

taught in our schools, does not lend itself. It does not train us to balance carefully the probabilities on either side, so as to choose between the horns of a dilemma. We all know how exasperatingly often this is necessary in life. My conclusion, then, is that Mathematics, while immensely important to specialists because of its use in developing many of the sciences, is not specially suited for general education beyond the arithmetic, etc., used in business, since it supplies but few workable facts, and does not develop the intellectual muscles that we most commonly use.

Next, let us take the study of Language. This is valuable in itself as affording access to stores of knowledge in our own and other tongues, and as aiding in writing and oratory, both of great service to men of every occupation. It surpasses Mathematics as a training for life, since it demands a certain amount of observation, and exercises the reason in judging of niceties of meaning and in deciding between conflicting renderings. On the other hand, it will be admitted that in our schools students rarely get enough of any one language except their own to enable them to use it afterwards; and, as ordinarily taught, the study of language is apt to foster a quibbling habit of thought, and to give importance to words rather than ideas.

History and Geography we may say but little about, since in our schools they are commonly "crammed," and while supplying facts of great value, train chiefly the memory, which is far from being man's most lordly part. Morals or Religion, as separate branches, scarcely come within the range of popular schools.

Finally, what of the Physical Sciences as a mental discipline?

In general, these follow the methods of actual life, only with more exactitude, gathering facts by obser-

vation, arranging them, and generalizing and theorizing from them. Some, like Geology, give splendid exercise in tracing the relations of cause and effect, and in judging of probabilities; others incline more to the exactness of Mathematics; all, when not taught from books alone, demand close observation and conscientious truth in setting down the results of observation. This last point is one of great importance. How many blunders are the result of hasty and careless observation? How many so-called facts are twisted out of all semblance of the reality by prejudice! What but unsound conclusions can be drawn from these ill-observed and twisted facts? The more logical the reasoning the more certain is the conclusion to be false, if it sets out from false premises. Science trains us to observe with unprejudiced eyes before forming a judgment. The chemist, making an important analysis, if he spills a drop or two from his beaker, patiently goes back and begins anew, even though he has spent days on his work, and is on the point of finishing. In this age of shams and defalcations and fraudulent bankruptcies, let us not neglect anything that trains the mind to scrupulous honesty.

Again, most of the Physical Sciences, unlike Mathematics and Philology, treat of subjects of practical importance in the sphere of everyday life. We are fond of boasting of the advance the world has made in our age. If we look carefully we shall see that but few important advances have been made except in the domain of physical science. The process often goes on somewhat in this way: certain phenomena in nature, perhaps very trifling in appearance to an untrained eye, are observed; their relationship to previously known phenomena are studied, and the knowledge thus gained is by some inventive brain turned to practical use.