

THURSDAY, FEBRUARY 27, 1890.

THE NEW CODES, ENGLISH AND SCOTCH.

THE country is once more within a month of a new Education Code. Once more the Lord President and the Vice-President of the Council are being besieged by representatives of all interests and opinions, anxious to impress them with the exclusive importance of their particular views. Last year, it will be remembered, the Code—great advance as it was on its predecessors—fell a victim to the fears of one party and the lukewarmness of the other. The extreme School Board partisans gave but scant support to any scheme which did not practically embody the recommendations of the minority of the late Royal Commission, while the champions of voluntary schools shrank from any changes which, by raising the standard of efficiency, seemed likely to accentuate the difference between the Board school, which has the ratepayers' pocket to draw on, and the voluntary school, which depends on a fast-shrinking fund of private subscriptions. And so the Code was sacrificed, and the friends of education were condemned to wait another year.

This is what is constantly happening, and what will continue to happen, so long as there are ten experts forthcoming on all matters relating to educational machinery for one who knows and cares about education itself. Whether elementary schools should be free; whether they should be under representative control; whether they should all receive rate-aid—these and the like disputes are always sure to gain the ear of the public, while the problem of making the education provided worth disputing about is passed by almost unnoticed.

How few among our so-called "educationists" (a newly-introduced word with an ominous ring about it) ever sit down deliberately to face the central problem of elementary education—the only problem of fundamental importance: Given a child between the ages of 5 and 13, with the limitations imposed by its age, by its home surroundings, by the pressing necessity that it should begin to earn a living as soon as possible, and by the fact (most neglected of all by theorists) that there are only a certain number of school hours in the day—what is the best kind of training through which it shall pass? How can those few precious years be best utilized?

Theories, indeed, there are, enough and to spare, till we could wish sometimes that all those in high places who talk of education were made to go through an apprenticeship as school managers, in order to gain some practical acquaintance with the limits imposed on the range of instruction by the nature of the child-material with which they have to deal. For no designer trained to make "designs-in-the-abstract"—who produces patterns for carpets which cannot be woven, for wall-papers which cannot be printed, for copper that cannot be beaten, and for wood that cannot be carved—could be more out of touch with the material in which his designs have to be executed than the educational "reformer-in-the-abstract," who sketches fabulous plans for Universal National Systems of Education which have only one defect—that they are impossible to carry out.

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And now, having relieved our feelings, we may turn to the question of immediate importance—namely, the prospects of educational advance under the new Code which is so eagerly expected.

It is rumoured that the authorities at the Education Department are earnestly engaged in the attempt to make the Code a real advance on former efforts. They have many difficulties. If they can successfully run the gauntlet of the Treasury, they have to reckon with the factious criticism of political partisans. We hope, however, that we may assume that the draft Code as it issues from the Department will embody at least all the purely *educational* reforms which appeared in its unlucky predecessor. The clause requiring English as a class subject will go, the curriculum and regulations for evening schools will be made more elastic, an attempt will be made to spread the teaching of drawing, and further facilities will be afforded for science instruction at central schools and classes. It will be the task of outside critics to see that these proposals, already made in last year's Code, are not whittled down, and that they are supplemented by other changes on which all educational reformers are practically agreed. What these changes are may be gathered from the discussion on elementary education, especially in its relation to scientific and technical instruction, which followed Dr. Gladstone's paper at the Society of Arts last November. The programme has been since embodied in a more definite and concrete form in the suggestions which have just been submitted to the Education Department by the Committee of the National Association for the Promotion of Technical and Secondary Education. Among other suggestions they propose that drawing should be made compulsory in boys' schools, of course being allowed a due interval before the regulation comes into operation, during which schools may adapt their staff for the purpose. Elementary drawing should be introduced into infant schools for boys to correspond to needlework for girls, as proposed in last year's Code. The absurd minute of the Science and Art Department—forced on them, it is only fair to say, by the Treasury—confining grants on drawing in girls' schools to departments where cookery is taught, ought of course to be repealed; not so much in the interests of the girls, as of the boys in mixed schools, for whom under the existing regulations provision for drawing cannot well be made. Drawing is not only the basis of all technical instruction, but is a subject of very high educational value, and on both grounds its spread is much to be desired. A further change which is to be hoped for is the extension of the Kindergarten methods from the infant school into the lower standards, and their continuation by means of graduated object-lessons so as to lead up to more distinctive scientific and manual instruction for the more advanced scholars of the school. Manual instruction of some kind ought to be introduced throughout boys' schools to balance needlework instruction for girls.

By manual instruction we do not merely mean instruction in woodwork (called, rather unhappily, the "use of tools" in the recent Act), which is evidently only suitable for the higher standards, say the sixth and seventh. We doubt if it can be profitably given to children below the age of 11, and even in the case of these it can of course only take the form of the "hand and eye" training—not of specific

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instruction in carpentry. For younger children, however, much might be done in the way of modelling (or, as it has been called, "applied drawing"), designed to carry on the training of the fingers which are often made so nimble by the paper-cutting and the Kindergarten exercises of the infant school, only at present to lose their pliancy and dexterity by want of practice as soon as the child emerges from the fairy-land of the Kindergarten into the dull, prosaic atmosphere of Standard I.

To introduce this change it will doubtless be necessary to abolish individual examination in the lower standards at least, and assimilate them in this respect to the infant school. Another change will also be necessary, in the mode of interpreting the Education Acts which has hitherto been customary at Whitehall. Up to the present time there has been a tendency in the Government Departments to decline to recognize manual training as a form of instruction contemplated by the Acts, and in the well-known case of the Beethoven Street Board School, the London School Board were surcharged by the auditor with the cost of tools. The School Board failed to carry the question to the law courts, and so for a time the matter rested. Since then, however, the question has entered on a new phase. The Liverpool School Board, wishing to provide manual instruction in its schools, has obtained the opinion of Sir Horace Davey, Q.C., to the effect that such provision clearly comes within the power of School Boards. The Board has consequently taken steps to make the necessary provision, has appointed an instructor, and now only waits to be surcharged in order to carry the whole question to the Queen's Bench. Other School Boards are following suit, so that we must very shortly see the matter settled in one way or another. The legal question is interesting, not only in its bearing on manual training, but on the general powers of School Boards to give *any* extra instruction they please, provided they comply with all the regulations and requirements of the Education Department for the time being. If Sir Horace Davey's opinion is sustained, it carries with it the right of School Boards to provide any form of technical or manual instruction that can be given consistently with the regulations of Whitehall. Up to the present year, as we stated above, the Education Department was not altogether favourable to the views of Sir Horace Davey. But it is rumoured that of late the views of the authorities on the subject have undergone a change, and that it is probable that manual instruction may not only be recognized as legal, but actually incorporated as a grant-earning subject in the forthcoming Code. The rumour, which we sincerely hope is true, is confirmed by the fact that in the Scotch Code just issued a clause is inserted for the first time inviting school managers to submit as a class subject (earning a grant of 2s. or 1s. a head) "a course of manual instruction on a graduated system." The Scotch Education Department, therefore, has conceded the whole principle, and though of course Scotland has a separate Act, the admission is full of significance. It would be a trifle too absurd for the English Education Department to refuse to "recognize as educational" a subject which the Scotch Office thinks important enough to be encouraged by a grant.

In other respects the new Code just issued from Mr. Craik's office is a valuable index, if not of what we shall

get, yet of what we may justly press for, in the coming English Code. It is, indeed, an enormous advance. Scotch members of Parliament sometimes complain that Scotch business attracts no attention at Westminster. The evil, however, has at least some compensating advantages. Unchallenged—almost unnoticed—the officials at the Scotch Education Office can quietly introduce by a stroke of the pen the reforms in the Code for which we in England have to wait year after year. It may serve a useful purpose if we recount a few of the reforms which Mr. Craik has been able to carry out this year in Scotch education. Of the abolition of fees we say nothing, for that was the result of legislation last session.

In the first place, individual examination in the elementary subjects, which had already been abolished in the first three standards, is now replaced by collective examination throughout the school. This change gives much greater elasticity and liberty of classification to the teacher, and to a great extent modifies the pressure of the system of payment by results.

In the next place, the system of class subjects is entirely revised. Several alternative courses in elementary science are suggested, including courses of "nature knowledge" in "animals," "vegetables," and "matter," for each of which simple and suitable suggestive syllabuses are laid down. Any other progressive scheme of teaching may be submitted to the inspector for approval. "In elementary science this scheme may be so framed as to lead up to the teaching of scientific specific subjects. It may include the subjects of navigation or the elementary principles of agriculture; and a course of manual instruction on a graduated system may also be submitted."

At the same time the regulation requiring either English or elementary science to be taken as one of the class subjects is rescinded. It is to be noticed that in Scotland an attempt was made in the previous Code to encourage science teaching by making it alternative to English as a compulsory class subject. It is somewhat disappointing to be told, as we are in the last Scotch Report, that the change has as yet produced but little increase in science teaching. This fact seems to support the suggestion of the Technical Association that science instruction (which gives more trouble and requires more appliances) should be encouraged by a slightly higher scale of grant than that allotted to other class subjects. But it also tends to suggest the possibility that part of the price which Scotland has to pay for the ease with which it can get educational changes carried out is a certain popular indifference to those changes which may go far to make them nugatory. Thus it is quite possible that the Departmental invitation to submit courses of manual instruction may produce far less effect on schools in Scotland than would be produced in England by a favourable decision of the law courts on a hotly disputed case such as that which may come before them in connection with the Liverpool School Board. The steam which has to be got up on this side of the Tweed in order to get a reform permitted will often supply the motive force which will get that reform carried out. The different fate which has attended the Scotch and the English Technical Instruction Acts hitherto is a case in point. The Scotch Act, passed with ease through

an apathetic House, has fallen flat, while the English Act, badly drawn as it is, is arousing a great and increasing amount of interest in the country, and within the first six months is already in full swing in several districts.

But this is a digression. The recasting and improvement of the system of class subjects in Scotland is interesting not only in itself but as indicating a probable change of a similar kind in the English Code. Under these circumstances we must not fail to note the parallel change carried out in the schedule of "specific subjects." Almost the whole of the schedule which relates to science subjects—chemistry, mechanics, electricity, light and heat, physiology, botany, and physical geography—is entirely cancelled, and for the detailed syllabuses of these subjects is substituted a simple invitation to school managers to submit graduated courses in subjects not mentioned in the schedule. At first sight this seems a loss—as though the Department were moving in the direction of paying less instead of more attention to science. The alteration, however, must be read in conjunction with the reforms in class schedules and the observations on class and specific subjects in the last Report of the Scotch Education Department. Commenting on the fact that "the general development of class subjects tends to restrict the specific subjects," the Report proceeds: "this is a result not altogether to be regretted, as the influence of the class subjects is general, while that of the specific subjects is restricted to a few selected scholars."

Again, in the instructions to inspectors just issued, Mr. Craik explains one of the objects of the Department to be "to spread the beneficial results of any such higher teaching as may be given, to the whole school, instead of confining it to a few selected scholars."

It is clear, therefore, that the changes in the fourth and fifth schedules (which are probably the precursor of similar changes in the English Code) are dictated by a desire to extend class instruction in science, even if at the expense of specific subjects; in other words, to transfer natural science from its former position, as a smattering of a few special branches of physics imparted to a few pupils, to its proper place as a course of general stimulating instruction in the elements of "nature knowledge," given as an integral part of the school course to the school as a whole. More specialized science teaching can still be provided if desired in the form of specific instruction framed to suit local wants by the various school managers, or it may be given, as is already the case in many elementary schools, by means of science classes in connection with the Science and Art Department.

We cannot doubt that the Scotch Department is right in its policy, but the probable extension of class teaching under the new and more elastic *régime* suggests a doubt whether the proper way of introducing manual instruction is by means of including it among the class subjects, so long at least as the possible number of class subjects is restricted. Drawing—the only form of manual training previously recognized for boys—has already been put outside the range of class subjects. Needlework—the only other manual subject in the Code—may be taught either as a class subject or as part of the ordinary curriculum of the school. Is there not a chance that in including manual

instruction among the class subjects an unnatural rivalry may be set up between this subject and elementary science, which may restrict the spread of both? All this, however, is a matter for the future. Meanwhile we have only to congratulate the Scotch on the improvement of the conditions under which in the future their schools will be carried on, and to express the hope that England will not lag behind.

One word in conclusion. It may be wondered why in this article, dealing with scientific and technical instruction in elementary schools, so little reference is made to the Technical Instruction Act of last session, either in respect of the powers which it confers on elementary school managers, or of those which, much to the regret of many politicians, it appears to withhold.

The real fact is that we have our doubts as to the need of any general Technical Instruction Act for elementary schools, and have a suspicion that their exclusion from the late Act was in reality a blessing in disguise. Of course, if the opinion of Sir Horace Davey (and now we are glad to be able to add, of the Scotch Education Department) should be upset in the law courts, it may be necessary to rectify the anomaly by a short Act of a single clause recognizing the legality of manual instruction. But, with this possible exception, no new powers are required by School Boards, and no new rate need be imposed. Mr. Mundella, in complaining of the exclusion of elementary schools from the late Act, compared the scheme to an educational ladder with the lower rungs left out. Let him be reassured—no rung is wanting so far as legislation is concerned. As at present advised, we feel clear that the managers of a public elementary school, so long as they comply with the requirements of the Department, may teach what extra subjects they please. The rating power possessed by a School Board is limited only by the wishes of the ratepayers. What really retards the introduction of technical and manual instruction is the want of imperial grants (which may and ought to be given through changes in the Code), the want of time, the pressure of other subjects, the ignorance of the public, and the parsimony of the ratepayers. But none of these obstacles can be removed by legislation. What legislation could and probably would do, would be to restrict the present powers of School Boards by defining them; and, perhaps, even to confine the rate for technical instruction within the limit of a penny in the pound. But this can hardly be what Mr. Mundella wants.

A DICTIONARY OF APPLIED CHEMISTRY.

A Dictionary of Applied Chemistry. By T. E. Thorpe, B.Sc. (Vict.), Ph.D., F.R.S., &c. Assisted by Eminent Contributors. In Three Volumes. Vol. I. (London: Longmans and Co., 1890.)

THE first volume of the "Dictionary of Applied Chemistry," edited by Prof. Thorpe, is a welcome addition to our scientific books of reference, and forms an admirable companion to the "Dictionary of Theoretical Chemistry," the second volume of which was reviewed some weeks ago.

In the preface Prof. Thorpe points out that, as this