

educate. The author of "Daydreams of a Schoolmaster" has, indeed, said, that a physically healthy booby is as rare as a live Dodo. I do not agree with him. Boobies are not extinct: in the interests of science—say for preservation in the British Museum, or for dissection at the College of Surgeons—two or three very fine specimens might be procured in a certain great school. In young specimens, however, the species is almost as difficult to determine as it is in young ammonites; and the old ones have a singular imitative instinct (apparently with a view to concealment from their natural foes), and externally resemble persons of intelligence.

The truth is, that there is no place like school for having notions of equality driven, by dire experience, out of one's head. There are scores and scores of boys whom you may educate how you will, and they will know very little when you have done, and know that little ill. There are boys of slipshod, unretentive, inactive minds, whom neither Greek grammar nor natural science, neither schoolmasters nor angels, could convert into active and cultivated men.

There is no great mass of opinion unfavourable to making natural science a regular part of school instruction; and there is a large, and not very inactive mass of opinion favourable to it. But progress in this direction is not likely to be very rapid, as both the men and the machinery that are to work the subjects have to be created. At present a Natural Science master is very hard to get. When the demand begins, doubtless more will qualify themselves. And most schools are unprovided with buildings and apparatus necessary for teaching science properly. These essentials cannot be supplied without considerable expense; that is, in general, without increasing the cost-price of education. And schools naturally hesitate before raising their terms with this object. They wait till they are sure that the opinion of their clientela will sanction both their object and their method of attaining it.

But more than all, the influence of the universities and colleges is on the whole unfavourable. The universities, by their Triposes and prizes, affect generally the studies in the colleges. But the colleges, by their scholarships, exhibitions, entrance examinations, prizes, and lectures, direct the studies of the schools throughout the kingdom. They do this to an extent of which they are, in general, unconscious. If the colleges, for example, ceased to demand Latin verses for their scholarships, Latin verse would almost die before the breath of their disfavour. If the colleges offered scholarships and exhibitions, to acknowledge and encourage the study of science at schools, then the teaching of science would at once be naturalized in most of the schools which contribute many men to the Universities. Up to the present time Oxford has taken the lead in this: Christchurch, Balliol, Merton, Magdalen, and New College all encourage natural science more or less. And their recognition of it, though very small, has been most useful. But at Cambridge, very little is done by the colleges; and the two great colleges, Trinity and St. John's, have hitherto out of their large revenues, liberally expended for the encouragement of some other branches of learning, devoted literally nothing to reward the successful prosecution of natural science. Hence all the abler boys at school are in fact heavily bribed to study either classics or mathematics, even though their genius is for natural science. And from this want of recognition of science by the colleges generally, and from a belief that it is founded on a well-grounded disapproval of science as a part of early liberal education, and from some distrust of it as a possible disturber of classical tradition, schools naturally hang back from taking the step of incorporating natural science into their course of study. (1)

Cambridge, moreover, must undergo a great change of disposition, and therefore of its institutions, before science will flourish there. For science requires above all things the ardent and devoted love of knowledge: it requires enthusiasm for study; it cannot live where teaching has taken the place of learning; and where a nearly stationary unprogressive condition of learning is tolerated, and is supposed to be even favourable to the education of students. Whatever change is made for the revival of learning at Cambridge will be favourable to the cultivation of science there. Nothing, I believe, is of greater importance as affecting the progress of education in England than the reforms, now whispered, which must soon be made at Cambridge.

Besides the immediate results of the recognition of science as a part of the higher liberal education in improving the working of schools, there are other remoter effects of much greater importance. To them, in the concluding paragraphs of an essay already too long, it is not possible to do more than briefly allude. It is impossible not to feel that with the spread of scientific modes of thought are bound up all the highest interests of philosophy and religion. Much of modern logic, and philosophy, and thought is incomprehensible except to men trained in science. To any one tolerably conversant with the distressful state of mind of thoughtful men on some religious questions, most welcome will be any progress which may help to free our successors from the same partition of soul, the same divided allegiance, from which the present generation suffers. It cannot long be possible for us to consent to turn out men into the world totally unprepared to meet the problems which will necessarily force themselves on their notice; to turn out men, professedly of the highest education, totally unfurnished with true scientific method and knowledge, totally unable to meet the shallowest arguments from a false philosophy of nature brought on the side of materialism or atheism; who will talk glibly of the supernatural, and yet be ignorant of natural. Does it seem strange to hail as a friend to religion that scientific spirit so often denounced as hostile? Yet how can it be otherwise? "Are God and nature then at strife" indeed? At present there is secret, if not avowed, hostility between religion and science, or at any rate a distrustful toleration; nothing but active co-operation will permanently reconcile them. To endeavour not to see the results and tendencies of modern science is folly in the highest degree. The study and knowledge of the seen is sure to react on the study of the unseen; and he will entertain these studies in perfect harmony, and he only in whom the scientific and religious ideas are allowed to grow up, not in antagonism, but fearlessly and freely, side by side, co-operating in the formation of a reverent, active, and independent mind, and well-balanced judgment. To think otherwise is to think that half the world is God's and the other half the devil's.

We inherit a noble inheritance, the achievements of the intellectual giants of past ages carried forward by the intelligent sympathy of thousands of their fellows. It confers on its inheritors a calmness, and dignity, and confidence which will ever increase. For them no fear of to-morrow's discoveries breaks the night's rest: they utter no little shrieking cries of alarm: they are confident in the power and in the ultimate unity of truth. Not to any generation is it given to outstep its place in the history of philosophy; and the work of our generation is clear: it is to ascertain what is and what is not true, by patient and trustful investigation, and to have unbounded faith in truth.

be followed by further movement in the same direction. When some attainments in physical science are looked on as a necessary part of higher culture, as a means of forming a superior mind, the great colleges will not fail to encourage these attainments by a much more extensive recognition. The great colleges will remember that they have not only to train common minds for common professions, but to keep alive and advance all kinds of human culture, and knowledge, and philosophy. And in the present century physical science is perhaps the greatest school of philosophy.

(1) This was written in April. Since that time Trinity College has appointed a Lecturer in Science, and St. John's College has made it known that an exhibition of 50*l.* a year, tenable for three years, will in future be offered in the spring for competition in natural and physical science. This is a great and important first step, and will doubtless soon