

phosphorus-delusion has twined itself round a saying quoted (rightly or wrongly) from Professor L. Agassiz, to the effect that fishermen are more intelligent than farmers because they eat so much fish, which contains so much phosphorus. All the facts may be doubted.

Mark Twain, in 1875, was perhaps more humorous than he realized, when he placed whales with fishes in this "Answer to Correspondents":

YOUNG AUTHOR.—Yes, Agassiz *does* recommend authors to eat fish, because the phosphorus in it makes brains. So far you are correct. But I can not help you to a decision about the amount you need to eat—at least, not with certainty. If the specimen composition you send is about your fair usual average, I should judge that perhaps a couple of whales would be all you would want for the present. Not the largest kind, but simply good, middling-sized whales.

"American humor is nearly as ephemeral as the flowers that bloom in the spring," writes Aldrich. "Each generation has its own crop, and that of 1860, were it to break into blossom at the present moment, would probably be left to fade upon the stem." But some, perhaps, would regret to lose what has here been recorded of Lowell. As to Mark Twain, he "is not to be classed with the fragile plants."

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AS STUDENTS UNDERSTAND IT

IN SCIENCE of August 29, Professor Ellison A. Smyth, Jr., gives an amusing series of student blunders and carelessness in relation to facts of biology. These plainly show that the persons in question knew nothing and cared less for the work required of them.

But does it not illustrate still more plainly "the dry rot of academic biology" and the misuse of the lecture system?

In his admirable autobiography, Professor Pupin criticizes the University of Cambridge for giving him "information" when he needed "contact." Information is what the usual "lecture courses" give, and what the conventional examination asks for, from which the average student gains nothing. Such information is, in general, mechanically given, imperfectly understood by the student, and soon dismissed from his mind.

The results of contact may be permanent. Only by direct relation to things as they are can any healthy teaching in biological subjects be attained. This was clearly shown by word and deed by Agassiz, more than fifty years ago. In our day, the impulse he gave is unfortunately dying out. It is not now the fashion, even for the teacher, to know anything in detail and with exactness. Some zoologists have never

looked an animal in the face. A university should train men to observe accurately, to think for themselves and with enthusiasm. To give information is a relatively minor matter. The Sunday newspaper attends to this.

There are two main justifications for college lectures on science. One is to bring together in unified relation facts developed in the laboratory. The other is to develop enthusiasm, "to give inspiration," as the phrase is. To make such lectures worth while the teacher himself must have a degree of inspiration, with skill in making his words connect with the ideas already possessed by his audience.

The student who has handled a reptile or two will not write: "Reptiles have two or more pairs of limbs, such as the locust and others."

Nor will one who knows a bacillus at sight say: "Bacteria are used when vaccinating a person for disease; again they are used in spraying plants."

The fault in the matter of "senterpedes" and "bile ducks" does not lie with the teaching of spelling in the lower schools, but in the use in college of words which convey no actual meaning. Let us have contact as a basis for information. "It is not enough to tell a student that a magnet attracts iron, he must himself feel it pull."

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MAY I add to those choice "howlers" of Mr. Smyth's in SCIENCE of August 29 these two samples.

Mine, however, are not by any bewildered child under stress of examination, but from a printed sermon, written with "The Outlines of Science" open under the preacher's nose, by a doctor of divinity, a graduate of a New England seminary, who has been vice-president of his denominational educational society and trustee of four colleges.

The North Star . . . is said to be moving away from us with incredible rapidity, and yet is so far distant that it has seemed to change its relative position but a very little in a thousand years.

Another valuable feature of the spectroscope is its ability to measure the speed of light, even when the light is coming straight toward the instrument. The speed being determined, the distance of the star from which the rays come can be reckoned.

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LATIN AS AN INTERNATIONAL LANGUAGE

In reference to the letter of Professor Roland G. Kent about the use of Latin as an international auxiliary language, published in SCIENCE for June 20, 1924, pp. 554-555, may the attention of your readers be called again (see SCIENCE for April 11, 1919, Vol.