

JUNE 24.

Dr. W. S. W. RUSCHENBERGER in the chair.

Fifteen persons present.

A paper entitled "Notes on the Geology and Natural History of the West Coast of Florida," by Jos. Willcox, was presented for publication.

Some Modifications observed in the Form of Sponge Spicules.—Mr. EDW. POTTS remarked that whatever view we may prefer to take as to the position which sponges occupy in the animal kingdom—whether they are regarded as colonial flagellate monads with Saville Kent, or with Haeckel take a much higher place among the metazoa, or perhaps, with still greater probability, fill an intermediate place between these, the formation and development of the spiculæ in both the Calcareæ and Siliceæ seem likely to remain for a long time one of the most perplexing problems. Many terms of this conundrum will readily occur to the mind of any one who has worked in this field and observed the spiculæ from their earliest appearance to full maturity, and it is not the design of the present communication to refer to them now more particularly.

An instance, however, in which a singular modification of character has apparently been effected by the chemical condition of the environment seems deserving of mention. Amongst the sponges to which he had alluded in former communications as encrusting certain old pipes, recently removed from the water-works on the Schuylkill River, in Philadelphia, some portions were much more deeply colored with rust than the others; the statoblasts, particularly, seeming to be mere pseudomorphs of their originals in iron oxide. Fragments of this character were boiled in nitric acid, washed out and mounted for comparison with other matter similarly treated, but free from such discoloration.

The mature normal skeleton spicule of this sponge, *Meyenia Leidyi*, is smooth, robust and shorter than that of any other American species. Very rarely the fine line of the axial channel is visible, but in the specimen under examination the size and exterior appearance of the spiculæ remaining as before, the hardly noticeable channel has become a wide canal, open at both ends, and occupying more than one-half the breadth of the spicule. This does not occur merely in occasional instances, but universally throughout the fragment of sponge so affected. (See fig. 5, Plate IV.)

The birotulate spicules of this sponge also are short and of a

peculiarly substantial appearance, with entire reflexed margins, yet in the present preparation they could with difficulty be detected as mere ghosts of their normal shapes. The two discs rarely remained together, their characteristic entire margins were gone, the rotules being represented merely by a line of very fine rays. The speaker ventured no suggestion as to the influences or the method by which these changes had been effected, but referred the fact to the consideration of students more competent to deal with the mechanical and chemical constitution of these bodies.

Lieut. Thos. L. Casey, Eng. Corps, U. S. A., was elected a member.

JULY 1.

Mr. THOS. MEEHAN, Vice-President, in the chair.

Thirteen persons present.

A paper entitled "On a supposed new species of *Cristatella*," by Edw. Potts, was presented for publication.

Volcanic Dust from Krakatoa.—Prof. H. CARVILL LEWIS remarked that in connection with the cause of the beautiful red sunsets of last autumn and winter, which had been recently the subject of much discussion in the scientific periodicals, he had been interested in examining some volcanic dust which had been ejected from the volcano of Krakatoa, and which he had received through the kindness of Rev. Wayland Hoyt, D. D., of this city.

This dust, which, on August 27, 1883, fell thickly upon the decks, rigging and masts of the bark William H. Besse, bound from Batavia to Boston, is of a light gray color and harsh to the touch. It is essentially a pulverized pumice, by far the greater part of it consisting of fragments of volcanic glass. These fragments are sometimes twisted, but generally in flat angular transparent scales, which are filled with minute bubbles, and, of course, are isotropic. Angular fragments and crystals of transparent plagioclase, occasionally showing the hemitropic striations, and giving bright colors in the polariscope, together with more irregular and rounded fragments of dark green and brown pyroxenic minerals, probably augite and hypersthene, are scattered very occasionally among the glass particles. Grains of magnetite, often well rounded, also occur, and may be picked out and examined separately by a magnet covered with tissue-paper.

As it is this dust which is regarded as the cause of the universal red skies which followed so soon after the eruption, attempts have been made, both in Europe and America, to discover traces of it in snow or elsewhere,



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