through the flesh and milk, and through butter and cheese. The disorder proves fatal in man as in animals." As our correspondent says, this subject is one of great interest as a disease affecting both man and animals, and we should be glad to receive any information which will indicate its present home and prevalence. — ED.]

The teaching of natural history.

I have been much interested in reading the rather unjust review of French's 'Butterflies' in a recent issue of *Science*, 'A teacher's' letter in a succeeding number, and Mr. S. H. Scudder's reply in the last. Unlike Mr. Scudder, I have been a teacher, although I have never had but one pupil, — myself; and, as I have him yet, I want to ask Mr. Scudder what I shall do with him. What education I possess was, with one exception, directed by the faculties of certain institutions, where nothing was known but Latin, Greek, and mathematics. The exception was in a high school where Gray's 'How plants grow' was used as a reading-book. The class never had a plant, a flower, or a leaf. The readers simply stood up and read the first one hundred pages of that book. The pupils asked no questions, they could not for evident reasons; neither did the teacher; and the latter volunteered no remarks; yet that botanical instructor was, it seems to me, adopting the plan advocated by Mr. Scudder, for he was not using Gray's book in 'finding out the mere names of objects:' he was allowing the book to discuss "the nature, meaning, and causes of the relative affinities of organized beings," so far as that little book could do. I did not learn the name of a single plant. I am more than sure that I learned none of the relative affinities of which Mr. Scudder speaks. How could I? Without the specimen, what meaning is conveyed to the beginner by, "A flower, with all its parts complete, consists of calyx, corolla, stamens, and pistils; one from the morning-glory will serve as an example"? The morning-glory, indeed! Why, this will never do. Morning-glory is the *name* of a plant, and Mr. Scudder says, 'The name may be called a necessary evil; and unless, with it, is more emphatically acquired a knowledge of the structural and biological relations of the object which it bears to other objects, it is worse than useless knowledge." In my case the name was not even a necessary evil, for it did not exist. I was supposed to be acquiring knowledge of structural relations in an elementary way, and the book was supposed to be teaching the class the affinities and relations of things botanical; but, so far as I am concerned, I am free to admit that the result was an abominable failure. How could I have obtained the flower called for, since I did not know the plant producing that flower?

When Mr. Scudder goes to a flower-show and sees a strange plant, does he engage the florist in a discussion about biological relations or structural affinities? No, I think Mr. Scudder says, 'What *is* that?' When Mr. Scudder finds a fossil insect, he doubtless studies its biological relations, since he is an advanced and accomplished naturalist; but, if he were an ignorant beginner, he would run to his teacher with the question, 'What *is* that?' And if he had himself for a pupil, who had not learned the structural affinities of 'the find,' he would ransack the books for the name; and, having found it, he would en have not only the key that opens the door to further knowledge of the work of other investigators, but he would have a peg as well, on which to hang his information and the result of his own investigations. If he would not do this, what would he do? In all kindness, with the heartiest feelings of esteem for Mr. Scudder, and with a burning desire to increase my own knowledge, let me beg Mr. Scudder to tell me what I shall do with my single ignorant pupil. How can I teach myself the biological relations and structural affinities of the butterflies, since I am not supposed to know the name of even the commonest butterfly? Without the name, what foundation have I on which to erect my future learning? I got the structural affinities without the names in my earliest botanical instruction. The result I do not approve. But if Mr. Scudder will tell me how to teach myself according to his plan, he will also be telling 'A teacher' how to teach his pupils, although I am *not* the author of the letter in the last *Science*. If I am not to begin by finding out the name, where shall I begin? If I dissect the butterfly, study its histology, and write a monograph on its ontogeny, and know not its name, what shall I call the book, and what will its readers say? Shall it be 'The structure and life history of *a* butterfly?' Of what butterfly? To my uninstructed eyes there seems to be more than one butterfly. If there are more than one, do they all have the same structure and life-history? Were I allowed to pursue what seems to be a natural and proper course, I would take French's excellent book, and having found the name of the specimen by French's excellent key, and having learned what French has to say in his text, I would, as I do, await the issue of Mr. Scudder's expected work on the butterflies with pleasant thoughts of anticipations about to be agreeably realized. But since this would be the wrong method, will Mr. Scudder kindly tell me what would be the right one?

A. READER.

The classics versus science.

An editorial paragraph in *Science* for Nov. 19 suggests some curious reflections. If, as you say, Mr. Lowell's oration at Harvard "is itself a justification of a classical and literary education, and a living argument for a culture loftier and deeper than that which strictly utilitarian theories would provide," does it not logically follow that science deserves no place in the curriculum, and that your own journal has little excuse for being?

Science has been added to the course of studies largely because of the demands of the utilitarians; and only in recent days, and faintly, has its disciplinary value been urged.

Certainly, when one sees what is oftentimes taught as science, and is obliged to read the wretched English in which some scientific books are written, — which books, by the way, are highly lauded in scientific journals, — and, moreover, when one witnesses the temper of scientific men in treating those who differ with them concerning the latest ephemeral classification or other equally important point, one is inclined to side with the classicists in the belief that the study of science has little value either for purposes of discipline or culture; that it scarcely forms 'open-minded' men in the poet's sense; and that perhaps it would be better for all concerned that they should be 'digging Sanscrit roots.'

F. W. STAEBNER.

Westfield, Mass., Nov. 21.