above locality, but at many others, both in the Gulf Stream and Gulf of Mexico, and that this greensand is often in the form of well-defined casts of *Polythalamia*, minute mollusks, and branching tubuli, and that the same variety of the petrifying material is found as in the fossil casts, some being well-defined greensand, others reddish, brownish, or almost white. In some cases I have noticed a single cell, of a spiral *Polythalamian* cast, to be composed of greensand, while all the others were red or white, or *vice versa*.

The species of *Polythalamia* whose casts are thus preserved, are easily recognizable as identical with those whose perfectly preserved shells form the chief part of the soundings. That these are of recent species is proved by the facts that some of them still retain their brilliant red colouring, and that they leave distinct remains of their soft parts when treated with dilute acids. It is not to be supposed, therefore, that these casts are of extinct species washed out of ancient submarine deposits. They are now forming in the muds as they are deposited, and we have thus now going on in the present seas, a formation of greensand by processes precisely analogous to those which produced deposits of the same material as long ago as the Silurian epoch. In this connexion, it is important to observe that Ehrenberg's observations and my own, establish the fact that *other* organic bodies than *Polythalamia* produce casts of greensand; and it should also be stated that many of the grains of greensand accompanying the well-defined casts are of wholly unrecognizable forms, having merely a rounded, cracked, lobed, or even coprolitic appearance. Certainly many of these masses, which often compose whole strata, were not formed either in the cavities of *Polythalamia* or mollusks. The fact, however, being established beyond a doubt, that greensand does form casts in the cavities of various organic bodies, there is a great probability that all the masses of this substance, however irregular, were formed in connexion with organic bodies, and that the chemical changes accompanying the decay of the organic matter have been essentially connected with the deposits in the cavities, of green and red silicates of iron, and of nearly pure silica. It is a curious fact in this connexion, that the *siliceous* organisms, such as the *Diatomaceæ*, *Polycistineæ*, and *Spongiolites* which accompany the *Polythalamia* in the Gulf Stream, do not appear to have any influence in the formation of casts.

The discovery of Prof. Ehrenberg, of the connexion between organic bodies and the formation of greensand, is of very great interest, and is one of the many instances which he has given to prove the extensive agency of the minutest beings in producing geological changes.—*Proc. Bost. Soc. Nat. Hist.* vol. v. p. 364.

ON THE CUMÆ. BY PROF. AGASSIZ.

In a recent number of the 'Annals and Magazine of Natural History,' Mr. Bate describes some Crustacea related to *Cumæ*, which had young, and *therefore were adults*. This is not in conflict with the statement of Prof. Agassiz in this Journal, vol. xiii. p. 426,

where he says, "In regard to the Crustacea called *Cumæ*, I cannot say positively that the group must as a whole be suppressed. But I can state with confidence, that all the species of that genus which I have had an opportunity to examine alive—and I have watched three—are young of *Palæmon*, *Crangon* and *Hippolyte*." Prof. Agassiz, in a recent letter (to J. D. Dana, dated Nahant, July 18th) respecting these observations of Mr. Bate, writes that "they only show how extensive a field of observation remains untrodden among these little forms. Had Mr. Bate looked more fully into the embryology of Crustacea, he would have been better prepared to appreciate the close correspondence there is between the young of certain families and the adults of others, and would have known that these facts are not limited to the Macroura, as I have shown in my Lectures on Embryology, p. 62-69: he would know that the eyes of even the highest Crustacea are sessile in the young, &c., and that such characters observed upon young Crustacea do not therefore prove them to be peculiar types, unless at the same time their reproduction be satisfactorily traced. Acknowledging Mr. Bate's interesting observation as proving that his *Diastylis Rathkii* is an adult animal, the question has made a real progress through his researches; but it remains as certain as before, that *there are Cumæ which are larvæ of Macroura*."—*Silliman's American Journal*, Sept. 1856.

NOTE ON CALLITRICHE HAMULATA.

To the Editors of the Annals of Natural History.

October 13, 1856.

GENTLEMEN,—While lately in Scotland I had the satisfaction of finding the *Callitriche hamulata* (Kütz.) growing in a ditch communicating with the river Annan, close to Jardine Hall.

The specific character of the *C. pedunculata*, as given in Babington's Manual (ed. 4. p. 293), applies accurately to the *C. hamulata*, with the exception of the supposed want of bracts in the former plant.

On mentioning the subject to Mr. Babington, he informed me that he had detected bracts on cultivated plants of his *C. pedunculata*, β . *sessilis*, and convinced himself that that plant is *C. hamulata*. He considers *C. hamulata* (Kütz.) as the type of the species, and the *C. pedunculata* (DC.) to be a variety of it.

My discovery does not therefore increase the number of our species, but only corrects the nomenclature by identifying a doubtful plant with a known continental species. This is a highly satisfactory result.

I may add that Mr. Babington mentioned that the bracts are usually very deciduous in this plant; such I found to be the case in the Scottish specimens.

I am, Gentlemen, yours obediently,

FREDERICK TOWNSEND.

Agassiz, Louis. 1856. "On the Cumæ." *The Annals and magazine of natural history; zoology, botany, and geology* 2nd ser. v. 18 (1856), 428–429.

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