

his charges to make the highest uses of what they have. For this purpose the best teacher is he who is most keenly alert to detect the trend of individual character in his pupils, so that, like a careful gardener, he may repress improper growth in one direction and stimulate development in another. For aid in this necessary task reformers are looking hopefully to psycho-analysis. There are village Hampdens and embryonic Newtons, Miltons, and Herschels always awaiting discovery, given the necessary discernment to detect their specialities. At present all that education can do is to provide the environment in which they and lesser geniuses can develop, and this aim the Educational Society which has been meeting in Adelaide this week has set itself to further. Papers on art, music, the humanities, and science have been read with the object of securing an improvement of the school courses in order that the child's various powers may be so dealt with as to ensure the exercise of all. We are reminded by Mr Van Raalte that art is based on observation and on the analytical study of nature, so that the teaching of art may be at the same time the teaching of logic and analysis. It might be added that art is not a special branch of creative effort, but extends to the whole of life, differentiating finished work of every kind, from the making of a chair to the deft handling of a plough, from mere slovenliness. It has lessons for the workman who produces things for use no less than for the sculptor or painter whose ideas are represented by the statue or the picture.

And so of music, which Luther defined as one of the "most beautiful and glorious gifts of God, to which the Evil One is a bitter enemy," a knowledge of, if not proficiency in it, cannot be divorced from a truly liberal education. Plato held music to be "a schoolmistress that makes men milder, gentler, better-behaved and more reasonable"; and happily, as Mr Gratton observed, it has long since been promoted to a higher rank than that of the "Cinderella of school subjects." When Professor Darnley Naylor demands a place in the curriculum for "the humanities" he anticipates and conciliates a good deal of the lukewarmness, not to say opposition, from those who have maintained that it is not enough to show that any branch of knowledge is worth acquiring, but that it must be shown that it is more valuable than other subjects which it would more or less displace. At best, all that the time at the disposal of the schools admits of in regard to any subject is the imparting of a taste for it with a view to its development in later life; and one cannot but think that Professor Naylor has struck a heavy blow on behalf of the retention of the classics by his proposal to relieve the pupil of the drudgery of turning English into Latin and Greek and requiring from him only ability to read those languages in the original. Professor Naylor would reduce grammar and syntax to a minimum, and would even allow the use, at examinations, of the dictionary and the grammar. Such a suggestion would horrify old-fashioned pedants; but in these days, when the sum of knowledge is ever enlarging, while the pupil's time remains the same, it is a choice between Professor Naylor's drastic method and no classics at all, and he knows their value as a part of literary culture far too well to acquiesce in their falling into desuetude.

TEACHERS IN CONFERENCE.

Science and Sex in Education.

A plea for a better recognition of the place of science in the school curriculum was made at the annual conference of the Educational Society yesterday.

The second annual conference of the Educational Society of South Australia was continued on Friday at the Institute Building, North-terrace, when several problems of vital interest to teachers and pupils were discussed. The present crowded curriculum of the schools was severely criticised by Professor Kerr Grant, who admitted that after 20 years as a teacher of science he found the results of the present system disappointing. In the evening an exceedingly frank discussion took place on sex matters, the principal speakers being Professor Brailsford Robertson and Mr. A. C. Garnett, M.A.

Dr. H. T. Postle presided at the afternoon session, when the place of science in education was discussed. In introducing the speakers, Professors T. G. B. Osborn and Kerr Grant, he said the world had benefited vastly by the attitude of modern physical science. Especially had it benefited from those teachers whose views were for ever expanding. Modern school life was totally different from that of half a century ago, and there should be the freest discussion possible in order to secure the best curriculum. (Applause.)

SCIENCE IN THE SCHOOLS.

ADVOCATED BY PROFESSOR OSBORN

Professor Osborn said a place had been won for science in education in the middle of last century. There had been such a revolution in life generally during the past 20 years that no one could lay claim to a wide general knowledge without a knowledge of some science. He did not regard science as being antagonistic to what were known as the humanistic studies. If, however, in a curriculum prepared for students under 16 years of age there had to be any specialisation, he would prefer to lay emphasis on the literary rather than scientific side of study. Until that age was reached he could see no reason for differing between girls and boys in the arrangement of a curriculum. He would personally like to see science brought into relationship with the everyday affairs of life. A study should have some relation to ordinary life and should afford some mental discipline. It should have an ethical value, and here science taught the value of exactness and fostered a love of absolute truth. It helped them also to realise the wonderful value of human endeavor. He felt, however, that science as it was taught to-day had failed with regard to utility, and it had certainly failed on ethical grounds. Part of this inability to correlate science and ordinary life might be attributable to the fact that their students learned from elementary manuals which were a statement of the basic principles of some science. They were advanced by an expert in that particular science and represented the work of a specialist, with a view to raising other specialists. At the average boys' school science was confined to chemistry and physics, and at a girls' school to botany. It was frequently complained that the youth of to-day showed no appreciation of the wonders of life. In his opinion it would be a terrible indictment of the present method of teaching science if it had robbed youth of its sense of wonder. The average man in the street had received little more direct instruction than a youth sixteen years old.

The mid-Victorian era was one in which a man was judged a good deal by his bank balance, and the wealthy men of the day had been quick to see the connection between a bigger bank balance and the application of scientific principles. Science should mean a great deal more than this, however, for they should all strive to know a little of the world they lived in, of the natural laws controlling it, and of their own bodies. Children were not going to learn these things by the elementary manuals of which he had spoken. A student would learn more about specific heat by boiling a kettle or investigating a steam engine than by mere academic methods, because he would be interested in the experiment he was carrying out. As it was, a boy engaged in physics might learn a good deal about light, heat, and sound, and nothing of electricity and magnetism. Some day, however, he would find out something for himself when he installed an electric bell in his own house. As a biologist, he regretted that such a large proportion of students from the boys' schools went forth when their education was supposed to be complete without a real knowledge of this great living world about them, with all its underlying biological principles, which in turn governed their own lives. Natural law

made no allowance for ignorance, and they sometimes paid a terrible price for this in relation to their public and domestic hygiene and the laws governing food preservation. Occasionally this ignorance was responsible for a huge national loss. During the recent plague of wheat weevil from which this State had suffered a representative of the people had solemnly asserted that weevils were spontaneously generated. A knowledge of natural laws would have saved him from making himself ridiculous. An important feature of biological training that should not be overlooked was that it engendered an attitude of mind which ensured that a child would approach the sex question frankly and naturally. Mention must be made of the pioneer work accomplished by such men as Sanderson and Oundie. It was reassuring to know that men like Archer Vassal, of Harrow, and Professor Nunn, with scores of other noted teachers, were advocating "science for all" in the education of youth. They wished to bring school training into touch with the students' daily lives, so that they might combat the ignorance and prejudices of the world. Their power of controlling the world depended upon their knowledge, and their volition counted for much in the progress of the race. (Applause.)

MODERN EDUCATION.

A CRITICISM OF METHODS.

Professor Kerr Grant said he believed the present educational system was much too passive. He was a strong believer in the educative value of performance as against mere absorption. The mind of a child was not an empty hole, but a living thing that would grow and develop by the assimilation of suitable nourishment. They should get away from the idea that education was merely knowledge absorbed from books. Books were certainly of great value, but the modern system tended to produce only bookish men, unwilling to undertake and often incapable of displaying any self-initiative or of making any self-directing effort. This fatal passivity was not a characteristic of healthy, but uneducated youth. Mr. Bryant, of Harrow School, had declared there was a "close connection between motor activities and mental development." If that were a fact, then a fundamental revision of the educational system was wanted. It was essential that there should be more opportunities for a freer exercise of individual taste and power. This would necessitate the abolition of compulsion for the curriculum must be adapted to the capacity of the individual, and this implied a corresponding diversity. For instance the programme of study best suited for girls was not the best for boys of a similar age. It was a rare occurrence for a boy to possess any considerable liking for literature. Galsworthy had remarked in connection with this phase, "Just at the critical time someone puts into his hands one of those damnable mechanical toys, and he is lost forever." Yet literary subjects occupied more than half the available time. With regard to their own language no one could possess too deep an acquaintance with it. He was doubtful however, of the value of instruction in foreign languages, except where a direct case of utility was in question. Under other circumstances it certainly was not worth the years of drudgery involved. More regard should be paid to the limited powers of abstract thinking possessed by the average pupil. In a story entitled, "The Man Higher Up," O. Henry had remarked "Yep, when a number one burglar tries to turn his Jemmy into James he commits an impropundity." They might pause to wonder if educationists to-day were not engaged in this very task. He thoroughly agreed with Professor Percy Nunn, of London, who said, "A girl can get through life very comfortably with a very small amount of mathematics." Only a few could possibly acquire any value from a study of this subject beyond the simplest elements of arithmetic, algebra, and geometry. It was useless cruelty to enforce a more advanced syllabus upon them. (Applause.) He would abolish general compulsion in all subjects, and only retain special compulsion for those required as the pre-requisites for University degrees or special professional careers.

The present-day curriculum was too crowded. No student should study more than six subjects at the same time, and preferably not more than four. It would be possible then to hope that a degree of proficiency could be obtained which would enable him to use his knowledge. (Applause.) He considered the teaching of science should have a larger share on the time-table. Its utilitarian value could no longer be disputed. Its cultural value depended largely on the methods of teaching

employed, and on the proclivities of the pupil. If based on proper principles would most certainly be an instrument of mental culture. The workshop, experimental plot, or garden, and the laboratory must to a large extent take the place of the class-room and the text-book. The workshop would have the most important place in the secondary school of the future. The future of humanity was involved in the problem of acquiring mastery of Nature. As a teacher of science for years, he had to acknowledge that the results of the present methods had been disappointing. There should be a more thorough training for teachers and better facilities for laboratory work, and the substitution of active constructive work by the students, either individually or in co-operation. They should be taught not merely to imitate the University method, but to work out their lives permeated with a science giving all possible scope to the manifold potentialities of the human mind, whether artistic or scientific. (Applause.)

SEX EDUCATION.

HOW SHOULD THE SUBJECT BE TACKLED?

Dr. Helen Mayo presided at the evening session, when there was a crowded attendance. In stating her personal views regarding the imparting of knowledge of sex to children, Dr. Mayo said she did not think the work could be undertaken in large classes. (Applause.) Such instruction must be individual and any show of emotion must be guarded against. Self-control in manners was a step in the right direction, for it would help to restrain young people. The moralists were faced by a difficult problem, for a discussion of the subject was apt to arouse dormant impulses.

Professor Robertson said human organs and physiological activity had been built up in the process of evolution with regard solely to the physical welfare of the species and its propagation, without any regard whatever to the present conceptions of civilised society. The outline of evolutionary history was inscribed upon the remotest tissue of their bodies. Whatever they might desire they could never alter that fundamental fact. Their evolutionary history was inscribed in their bodies. The qualities by which one sex was distinguished from another could be divided under two heads. First there was the fundamental hallmark of sex, namely its ability to produce a certain kind of germ cell. Then, in addition, there was a secondary group incidental to the main differences. These were known as secondary sex characteristics. They varied in different species. Among sheep the ram had horns, and the rooster was distinguished by its upstanding comb, its long tail feathers and spurs. The sex of the male human being was outwardly manifested by the growth of the beard, the deepening of the voice, and the general contour of the body, and in the female the development of the mammary glands was another secondary sex characteristic. In addition to these physical distinctions, also psychological ones prevailed in every class of higher animal, and were sufficient similar in different species to show similar underlying causes. To the origin of the secondary differences they might probably attribute these psychological differences. It was not so generally known that if part of certain organs were transplanted to another part of the body secondary characteristics would still develop. This was particularly remarkable when it was remembered that the organs had been removed from their normal place and so deprived of their normal function. He had witnessed experiments on fowls which had resulted in the female bird assuming the external characteristics of the male, and vice versa. In this respect it was interesting to notice that both birds assumed a behaviour to match their sex appearance. The secondary sex, however, was quite independent of the production of germ cells. In the normal individual the incitement of sex psychology was inevitable, and it remained now for the educational worker to direct it into channels where it would be of the most value to society. (Applause.)

Mr. Garnett said he intended to deal with the problem merely as it applied to children. It was largely a moral problem. The child must be taught to guard against certain actions and prepare for future moral self control. The weight of evidence was that the supposed physical effects following childish perversion of sexual instinct had been grossly exaggerated. Dr. Andrews had examined a large number of such boys from a great public school, and had found them exceptionally powerful, both mentally and physically. Their history in after life, however, showed that without exception they relapsed into mediocrity. The records went to show that the most vigorous boys, mentally and physically, were most vigorous sexually. The later history seemed to show that the abnormal interest in sex had robbed them of their interest in ordinary life and its avocations. The efforts of moralists to secure children into good behaviour frequently precipitated the trouble they wished to avoid. They must remember they were dealing with an impulse innate in every normal child. The new psychology had shown that a great deal of trouble arose through sex repression, which was a fruitful cause of neurosis. The problem could be dealt with by directing the child's



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