

REPORT OF THE INTERSTATE GEOLOGICAL CONFERENCE

Held at the Institute of Science and Industry,
Melbourne.

June 2nd, 3rd and 4th, 1925.

The Conference was convened by the Prime Minister the R. Hon. S.M. Bruce, P.C., M.G., who invited each of the States to be represented by its Chief Government Geologist, its Deputy Chief Government Geologist and by the Professor of Geology of its local University.

The deliberations of the Conference were commenced by Senator the Hon. R.V. Wilson, Minister for Markets and Migration, welcoming the delegates on behalf of the Commonwealth Government and outlining the reasons that prompted the Government to call them together.

The following were present:-

CHAIRMAN: Sir George Knibbs, K.B., C.M.G., etc.,
(Director, Institute of Science and Industry)

Queensland: Mr. B. Dunstan, Chief Government Geologist
Mr. L.C. Ball, B.E., Deputy Chief Government Geologist
Professor H.C. Richards, D.Sc., University.

New South Wales: Mr. E.C. Andrews, B.A., Government Geologist
Mr. W.S. Dun, Palaeontologist

Victoria: Mr. W. Baragwanath, Director, Geological Survey
Mr. D.J. Mahony, M.Sc., Geological Survey
Professor E.W. Skeats, D.Sc., A.R.C.Sc.;
University

South Australia: Mr. L. Keith Ward, B.A., B.E., Government Geologist
Mr. R. Jack, B.E., Deputy Government Geologist
Professor Sir Douglas Mawson, K.B., D.Sc., B.E.,
University

West Australia: Mr. A. Gibb, Maitland, Government Geologist

Tasmania: Mr. A. McIntosh Reid, Government Geologist
Mr. P.B. Nye, M.Sc., E.M.E., Government Geologist

Commonwealth: Professor Sir T.W. Edgeworth David, K.B.E.,
C.M.G., B.A., D.Sc., F.R.S.
Dr. Arthur Wade, D.Sc., A.R.C.Sc.
Dr. H. Herman, D.Sc., B.C.E., M.M.E., } Australian
Mr. Colin Fraser, M.Sc., } Institute of
Mr. A.S. Kenyon. } Mining and
} Metallurgy.

Secretary: G.A. Cook, M.Sc., B.M.E.
(Institute of Science and Industry).

In the invitations convening the Conference the Prime Minister expressed the belief that its deliberations would lead to a regular interchange of ideas, a standardization of methods, a pooling of knowledge, and a combination of effort for the solution of important Australian problems;

and also that it would assist in mitigating the disadvantages from a geological point of view of the artificial boundaries within which the Commonwealth and State geological officers at present operate. In addition the Conference was asked to consider the best means by which the Commonwealth Government could facilitate the discovery or production of mineral oil in Australia as well as to advise on a number of questions also dealt with herein intimately related to the probable functions of any Federal Geological Survey that might be proposed.

The question of the establishment of a Federal Geological Survey is by no means a new one. In 1910 the Chamber of Mines of Victoria approached the Rt. Hon. the Prime Minister with a similar proposal. In 1911 the Council of the Australasian Institute of Mining and Metallurgy asked, inter alia, for the establishment of a Federal Geological Survey. The then Minister for Home affairs stated that he recognised the importance of the subject, and promised to give the matter his best consideration. In 1921 the Australian National Research Council appointed a Special Committee consisting of the Government Geologists of all the States and the Commonwealth, the Professors of Geology of the Australian Universities, the Director of the Institute of Science and Industry, and the President of the Australasian Institute of Mining and Metallurgy. This Special Committee reported in favour of the idea, which was further strongly supported in 1923 by the Australasian Association for the Advancement of Science. The combined deliberations of the Australian National Research Council and the Australasian Association for the Advancement of Science resulted in 2nd Pan Pacific Congress (held in September, 1923) presenting to the Federal Government a resolution suggesting the establishment of such a Survey 'provided always that this proposal is approved by the State Governments'. The present Conference endorses the main conclusions arrived at so carefully during these earlier deliberations and makes a definite proposal for the initiation of an efficient organisation.

The rapid development of Alaska consequent upon the systematic investigations of numerous field parties under the United States Geological Survey, furnishes a striking illustration of the value of geological surveys in unexplored territories. Arising out of these surveys have been not only valuable mineral discoveries, including oil, but also revenues derived directly by the State from the commercial exploitation of these mineral discoveries, and indirectly by the consequent general opening up of the territory. The Alaska Geological Survey consisted in 1924 of a field staff absorbing an expenditure of over £30,000 for field operations alone. This was for a compact area of 600,000 square miles, which is comparable to the combined areas of Papua, the Northern Territory and the Mandated Territories. These last, however, are not compact but are very widely separated.

That the value of detailed geological surveys is recognised by important commercial interests is evidenced by the recent operations of the Taranaki Oil Fields Ltd., in New Zealand. This company is at present spending large amounts in making detailed geological surveys of its properties and its search for oil is entirely based on the results of such surveys.

The present Conference submits hereunder answers to the questions put to it by the Rt. Hon. the Prime Minister, and also submits a draft scheme for the establishment of a Federal Geological Survey on a definite basis. The Conference wishes to emphasise that this draft scheme is, in its opinion, on the minimum scale for the initiation of an effective programme of work.

The Conference also draws special attention to the conditions of service required of geologists in arid and tropical areas, and strongly recommends that the system adopted by the Geological Surveys under the Imperial Government be followed. In such cases the officers spend about six months in the field and the remainder of the year in working up field results and reports at the headquarters of the Surveys in London. The advantages of such arrangements are many. The officers concerned can recuperate from the ill effect of their unhygienic surroundings in the tropics, can conduct necessary office work more vigorously in a healthy climate, and are able to consult scientific colleagues and libraries in connection with the preparation of their reports. All these factors make for efficiency and true economy. A lump sum of £4,000 per annum is provided in the draft scheme for special expenditure necessary for conducting operations in regions where unusual difficulties and risks have to be encountered.

The Conference specially emphasises the desirability of carrying out the topographic survey referred to in Resolution No. 3 as far as is possible in conjunction with the Geological Survey.

The Conference passed the following resolutions:-

1. Annual Conference

That in view of the numerous and important problems in geology involving Commonwealth and State co-operation and the economic and financial importance of the results to be derived by the interchange of views, this Conference considers it essential that an annual meeting of Commonwealth and State geologists, the heads of University Geological Departments, and other representative geologists be called at which the following more urgent problems of common interest be considered: (a) a review of the existing position of the Geological Surveys of the various States, (b) the co-ordination of the Geological Surveys of the States, (c) a standardisation of methods to be adopted by the several State Surveys, (d) a common scheme for the scales, colouring and mode of presentation of the information on the geological maps of the States, (e) the systematic study of important geological problems, (f) co-operation between Surveys in adjacent States, (g) a scheme for the preparation of geological maps of suitable standardised size so as to eventually form a complete geological map of the entire Commonwealth, and (h) the facilitation in every way of the interchange of the geological knowledge of Australia and elsewhere. It was also resolved that pending the formation of a Federal Geological Survey the Government Geologist of New South Wales be asked to take the initiative in regard to the convening of the next annual Conference.

2. State Geological Surveys

This Conference of geologists expresses its appreciation of the immense body of information already collected by the several State organisations which have been working with staffs much smaller than are demanded

by the extent of their respective territories. Much of this valuable work has been necessarily designed to set out the broad geological features of wide regions. Much remains to be done in mapping areas not yet examined and in providing detailed maps of the areas of which the broad features are known, as a basis for the full economic development of the resources of each State. With this end in view the Conference urges respectfully that the Commonwealth Government brings before the State Governments the pressing need for systematic and sustained geological surveys, and for the appointment of a sufficient number of qualified geologists to carry out this work rapidly and effectively.

3. Topographical Survey

This Conference considers that there is need for an extension of the topographical survey of Australia and the making available of these maps as a foundation for water conservation, railway and highway location, geological work, and other purposes; that the Commonwealth Government be asked to arrange, if possible, that topographical surveys be carried out in regions in which geological surveys are being undertaken; and that, it is desirable, that the possibilities of aerial work should be considered for assisting geological surveys and other public purposes.

4. Legislation

This Conference is of the opinion that there is a necessity for uniform action by the Commonwealth and States in controlling the development of minerals by the introduction of legislation insisting on the publication in every prospectus, whether for public or for private circulation, of a report by a qualified mining engineer or geologist not financially interested in the venture, and that such mining engineers and geologists should be registered.

5. Palaeontology

This Conference considers it is advisable in the interests of the study of the geological structure, the stratigraphical geology, the artesian water system, the possible oil bearing beds, the coal measures, and the classification of the metalliferous areas of Australia, that an organisation be established to study the associations of fossils in the various systems, such work to be carried out in co-operation with the field work of the various States.

6. Oil

This Conference is of the opinion:-

That the most effective method by which the Commonwealth could assist in the discovery and production of mineral oil in the areas administered by the Commonwealth (Papua, the Northern Territory, and the Mandated Territories), is by carrying out systematic and detailed geological surveys in these areas.

That similar detailed surveys should be made in the States, and that the Commonwealth Government should assist in this work if desired by the States, and that the State Geological Surveys should be asked to indicate the areas which seem, in the existing state of knowledge, to require such detailed examination.

That the offer of a bonus of £50,000 for the discovery of oil in commercial quantities is not such as

to achieve the purpose it has in view, and that the money would be better spent in assisting in the detailed systematic surveys mentioned in the previous resolutions.

Notwithstanding the resolution immediately preceding this Conference recommends that the present provision for a bounty under the Shale Oil Bounty Act should be continued.

7. Federal Geological Survey

This Conference considers that it is desirable to establish a Federal Geological Survey to deal with the geological history and structure of the Territories under the administration of the Commonwealth, and, with the concurrence of the States concerned, of Australia; and also to deal with the mineral and underground water resources of the Territories under the administration of the Commonwealth Government.

8. Suggested minimum scheme for Federal Geological Survey

That the following scheme, as a minimum, be adopted for the initiation of the Federal Geological Survey.

Field Staff

Six parties of which at the outset one might be on State territories, and five on Commonwealth and Mandated territories.

Each party to consist of:-

	£	
Field Geologist	700-800	
Asst. Field Geologist	400-500	
Field Assistant	250-300	
Casual	250	
Field Allowances	500	
Equipment	150	£2,500

Six parties @ £2,500 £15,000

Note: Each party to do its own necessary topography.

Palaeontology

Chief Palaeontologist	650-750	£750	
Second Palaeontologist	500-600	600	
One Palaeontologist	400-500	500	
Junior		250	
Apparatus & Sundries		<u>250</u>	£2,350

Petrology

Chief Petrologist	650-750	£750	
Second Petrologist	500-600	600	
Mechanic		350	
Apparatus & Sundries		<u>250</u>	£1,950

Chemical

Chief Chemist	650-750	£750	
Second Chemist	500-600	600	
One Chemist	350-400	400	
Junior & Casual	250	500	
Apparatus, Chemicals & Sundries		<u>750</u>	£3,000

CARRIED FORWARD £22,300

BROUGHT FORWARD £22,300

Lithographic and draughting

Chief Draughtsman	600	£600	
Second Draughtsman	500-550	550	
2 Draughtsmen	400	800	
2 Draughtsmen	250-300	600	
Boy		150	
Materials & Sundries		<u>200</u>	£2,900

Printing £4,000

Museum

Curator	600		
Asst. Curator	400		
Casual	250		
Materials & Sundries	<u>100</u>		£1,350

Clerical

Clerk & Librarian	500		
Asst. Clerk	350		
2 Stenographers	350		
Boy	<u>100</u>		£1,300

Travelling Expenses

Including special allowance of £4,000 to meet special difficulties in arid districts and tropical regions. £7,500

Office Materials

Lighting, heating and sundries £750

Administrative

Senior Field Geologist	£900-1000		
Director	2000		£3,000

£43,100

NOTE : The above annual estimate of cost is based on every officer being on his maximum. The total expenditure indicated would not thus be reached until some years after the organisation had been more or less fully staffed.

9. North Australia Commission

Should the North Australian Commission be created it is very desirable that a geologist be appointed a member of that Commission to assist in the formulation of developmental schemes.

NOTE: Nearly every resolution including No. 7 was passed unanimously, and the remainder in each case by a large majority.

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