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SCIENTIFIC RESEARCH

Congress in Adelaide

The Australasian Association for the Advancement of Science will meet in Adelaide from August 25 to 30.

The retiring president is Sir George Knibbs, director of the Institute of Science and Industry. His place will be taken by Sir John Monash. The vice-presidents include Sir Baldwin Spencer, director of the National Museum, and Sir David Orme Masson, formerly Professor of Chemistry in the University of Melbourne.

Professors Rivett and Agar have been appointed presidents of the chemistry and zoology sections respectively; Capt. J. K. Davis, director of navigation, is to be president of the geography and history sections, while Dr. Cameron, director of agriculture in Victoria, will act in a similar capacity for agriculture and forestry.

Other Melbourne scientists who will take a prominent part are Professor Skeats, Dr. Georgina Sweet, Capt. Pitt-Rivers, Professor J. Gunn, and Mr. C. H. Wickens. Dr. A. E. V. Richardson, Professor H. A. Woodruff, and Professor A. J. Ewart.

Professors Kerr Grant, Harvey Johnston, and Griffith Taylor, Dr. Harvey Sutton, and Dr. Morris Miller, formerly of Melbourne, will also be present.

RHODES SCHOLAR PLAN

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To Know Each Other

("DAILY MAIL" CABLES.)

LONDON, Today.

Speaking at Oxford at the annual dinner of the Rhodes Scholarship Trust, Rudyard Kipling referred to Cecil Rhodes' plan to get the students of many countries to knock up against one another. He said the knowledge of how far a man may be trusted to pull off a losing game was only acquired in the merciless intimacy of one's early years. After that, one has to guess at the worth of one's friends and enemies. But youth, which sometimes knows almost as much about some things as it thinks it knows about everything, can apply its own tests on its own proving grounds, and does not forget the results.

Rhodes and Jameson did not draw together impersonally over the abstract idea of imperial service. They tried each other out long before across the poker tables of the Kimberley Club; beside the deathbeds of friends, and also among the sudden desperate emergencies of life on the diamond fields. Therefore, when their work began, neither had time to waste reading up each other's references.

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FREE ORGAN RECITAL.

A large number of people enjoyed an excellent programme presented at the Elder Hall on Wednesday by Mr. Harold Wylde, F.R.C.O., in connection with the weekly free organ recital. The programme included:—"Variations de concert" (Bonnet), "Berceuse" (Cesar Cui), "Fugue in D minor" (Bach), "Cavatina" (Raff), and "Tidal march and finale" (Parry). Miss Celia Nash gave pleasure by her rendering of "Shepherd, thy demeanour vary," with organ accompaniment.

EDUCATION SOCIETY'S CONFERENCE.

Science in Examinations.

Wrong Subjects and Wrong Methods.

Professors Osborne and Kerr Grant are agreed that scientific subjects, as at present presented at elementary examinations, are ineffective. A constructive criticism was given in the course of their addresses on "The Place of Science" at the conference of the Education Society of South Australia on Friday.

Dr. H. T. Postle presided over a large attendance.

Professor Osborne said that what they had to consider was, what part, if any, the teaching of science should play in the education of the ordinary boy or girl who, after having left school, would not undertake any further systematic study. Real education should provide mental discipline, knowledge in matters of utility, and interest, and those things should tend to promote the finer feelings; in other words, things taught should have a certain amount of ethical value. Science satisfied all those requirements. It should be remembered that the world had undergone a complete revolution in its method of life even within the last 20 or 30 years, and that no average man or woman could go into the world completely ignorant of the general principles of the application of science to daily life. In a word, they should know something about the universe, the laws that governed it, and the people. Ideally all children should know something of all sciences. Obviously, it was impracticable that they should gain that knowledge by elementary manuals on physics, chemistry, botany, zoology, astronomy, and geology, for those manuals were written usually by specialists with a view to setting out clearly the fundamental principles on which the subjects were based. They provided the introduction that might lead to the training of specialists. The ordinary boy or girl would not be a specialist in chemistry, botany, or physics. They were interested, whether they knew it or not, in the application of scientific knowledge to the ordinary daily life. There was no use burking the issue that as ordinarily understood, scientific subjects presented at the elementary examinations, were not the success they should be, from an educational standpoint. For one thing, they generally meant that a boy or girl knew a little about the rudiments of one or two sciences. Speaking as a biologist, he said he felt very keenly the fundamental weakness in the science of instruction in boys' schools, which was that the vast majority of young men had little knowledge of the living world, animal or vegetable. Yet they were dependent for their existence upon that animal and vegetable world, and the underlying biological principles governing their health, public hygiene, and food treatment. Included in the general science course there, certainly, should be space given for the biological subjects. Lack of time prohibited him from going into the details of such a course, but educationists would be well aware of the pioneer work of such a man as Sanderson, of Oundle, in the field of general science, and would know that there was a strong movement on foot in England with which were associated men of the type of Archer Vassall, of Harrow, and Professor Nunn, as well as numerous teachers in schools throughout the length and breadth of the country, to advocate "science for all" in the education of the youth of the age. Those men desired to bring the school training into direct correlation with the students' daily lives.

Secondary Education.

Professor Kerr Grant remarked that the present system of secondary education suffered from very serious defects, the chief being that it was entirely too passive in character. He agreed with an American who had once told him that there was too much "instuffe" and not enough "educo" in the present methods. The mind of a child was not an empty space into which all sorts of material could be crammed, but rather a living, organic entity, which for its proper development must be nourished with suitable food. The continued repression of every effort on the part of the child towards spontaneous self-assertion was fatal to a vigorous mental growth. For feeding the body a healthy appetite was essential if the food was to be successfully assimilated; and similarly the feeding of the mind. There was evidence enough to show that the present system was often productive of an actual revulsion from the subjects of modern instruction. That was no doubt partly due to the unfortunate choice of subjects and partly to the methods of imparting them. The modern curriculum was far too predominatingly literary to suit the tastes of the average boy and girl. John Galsworthy, in a recent statement of his views on education, acknowledged that when he deplored the unwillingness of the average boy and girl to read, he said:—"Just at the age when they might be expected to develop literary inclinations some one puts before them one of those damnable mechanical toys, and then he is lost indeed." While he was of opinion that a child's knowledge of its own language and literature could not possibly be too profound or extensive, he held a very different view with regard to foreign languages. Long years of drudgery, loathed by the unfortunate child, must be spent in memorizing the multitudinous forms of the inflected language, and the average boy would probably never make the slightest use of the rudimentary knowledge in the language that he had acquired as the result of so much toil. For those who, upon utilitarian grounds, desired to learn a modern language, better facilities should be offered than were at present provided. The individual tastes and the powers of the child mind should be considered much more liberally than was at present the case, and particularly the profound differences in the proclivities of the sexes should be reflected in the educational system. On purely utilitarian grounds, said the professor, the necessity for scientific education could not be refuted even by its most bitter opponents. As a teacher of science of more than 20 years standing, he had to acknowledge that the results obtained by present methods had been disappointing. One reason for that was that the proper teaching of science demanded a more thorough training of the teacher, increased facilities for laboratory instruction, and a larger amount of time than had ever yet been devoted to it. Necessary as those things were, there was an even greater need for a more fundamental reform, namely, the substitution of active constructive work by the student, both individually and in co-operation with others. The workshop, the experimental garden plot, and the laboratory must supplement the lecture room, and the text book. Remarkable results in scientific education had been attained recently at Oundle School, in England, through the instrumentality of the workshop. In its early stages science teaching should not be differentiated into special subjects. Too much stress was laid upon the analytical, as contrasted with the synthetical, aspect of knowledge. No doubt at a later stage, and for those who are contemplating a career in any branch of pure or applied science, specialized analytical study became necessary. The present curriculum of the secondary schools was dominated far too completely by examinations generally, and by the university entrance examination in particular. It was highly desirable that the secondary schools should evolve ideals and methods of their own. He would abolish compulsory examinations as a general thing, and retain that system only for those scholars who had definitely selected a professional career.

"Sex Education."

The evening session of the conference was presided over by Dr. Helen Mayo. In announcing "sex education" as the subject for discussion, she extended a welcome to the speakers, and emphasized the value of the question.

Professor Brailsford Robertson prefaced his address with the statement that he intended to confine his remarks to the subject of the physiology of sex, leaving the application of the facts of sex education and social welfare to those better qualified than himself. It was necessary, in the first place, he said, to realize that the form and physiological function of the organs had been determined during the process of evolution, by the necessities under which their progenitors lived. The process of evolution had gone on without regard whatever to their present conception of what constituted civilized society. The outline of their evolutionary history was inscribed upon every remote cell and tissue in the bodies and, such as it was, the result of long past conditions was what they had to learn to live. The characters which distinguished the two sexes might be considered as falling into two groups, namely, fundamental, which constituted the hall mark of sex, and secondary or incidental to sex. He dealt with both groups.

Mr. A. C. Garnett, M.A., who spoke on the psychological aspect of the question, said that if ever the question of sex education was to be solved, it would be through the child. It was largely a moral problem. They had to safeguard the child so that it would be able to exercise moral control. Athletics, study, and other forms of desirable mental occupation were good to keep boys and girls from dangerous idleness. Co-education seemed to make for a healthier sexual life. It was commonly urged against co-education that it resulted in premature "sweethearting" in the case of young people, but provided the opportunity for cultivating true affection.

Lack of sex education stimulated sex curiosity. In considering whether or not they should advise sex education, it was not a question whether the child should know or should not know. The child would find out. It was well to see that the first knowledge came from a suitable source in a suitable way. All authorities agreed that the father and mother were the best to impart the knowledge if they knew how to do so, but often they failed to impart it. The minister of the church was also a good medium. All teachers should be taught how to instruct in matters of sex. Perhaps the best plan would be to have specially trained visiting teachers. The system had been successfully tried in Victoria, and, to a certain extent, in South Australia. It was essential that they should encourage a strong individuality in the child, and so develop a strong self-respect. They must teach by precept and example, and more especially by example. They should teach a reverence for the sacredness of life, and a chivalrous respect for the opposite sex. They should link the idealism of the child to the loyalty of some great hero. Best of all, they should link that idealism to the loyalty and personality of Christ for all purposes of emphasizing the heroic and pure.

Dr. Mayo said she thought teaching in sex matters should be to individuals and not in classes. Emotion should not be associated with such teaching. There was a tendency for a reaction on the part of the child to the emotion of the teacher.

The speakers answered a number of questions relating to the subject matter of the addresses.

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A LIBERAL EDUCATION.

If the administrators of our educational systems, public and private, sought to please everyone who has an opinion on the work that should be done in the schools, their lot would probably be that of the man in the fable who travelled with the boy and the donkey. They would be involved in a hopeless attempt to reconcile contradictions. Roughly speaking, the critics fall into two categories, the practical and the idealistic. One school lays stress on art, literature, languages, and science, and another deplores the "cramming" of juvenile minds with a "lot of useless knowledge" and affirms that when once "the three R's" have been mastered the rest of the time should be devoted to subjects of a strictly utilitarian character—agriculture, metallurgy, carpentering, &c. This second school warns us against the slavish copying of old-world models, and pronounces that it would be better for a girl to know how to make butter or darn clothes than to parse, or play the piano, and that a boy would find more profit in understanding something of bush-clearing and sheep-shearing than in being well-informed as to the number of guns possessed by Thebes or wives by Henry VIII. It seldom occurs to the adherents of either school that both have claims to consideration; that while it may be the function of education to equip the pupil for a livelihood, it is no less its function to improve his character and form his tastes and in other ways qualify him for good citizenship.

A great deal of mystification would be dispelled if education were regarded, as it should be, as a civic process. By its stress on "skill" in the teacher our public school system as now directed is exemplifying the teachings of the latest and best authorities. For the skill demanded is in the bringing up of the pupil apart from the academic instruction given. The essence of bringing up is forming habits of right behaviour, and under the "skill mark" system it is required of teachers that this shall be their first aim. But if education is to be a civic process more is needed than right conduct. Among the members of a democratic community there must be at least an approximation to sympathy, and in large measure sympathy depends on common knowledge and common interests. Suppose three persons meet, one knowing nothing except Greek, another chemistry, and a third law. There is no common stock of knowledge between them and little profitable interchange of ideas is possible. Here, then, is the case for uniformity up to a point. Of a sound education it is demanded that it shall make a certain degree of knowledge and a certain standard of taste common property. Beyond that point education takes upon itself another function. It is to discover the individual's capacity and afford it the fullest scope for development. The educator can at best but educe that which is within the pupil in the germ. He cannot create new faculties. His task lies in preparing