SCIENCE CONGRESS.

AUSTRALASIAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

SEVENTH DAY'S PROCEEDINGS.

THE CLOSE OF THE CONGRESS.

The labours of the science congress were, so far as the reading of papers and the delivery of lectures are concerned, brought to a conclusion yesterday, and all that remains to be done now is for the members of the association to accentuate the close of their arduous work by participating in a number of excursions that have been arranged for the enjoyment of the visiting scientists and their wives and families. It can be truthfully asserted that the New South Wales members of the association have done full justice to the reputation which all public bodies of Sydney enjoy, namely, that of treating their guests in a most hospitable manner, and, if any doubt existed on this point, it could no longer exist after the exceedingly kind expressions of thanks accorded by the visitors to the New South Wales members of the association at the final meeting of the council held yesterday. It would be ungenerous on the part of the representatives of the press if they did not record their appreciation of the unremitting and exceedingly valuable assistance given them by Mr. Alexander Morton, curator of the Hobart Museum, and formerly of the Sydney Museum. His assistance was purely voluntary, and but for it the representatives of the press would have been unable to give publicity to the large number of papers that were read.

During the afternoon a number of members visited the works of the Colonial Sugar-refining Company, and made a careful inspection of its complete and extensive plant. By far the larger number, however, of the visiting members, together with their wives and daughters, preferred to take a trip round the harbour in a steamer.

GEOLOGY AND MINERALOGY.

CORAL-BORING EXPEDITION TO THE SOUTH SEAS.

Considerable interest was manifested in the section devoted to geology and mineralogy owing to the fact that Professor David was announced to read a paper on "The Coral-boring Expedition of 1897 to the Island of Funafuti in the South Seas." The incidents in connection with the expedition and the results attained by the bore were published in the "Herald" in the form of an interview with Professor David immediately on his return to Sydney from Funafuti; hence it is necessary to give but a brief outline of his paper. It was illustrated by 70 lantern-slide pictures, which assisted the audience materially in following the Professor's interesting account of the expedition and its trials. The funds for the expedition were found chiefly by Miss Eadith Walker, of Yarralla, the late Ralph Abercrombie, and the Royal Society of London, while the New South Wales Government lent a diamond drill and the workmen. The method of working the drill and simultaneously attacking the great coral cliff which bounds the atoll seaward is was explained, and an account given of some of the manners and customs of the natives. Special reference was made to the nature of the last part of the boring done while Mr. Sweet, F.G.S., was in charge. The last 30ft. of core were particularly interesting, being formed of a soft chalky rock, with numerous foraminifera, and showing that the coral formation proper had been all but completely penetrated. Had it been possible to bore a little deeper Professor David thinks that the foundation rock would have been reached. Mr. Sweet had done all that he judged would most conduce to attaining this end, and when the boring had to be stopped had left the bore in such a condition that it was possible in resuming the bore to utilise the old borehole, now 698ft. deep. Professor David urged that this meeting might use its influence with the council of the association to have a recommendation made to the Government of New South Wales to extend the loan of the diamond drill so as to admit of the boring being continued till bedrock was reached. A letter received yesterday from the Royal Society of London stated that it was so pleased with the results already attained at the Funafuti bore that it had voted a further sum to meet the expenses, making their total subscription up to the present £500. Opinions amongst scientific men in Great Britain as to the conclusions to be drawn from the evidence of the Funafuti bore were at present divided. While the advocates of the Darwinian theory "chortle" over the results, Dr. Murray's supporters say that the evidence substantiates their views. A large portion of the core is now on its way to England, and its arrival is eagerly awaited. Professor David considered that the last portion of the core obtained weakened the subsidence theory. Special mention was made of the recent generous and prompt action of the Hon. Dr. B. G. Corney, of Suva, in despatching the schooner Eastward Ho to the relief of the expedition at Funafuti.

ETHNOLOGY AND ANTHROPOLOGY.

Mr. J. Enright, of West Maitland, contributed some interesting information in a paper dealing with the Wollombi rock carvings.

A communicated paper by Mr. J. J. Cary, of Geelong, Victoria, furnished a short account of the vocabularies of the Geelong and Colac aborigines collated 60 years ago by Mr. F. Tuckfield, a missionary to the natives. Mr. Carey having access to the MSS. in the hands of the Tuckfield family found traces of what appeared to be not only a dual number but a trinal in the native pronouns.

"Some Indian Words of Relationship used by the Australian" formed the subject of a paper by Mr. John Fraser, LL.D. The word "kaka" is used throughout India to mean "an elder brother or an uncle." The Malays say "kakak" for an elder brother; and Dr. Fraser has now discovered that the Diyeri tribe on Lake Eyre, in the heart of Australia, say "kaka" for "an uncle or a mother's brother," and "kaku" for "an elder sister." The same word in different forms is found in 120 localities everywhere along the coast and in the interior of Australia. The inference, Dr. Fraser observes, is that the ancestors of these Australians must have at one time been in India.

The Rev. J. B. Stair, of St. Arnaud, Victoria, contributed a paper on "Australian Cave Paintings and Rock Carvings," and illustrated it with an album of coloured and plain plates and photographs from Sir George Grey's journal of his expeditions. The same gentleman read a paper on "Old Samoan Amusements, Trades, and Employments," and dealt in an interesting and exhaustive manner with the dances, musical instruments, singing, story-telling, games, religious festivals, sports, canoe and house building, process of tattooing, and trades of the Samoans of 50 years ago.

This section was finally closed with an entertaining lecture by Mr. Alexander Morton, of the Hobart Museum, on the Murchison blacks of Western Australia.

MENTAL SCIENCE AND EDUCATION.

EVOLUTION AND SOCIOLOGY.

Dr. T. P. Macdonald read a paper upon "Evolution and Sociology." He contended that the doctrine of evolution in its sociological aspects could offer wise suggestions for the solution of the grave social problems of our time if the complete up-to-date conceptions of evolution were fully appreciated. Malthus, Darwin, Huxley, and Spencer had developed to extremes the doctrine of the struggle for life, with all its corollaries of survival of the fittest, natural selection, &c., while, on the other hand, Kropotkin, Lubbock, Romanes, and Latourneau had proved that mutual aid had played a more important part than struggle in the development of the animal kingdom. Therefore, there were two important principles underlying the truth of evolution. The struggle for life was an expression of the natural right of individuals to self-preservation; and in its relation to consciousness and reason this same principle gave the ultimate complete conception of the natural right individuals had to freedom. While the principle of struggle underlaid the ethical side of life, so that of mutual aid underlaid the economic. Animals by association become powerful, but no social rights were created thereby. There could be no greater right in society than the right of individuals to freedom. All associations, therefore, to be ethically sound must be perfectly free. A prophecy that the work of the world would one day be done by a system of social volunteers was the final conclusion from the arguments adduced.

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tion from the arguments adduced.

Professor Selman read a paper, in which he dealt with technical education in England, Germany, America, and New South Wales. He pointed out glaring defects in our own system, and suggested as a remedy a system of payment on results of examinations. He said that during the last eight years £300,000 had been spent on technical education and that the State was paying at the rate of about £36 a year to teach a boy carpentry or a girl drawing. We were paying from 20 to 30 times more than we ought for the poor results obtained. An entirely new system was proposed, which had worked most excellently since 1862 in England, and was still in operation there.

Mr. C. J. Brennan, M.A., read a paper on Friedrich Nietzsche, and dealt with his relation to Schopenhauer and Wagner, together with the development of his ideas up to 1876, when he broke away from idealism. The main criticism of the author was that Nietzsche's later ideas were the outcome of the rage of disappointed idealism, and gradually took more vehement form from his desire to entirely destroy the old metaphysical and idealistic element in his nature, though he never seemed to have satisfied himself.

TELEGRAPHY WITHOUT WIRES.

Although the great value of many of the papers read at the Science Congress has been demonstrated by exceptional appreciation on the part of the public, it may safely be said that the utility of the members' work becomes more apparent when the public is directly affected. In this connection the lecture on telegraphic signalling without wires delivered at the University Hall last evening to a very large audience of working men by Mr. J. Arthur Pollock, B.Sc., and lecturer on physics at the University, is deserving of special mention. Before the lecture was delivered the president of the association welcomed the working men to the lecture. He said that although the members of the association were not present, the lecture was part of the work of the congress. Judging by the large attendance, he believed such lectures, which the association intended to give in the future, would be attended by happy results. The announcement of Professor Liversidge was received with applause. Mr. H. C. Russell, C.M.G., took the chair; and Mr. Pollock commenced by giving a practical electrical experiment. In a very happy, colloquial, and popular style he conveyed to his audience the various discoveries made in electricity, more especially as affecting the transmission of electrical energy. By means of diagrams he showed how electrical energy was transmitted, not by the wires, but by the surrounding space, and concluded a very fascinating series of experiments by transmitting a telegraphic message from one end of the hall to the other without the use of wires. The achievement aroused enthusiastic and well-merited applause, and the lecture, which seemed all too short, ended. A cordial vote of thanks to Mr. Pollock was carried by acclamation. The lecture will be repeated at the "at home" of the Royal Society this evening.

MEETING OF THE COUNCIL.

The final meeting of the council of the association was held at noon for the purpose of dealing with a number of questions and matters that had arisen during the proceedings of the congress. There was a full attendance of members, and the chair was taken by the president, Professor A. Liversidge.

THE RECOMMENDATION COMMITTEE.

A report was received from the recommendation committee recommending—(1) That the New South Wales Government acquire the quarry of prismatic sandstone at Bondi with a view to its preservation as a remarkable geological occurrence; (2) the reappointment of the committee on the systematic conduct of the photographic work of geological surveys; (3) the appointment of a seismological committee for the year 1909; (4) the appointment of a committee to secure magnetic surveys at the extreme southern portion of New Zealand; (5) that the committee be reappointed to continue the investigation of the mineral waters of Australasia; (6) that the New South Wales Government be recommended to complete the borings at Funafuti while the boring apparatus remains at the island and the bore remains open; (7) that a committee be appointed to draw up a list of works and papers relating to Australian flora; (8) that the Government of New Zealand equip Timaru with approved seismological instruments, to be placed in charge of Mr. George Hogben, and that a contribution of £25 be granted towards carrying out that object.

The whole of the recommendations were adopted.

NATIONAL CATALOGUE AND SCIENTIFIC LITERATURE COMMITTEE.

The report of the above-mentioned committee recommended that some recognised society in each colony should collect all necessary matter and forward it to the central bureau, London.

The recommendation was adopted.

BARON VON MUELLER MEMORIAL COMMITTEE.

A report was read from the Baron Von Mueller memorial committee intimating that it had passed a resolution placing on record the high appreciation of the members of the association of the valuable labours in the cause of science of the late Baron Von Mueller.

The report was adopted.

VOTE OF THANKS.

In recognition of the assistance accorded to the association during the course of the Congress votes of thanks were passed to the University senate, the Railway Commissioners of the different colonies, and especially of New South Wales; the steamship companies; Mr. E. W. Knox, of the Colonial Sugar Refining Company; Mr. Howell and the directors of the Dapto Smelting Works, the Royal Society of Great Britain, the Sydney Liedertafel, and the Ladies' Club. A special vote of thanks was passed to Sir James Hector, Professor Baldwin Spencer, Professor David, Mr. Pollock, and Mr. Morton for the lectures they had delivered. A vote of thanks to the press was passed, after which the members accorded a hearty vote of thanks to the president for the admirable manner in which he had conducted the proceedings of the Congress. The proceedings then terminated.

VISIT TO THE CLYDE WORKS.

A number of the members of the Science Congress paid a visit to the Government Metallurgical Works at Clyde yesterday. They were received by the Government Metallurgist, Mr. Taylor, and Mr. Musgave, who showed them over the establishment, and afterwards hospitably entertained them.

TO-DAY'S ARRANGEMENTS.

At 2 p.m. to-day a steamer will leave Princes' Stairs, Circular Quay, to convey members to Garden Island and the warships, finishing up by a visit to the tramway power-house, Rushcutter Bay. This evening, at half-past 8 o'clock, a conversazione will be held by the Royal Society of New South Wales in the great hall of the Sydney University. On Saturday the members of the association will proceed to National Park and Port Hacking by a train leaving Redfern Railway Station at 9.50 a.m. to participate in a fishing and botanical excursion. A free special train will convey the members of the association to the Blue Mountains on Monday, and the hour at which the train leaves Redfern Railway Station will be notified in to-morrow's issue of the "Herald."