

As to the proud boast of the Chancellor that there has been a great expansion in every branch of the work of the University during the past five years, it would be unkind to select this opportunity for submitting it to strict analysis. If the matter were strictly examined into, it would be found that in some important respects the advance has been by no means great. It is true, however, that the Legal School has been established, if not on a particularly satisfactory basis; that a Medical School has been organized, and is being carried on at great cost for comparatively little result; and that the musical professorship has been productive of most notable and gratifying results. Concerning the last-named school, it is sincerely to be hoped that the aspirations of the Chancellor and of His Excellency will be fulfilled, and that the apprehensions of the friends of music for the permanency of the Chair will be speedily dispelled. And with regard to the Medical School it is only right to point out that it has been munificently endowed by private benevolence. The income of these endowments falls considerably short of the annual requirements, and the deficiency has to be made up; but we have never wished it to be supposed that the school is being entirely or even mainly maintained by withdrawing funds from other University objects.

The address delivered by Professor Bragg on general education was suggestive, but, to use his own phrase, was of rather a scrappy character. The lecturer, who modestly but rather unnecessarily discounted his remarks by saying that he is an inexperienced teacher, started from the premise that "a boy leaves school with his mind stored with Latin and mathematics and history." The description as regards the average South Australian scholar is not very accurate. Rather does he leave school with a limited knowledge of Latin, with a mere nodding acquaintance with mathematics, and with a profound ignorance of history; with a capable dexterity in the matter of handling grammar and analysis, with no great knowledge of spelling, and with a fair mastery of the crammed principles of botany, chemistry, geology, physiology, and zoology. Professor Bragg thus starts from a wrong premise, and upon this he builds up his scheme of education—just as the owner of a house would add story to story on foundations which are untrustworthy. This is not to say that the stories in Mr. Bragg's house are not in themselves substantial. He is manifestly right in urging that principles are the things to learn, and that a boy's training should be purely general. Further, he is right in insisting upon the prime necessity for excellence in the mode of teaching as against mere dexterity in the imparting of lumps of knowledge. And, granting the foundations to be right and sound, he builds the third story usefully and truly when he complains of things as they are—that "there is too much teaching and too little educating." Here he leaves us without much definite guidance. What is education and what is teaching? Surely we want a definition here—especially from a mathematical man, who goes on recognised laws and from established facts. The absence of this defini-

tion detracts sadly from the value of Professor Bragg's oration. One learns from him that Euclid is a poor teacher of geometry, but one is not sufficiently instructed as to the best substitute for his time-honoured propositions. Some of the suggestions regarding the best way of making the training of youths at school a preparation for their work in after-life are valuable, if not particularly new; but it is rather surprising that so little stress is laid upon the value of learning for its own sake, and apart from any advantage reducible to a commercial standard that it yields. On the whole, we cannot find that Professor Bragg's address throws any very strong light on the matter of education — really *the* most important matter in our day. He tells us that the function of the teacher is to direct enquiry; to teach students to observe; to reason from observation; to design. It did not require an angel from Heaven to tell us this. One who will make us understand how to do these things is the kind of person we want. Unfortunately he has not come yet, but at all events we can patiently wait for him.

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The Advertiser

THURSDAY, DECEMBER 20, 1888.

IN an interesting address at the University commemoration yesterday Professor Bragg dealt with a subject which is receiving much attention from educationists in all parts of the world. Everywhere, but particularly in British countries, the complaint is heard that the practical side of education is neglected, with the result that what is learned at school proves to be of little value in after-life. This is a utilitarian age. The scholarship which prizes knowledge for its own sake is for the leisured few; the many require that their intellectual training in the years of youth shall have a direct relation to the practical necessities of their future career. It is generally felt that this want is not adequately recognised in directing the studies of the average boy. The school fails to supply him with the outfit which is necessary to qualify him for a successful part in the hard business of ordinary life. He finds that he cannot get on without a further training. He may have learned much, but he sees no outlet for a practical application of his learning. And on that which was so diligently instilled into his mind by the schoolmaster his mind often enough loses its hold while he is acquiring the additional knowledge that is to fit him for the workshop or the office. In the old country the competition of foreigners, who have received a commercial training, is taking the bread out of the mouths of English clerks, whose education has been of a general rather than of a

character. There is the same complaint ^{of a special} with regard to the instruction of children of the working classes. The curriculum of the public schools does not include those subjects which are closely related to the various occupations by which the artisan or mechanic has to gain his livelihood. And so arises the demand for technical education. In providing this, continental countries, such as France, Germany, and Belgium, are far ahead of England, and the consequence is that the traditional superiority of the British workman in intelligence and manual skill is being challenged on all sides.

Professor Bragg devotes himself to the enquiry as to the best means of remedying ascertained defects in our educational processes. He shows clearly enough that limiting a boy's education to those subjects which would directly apply to the pursuit of any one trade or profession is both undesirable and impracticable. It is undesirable, because the extreme specialisation of youthful studies tends to narrow the mental horizon and stunt intellectual growth. It is impracticable, because in a small community like our own a comprehensive system of technical instruction is not possible that would educate boys in all the industries into which the energies of adults are directed. We do not understand Professor Bragg to question the value of the work which technical education is capable of achieving, as an addition to the ordinary school curriculum. While we cannot hope to have one school devoted to carpentering, another to smith's work, and so on, there is still room open for instruction in those branches of practical knowledge which are of use in every trade. Technical education of a general type is not to be condemned because a highly specialised system is impracticable. But Professor Bragg's address goes over different ground. He takes the ordinary school, and he asks whether nothing can be done with it to meet the objection that the school-course is not the preparation it ought to be for the duties of after life. This enquiry he

answers in the affirmative. The fault of our educational system is ~~not~~ ^{not} too comprehensive, or not comprehensive enough. It is not that the wrong subjects are taught. It is that the right subjects are taught ~~wrongly~~. The cardinal defect ~~is~~ in the methods of education; or rather it is that instead of education there is only teaching. There is a mechanical system of instruction which crams with knowledge, but does not discipline the intellectual faculties for the discovery of truth by the efforts of the learner himself. It is much less important to store the mind with facts in a manner which deprives them of stimulating worth, than to evoke the powers of observation and of reasoning from observation. This point need not be enlarged upon, for Professor Bragg only echoes the views of other educationists who have shown that more intelligent methods of teaching are the ~~supreme~~ want of our educational system. It is much easier to indicate faults than to point the way of reform. Professor Bragg, however, attempts a difficult task. He suggests modifications in the conventional plan of teaching mathematics and physics, which would not only confer additional interest on those subjects, but add to their usefulness as disciplinary studies. As Herbert Spencer has pointed out, the natural path of the student of facts is from the concrete to the abstract, and the more our school system recognises this principle the more successful it must be. It is scarcely possible to teach physical science effectively in any other way. The observation of phenomena must precede the formulation of laws. Abstract theories fail to interest, to stimulate, or, in short, to educate, unless the mind has been prepared for them by the habit of observing, and of deducing from the facts observed the principles that underlie them. The value of a training founded on this basis is not to be measured by the actual worth of the knowledge gained. Its value consists in the wholesome discipline of the mental faculties, and the production of a habit of accurate observation and correct reasoning.

The need of such an improvement of educational methods as will tend to these results is strongly urged by the professor. A plan of teaching that is obviously advantageous in the case of natural science may with equal benefit, if with somewhat more difficulty, be adopted in regard to other subjects, the abstract aspect of which is usually made too prominent. With the same end in view the

professor advocates increased attention to the teaching of drawing and decorative design, of which the direct practical utility is very large, irrespective of its value in encouraging the faculty of observation, and educating the taste. The conclusion of the address is a little disappointing. From teachers themselves change in the monotonous routine of our mechanical system of education will not come in the absence of an external demand for reform. The better way of teaching which Professor Bragg has sketched is to be enforced by an educated public opinion. It is the same with educational methods as with laws: Nothing can be done successfully that exceeds the demand, but once the demand exists it will be met. If this be a correct statement of the case we can only hope that such addresses as that of Professor Bragg will become more frequent, whether from University professors, school teachers, or others competent to enlighten the public. Their effect must be to destroy in time the apathy that permits the continuance of methods of proved inadequacy to the objects for which they were designed. Public opinion is on a wrong scent if it imagines that technical education will cure the evils of the ordinary system of instruction. Technical education has its own functions to perform, and very important and very useful they admittedly are. But the inherent defects of school or college training are an independent question, and must be removed by other means. The vague complaint that our educational system is not practical enough would largely disappear if Professor Bragg's advice were heeded.

THE proceedings at the University Commemoration yesterday were highly interesting. The past year has been one of gratifying success in the work of the University. As an educational institution it is decidedly progressive. Its scope has continued to enlarge, and it fulfils numerous functions in a satisfactory manner. It is both a teaching and an examining body, and in each respect its standard is a high one. Yesterday nineteen students were admitted to degrees. Among the graduates was the first lady who has won the degree of B.A. in the Adelaide University, and another successful candidate.

like in class... in mathematics. In an excellent speech the Chancellor indicated the progress made by the University during the past five years. Since 1883 the number of students has largely increased. To the faculties of Arts and of Laws have been added a Faculty of Science, a Chair of Chemistry, a School of Medicine, and a Professor of Music. Evening classes have been established, and the senior and junior public examinations, as well as the popular examinations in music, have extended the influence and usefulness of the University in other directions. There is now a visible link of union between the public schools and the University, which forms the crowning point of an educational system of which the colony may well feel proud. Established on a liberal basis, its benefits are freely open to all, and year by year it attracts to its classrooms more of the promising students, who leave our schools and colleges, and whose ambition it is to gain the academic rank which is readily yielded to merit. It would be a misfortune if, having grown so much, the University should be obliged to suffer a curtailment of its usefulness in any branch of its operations. By the end of next year the temporary provision for the chair of music will have been exhausted. The permanent endowment of the chair will involve no very considerable outlay, and it is to be hoped that the means of continuing this branch of University work will not be lacking. There cannot be a doubt as to the success of the School of Music, which owes its establishment to the praiseworthy efforts of his Excellency the Governor. The labors of Professor Ives have had a distinct influence for good in promoting musical culture in the colony. Apart from the studies of those who have entered for degrees, the public examinations in the theory and practice of music have excited a high degree of interest, and the results have been successful beyond all expectations. The University of Adelaide, being the first in Australia at which a chair of music has been founded, is naturally desirous that the school should not expire from want of an endowment. We are glad to know that a movement is projected with the object of providing a fund for the permanent establishment of the chair.
