

# SCIENCE CONGRESS IN FULL SWING.

## SECTIONS BEGIN REAL WORK IN EARNEST.

### MANY INTERESTING PAPERS DELIVERED.

The members attending the Congress of the Australasian Association for the Advancement of Science began their work in real earnest at the University on Tuesday morning. All 14 sections were at work, and many interesting papers were delivered. The deliberations will be continued to-day and during the week.

#### MONETARY POLICY.

##### Reactions Upon Australia.

In his presidential address to the social and statistical science section, Professor D. B. Copeland reviewed recent theories of money and noted their application to Australia. He pointed out that it was a mistake to make a clear distinction between current thought and that of the nineteenth century economists. Present-day economists were continuing the work of great thinkers like Ricardo, and Mill, in whose writings would be found the germs of modern theories of the gold exchange standard and credit control. Developments in certain banking and currency during and since then had made possible the application of new ideas.

##### Return to Gold Standard.

The longing for a return to the gold standard by bankers and business men was natural; they were accustomed to its workings, and by contrast with war-time money systems it was greatly superior. But it was a defective standard in that it allowed of considerable fluctuations in prices, was costly, and was to some extent inelastic. Recent contributions to monetary science had shown that the gold standard was powerless to control the credit cycle. Further, under the gold standard stability of foreign exchanges was achieved at the expense of fluctuating internal prices. It was now thought that the domestic price level should be kept stable at the risk of fluctuating exchanges. The two important problems before monetary science were to prevent long period changes in the price level and to eliminate the evils of the business cycle. The simple restoration of the gold standard would solve neither. It was necessary to use the power of issuing credit to control the business cycle and to adopt safeguards against long period price changes by keeping reserves of gold or notes in conformity with credit needs. That could be done by means of a central bank which would be a feature of growing importance in the monetary systems of the world. For Australia it would be sufficient to maintain the connection with England through the exchange. At present the exchange situation was due probably to accumulated funds in London through borrowing—both public and private—and the favourable export season. Under the gold standard such a situation would be met by increasing gold supplies. That would be followed by a rise in prices in Australia, causing imports to increase and exports to contract. At present there was no such automatic correction.

##### Note Issue Restricted.

On the contrary, the note issue was restricted and prices were falling slightly. The correction was that notes should be increased. Under the new arrangement with the Commonwealth Bank it would be comparatively easy to arrange for the ready purchase and sale of exchange at fixed rates. Notes could be issued against bills and contracted at times when remittances abroad were being demanded in any quantity. That would provide for an automatic expansion and contraction of currency against the exchanges. Such an arrangement was quite consistent with Australia's economic situation, provided always that British prices did not fluctuate seriously. For both United States and Great Britain it would be necessary to maintain internal price stability. The Federal Reserve Bank in the United States had so far achieved that in a remarkable manner, mainly through the buying and selling of securities which affected the supplies of credit available to private banks. Those open market dealings were essential for the success of central banking, and Australia should study the recent experience of the United States. Gold was not allowed to affect prices, and if it should be restored, some arrangement would be made whereby fluctuations in gold supplies would not affect the price level. Professor Irving Fisher's plan for varying the quantity of gold which would be obtainable for a note, should prove adequate. An additional feature of monetary conditions would be that more rational control of credit reserves should follow credit, which must be based upon index numbers of prices, production, and unemployment. The old policy of watching the inverse ratio in issuing credit was inadequate. Both Bri-

tain and the United States had now recognised that and were acting upon it. It was quite possible to maintain price stability if that policy were closely followed. The future of the price level rested partly with those reforms and partly with the supplies of gold. Before the war gold supplies increased at the rate of about 3 per cent. per annum, but now the rate was 2 per cent. Gold would not circulate to the same extent as before, so that the reduced supply could be offset by increased economy in use. Existing supplies were adequate to sustain existing gold prices and with wise control any serious deflation could be prevented.

#### VOCATIONAL GUIDANCE.

##### Placing Australia's Youth.

Mr. J. Nangle (Superintendent of Technical Education in New South Wales), in his Presidential address to the mental science and education section, spoke interestingly on the subject of "Vocational guidance." An earnest effort had been made in the educational systems of this and other countries so to shape the primary and super-primary school courses as to include special training to discover and develop vocational aptitude. It was inevitable that in the ordinary course of things that should happen, because if education were to have any real value it had to be planned to produce happy and efficient citizens.

##### Fitted for His Calling.

It was impossible for any citizen to be either happy or efficient if forced to live a life of work in a calling for which he was fitted neither by taste nor aptitude. It was true that he might have much learning, out of which in the hours of his leisure he would find cultured enjoyment, and, in a measure, even consolation for the tragedy of his uncongenial working hours; but he could not live the full life of the man who was in his true vocation, and in consequence had an avenue for the expression of his special qualities, and to whom the following of his calling was a matter of pleasure rather than otherwise. The people of the world might be said to consist of—those who thought and did nothing, those who thought and did, and those who did and thought not. Each division probably had its value and its

relative merit, but apart from those aspects it was very important to make the job fit the task. The case of a man who was in a merely operative calling—who was capable of thinking as well as doing—was as great a misfortune as that of a man who was a doer merely put to carry out work which required thought as well as manual dexterity. In the one case there was capacity and ability wasted, and almost certainly discontent. In the other, there was inefficiency and probably unhappiness. The sum total, however, of the whole sorry business was that the community lost materially and spiritually. It was impossible even to approximately estimate the state of things in that respect in any country. Judging from the observations which could be made it was very general, and that was so in spite of the whole-hearted efforts of the educationalists already mentioned. Actually, however, the matter was not one that could be handled wholly in the schools, though the latter had necessarily much to do towards the proper working out of the problem. A satisfactory entry into a calling was not completed until a period of pupilage or apprenticeship was served.

##### Apprenticeship Training.

Mr. Nangle dealt with the various attempts in regard to apprenticeship training, which he contended must be connected and closely co-ordinated with what was done in the schools. Without going as far as saying that all children should be measured for intelligence and school achievement, and their vocations fixed as a result of those measures, it could be claimed that some useful estimate of vocational fitness was practicable, and that it was possible to establish a ready passage from school to the learning of a suitable calling. In short, that most of the callings could be classified as regarded native capacity and attainments required to successfully follow them; that that capacity could be estimated during school life—



PROFESSOR N. T. M. WILLSMORE, Vice-Chancellor of the Perth University.

and that boys and girls so classified could be led and directed into their proper callings by organizing a close relationship between the schools and the industrial work of the country.

##### Natural Aptitude.

The lecturer then gave many instances of successful experiments in ascertaining the natural aptitude of school children. During the last 20 years many thousands of boys had been brought to him with a view to getting his advice as to what callings they should enter. Interviews with the boys had generally lasted from one-half to an hour. Those periods, though all too brief, had nevertheless been sufficient to enable him to gather, in most cases, quite useful information as to the general intelligence, school achievements, and the absence or otherwise of pronounced aptitude. He had kept in touch with very many of those to whom he had given advice about suitable callings, and although there had been many failures, it was both interesting and pleasing to know that the advice given had been useful in the greater number of cases. It was especially interesting to find that there had been a fair measure of success even in those cases where the boys themselves were decidedly uncertain as to what they would like to learn. Evidently in these instances he was able to discover qualities which had remained undiscovered by either themselves, their teachers, or their parents.

Apprenticeship involving the serving of a term was an orderly method of progress from school to the standard of competence in a trade or profession. Its disciplinary value was very great—but even greater was the consciousness of sacrifice, which was very real in these days of highly paid unskilled boy labour. That which was gained as the result of service and sacrifice was held in esteem. Journeymen who had seriously served a period of apprenticeship and in that way had graduated to their present standard held their callings in much greater pride than did those who had drifted casually or haphazardly into employment as tradesmen or even professionals. Unfortunately, however, it was impossible to avoid recognising that in spite of everything that had been done to re-establish under modern conditions the old apprenticeship system, the practice of taking apprentices was losing ground. In all the industrial laws or awards, apprenticeship was mentioned, and in most of those in the skilled division only those who were apprenticed were allowed employment. Latterly in Australia and in other countries special training schools had been established with a view to relieving a severe scarcity of skilled workers in several of the building trades. In those schools an intensive training, extending from 80 to 100 days, was given, followed by a period of service as improvers. The employment of improvers, however, was only consequent upon special arrangements

being made under the industrial laws, which in Australia seldom made it possible, or at any rate easy. Unless arrangements could be made to direct and fix as apprentices the necessary number of young people there would most certainly be a very serious shortage of Australian-born skilled artisans in the country in the very near future.

#### COST OF MAN.

##### Efficiency in Civilisation.

##### Professor H. E. Whitfield's Solution.

"Efficiency in Modern Civilisation" was the subject of the Presidential address delivered by Prof. H. E. Whitfield before the engineering and architecture section. Prof. Whitfield said that workers in pure and applied science were naturally disposed to take the rosy view of human progress. For the last two centuries the engineers had been adapting the forces of nature to the service of man so successfully as to change the relationships of various factors which controlled civilised life. During that period the use of mechanical powers and of other scientific discoveries had increased the production

per head to 15 or 20 times its former value. Even in the early days of the mechanical revolution, it was dimly discerned that new evils were arising under the deranged conditions. In the matter of mechanical development they had devoted an immense amount of thought and patience towards improving their efficiency, and had done well. In the matter of social organisation and government they had done very badly, and in several important



PROFESSOR D. M. Y. SOMMERVILLE, President of the Mathematics Section of the Congress.

respects their civilisation appeared to be much less efficient than to the sixteenth and seventeenth centuries. They might say that a nation was 100 per cent efficient when all its individuals could work to their best capacity and freely develop their faculties. The general efficiency of the United States was considered by Gant to be about 5 per cent. at the present time.

##### Reasons for Failure.

The failure to secure better results in spite of their wonderful opportunities was, of course, in the ultimate analysis due to inherent defects in human nature, but the failure was also due to social diseases which had spread under modern conditions and which they had not troubled to remedy. Chief among those were such evils as unemployment, monotony of work, and high cost of distribution. Each of those problems appeared to be capable of solution if it were resolutely faced and attacked scientifically. One of the greatest curses of modern life was unemployment. They had in Australia at the present time an immense amount of work to be done, and there were some people in Australia, and millions in Europe, willing to do it. They had an abundance of food and materials, and could make the tools required for the work. Looking at the problem impartially as scientists, they could say it was by no means incapable of solution. The deadening effects of monotony of work due to specialization were hard to estimate, but much could be avoided by making suitable provision.

##### Distribution of Goods.

Dealing with the high cost of distributing goods, Prof. Whitfield said that in simpler communities the producer marketed his own goods, and received practically the full value paid by the consumer. At present it was notorious that the producers often received only a small fraction of what the consumers paid. There seemed to be no scientific reason why the distribution of goods should be such an expensive process, and when they found