

THURSDAY, MARCH 17, 1887

THE STATE AND HIGHER EDUCATION

IT is seldom that a Cabinet Minister receives so influential a deputation as that which on Friday last requested Mr. Goschen to supplement the revenues of the Victoria University from the National Exchequer. The gentlemen present represented the intelligence and industry of the North of England: they told a story of earnest and patriotic effort, and we sincerely trust that Mr. Goschen will feel able to afford them the moderate assistance they desire.

The ground on which the request was made, and on which Mr. Goschen promised to consider it with favourable attention, was designedly circumscribed by narrow limits. Neither the deputation nor the Chancellor wished to raise the wide question of the future relations between the State and the higher education. Both were anxious to regard the matter in hand from one point of view only. For good reasons the State has seen fit to confer the power of granting degrees upon the Victoria University, but it insists that external examiners shall take part with the Professors of the University in the conduct of the degree examinations. The cost thereby entailed on the Colleges, though not very great, is still an appreciable burden to institutions which can barely pay their way. It is therefore suggested that without committing itself to any far-reaching scheme of a general endowment of University Colleges, the State might properly defray the cost of the restrictions which it has itself imposed. Unlike the Universities of Oxford and Cambridge, the Victoria University has hitherto depended on funds which have been accumulated in a single generation. Unlike the University of London, it is a federation of Colleges engaged in educational work. These institutions want their class fees and their examination fees as well as all their slender resources from endowments, and could turn them to good account. Their case is, that to do so would be to the public advantage. They ask that 2000*l.* a year may be given towards the salaries of the examiners and other University officials, in order that the Colleges of the Victoria University may be able to devote the whole of their available funds to the work of teaching.

With this position we have no fault to find. The circumstances of the Victoria University are exceptional, and we think that the Chancellor of the Exchequer, if he grants the request of the deputation, may fairly contend that he has not committed himself on the wider issue that must before long be raised.

We cannot, however, refrain from pointing out that the question of State aid to higher education cannot remain in its present position. Whether such aid shall or shall not be given is no longer open to discussion. It is given already, but not, apparently, on any definite principle.

If it is right that 12,000*l.* a year should be supplied from the national funds for three new Colleges in Wales, which have still their reputations to make, it is surely wrong that England should have received no help till a school of science of European celebrity like the Owens College is forced to ask for a share in a grant of 2000*l.* a year. Scotland, Wales, and Ireland receive upwards

of 40,000*l.* a year in aid of higher education. Why is England, who pays no small share of this, to have no equivalent aid herself? It has not been found that a liberal educational policy discourages the "pious founder." University College, Dundee, and Lord Gifford's recent bequest are proofs that he still flourishes in Scotland. Why should a contrary result be feared if England shared Scotland's advantages?

It may be said that the fact that the northern Colleges have reached their present degree of efficiency without State support is sufficient proof that it has not been needed. We doubt the validity of this argument. Time is an important element in the industrial warfare of the present day. If we are to wait till prosperity and high prices enable our provincial Colleges to struggle through the slough of financial difficulty in which many of them are involved, we may find too late that efficient educational institutions have helped to bring to others prosperity which has not come to us. The higher education of our industrial population is no mere luxury to be attended to at a more "convenient season," but a vital necessity, a fundamental condition of commercial success. The State should indeed do nothing to choke the fount of private generosity by which in the past that education has for the most part been provided. It should do all in its power to direct local effort towards those channels in which most good can be done. The promoters of the Yorkshire College were four years in collecting one-third of the sum which they originally regarded as necessary for their enterprise; and the undertaking might have languished for several years more had not the Clothworkers' Company come forward with an offer of timely and judicious help. Much good might be done if in like manner the State would assist and encourage the founders of a College in the earlier and more difficult stages of their work.

We are, however, clearly of opinion that if after fair trial it is evident that a "University College" cannot hope to attain efficient support, or to fill its class-rooms from the surrounding neighbourhood, the State would do well to transfer its patronage of higher education elsewhere. If an institution, whether called a "University College" or not, is really doing elementary work, it can, under our present system, obtain State aid. If its pupils are entered for the South Kensington and City and Guilds of London Examinations, it may, by the grants thus received, largely diminish the sum which would otherwise be required for the payment of its teachers. If, then, it is sufficiently proved that any institution belongs to this class, it is already provided for, and has no special claim for further and exceptional help.

On the other hand, it must be remembered that the higher education has never been self-supporting, and that the most successful College can only hope to make both ends meet by endowments or by a sufficient income obtained from some other source than fees. More good will be done by allotting any sum devoted to higher education to Colleges which may be in financial difficulties, but which have proved that they are situated where the want of such education is felt, than in affording exceptional support to institutions in thinly-populated districts, where the "raw material" for a successful experiment in teaching of the highest class cannot be

found. An able lad gains much valuable knowledge, and, most important of all, self-knowledge, by contact with those who are his equals not only in talent but in years. It would be better, by a system of scholarships, to give the youth of country districts an opportunity of learning what competition means in a flourishing College, than to foster a large number of half-equipped and struggling institutions, which cannot reasonably hope to attract students of more than average capacity in numbers sufficient to justify their claim to being centres of the higher learning.

To encourage in their initial stages promising educational enterprises; to determine, if need be after fair trial, whether any given institution can do most good as a centre of elementary, secondary, or higher instruction; to afford to institutions of each grade help, the amount and continuance of which depend upon the educational results they attain and upon the increase or withdrawal of local support,—these are the general lines on which the State may aid secondary and higher education. It would thus encourage the performance of good work in each educational stage at those points where in the nature of things good work of that kind could best be done. It would be led no doubt into expenditure, but in this, as in so many other cases, the old induction holds good. "There is that scattereth and yet increaseth," is true of nations as of individuals, and most true of national expenditure on education.

PRACTICAL ZOOLOGY

An Elementary Course in Practical Zoology. By B. P. Colton, Instructor in Natural Sciences, Ottawa High School, Illinois. (Boston: D. C. Heath and Co., 1886.)

THIS volume is one of the latest additions to the stock of laboratory hand-books based upon the well-known type-system. It is more comprehensive, but, in detail, much simpler and more elementary, than any of its predecessors, while it differs from them in its method of treatment. The objects and scope of the work are set forth in a short introduction, and the detailed matter is embodied in thirty-two fasciculi, each devoted mainly to a consideration of some one type of organisation. Of these, ten are devoted to Insects and three to Crustacea—this, however, for a special purpose to which we shall allude. Practical hints dealing with methods and the like are incorporated with the text.

Certain emendations will be necessary in a subsequent edition, and to these we shall refer duly. In not a few cases the descriptions of the structural features of a given animal have been prefaced by a brief account of its habits and movements. An arrangement, this, of which we heartily approve. It must not be imagined, however, that the book stops short here. The author sets himself "to aid the student in getting a clear idea of the animal kingdom, as a whole, by the careful study of a few typical animals," and he reminds us that "a definition thought out by the student himself, imperfect though it be, is of more value to him than a perfect definition learned from a book, which often appeals to mere memory. Definitions made in the way these pages require are good as far as they go: they should be corrected and supplemented by the instructor. It develops a boy more to earn a dime than to receive a dollar as a gift."

The contents of the work are well arranged, the style is clear and concise, and the facts are presented in logical sequence, nothing being anticipated; but despite the assertion quoted above, there are far too few facts recorded. Some of the descriptions are meagre in the extreme, while others are so brief as to be useless. For example: on p. 8 the nervous system is introduced to the beginner for the first time (and that in the grasshopper) as consisting "mainly of a white cord extending along the floor of the whole body-cavity. In most of the abdominal rings the nerve-cord has enlargements called ganglia, from which nerves branch to the surrounding parts." The like is to be said of the descriptions of the spider's organs of respiration (p. 22), of the clam's kidney (p. 52), and other organs which could be named; while those of the dorsal vessel and "liver" of the earthworm demand early rectification. On p. 30 the author says of the "line of division between the head and thorax" in the crayfish:—"Huxley places it between the second pair of maxillæ and the first pair of maxillipeds. Hyatt places the division between the first and second pairs of maxillæ, as the space between these is membranous entirely across the sternal region, while back of this line the parts are hard and firmly soldered together." One primary object of a book of this kind should be that of imparting a sound training in methods by way of systematising the work of the student, and every conscientious teacher of zoology knows that by no means the least formidable difficulty to be encountered is that of teaching his pupils how much, and what, they shall leave aside. Bearing this in mind, we would fain see all matters which involve differences of opinion such as that alluded to above, eliminated from an elementary work.

The author has evidently been struck with the fact that there has manifested itself, under the growth of the type-system, a tendency to produce a lop-sidedness in the mind of the student. He is by no means alone here, but he sets himself to rectify the matter. This he does by extending and considerably modifying the said system; with what amount of success, has yet to be seen. He, and others who have since come into touch with him, must bear in mind that the type-book is, for the most part, but a tool in the hands of the student working (as does he for whom the author prescribes) under the guidance of a teacher, whose bounden duty it is personally to direct the work in all its details. He, and he alone, is to blame for this apparent defect.

One charge frequently brought against the type-system is that of apparent neglect of classification. The author meets this difficulty in a praiseworthy manner, by first describing a given animal as fully as his case demands, and then dealing with certain allied forms sufficiently to bring out the nature of those comparisons upon which our existing classifications are based. He introduces the subject of classification (p. 12) in an absolutely dogmatic and empirical manner, which, while it does not do justice to his intentions, exposes at the same time the dangers of the method adopted. He supplements the afore-mentioned chapter for chapter. Writing on p. 44, he says:—"Animals are ranked according to the number of things they can do, and do well. The earthworm has many parts, but they are nearly all alike, and do not enable it to do many different things. A part of an animal having a special