

### Shall We Teach Geology?

PERHAPS Professor Winchell and his reviewer have said as much as is profitable on the points at issue between them, and yet I for one should feel sorry to have the discussion end precisely as "Reviewer" leaves it. We all gladly admit that the Roman Empire is a more interesting object of study than the "old red sandstone;" but how if a study of the "old red sandstone" helps us to understand the Roman Empire, in the first place by giving us a superior method of study, and then by teaching us something about the theatre upon which the Roman and other empires played their parts? And especially how if one is teaching children to whom the Roman Empire is very distant and very dead, while the "old red sandstone" crops out just before the schoolhouse door, and is so attractive and interesting to them that they often ask questions about it? Unquestionably, our national hero, when properly brought before the mind, is a more gracious figure than a plesiosaurus; and yet it is very easy to teach American history in such a way that one form shall seem to the children about as rigid and unstimulating as the other. If a plesiosaurus is just being exhumed in the neighborhood (it is proposed to teach children only the near and the attractive in nature), I am not sure but he will prove, for a few days at least, the more interesting object.

It seems to me that "Reviewer" is afraid of a word. Suppose we say nothing about geology, but simply give the children an opportunity, at proper times and in due measure, to vary their studies by some minute and careful examination of minerals, plants, and animals. Such study need take but little time, but, if properly directed, may be very valuable; may, indeed, exert a transforming influence over those who are subjected to it, giving them new aptitudes, new sensibilities, and a finer organization. Is this too much to ask? Have not twenty-five years of discussion brought us at least as far as this?

What is demanded is not the introduction of a new subject of study into an already crowded curriculum, but an organized course

of nature-study running through the whole period of school-life. The particular objects of study are not so important, but plants and minerals will naturally form in the lower schools the main part of this material. The point is, that the instruction should be continuous enough and yet fresh enough to catch and hold the mind in its varying stages of development from youth to manhood. Good collegiate must be grounded upon good preparatory work. Accepting "Reviewer's" test—that also of Johnson and Arnold—of teaching that which is "interesting to the mass of men," does it bear out his inferences? If so, let us drop this subject altogether, and not cling to the dead form of "geology as an optional study in the high schools and colleges." The ordinary college presents many disheartening sights; but I know of no one more disheartening than to see the members of a senior class who have never taken up a stone except in anger, and never thought of one except as a missile passing from hand to hand,—the *pièces justificatives* of a lecture on geology.

Ypsilanti, Mich., April 1.

E. A. STRONG.

### Curves of Literary Style.

IT seems necessary to explain occasionally that in the construction of curves of literary style, concerning which two or three notes have recently appeared in *Science*, a very large number of words or sentences must be used. The method is distinctly based on a supposed constancy in the long-run. In the original article the statement is made that probably not less than one hundred thousand words or sentences would be required for the construction of a "characteristic curve." If Mr. Parker had counted only thirty sentences from "Sartor Resartus," he might have found a close agreement with the curve of the "French Revolution," or he might have found a wide divergence. In neither case would the result have had any significance. A comparison of three hundred sentences proves nothing, one way or the other.

Terre Haute, Ind., April 1.

M.

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