

for their wonderful physical and mental vigor, and persistence through the ages.

The prevailing ignorance of sanitary laws is so great, and the deplorable results of this ignorance are so prevalent, that it is the duty of every teacher to make a special study of this subject, so that in every school section in the land a public sentiment may be created that will assist medical men and sanitary experts in introducing many much needed sanitary improvements.

The titles of two or three of the most modern and valuable books on sanitary science should be published in the EDUCATIONAL REVIEW.

### Physiology.

The same general remarks apply to the study of human physiology in the public schools, as well as to sanitary science. Both are of supreme practical utility, and to some extent the leading facts of both must be learned from books, or from the teacher. Physiology, however, more easily lends itself to experiments and demonstrations suitable for young pupils. Indeed the fundamental conceptions must be learned from the pupil's own observation. If this is not done, and well done, the greater part of the text will have but little meaning to the pupil, and it will soon fade from his memory.

The materials for experiments and observation are so easily obtained, the directions in the text-book are so explicit, and the results of such teaching are so valuable, that there is no excuse for making the subject merely an exercise in memorizing the text—no excuse even in ungraded schools.

That in some cases nothing was done beyond memorizing the text was evident from a number of the answers given at the last Nova Scotia provincial examination on this subject. Within the last six years, however, there has been much improvement in the character of the teaching. This year a larger proportion of the candidates than ever before were able to name three experiments in physiology, which they had performed, and were able to describe them in words which left no doubt whatever in the mind of the examiner as to their genuineness.

It might be well to note some points which should receive more attention if yet better results are to be obtained:

1. Students should pay particular attention to the spelling of the technical terms, especially the more common ones. Such misspelled words as these are of frequent occurrence: "Sells" for cells, "sholder," "musels," "limph," "alkiline," etc. One candidate had twenty-four mistakes, such as "brane," "pidgin,"

"stumach," "alccli," etc. It seems strange that such a candidate should have been able to get a grade "C."

2. Experiments should be described exactly as they occur,—never in the words of the book. A good and genuine description of one's own experiments always receives a high mark.

3. Pupils should have much practice in representing correctly by drawings the forms of the bones, muscles, cells, etc., which they are studying. Even the memory drawings from the book are of great value, and sometimes double the value given to an answer.

4. The candidates should always consider carefully the wording of the question. At the last examination the first question was: "What are the functions of the following organs—the patella, the lacteals, etc.?" About 40 per cent. of the answers merely described their positions, but gave no information about their "functions." In the teaching examinations, which are frequent in every good school, some questions should be devised in which the examinee is liable to make mistakes of this kind, in order that the opportunity may be given to call attention to them.

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### Outline Maps.

A series of outline maps has been published by a teacher of the Halifax Ladies' College for the use of schools in connection with the teaching of geography. The use of outline maps is not new, but with a series of maps, each one to be used to emphasize certain features of the country, and to bring these features before the scholars in a logical sequence, a very comprehensive knowledge of the country can be gained. A few of the points in favor of the use of the maps may be briefly noted: The outlines are furnished the scholar, and as his attention is constantly directed to the relative positions of coast-waters, rivers, mountains, etc., which he must locate himself from memory, he gets a knowledge of the outline and of the general topography of the country, which it would take many hours of merely mechanical map drawing to accomplish.

In the use of a series of such maps, the knowledge obtained is comparative, definite, and not confused. One map is used to illustrate physical features, another vegetation, another position of cities and their distinctive characters, whether commercial, manufacturing, etc. There is a distinct advantage here over the use of one map for the representation of all points to be learned, for in such a case the facts become blurred and confused in the mind on account of their variety and multiplicity, and they have nothing of the clearness and definiteness