular in outline. No cross walls have been observed in these hyphæ. A single nucleus is present, usually near the base. Often the tips of such hyphæ are bent over into a procumbent position due to the pressure of the overlying host cells. These hyphæ were first reported by Colley in 1918[2], who mentions their presence without comment.