

APPENDIX " A. "

MEMORANDUM BY THE DIRECTOR OF COMMONWEALTH LANDS AND SURVEYS UPON
SUBJECTS SUBMITTED TO THE CONFERENCE OF SURVEYORS-GENERAL.

With a view to the discussion of a number of subjects of interest, both to the States, the Dominion of New Zealand, and the Commonwealth, the Minister of Home Affairs has invited your attendance at this Conference. As far as the States and the Commonwealth are concerned, there is absolute identity of interest, since, in both cases, the ultimate aim is the welfare of the people of Australia, and, although New Zealand forms no part of the Australian Commonwealth, yet that Dominion has federated with Australia in so far as the examination of candidates for, and the issue of, licences to survey are concerned, and, further, has carried out an extensive triangulation, and has, through some of her surveyors, added largely to the sum of knowledge in matters of special interest to the surveying profession; it is therefore gratifying to have the advantage of the experience and advice of the Surveyor-General and of the Government Astronomer of the Dominion.

With your concurrence, I shall, as briefly as possible, refer to the several matters submitted to this Conference for discussion and consideration, nearly all of which are of general interest, though in a few cases subjects are introduced rather with a view to securing the benefit of your advice than because they affect the States or the Dominion individually.

GEODETIC SURVEY OF AUSTRALIA.

A Geodetic Survey of Australia is the first, and, perhaps, the most important, subject for consideration. I have shown on the accompanying map of Australia the extent of the trigonometrical surveys of the several States from information supplied me by the Surveyors-General. Each State has endeavoured to carry out a survey of this nature with the means at its disposal, but clearly there must be wide differences in method, each scheme of triangulation more or less independent, the instruments used ranging from a 5" theodolite to an 18" alt-azimuth, the limits of error, and methods of computation widely divergent.

If a general survey merely served the purpose of connecting these surveys, and, where necessary, provided a more accurate backbone to which the work on either side might be adjusted, it would be an immense advantage; but I think Australia should aim at something beyond that—a survey that would be comparable with the United States Coast Survey, beginning in a modest way, growing with the people but based from its inception upon sound principles; even when such conditions are imposed, much work has been done that would be immediately available; this should be utilized, and the work extended along the whole coast line of Australia.

An accurate survey of the character indicated, extending gradually from the settled districts to those only sparsely occupied, is an immense advantage in the development of a country, and affords a number of accurately determined points to which all other surveys may be referred; it forms the basis for the topographical surveys required, not only for the purposes of settlement, but for the projection of an efficient scheme of defence, facilitates the carrying out of systematic geological surveys, and gives them a higher value, aids the surveyor and engineer in road and railway location, and provides the necessary data for the construction of accurate maps.

In India, as the trigonometrical survey advanced, serious discrepancies were discovered in the topographical surveys, and in New South Wales errors in the position of the coast line (as great as 8 miles) were found, and it is more than probable that even more serious departures from the true positions will be discovered in the more remote parts of Australia, neither can there be any hope of producing an accurate map of the Continent until it has been encircled by a system of accurately observed triangles. Apart altogether from utilitarian considerations, it is desirable that Australia should do her share towards increasing the sum of human knowledge, and her geographical position is specially favorable for the investigation of questions relating to the figure and density of the earth, and those variations resulting from the lack of uniformity of the one and inequalities of the other. Instruments used in angular determinations are now much more nearly perfect than they were ten years ago, while the improved methods of linear measurement leave little to be desired, either on the score of accuracy or in regard to speed. If the desirableness of carrying out such a survey be granted, a conclusion confirmed by the efforts of the States and of the Dominion of New Zealand, and further by the fact that in every civilized country a trigonometrical survey has been regarded as essential, then the discussion is narrowed considerably, and resolves itself into a consideration of the best method to adopt to achieve the desired result. It is impossible to expect that such an undertaking can be carried to a successful issue unless throughout the work the same standard of precision is adopted, similar instruments are used, and similar methods of reduction of the observations. How best to achieve the desired result is matter for the consideration of this Conference.

MAP OF AUSTRALIA IN COURSE OF PREPARATION.

Regarding this map, which is approaching the stage at which proofs may be furnished, questions have been raised respecting the nomenclature. The Comte de Fleurieu, a member of the French Geographical Society, has interested himself in this map, and has expressed a wish to have the names given by early French navigators retained, where practicable, or replaced where they have been omitted. It is not desired that any well-established local names or any given by British or other navigators who preceded the French should be altered, but in those cases where the same name has been given to two different localities or where points are unnamed, or where the local name has no significance, then the work of the French seamen should be recognized where they preceded the sailors of other nations. Something has already been done in this direction by each State, and a list of French names prepared by the Comte is before you. It has been recommended to the Minister of Home Affairs that proofs of the map should be submitted to the Surveyor-General of each State, and also to the geographical societies or kindred bodies,

asking them to carefully examine those proofs and make any suggestions for the improvement of the map. Clearly, such suggestions should come before a committee of revision with a view to careful consideration, and the incorporation of such as on examination proved desirable.

The object is, obviously, to produce a map that will be accepted as a standard, and one that will be as nearly accurate in outline detail and nomenclature as is in the circumstances possible. The *personnel* of the revising committee is a matter of importance, claiming the earnest attention of this Conference.

THE INTERNATIONAL MAP OF THE WORLD.

In November, 1909, representatives from almost every country in the world met in London under the title of the International Map Committee, with the object of recommending the system on which the international map of the world, on a scale of 1 in a 1,000,000 should be produced. At that Conference, Mr. Cecil W. Darley represented Australia, and the conclusions arrived at have been published, and you are no doubt familiar with them. Australia is now asked to do her share towards the production of this map; the work will occupy forty-six sheets, each covering four degrees of latitude and six degrees of longitude, and will probably cost from £2,000 to £2,500. The scale is roughly 16 miles to an inch. Unfortunately, for this map there must be a new compilation, because the projection and scale differ from that of the map now approaching completion. The advisableness of taking part in this work, and the best means to be adopted to attain a satisfactory result are matters submitted for discussion.

THE ISSUE BY THE COMMONWEALTH OF LICENCES TO SURVEY.

The Commonwealth is now employing a number of surveyors, and is appointing a cadet or field assistant to each party; these cadets are under articles and must before being engaged comply with the conditions imposed by the Surveyors' Boards of Australia. Since the number of surveyors employed is likely to be largely increased, it is desirable that the Commonwealth should hold its own examinations and issue licences to survey to those candidates who pass satisfactorily, but it is also desired that there should be the same reciprocity between the Commonwealth, the Dominion of New Zealand, and the States of Australia, as now exists between the latter two. The area under the control of the Commonwealth is large, embracing the Northern Territory, the Federal Capital territory, and Papua, and it is not improbable that islands in the Pacific may later be included. How best to achieve the object in view is a matter for your consideration.

COMMONWEALTH LANDS TITLES.

Since the Commonwealth is acquiring property over the whole of Australia, the time must soon arrive when a Lands Titles Office will be established in order to facilitate transfer; the matter is brought before you because in some of the States there is an intimate connexion between the Survey Departments and the Lands Titles Office, and it was thought that useful information might be obtained for future guidance.

UNIFORMITY OF DECLARATIONS.

Some difficulty is experienced by the Commonwealth in dealing with lands in the several States, owing to the differences in plan forms and even in the statutory declaration. It would be a distinct advantage if a common form of declaration were used throughout Australia for all plans of land to be brought under the Torrens Act. It would then be possible to materially reduce the number of forms used since the system of subdivision into parish and county is common to Queensland, New South Wales, Victoria, and Tasmania, and it is only in Western Australia that a totally distinct form of subdivision obtains. The benefit of a reduction of the number of forms will be felt as the Commonwealth records increase.

CARRYING OUT OF SURVEYS BY THE STATES FOR THE COMMONWEALTH.

Although surveys are being carried out of lands acquired by or transferred to the Commonwealth over the whole of Australia, it would be extravagant to maintain a Commonwealth staff that could satisfactorily deal with the work. The only possible method is to obtain the assistance of the Surveyors-General of the several States and make use of their officers. This matter has been discussed with those of the Surveyors-General whom I have had the opportunity of meeting, and every assistance has been offered, but as I have not visited all the States, it was considered opportune to place the matter before you.

The Commonwealth desires to have surveys carried out by surveyors employed by the several States as expeditiously as practicable, and also to have the plans of those surveys examined in the usual way by officers of the State Lands Departments, and the usual certificate attached, the original and certified plan being then transmitted to the Commonwealth Department of Lands and Survey. All charges in connexion with the work would be paid by the Commonwealth Government, and if desired, there would be no objection to the preparation of two plans of each survey, one to be retained by the State within which the land is situate. It is not expected that in time of pressure Commonwealth work will have precedence; in such a case the inevitable delay must be borne, though I am sure that every effort will be made to facilitate the business of the Commonwealth.

THE SPELLING OF AUSTRALIAN PLACE NAMES.

Attention has been drawn to the fact that there are cases where the same name is used in a number of different States. Where the name is that of a post town, inconvenience results by delivery at a wrong centre; in some cases as, for instance, Armidale and Armadale; there is a slight difference in the spelling, but still a great risk of error. The matter is one claiming attention.

(Sgd.) CHARLES ROBT. SCRIVENER,
Director of Commonwealth Lands and Surveys.