

XI.—NOTICE OF A SHOWER OF FIBROUS SUBSTANCE AT GAINSVILLE, FLORIDA.—BY GEORGE LAWSON, LL. D.

(*Read 8th May, 1893.*)

ABSTRACT.

Dr. Lawson exhibited samples of a substance, consisting of extremely delicate, pure white fibres, that had fallen from the atmosphere upon the ground in quantity large enough to whiten it over an area extending about ten miles, around Gainesville, Florida. The specimens, with an account of the phenomenon, had been transmitted by Mr. R. S. Pike, of Gainesville, to Colonel Stewart, of Halifax, in order that they might be examined with a view to an explanation of the nature and source of the substance. After examining them, Dr. Lawson wrote to Colonel Stewart as follows:—

22nd OCTOBER, 1892.

DEAR COLONEL STEWART,—

I have examined the mass of white threads which you handed to me on the street yesterday, and which I understood you to say had fallen in a shower over a region of some miles extent in Florida. I find that the substance, on combustion, gives out an ammoniacal odour, characteristic of bodies rich in nitrogen. It cannot therefore be a vegetable fibre. It may be the silky substance of which many insects construct their cocoons. Under the microscope, however, it shows the very fine round uniform thread such as is produced by the more perfect spinning apparatus of a spider. I have no doubt therefore that such is the origin of the material. I shall be glad to hear how far this explanation accords with the observations made by your Florida correspondent.

Yours faithfully,

GEORGE LAWSON.

Some months afterwards a full account of the "shower" was published in the *Scientific American*, with the results of an examination of the material, which corresponded entirely with the above explanation, and another instance of spider's web material falling from the atmosphere (in California) was cited.

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Subsequent to the meeting at which the above communication was read, Dr. A. P. Reid, Medical Superintendent of the Victoria General Hospital, examined the material in question and reported upon it as follows:—

"On microscopic examination, I find it is made up of elastic fibres having much the appearance of 'yellow elastic tissue.' Each fibre is made up of a number of fibrillæ, which, on measurement of this ultimate fibril, I find it to be 0.0018 mm., or about  $\cdot 000072$  of an inch ( $\frac{1}{14000}$ ). The fibrils are even and continuous and structureless. They often run in pairs perfectly parallel with each other, so much so as to bear very much the resemblance of a hollow tube, but, on careful examination, I was able to definitely resolve the apparent tube into two distinct fibrils that could be separated from each other, and they were not adherent to each other.

"This all goes to shew the accuracy of your opinion that they are the product of a spider, and each fibril the product of a "spinneret," and these spinnerets so close together that the issuing fibrils emerging in company continue to remain loosely associated. The fact that they are even, continuous and structureless will also bear out the explanation. When examined with Leitz's pantachromatics, the apparent tube is seen to be made up of as many as 3, 4 and 5 of these fibrils, lying irregularly beside one another. This can be readily made out with the  $\frac{1}{8}$ th objective, and with the  $\frac{1}{12}$ th immersion. I got the best definition with the specimen stained with Erlich's triple stain; when thus made out the structure could be perceived in the plain specimen. I have no doubt but any of the microscopic color stains would be equally efficient, and I only used the triple

because it would be more likely to shew any structure if such were present.

“The fibrils are small, the  $\frac{1}{14000}$  of an inch being the largest, yet they are wonderfully even in size and continuity.”

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(*Scientific American*, Nov. 19th, 1892, page 325.)

#### SPIDER WEBS FROM THE CLOUDS.

A subscriber living in Gainsville, Florida, sends us for identification a white thread-like substance which he states fell to the earth in large quantities during a rain on September 20th. A sample of the material had already been forwarded by another person to the Smithsonian Institution and was thence sent to Dr. George Marx, of the Department of Agriculture, who makes the following report:

“The sample of a white substance which fell in great quantities in Gainsville, Fla., has been handed me by the botanist of this Department for examination.

“This very interesting material is without doubt a product of the spinning glands of a spider, or rather thousands of spiders. The chemical reagents prove it is not a vegetable matter, but animal, and the fact that strands can be dissolved almost infinitely into minute threads, and further, the great length of the strands, hundreds of yards, causes the inference that only a spider could manufacture it.

“The species of this spider is unknown to me, but it is not improbable that it might be a *Nephila*, a very large orb-weaver, which abounds in the southern parts of the United States and the West Indies.

“The young spiders of many genera avail themselves of their spinning products to migrate from their birth place by floating through the air to localities at a great distance. Should rain moisten these weavings the spider-web becomes too heavy to float in the air and sticking together in great masses falls from above.

"A similar occurrence was reported to me from Vallicita, Calaveras county, California, Nov. 16, 1891. It has occurred there for the last four years in October and November."

This is the first time this phenomenon has occurred in the South. The web is perfectly white and appears to be a mixture of silk and cotton, but mostly silk.