REG. 24.8.26

SCIENCE CONGRESS IN PERTH.

ALL THE STATES REPRESENTED.

PROFESSOR RENNIE'S PRESIDENTIAL ADDRESS.

PERTH, Monday.

The congress of the Australasian Association for the Advancement of Science was opened to-day. The delegates were representative of the Commonwealth and all the Australian States and New Zealand.

The first item on the official programme was a civic reception by the Mayor of Perth (Mr. J. T. Franklin), at the town hall. The general council met in the afternoon at the Modern School, where Mr. G. A. Julius, Chairman of the Council of Scientific and Industrial Research, delivered an address on "The reorganized Council of Scientific and Industrial Research," and, in the evening, at the town hall, the President-elect (Professor E. H. Rennie), who has held the Chair of Chemistry at the Adelaide University for 42 years, gave his inaugural speech, his subject being "The chemical exploitation, past, present, and future, of Australian plants."

PRESIDENTIAL ADDRESS.

Professor E. H. Rennie, the newly installed President, opened his address in the evening with appreciative references to the work and personality of two members of the association, Messrs. J. H. Maiden and Henry G. Smith, who had died since the last meeting in South Australia.

Cosmic Rays.

The earlier part of the address was a review of recent researches into the structure of the atom. He dwelt upon the recent researches of Professor Millikan, which dealt with the existence of cosmic rays. Physicists, he said, had become aware of the radiation of an exceedingly penetrating nature, namely, a very short wavelength, far shorter than that of x-rays which, until recently, were the shortest known. These rays were, in fact, only about one-fiftieth of the length of gamma rays, or about one-ten millionth of that of ordinary light. The most penetrating x-rays used in hospitals could not pass though half an inch of lead, but Professor Millikan had shown that cosmic rays could pass through the equivalent of 6 ft. of lead. They came into the earth from outside with equal intensity at all hours of the day and night, and with practically the same intensity in all directions. What their origin might be was a matter for speculation. From what was known of them Professor Millikan supposed that they must be due to some sort of transformation going within the nuclei of atoms; but, if so, it must be far more energetic than any transformation of which they had knowledge such as was manifested in radio activity the energy involved was comparable with that developed by the capture of an electron by a positive nucleus, and Professor Millikan considered this kind of thing was a probable source of these rays. The possibility of transmuting mercury into gold by powerful electric discharges was touched on by the President, who said it appeared advisable to suspend judgment for the time regarding the interpretation of the experimental results achieved. Reference was made to the five "missing elements," and the President explained that three of them had recently been discovered.

Plant Products.

Professor Rennie was on his own ground when he reached consideration of plant product, and the remainder of his address was devoted to an exhaustive analysis of the constituents and potentialities of Australian plant products. He divided them for convenience into essential oils, gums, and resins, colouring matters, poisons and miscellaneous substances not included in any of these classes. Passing on to the importance of essential oils from a perfumery point of view, Professor Rennie said that Boronia magastigma, the Western Australian specie, had acquired special importance from the fact that two manufacturing chemists were producing from it a valuable perfume. Apparently nothing of importance had yet been published respecting the nature of the oil; but, from private information, which he understood would be contained in a paper which was to be read before the chemical section by Mr. W. B. Garner, he gathered that the substances constituting the perfume were yet unknown, but were likely to be examined in the near future. The flowers were gathered in enormous quantities by a specially contrived apparatus which did not injure the plant. The extract from the flowers, on evaporation, yielded a green waxy material, which was of intense colour and was apparently used in its crude state for perfumery. This waxy residue decomposed if heated with steam, but almost certainly contained volatile oils to which the perfume was due. The material, however, owing to the cost of collecting the flowers was very expensive.

Essential Oils.

In the essential oils section the professor left to the last that one which he described as the most important in Western Australia, namely oil of sandalwood. This was distilled chiefly from the wood of Sandalum cygnorium, and its importance might be gathered from the fact that, up to the end of 1924, 70,000 lb. had been exported. The wood of the closely allied specie, Santalium album, had been used for ages past in the East for incense, and the oil as a drug. The wood and oil of the Western Australia specie were used for similar purposes. The oil was valuable for three reasons. It was used in perfumery, not so much for its somewhat pleasant smell, but as a fixitive for other perfumes the latter being retained by oil in, for instance, the perfumery of soap. More important, however, was its use in medicine. The medicinal properties were due to the large quantities of santalol which it contained. There had been some controversy as to the exact chemical composition of the oil, but this had partly arisen from the fact that the oil before exportation from Western Australia began, was derived entirely from Sanalum album, and that it was this latter material which had been chiefly examined and reported upon. There was abundant medical evidence that the local oil was at least equal to the East Indian product, although it did not quite answer to the official requirements of the British Pharmacopoeia. It must be confessed that, while many Australian oils were of commercial importance, little use had been made of them up to the present.

Afforestation.

Before concluding Professor Rennie said he would like to plead for a more vigorous policy of afforestation everywhere in Australia. A school of forestry was to be established in Canberra; but, unless, and until, the various Governments were prepared to enter upon a vigorous campaign of actual afforestation upon a large scale, the future of the supply, not only of timber, but of many products such as had been referred to, was, to say the least of it, very uncertain. In this connection it was satisfactory to learn that steps were being taken to regenerate the sandalwood forests in Western Australia; but was it too much to ask that, in any scheme of afforestation, regard might be had, not only to the supply of timber, but also to the study of the conditions under which other products might be conserved? Though it was quite possible that with the progress of organic chemistry such substances as santalol, for example, might be manufactured from cheap materials more cheaply than it could be obtained from the sandalwood tree, yet that did not appear to be probable in the near future, and therefore every precaution should be taken to provide against the complete extinction of this valuable tree.

THE BUSINESS MEETING.

The first meeting in Western Australia of the Council of the Australasian Association for Advancement of Science was held in Perth this afternoon. The retiring President (Sir John Monash) occupied the chair.

The election of officers resulted as follows:—General Treasurer, Mr. D. Carment (N.S.W.); Permanent Honorary Secretary, Dr. A. B. Walkom (N.S.W.); Local State Secretaries—Queensland, Mr. C. T. White; New South Wales, Dr. Walkom; Victoria, Mr. E. R. Pitt; Western Australia, Mr. A. Gibb Maitland; Tasmania, Mr. C. E. Lord; New Zealand, Professor C. C. Farr.

It was decided that the twentieth meeting of the association be held in Brisbane in May, 1930, it having been already arranged that the nineteenth meeting be held in Hobart in January next year.

Mr. R. H. Gambage, C.B.E., was appointed President-elect for the Hobart meeting.

Professor N. T. M. Wilsmore resigned from the office of local secretary for the Western Australia, on account of pressure of other duties, and it was decided to place on record the council's appreciation of his services in connection with the organization of the Perth meeting.

A CIVIC WELCOME.

POPULARIZING SCIENCE.

Lieut.-Gen. Sir John Monash, retiring President of the association, responding to the toast of "The guests" at the civic welcome to the delegates at the town hall to-day, said it was the prime and fundamental objective of the association to make its activities public and popular. The great objective was not merely to meet together as scientists and to develop team work among the nations' scientists, but to interest the general public in scientific effort. Science could not progress unless it was adequately endowed. Most scientists had their careers mapped out, either as teachers or in professional work, and could not devote that time to scientific pursuits which was necessary for the nations' needs. Something in the nature of a special endowment for science was imperative. It would come either from private munificence or public subsidy. But for this it was necessary to have the support of public sentiment. The world had developed so much in the last half-century that all civilized communities had come to recognise that they could not blunder forward by rule of thumb any more. They had the whole of the resources of scientific effort to guide them and the more we learned and sought and found, the bigger became the field that was opened up, particularly so in Australia, where, in every direction, they had mighty problems. The association stood for the application of talent and genius of Australian men and women towards the solution of these problems, and it stood for what was much more important—the awakening of active public interest in the work, so that, as time went on the endowment of support, financial and otherwise, would in due course be forthcoming.

SCIENCE AND INDUSTRY.

The aims of the reorganized Commonwealth Institute of Science and Industry, some of its achievements, and the programme upon which it is embarking, were outlined by the Chairman (Mr. G. A. Julius). There was a clear realization that results in the field of research could not be expected in a week, or even in a year; and that probably long periods would elapse before many of the problems were solved, if they were ever solved. The formation of State committees was well in hand, and there was nothing to prevent their getting to work at once. Mr. Bruce had instructed the Council that it was not the wish of the Government that extensive new laboratories should be established by it, but that the work should be done by the assistance of existing institutions in various States. The Government had instituted a trust fund of £100,000, the income from which was to provide assistance to the workers engaged in scientific work and the training of students in scientific research. With regard to further provision in the Endowment Act providing assistance to persons engaged in scientific research, the council hoped soon to formulate machinery for making grants in aid on the lines followed in Great Britain. For the present, work would be concentrated mainly in five major divisions: — Animal pests and diseases, plant pests and diseases, forest products, fuel problems (especially liquid fuels), and the preservation of food (especially cold storage). Owing to a probable lack of natural oil in Australia, it appeared to be a question of the provision of the substitutes most promising. Of the latter were oils from low temperature distillation of coal, synthetic fuel fro mhydrogenation of coal, high pressure catalysis of gases, &c., and power alcohol. The council was watching what wealthy corporations were doing in regard to obtaining power alcohol from sugar and starchy raw materials, and was ready to assist if required. Committees had been appointed to enquire into the question of synthetic stone, and to cooperate with investigations by the Britsih Australian Tobacco Company, Australian tobacco not being satisfactory. Great hopes were held out for the solution of the prickly pear problem. The council proposed to investigate the composition of shale oils obtained by distillation, to ascertain whether they contained substances which could be separated commercially.

ADV. 25.8.26

THE UNIVERSITY JUBILEE.

ADELAIDE PROVIDES LESSONS FOR MELBOURNE.

The Registrar of the University of Melbourne (Mr. J. P. Bainbridge), who attended the jubilee celebrations of the University of Adelaide, relates his experiences and impressions as follow:—

"There are certain matters of public interest and facts which are not generally known that came out during the recent jubilee celebrations in Adelaide. In the first place, the foundation of the University came about in a rather peculiar manner. The Theology College, needing funds, approached Mr. W. W. Hughes (later Sir W. W. Hughes) and asked him for assistance. Much to their surprise, he offered them £20,000, they expecting at the most £100. Although delighted at the offer, they pointed out that it was much more than they required, and suggested it should be used for some bigger purpose, such as a start towards founding a University. No sooner was this gift made public when Mr. Elder—afterwards Sir Thomas Elder—immediately offered another £20,000. Sir Mungo MacCallum (vice-Chancellor of the Sydney University), at the celebration dinner last week, referred to these gifts as offered to a university, which 'when as yet she was, was not.'"

"With this nucleus of £40,000 the Government drew up and passed an Act constituting the University, and this was its origin.

Open-handed Giving.

"This kind of open-handed giving," continued the registrar, "has been followed ever since, and the history of the University is a record of the names of generous givers, the Elders, Barr-Smiths, Bonython, Angas, White, and the Darlings and many others. All these men have given big gifts to the University, and at the recent celebrations a new building (for physics and engineering) was opened by the Premier (Hon. J. Genn). He stated that this was the first building for the University which had been paid for wholly by the Government.

"When the University was originally established, the Government undertook by Act of Parliament to give 5 per cent. a year in capital value of all private gifts. This generous offer by the Government has been religiously kept.

"At the jubilee celebrations it was announced that £5,000 had been given by Sir Joseph Verco and £10,000 by Sir Josiah Symon to the University, and there is no doubt that the support of the Government is a big inducement for private benefactions."

The registrar compared this history with that of the Melbourne University. It was founded in 1885 entirely by the Government, which voted £9,000 a year and a grant for building purposes.

"It was nine years later before the first benefaction was received," he said. "It was £800 obtained by subscriptions for the purpose of establishing an academic prize. Nothing more was received for seven years, when another small bequest was received. Melbourne is indeed poorly off for benefactions. It is true a large number of small gifts have been received, but none so outstanding as those in Adelaide."

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REV. A. G. B. WEST.

Rector of St. Dunstan in the East, London, who has kept in touch with many friends in Australia through the publication of recent articles of special interest. He was formerly rector of St. Augustine's Church, Unley, and visited this State a few months ago.

A PETRIFIED FOREST.

A remarkable discovery was made last week of a petrified forest on the beach, between tide marks, at Ceduna. Stumps of trees, turned into stone, are to be seen just as they grew hundreds of thousands of years ago, with large roots spreading out in every direction. The roots lie on a bed of white clay, which represents the old soil in which they grew, and the deposit is overlain by the later formations of conglomerate and travertine which are so common along the West Coast. The petrifying agent in the case of these trees is silica, the material which forms flint and opal, and is thus in strong contrast to lime, which is the usual petrifying agent in travertine and other limestones. The discovery was made by Mr. R. Bedford, of the Kyancutta Hospital and Museum, whilst on a collecting trip, and at the same time many interesting specimens of native curios, fossils, and whales' bones were secured.

ADV. 28.8.26

It is understood that Mr. Norman Jolly is to be appointed Commissioner of Forests for New South Wales on the retirement of Mr. Dalrymple Hay in October. Mr. Jolly, who is a South Australian, is at present Principal of the Commonwealth School of Forestry, for this year being conducted at the Adelaide University, pending its establishment in Canberra.