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IV.—On the existence of Siliceous? Spiculæ in the exterior rays of Actinia

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man informs me, that having once "set" nine eggs of the domestic hen, he by mistake, at the expiration of two, instead of three weeks, went to examine them, and lifting each egg shook it violently, to ascertain if it were addled. He concluded that all were in this state, and thought no more of the matter until a week afterwards, (the twenty-one days having expired,) when the hen appeared strutting about with seven or eight chickens; the violent shaking in this instance of eggs two-thirds incubated did not injure the contained chick. Mr. Sinclair has known his tame pigeons remain off the nest all night when their eggs were half incubated, and though, as in the case of those of the partridge, they felt quite cold, no injury arose from this circumstance.

PTARMIGAN, *Tetrao Lagopus*, Sabine.—As remarked by me elsewhere, "the *T. Lagopus* is not now, nor do I conceive ever was, indigenous to this island. There seems not to be in any part of Ireland a continuity of mountains of sufficient altitude to be suited to the ptarmigan's abode." This species is known to so few persons, that the following note may perhaps be worth insertion.

"Dec. 1835.—My relative Robert Langtry, Esq. (of Fortwilliam, Belfast,) informs me that when at shooting quarters last autumn in Ross-shire—on the banks of the Beulay, and close to Loch Monar—he on several days shot four or five brace of ptarmigan. When his dogs pointed and the birds were but a few yards distant, so great was their assimilation in colour to the surrounding rocks, that he could not distinguish them so long as they remained motionless. They soon, however, stretched their necks and *walked* off before the dogs, and on being further disturbed took wing, but only to alight like a flock of pigeons on the tops of the adjacent stones. My friend verifies the accounts of their being easy of access, but states that, like other game, they are wild when the ground is wet."

[To be continued.]

IV.—*On the existence of Siliceous? Spiculæ in the exterior rays of Actinia.* By G. W. BAILEY, Prof. Chem. Min. and Geol. U. S. Military Academy*.

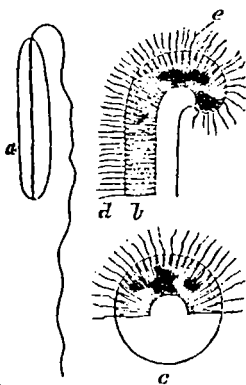
DURING a recent visit to Boston in April, I eagerly embraced the long-wished-for opportunity to examine the marine siliceous infusoria of our coast; for I hoped to be able to detect, in a living state, some of those elegant forms which occur so abundantly in the fossil infusorial strata of the marine tertiary of Virginia. I was aware that Ehrenberg had detected many of these forms in a living state in the sea at Cuxhaven and elsewhere, and I felt confident that our shores must abound in similar forms. In company with Dr. Gould, I visited the docks near the Chelsea ferry, and collected from the immersed logs, &c. a quantity of filanctous algæ, among which I knew that many of the objects of my

* From the Boston Journal of Natural History, vol. iv. No. 2.

search were likely to be entangled. On subjecting them to a microscopic observation I detected a number of very interesting and beautiful forms, although the season was not the most favourable. The first objects that attracted my attention were great numbers of siliceous spiculæ, precisely similar to those found fossil in the infusorial strata above referred to; these I found among the algæ, and also more abundantly in the mud of the docks. These spiculæ resemble those found in some species of *Spongia* and *Tethya*, and I believe that Ehrenberg refers the fossil ones to these genera; but an observation which I made leads me to suspect that some of them, at least, are derived from the exterior rays of *Actinia*. On examining with a high magnifying power the rays of a large species of *Actinia* which had an orange-coloured base and olive rays (*A. marginata*, Lesueur?), I found that the white rays which form the exterior circle appeared to differ from all others, being filled with spiculæ arranged with great regularity and in countless numbers, radiating from the axis of each arm (see fig. 1, *b* and *c*). Each of the spiculæ was perforated with a longitudinal cavity, from which was protruded a very long and delicate fibre (see fig. 1, *a*). These spiculæ resembled so much in their form, perforation, and general appearance, some of the fossil siliceous spiculæ above referred to, that, like the fossil ones, they must be siliceous. This question I had not the means of deciding, but I hope it will be settled by some of the Boston naturalists.

It is only necessary to burn one of the rays and examine the ashes; the siliceous spiculæ will of course retain their form after ignition. It would be an interesting fact, if, by means of these spiculæ, we could obtain evidence of the existence of species of *Actiniæ* during the epoch of Eocene tertiary; for who would expect that such soft and perishable creatures could leave, for such a length of time, any trace of their existence?

The annexed sketches were made merely as memoranda, as I hoped to have further opportunities for observation. They will serve to indicate the form and position of the spiculæ, although they have no pretensions to accuracy.



EXPLANATION OF FIGURES.

a One of the spiculæ from a white external ray of *Actinia marginata*? showing its longitudinal perforation and the long projecting filament, much magnified.

b Ideal longitudinal section of a ray to show the manner in which the spiculæ are arranged; at *d* are seen the vibrillæ, and at *e* the long filaments.

c Ideal cross section of the ray.