Mr. H. M. Lushey.

that education was costing too much, and that University education should only be given to those who could win their way. The annual expenditure in connection with the University of Adelaide amounted to £80,000, which included the Government's

Mr. E. W. Skitch.

subsidy of £43,000. Therefore, if the Government did not realise their great responsibility in supporting the University, it would become a great deal more difficult for their young professional people to take their courses in the University. Without Government assistance the fees would be increased by at least 50 per cent. People who spoke of education as being too easy and undervalued should remember that if the Government did not support the University they would not have such a large number of students there to-day.

Courage of the Out-back Teachers.

The educational system, like everything else, was subject to changes. It was necessary to have a sympathetic Government, an enthusiastic Minister, and a brainy staff. There was only one way to do that, and that was by keeping the staff up to date. The building for the training of teachers, however, was quite unsuitable; it was once used for a police barracks. Now they were putting the finishing touches to a new teachers' college. (Cheers.) He had promised that nothing would be denied to bring it up to date. He had signed a docket that day approving the expenditure of £2,000 in furnishing the Teachers' College. The Government decided to amend the law and allow the teachers to go to the Arbitration Court. The teachers had a conference with the Government, and the Government said they would agree to whatever award was made. The salaries were raised by about 23 per cent. This was not an indication to him that the court was over-generous. It was merely an indication that the salaries had not previously been what they should have been. (Cheers.) More hands had been recently taken on in the Education Department. There were now 525 more employed by the department than in 1923, but there was still a considerable shortage of teachers. One thing that impressed him on the West Coast and other parts outback was the courage of the young men and young women among the mallee roots and rabbits, doing their best to train the children in a rented hall or a wayside tin shanty. (Cheers.) He was glad of the ambition shown by these teachers. Those who had to go outside a certain zone should, he thought, receive special consideration. It took him a long time to get a grip of the important department of education, there were so many branches. Right through his struggles he received loyal assistance from the officers with whom he worked. The Director of Education was a loyal, able, and energetic officer. He was doing his best to employ all the most up-to-date methods that could be employed in the department. Mr. Charlton was also untiring in his efforts, as were also many others he could mention. He believed that apart from educating the children they must educate the public. If the public knew what system of education was being imparted to the children they would lend the department every assistance. Not only would their central schools turn out skilled boys, but the teaching there would possibly lead their minds along channels which otherwise they might not have used. The cause of much of the unemployment was the fact that there were so many unskilled men. By means of the central schools they would gradually eliminate that element. The University Council offered to make all arrangements for night lectures to teachers if the Government would find the money. The first expenditure for the present financial year would be £1,500, and then the annual cost would be £3,000. The Government at first hesitated, but finally accepted the offer. (Cheers.) Although the lectures would not begin until March, already 100 teachers had indicated that they intended to attend. He hoped soon to start the new agricultural high school at Urrbrae Gardens, which would cost £35,000. It was necessary that the Government should give careful consideration to that new branch of the department, because South Australia was an agricultural State. It was hoped that the school would be ready for occupation in January, 1928. Their welcome was very encouraging to him in the more onerous duties he was about to assume. Come what might, the Government would do their best to preserve the rights of the Education Department. (Cheers.)

The president said the Minister's speech had been an earnest and sincere one, and they were particularly pleased that he had not given up the portfolio of Education. (Cheers.) At the instance of the president, seconded by Mr. E. W. Skitch, the president-elect, a vote of thanks was accorded the Minister.

In responding, the Minister said he hoped it would not be long before every teacher in the State would be a member of the union. Any encouragement he could give in that direction would be gladly given. He knew what advantages could be gained by organisation. (Cheers.)

The part songs, "Holy night" (Beethoven), "In a gondola" (Karl Linders), "In silent mead" (Alet), and "Mosquitoes" were sung by the teachers' college male quartet.

ADV. 27.8.26

THE SCIENCE CONGRESS.

THE PERTH MEETINGS.

A VARIETY OF SUBJECTS.

Perth, August 26.

At the Science Congress, in the sanitary science and hygiene section, a discussion took place on the teaching of hygiene in the schools. Dr. Harvey Sutton (principal medical officer of schools for New South Wales) drew attention to facts which he described as startling. Hygiene in schools should protect, correct, prevent, and create. Safety-first teaching should be included, for as many boys of school age were killed annually in New South Wales by accidents as by infectious disease. One quarter of the school boys who died were killed by accident, and for every one killed 80 to 100 were injured. Curiously enough, four or five boys were killed for every girl. Males in general were shorter lived than females, and should have special care on that account. The study of growth deserved more attention. It had been shown that among boys of six to nine years five-sixths of the annual increase in weight took place in the five months from January to June. There was evidence that the rate of intellectual growth varied in a similar manner. A great variation took place in the incidence of infectious diseases. In one year 91,000 school children were absent for periods owing to these diseases. In another year the figure was only 7,000. District diseases could best be combated through the schools.

Dr. John Dale (Government medical officer of health at Perth) argued that State schooling should be frankly utilitarian, and that the teaching of nature's laws and nature's forms was an absolute necessity.

Education for Pharmacy.

Mr. A. T. Sissons (director of the Victorian College of Pharmacy), in an address on "The cultural side in education of pharmacy," said the curriculum of pharmaceutical colleges should pay attention to the cultural side of the pharmaceutical education as well as the technical side. He did not recommend any drastic changes in the existing syllabus, but suggested that biological science be added.

The Commonwealth Bank.

Professor D. B. Copeland, in an address on "The Present Position of the Commonwealth Bank," said the immediate task of the bank was to work out a satisfactory re-discount policy, and arrange for an elastic note issue that would give all the advantages of a gold standard without gold movements. It might be expected that this task would occupy the attention of the new board, and that there was no thought at present of embarking upon an independent policy that required the exercise of open market functions. It was clear that the bank should accept the position of a central bank under the gold exchange standard, and maintain exchange stability with the United Kingdom.

Foreign Diseases.

In his presidential address before the veterinary section, Professor J. D. Stewart (Dean of the Faculty of Veterinary Science in the University of Sydney), gave a resume of the growth of veterinary science from the establishment of the first veterinary school in 1762 at Lyons, in France, to its present stage of development, outlined its activities, and indicated the directions in which it might be further applied with advantage. The chief object of veterinary science and the primary duty of the veterinary services of the Commonwealth was to protect the interests of the pastoral industry, the most important of Australian primary industries, and to safeguard the revenue it produced by maintaining good health in flocks and herds. Reference was made to the important part veterinary science had played in assisting the development of Australia by preventing the introduction of many of the animal plagues that prevailed in other countries and by stamping out several that gained entrance. Among the latter special mention was made of foot and mouth disease, which was causing much trouble and heavy losses in England and America. The experience gained in 1923 during the outbreak of rinderpest in Western Australia went to prove how necessary it was for Australia to maintain a complete state of preparedness to combat immediately the incursion of these foreign diseases. Attention was drawn to the possibility of foreign diseases such as rabies being introduced into northern Australia by irregular traffic, and a complete veterinary survey of the Northern Territory and the north-west portion of the continent was strongly urged. The animal quarantine law procedure constituted by the first line of defence, and should not be completely relied on for absolute protection. A greater degree of security was to be obtained by also expanding the veterinary organisations in the different States to assure rapid diagnosis and speedy application of repressive measures, should any disease escape or break through the quarantine cordon. The added protection this expansion would give appeared to justify the Federal Government assisting the States to develop their veterinary services.

Government Action Appreciated.

A meeting of the general council expressed appreciation of the action of the Commonwealth Government in constituting the council of scientific and industrial research, in making provision for £50,000, expressly for carrying out research on scientific and economic problems of primary importance, in making an appropriation of £100,000 endowment, from the income of which grants-in-aid may be made to individuals or organisations already engaged in scientific research, or who may desire to begin special investigations, in arranging for the appointment of State committees on which the responsibility for carrying out such research will devolve.

An Address on Botany.

Addressing the botany section, Professor A. J. Ewart said so wide a title as the past and future progress of botanical science naturally permitted only of partial exploitation. In Australia, owing to the fact that the trees were the tallest in the world, except those of California, which were of equal height, the problem of the ascent of sap in them was of special interest. Hence a summary was given of the various theories on the ascent of sap, including the latest work on the water tension theory, namely, that the water was hauled up by the leaves from the roots by cohering water columns in the vessels acting like minute unbreakable ropes. Some difficulties in the way of a complete acceptance of this theory were indicated. Another problem of special interest to Australia was that of the eradication of weeds by poisons. Much work had recently been done upon the nature of the action of poisons, and on the influence of temperature and of neutral salts upon poisonous activity. If some of this work were confirmed and extended, it was not too much to say that they might be on the verge of discoveries that would enable them to use poisons and poisonous sprays of such character as to discriminate between definite economic plants and noxious weeds, and to enable the latter to be prevented from growing without affecting, or even with benefit to, the former. A few isolated instances of that kind were already known, as, for instance, the eradication of charlock in grain crops by spraying with copper sulphate, and the destruction of weeds in a buffalo grass lawn by the use of ammonium sulphate. Hitherto work on the eradication of weeds had been carried out mostly on empirical lines without regard to basic principles, and hence without any possibility of improving modes of treatment. In regard to Australia generally, as was only natural in a new country, most botanical work had been on systematic lines, naming and describing the flora of the continent. In Western Australia, and particularly in North-West Australia, this was still the most urgent work to be done, and it was upon scientific work of this nature that new partly explored countries should concentrate attention. It was regrettable that so much of the botanical exploration of Western Australia had been done from outside and that the State had spent so little upon it. Later botanical work in Australia would probably follow the same lines as in older countries, but a strong tendency might be expected towards oecology, because of Australia's special climatic conditions, and to economic botany and plant pathology, because of Australia's dependence upon agriculture and forestry as their chief industries. Particularly in Western Australia it was from work in these directions that botanical researches might contribute most markedly to the material progress and welfare of the State.

School Examinations.

In a paper on mental tests and scholastic examination Professor Mackie, of the Sydney University, declared that the work of testing and examining schools had not received much attention. There was no satisfactory book on school examinations, and articles in educational journals rarely dealt with the topic. During the past few years, however, the great development of tests of general ability and of scales for measuring school attainments had directed attention to this side of the teacher's work. The practice of education would respond to the stimulus of study, research, and experimentation quite as profitably as would medical practice or primary industry, and the Education Departments of the Australian States should provide funds for this very necessary work.

Professor John Smyth, of the Melbourne University, dealt with the subject of intelligence tests of new students at the Teachers' College in Melbourne. These tests, he said, were used to separate normal from sub-normal children, and to determine whether a boy of average or super-average intelligence was placed in the right class at school. The question arose whether similar tests should be applied in the selection of pupils for the secondary schools course and for colleges and universities. Other factors than intelligence had to be taken into account, such as interest, confidence, the emotions, and moral qualities.

At the close of the paper a number of general conclusions were stated, among them being:—(1) A student who was ranked in the lowest 25 per cent. of secondary students by test scores was unlikely to do more than pass work in the University. (2) University courses of those students whose test score was below the medium score of their group should be chosen with great care. (3) When it was proposed to raise students from the primary course to the secondary the intelligence test scores of these students could be accepted as a reliable indication of their ability. Another conclusion was that students of a group, however large, could be tested and rated within an hour.

The Training of Opticians.

The president of the Australasian Optometrical Association (Mr. Kett), in an address on the training of opticians, stated that three out of every ten persons actually wore glasses for other reasons than as a concomitant of advancing years, and seven out of ten required them. The detection and correction of visual defects and disabilities were therefore most important. Social and economic demands on people's eyes were greater to-day than ever before. What in other generations had been patent disabilities had in this generation become patent from the fact that social and economic evolution had outdistanced physical evolution. The malign influence of a disordered visual function upon health could find no better illustration than in the lives of many of the greatest writers and thinkers of the past century. A list of men and women whose lives and work were most seriously affected by eye strain would include Darwin, Huxley, Browning, Carlyle, de Quincey, Swift, Balzac, Tschaikowski, Berlioz, George Eliot, Wagner, and Neitzche. In all these instances the health of intellectuals was impaired and their work restricted.

Nation Building.

Sir Charles Rosenthal addressed the engineering and architecture section on "Nation Building." He regretted that illness had prevented Sir John Sulman from officiating as president of the section. The earliest records of Ancient Greece and Rome indicated the importance in those days of both engineering and architecture, and the monuments to both callings still existing made them marvel at the skill of both designers and artisans. In Europe and the British Isles architectural gems told of the genius of by-gone days. Canterbury Cathedral in particular was a perfect illustration of the development of ecclesiastical architecture from the Norman of William the Conqueror as seen in the East-End, through the Early English and Decorated to the Perpendicular period as illustrated in the West-End. In Egypt ancient monuments, temples and Pyramids spoke of the grandeur of early Egyptian areas. The Pyramids in particular compelled admiration from both engineering and architectural viewpoints. In modern Egypt the Assouan Dam, harnessing the Nile waters, was a splendid example of engineering skill. India, China, and Japan wonderful monuments existed illustrating both [illegible] America, a new nation, had been built up mainly by the engineer, and the architect followed the blazed track and [illegible] magnificent buildings to the [illegible] works. Australia, the youngest of the nations, has a proud record also—harbor and