SECTION XXXI.

THE COMMONWEALTH SEAT OF GOVERNMENT.

§ 1. The Selection of the Territory.

1. **Constitutional Provisions.**—The powers under which the Commonwealth Government has acted in taking steps towards the establishment of a seat of Government are conferred by the Commonwealth Constitution Act 1900. By section 125 of that Act (see p. 32 hereinbefore) it was provided that the seat of Government of the Commonwealth shall be determined by the Parliament and shall be within territory granted to, or acquired by, the Commonwealth. It was also provided (*a*) that the territory shall be situated in New South Wales not less than 100 miles from Sydney, (*b*) that it shall contain an area of not less than 100 square miles, and (*c*) that such portion of the territory as consists of Crown lands shall be granted to the Commonwealth without any payment therefor. Finally, the section provides that Parliament shall sit at Melbourne until it meets at the seat of Government.

In Year Book No. 4 (p.p. 1134 to 1160), an article was published giving detailed information as to the events leading to the selection of the Federal Capital territory, and as to the progress of operations in connection with the establishment of the capital city. The article was prepared from information gained from personal observation and from data kindly furnished by Lieut.-Colonel David Miller, V.D., I.S.O., Secretary for Home Affairs, under whose supervision all preliminary operations in the Federal Capital territory have been conducted. Information was also supplied by Lieut.-Colonel Owen, A.I.C.E., Director-General of Works, and Mr. C. R. Scrivener, Director of Commonwealth Lands and Surveys.

2. **The Seat of Government Act 1908.**—After considerable delay it was decided by the Seat of Government Act 1908 that the seat of Government should be in the neighbourhood of Yass-Canberra in New South Wales. The chief provisions of this Act were (*a*) that the seat of Government should be in the district of Yass-Canberra in the State of New South Wales, (*b*) that the territory to be acquired by the Commonwealth should contain an area of not less than 900 square miles, and (*c*) that the territory should have access to the sea.

Under this Act, then, the district in which the seat of Government is to lie was finally selected; it yet remained, however, to determine the actual territory for the seat of Government within that district, and to provide the machinery for the acquisition of such territory by the Commonwealth. The locality of the Yass-Canberra district may be seen on reference to the map given on page 1149.

§ 2. The Acquisition of the Territory.

1. **General.**—The chief facts relating to the actual acquisition of the Capital territory by the Commonwealth Government from the Government of New South Wales are outlined in Year Book No. 4 (pp. 1136-8). The boundaries of the territory as originally proposed and as finally selected may be seen by reference to the map on page 1150 hereof.

2. **Agreement between Commonwealth and New South Wales Governments.**—On the 18th October, 1909, the Prime Minister of the Commonwealth and the Premier of New South Wales, subject to the approval of their respective Parliaments, agreed to the surrender by the State and the acceptance by the Commonwealth of an area of approximately 900 square miles (shewn on the map on page 1151 hereof), and made certain stipulations with respect to the surrender and acceptance of the territory. The State also agreed to grant to the Commonwealth an area of two square miles for the purposes of a Commonwealth port, and in addition thereto certain other areas aggregating 2302 acres, which were considered necessary for the defence of the port. The State of New South Wales further granted to the Commonwealth :—(*a*) the right to construct, maintain, and work a railway from the territory to Jervis Bay; (*b*) the right to use the waters of the Snowy River or such other rivers as may be agreed upon for the generation of electricity for the purposes of the territory; (*c*) paramount water rights over the catchment areas of the Queanbeyan and Molonglo Rivers and their tributaries.

The State further agreed :—(*a*) To reserve from sale, lease, and occupation, except with the concurrence of the Commonwealth, all Crown lands in the catchment areas above referred to; (*b*) to protect from pollution the waters of the Queanbeyan and Molonglo Rivers; (*c*) in the event of the Commonwealth constructing a railway within the territory to its northern boundary, the State agreed to construct a railway from a point near Yass to join the Commonwealth line.

3. **Seat of Government Acceptance Act 1909.**—On the 13th December, 1909, the Seat of Government Acceptance Act was assented to. This Act was expressed to commence on a date to be fixed by proclamation after the New South Wales Parliament had passed an Act notifying the agreement and surrendering the territory. The Acceptance Act confirmed the agreement (which was incorporated as a schedule to the Act), determined the site of the seat of Government, and authorised the Governor-General to declare by proclamation that on and from the proclaimed day the territory was accepted by the Commonwealth. It also made provision for the continuance in the territory, after its acquisition by the Commonwealth, of State laws and private interests in land and for the commencement of the administration of the territory by the Commonwealth.

On the 14th December, 1909, a similar measure entitled the Seat of Government Surrender Act was passed by the Government of New South Wales. The Act came into force by proclamation on the following day; it ratified the agreement and surrendered the territory to the Commonwealth.

4. **Proclamations Effecting Acquisition of Territory by Commonwealth.**—On the 20th January, 1910, a proclamation was issued by the Governor-General bringing the Seat of Government Acceptance Act into force on the 22nd January following. The effect of this proclamation was to bring the Act into force to the extent of enabling the Governor-General to issue a second proclamation vesting the territory in the Commonwealth. Prior to the issue of the second proclamation it was, however, considered advisable to secure further legislation in the direction of an Act to provide for the proper government and administration of the territory. The *Seat of Government (Administration) Act* was accordingly passed on the 25th November, 1910; the provisions of this Act are referred to in a later part of this section. On the 5th December, 1910, the second proclamation was carried vesting the territory in the Commonwealth on and from the 1st January, 1911.

§ 3. Physiography.

1. General.—The general locality of the Federal territory is shewn on the map on page 1149. The chief topographical features of the whole territory may be seen by reference to the map on page 1152, while those of the districts in the immediate vicinity of the city site are shown on a larger scale on the map on page 1151. The total area of the territory is approximately 900 square miles, or 576,000 acres, of which it will be necessary to reserve from occupation the catchment area of the Cotter River, which has an extent of 170 square miles, or 108,800 acres. An area of about 12 square miles, or 7680 acres, has been set apart for the purpose of the city site, and it is proposed to reserve a further area of about 100,000 acres for parks, roads, military college, and other public purposes outside the city area, leaving 359,520 acres available for profitable occupation under reasonable conditions.

As regards accessibility, Canberra is 204 miles distant from Sydney, 429 miles from Melbourne, 912 miles from Adelaide, and 929 from Brisbane, from which it may be seen that the capital site is reasonably equidistant from the chief centres of population of the Commonwealth. As to access to the sea, it has been found that there is a practicable route for a railway between Canberra and Jervis Bay with a length of about 123 miles. To the north of the territory the country is open, and good roads lead to Yass (*via* Hall) and Gundaroo (*via* Sutton).

In Year Book No. 4 (pp. 1139-1142), reference was made to the chief topographical features of the Federal territory. For this purpose the territory was classified under four main heads :—(i.) The Canberra Ridge and Plain ; (ii.) the Murrumbidgee Scarp ; (iii.) the Paddy's and Gudgenby Rivers areas ; and (iv.) the Cotter River catchment.

2. **Meteorology.**—Meteorological observations have not been taken on the capital site itself over a sufficient number of years to enable a proper appreciation of climatic elements to be arrived at. At Queanbeyan, however, which is only 8 miles distant from the capital site, rain records have been taken since September, 1870 ; at Duntroon since 1896 ; and at a number of other places near the capital site for various periods. Particulars of rainfall and temperatures, as recorded at Queanbeyan, have already been given in this book (see page 109.)

(i.) *Rainfall.* The average rainfall for the whole of the Federal territory has been computed by the Commonwealth Meteorologist to be 25.5 inches, or about that of Melbourne or London. The following table gives particulars of the rainfall recorded at several places near the capital site :—

COMMONWEALTH SEAT OF GOVERNMENT.—RAINFALLS RECORDED AT PLACES IN VICINITY OF CAPITAL SITE.

Station.	No. of Years.	Average.	Greatest.		Lowest.	
			Year.	Amount.	Year.	Amount.
		Inches.		Inches.		Inches.
Duntroon	16	18.74	1900	28.94	1902	11.09
Kiandra	37	64.55	1889	90.06	1908	42.18
Lake George	26	27.00	1887	42.11	1908	15.90
Queanbeyan	41	22.52	1887	41.29	1902	10.45
Red Hill	25	33.89	1887	49.66	1902	18.24
Uriarra	15	32.92	1887	54.11	1899	20.00

The highest recorded average rainfall within the Federal territory is 32.92 inches at Uriarra, and the lowest, 18.74 inches at Duntroon. It is stated, however, that neither of these records can be accepted as accurate. At Queanbeyan the average rainfall is 22.52

inches; as much as 41.29 inches were registered at that place in 1887, and as little as 10.45 inches in 1902, a range of over 30 inches. The average rainfall in the city site itself is estimated to be 21.80 inches per annum. This equals or exceeds that recorded at the following places:—Berlin, Budapest, Christiania, Copenhagen, Madrid, Marseilles, Moscow, Naples, Paris, San Francisco, Stockholm, St. Petersburg, and Vladivostock.

No official records have been taken within the Cotter catchment area, but it is estimated that the average rainfall cannot be less than from 40 to 60 inches per annum, since Kiandra, which is not many miles distant, has an average of 64 inches and is exposed to the same rain-bearing winds, while it has the disadvantage of being some 500 to 1000 feet lower than many of the peaks which serve as condensing or precipitating agents for the Cotter River. If the records of Kiandra can be taken as a guide, it follows that the precipitation on these higher levels does not suffer the extreme annual variations to which the lower levels of the Federal territory are susceptible, so that the flow of the Cotter River may reasonably be regarded as both fairly uniform and constant.

(ii.) *Temperature and other Matters.* The meagre temperature data so far obtained over the capital site leave information as to many phases of weather inconclusive. Taking Queanbeyan as representative, the mean annual temperature may be assumed to be 55° Fahr., the summer mean 68°, and the winter 42°. The maximum shade temperature recorded at Queanbeyan for the past seventeen years is 104°, the minimum 11° Fahr.; the ordinary summer temperatures are high, while the nights are invariably cool. During winter the temperature frequently falls below freezing point; the minimum recorded in 1911 was 22°, and the winter of that year was quite a normal one. At Duntroon (Military College) the minimum for 1911 was 25°. The prevailing winds during the winter months are from points west of the meridian, and since those from the south, south-west and west pass over the snow-clad Alps, they are keen. During the summer, hot winds from the west and north-west alternate with cool winds from the south, while the frequent north-east winds from the ocean are refreshing and serve to modify the summer temperature. It is rare for snow to fall within the city site, and still more rare for it to remain unthawed for more than a few hours after sunrise. Fogs are neither frequent nor dense. Observations of evaporation and other climatic elements are not available for a period sufficiently long to enable a reliable estimate of normals, other than those of rain and temperature, to be formed.

A meteorological station was established in 1910 on the capital site and the following instruments installed:—Evaporation tank, thermograph, barograph, hygrograph, aspirator, rain gauge, anemometer, and sunshine recorder.

3. **Geology, Vegetation, Soils, and Agriculture.**—For information as to these matters reference may be made to Year Book No. 4 (pp. 1142-5).

4. **Jervis Bay.**—The territory on the south side of Jervis Bay acquired by the Commonwealth includes (*a*) an area of about two square miles as described in the first schedule to the Seat of Government Acceptance Act 1909; (*b*) an area of 132 acres, known as Bowen Island, described in the same schedule; and (*c*) six other areas aggregating 2270 acres, also described in the schedule. The Commonwealth recently acquired an additional area of about 5000 acres to embrace the headwaters of Telegraph Creek, and the New South Wales Government has agreed to amend the Seat of Government Acceptance Act so as to embrace an additional area of about 9000 acres to include the catchment area of Lakes Windermere and Mackenzie, and the site for the Naval College. The State has also agreed to grant sovereign rights over the area between Bowen Island, Captain's Point, St. George's Basin, Sussex Inlet, Wreck Bay, and the South Pacific Ocean; in this area is included a small portion of the waters of Jervis Bay.

The entrance to Jervis Bay, between Bowen Island and Point Perpendicular, is $1\frac{3}{4}$ miles in width. The main Federal territory is situated on the southern side of the bay, at what is known as Darling Road, where there is a good anchorage on a sandy bottom, carrying a depth of from 6 to 11 fathoms of water at low-water spring tides. The 5-fathom line comes close up to the shore, and there is nothing less than 11 fathoms thence to the ocean. The sheltered area of Darling Road may be taken to be about $1\frac{1}{2}$ square miles, and affords an excellent shelter for vessels of even the greatest draught.

§ 4. Administration and Organisation of Services.

1. **General.**—By section 6 of the Seat of Government Acceptance Act 1909, it is provided that all laws in force in the Commonwealth territory, at the date of acquisition by the Commonwealth, shall, so far as applicable, remain in force until other provision is made. Power is given to the Governor-General to exercise certain functions hitherto vested in the Governor of New South Wales, subject to the proviso that the Governor-General may direct that any such function shall be exercised on behalf of the Commonwealth by the authorities of the State in whom it was previously vested. Before issuing the proclamation actually effecting the acquisition of the territory it was thought desirable to make further provision for the administration of the territory by the Commonwealth. The Seat of Government (Administration) Act was accordingly passed in November, 1910.

2. **The Seat of Government (Administration) Act 1910.**—This Act, which came into force on the 1st January, 1911, provides for the government of the territory and deals with the following matters:—(*a*) *Ordinances.* The Governor-General is authorised to make ordinances having the force of law in the territory, either House of Parliament being empowered, however, to disallow any such ordinance by passing a resolution to that effect. (*b*) *State Acts.* It is provided that certain State Acts shall not continue in force in the territory. These Acts are as follows:—The Conciliation and Arbitration Act 1899, the Industrial Disputes Acts 1908 and 1909, the Local Government Acts 1906 to 1908, the Country Towns Water and Sewerage Act 1880, and all acts imposing rates, taxes, or duties (except duties on the estates of deceased persons). (*c*) *Commonwealth Acts.* It is also provided that the following Commonwealth Acts should apply within the territory:—The Commonwealth Conciliation and Arbitration Acts 1904 to 1910, the Australian Industries Preservation Acts 1906 to 1909, and the Secret Commissions Act 1905. (*d*) *Crown Lands.* The freehold of any Crown Lands in the territory cannot be sold or disposed of except in pursuance of some contract entered into before the 1st January, 1911. (*e*) *Jurisdiction of Inferior Courts.* The inferior courts of the State of New South Wales exercise the same jurisdiction as they had before the commencement of the Act.

3. **Ordinances.**—Up to the end of March, 1911, five ordinances had been made under the provision referred to above. (*a*) The first of these came into operation on the 1st January, 1911, and deals with the provisional government of the territory. It directs that the State laws are to continue to be administered by the authorities of the State, and that magistrates, gaolers, and police are to be deemed to be officers of the territory. No new license to sell intoxicating liquor in the territory may be granted; any existing publican's license may, however, be renewed from time to time for the same premises. (*b*) The second ordinance, providing for the making, levying and expending of rates on land in the capital territory, was made on the 25th October, 1911. This ordinance was amended by the third ordinance, dated the 11th December, 1911, and by the fifth ordinance, dated the 20th March, 1912. (*c*) The fourth ordinance providing for the care, control, and management of public places and for the regulation of traffic was made on the 1st February, 1912.

It is proposed to pass Commonwealth Acts providing a complete scheme for the government of the territory, as the opportunity and necessity arise. In the meantime it is intended to make other ordinances at an early date dealing with various urgent matters; it is understood that the first of these will relate to the local government of the territory by the Commonwealth.

Information relating to financial and other arrangements, and to the scheme for the organisation of services in the Federal territory, may be found in the last issue (No. 4) of the Commonwealth Year Book (see p. 1151).

§ 5. Surveys.

1. **General.**—After the acquisition of the territory and the selection of the city site, the first step to be taken towards the establishment of the capital city is the carrying out of a large number of necessary surveys. These comprise (*a*) contour surveys; (*b*) triangulation survey of the territory; (*c*) demarcation of the boundaries of the territory and the catchment areas; (*d*) engineering surveys for water-supply, sewerage, roads, bridges, and other associated objects; (*e*) topographical or feature surveys of the territory and of the catchment areas of the Molonglo and Queanbeyan Rivers, comprising in all an area of about 1480 square miles; (*f*) road surveys; (*g*) surveys in connection with the Yass-Queanbeyan railway; (*h*) demarcation of boundaries of lands at Jervis Bay; (*i*) surveys in connection with the railway line to connect the capital city with Jervis Bay, and the establishment of a harbour at Jervis Bay; (*j*) redetermination of boundaries of privately-owned properties in the territory; (*k*) preparation of plans and descriptions of the whole of the foregoing surveys. These surveys are being carried out under the direction of the Commonwealth Director of Lands and Surveys.

2. **Astronomical Observatory.**—In connection with these surveys it is in the first place important to observe that a temporary astronomical observatory has been established on the summit of a range of hills, known as Mount Stromlo, about 6 miles south-west of the city site, and situated symmetrically with regard to the eastern and western boundaries of the territory. The primary object in fixing this site is the determination of the initial meridian, to which all surveys, including not only those within the Federal territory but all others throughout Australia, will ultimately be referred. A point on the summit of this range has been determined as the origin of all co-ordinates for the surveys which are to be carried out. Observations are being conducted at Mount Stromlo, and the photographs are being taken to determine the atmospheric conditions. A road with easy gradients 2¼ miles long has been constructed from the base to the summit of the mountain. Further details regarding the observatory site may be found in Year Book No. 4 (p. 1152).

3. **Progress of Surveys.**—Survey operations are steadily progressing. They include the demarcation of the boundaries of the territory, the determination of the boundaries of privately-owned properties, surveys for engineering works and proposals (including railways) and for other necessary purposes. For further information reference may be made to Year Book No. 4 (pp. 1152-4).

(i) *Railway to Jervis Bay.* A route for a railway to Jervis Bay, connecting with the line from the city site to Bungendore, has been selected, and location surveys are now being carried out in view especially of the early establishment of a Naval College at Jervis Bay. The length of the proposed line is approximately 96 miles, with a ruling gradient of 1 in 50 and curves of 12 chains radius as a minimum. The only bridges of any size will be those across the Shoalhaven and Mongarlow Rivers; smaller bridges will be required crossing Reedy and Durra Durra Creeks and the Coorang River. The descent towards Jervis Bay is gradual, the highest point being at the departure from the Goulburn-Cooma railway at 2550 feet above sea-level.

4. **Determination of Boundaries and Particulars of Land Tenure.** Amongst other matters which are in train may be mentioned the valuation of privately-owned properties lying within the territory, with reference to which the New South Wales Government has furnished a detailed statement shewing the nature of each occupation together with certain information in the possession of the State Department bearing upon the values of the properties. Particulars regarding the tenure of land within the Federal territory may be found on page 332 of this book.

Under the Loan Act, 1911, authority has been granted for raising the necessary funds to enable the privately-owned lands within the territory to be acquired by the Commonwealth.

§ 6. The Building of the City, and Associated Matters.

1. **Preliminary Measures.**—Whilst the foregoing survey operations are being performed it is proposed that the preliminary schemes for workmen's habitations, water-supply, sewerage, and other necessary works should be carried out for the necessities, not only of the city itself in its earlier stages, but also of the large number of persons who will be engaged on its construction.

(i.) *Accommodation for Workmen.* Arrangements for housing the employees engaged on the preliminary works and for controlling the area occupied by them are being made. For the purpose of providing in a suitable position an area upon which the officers occupied in surveying and other work, and other persons engaged in the establishment and construction of the city will reside, the estate known as Acton, covering an area of 1780 acres on the north side of the Molonglo River, has been acquired. Quarters for unmarried officers and cottages for married officers are being erected on this estate. During the earlier stages, workmen will probably be distributed on engineering works away from the city site, but from the time when construction within the city begins, there will be an aggregation of a considerable number of men, their families, and dependents.

When this stage arrives, it is proposed to lay out the area referred to as a semi-permanent village. The streets will be formed and drained; cottages erected for married men and families; and accommodation provided for single men. Immediate steps are to to be taken for the erection of offices and quarters of the staff. It is also proposed to establish a general store, where all consumable supplies may be purchased. A hospital is also to be provided and equipped, the medical officer in charge to act also as health officer. The establishment of a Government hotel and the provision of schools for the education of children are also in view.

(ii.) *Transport.* Steps are to be taken for the early construction of a railway connecting the centre of distribution at the city site with the Goulburn-Cooma line, either at Bungendore or at Queanbeyan. The construction of such a line will facilitate the supply of materials, plant, stores, and provisions, and will thus decrease the cost of engineering and building construction, and of workmen's living. In the initial stages it may be found necessary to construct a tramway from Queanbeyan for transport purposes until the railway is opened, such tramway to follow the route of, and be a permanent step towards, the line connecting Yass and Queanbeyan. The roads in use in the territory are approximately 200 miles in length; about one-half of these are formed and gravelled in parts, the other half having natural surface with slight formation. A substantial wooden bridge has been erected over the Molonglo River; it will carry the heaviest road load and, if necessary, could be used for railway traffic, pending the construction of a permanent bridge for railway purposes only. There are in addition four other bridges in the territory—two each over the Murrumbidgee and Molonglo Rivers—constructed of timber. A scheme is to be prepared for an efficient system of roads throughout the Federal territory, radiating from the city site.

All roads in the territory have been attended to, and the main roads, bridges, and approaches put into a state of repair, such as is warranted by the existing traffic. A modern road-making plant has been purchased and is in use with much resulting economy and efficiency.

(iii.) *Water-supply and Sewerage.*—It is proposed that a provisional scheme for water supply and sanitation should be carried out at an early date, so that the men who will be engaged on the construction of the permanent water-supply and sewerage systems, of roads, bridges, railways, and other works, will be provided for in a manner which will meet all requirements in the direction of health, and which will not in any way interfere with the site upon which the capital itself will eventually stand. At a later stage, when these permanent works are sufficiently advanced and when construction

within the city site commences on a large scale, a water-supply system will probably be adopted so as to form a permanent step towards the water-supply of the city upon official occupation. Similarly, in regard to sewerage, at first the arrangements will probably be more or less of a temporary nature, but it is proposed that the engineering works should be pushed so far ahead before building operations in the city are commenced, as will admit of a location being assigned for workmen, which will, in course of time, become a sewage district for the city extensions. The question of water-supply for afforestation will also receive early consideration.

(iv.) *Afforestation.* It is proposed to take steps at once for the afforestation of that part of the territory contiguous to the city site, in such a manner as not to interfere in any way with the design of the city. By being planted and properly laid out at an early date, the trees will be in a forward state by the time the capital city is ready for occupation. Approval has been given for the establishment of a nursery for the propagation of trees, plants, and shrubs, and the work is to be proceeded with at once. The scheme includes the growth of trees for scenic and ornamental purposes, for the prevention of the erosion of the banks of rivers and creeks, and for shelter. It appears probable that concurrently with the foregoing operations it will be found advantageous to commence some of the constructional works for the lake which is to be formed by utilising the waters of the Molonglo River at the capital site. It is proposed to obtain expert advice as to a scheme of afforestation and to establish local nurseries for the trees which will be used.

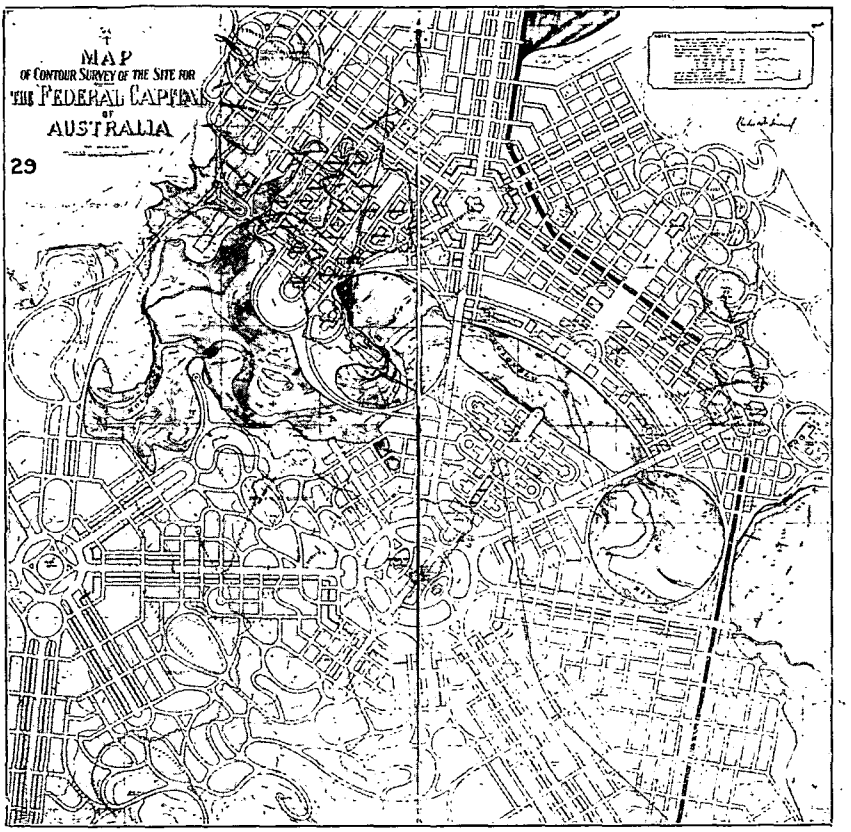
(v.) *Materials.* Steps are being taken with a view to the supply of local materials as far as possible. Shafts have been sunk and samples of shale, which it is thought will be suitable for the purpose of brickmaking, have been obtained. Tests of these samples have been carried out in Sydney and Melbourne with satisfactory results. The type of brick made is the machine-made brick, treated by the semi-dry process. A general plan for a brickmaking yard and sketch plans of buildings have been prepared, with a view to providing for further trials of the shale at the site tentatively selected. It is estimated roughly that ninety million bricks will be required for the public buildings; the delivery of these will probably be accomplished within six years after the erection of the brickworks, *i.e.*, at the rate of fifteen million bricks per annum. It is stated that the volume of shale available is ample for these purposes. Further investigations are to be made as to the nature of the building stone available in the territory. Granite occurs in large quantity over a great part of the territory; none has yet been used for buildings, but it is probable that, with the demand created by the establishment of the capital city, suitable quarries will be opened, while the porphyritic rock which outcrops frequently will no doubt provide valuable stone for ornamental purposes. Stone for road-making is abundant and quarries will be located; sand for building construction and pottery clays will be sought for. The question of the manufacture of sand lime bricks from local materials is under investigation. A pipe-making plant has been purchased and installed to turn out all descriptions of compressed cement pipes from 4 in. to 24 in. diameter.

Portion of the first instalment of Australian timbers for use at the capital has been received and stored, so that when required it will be thoroughly seasoned.

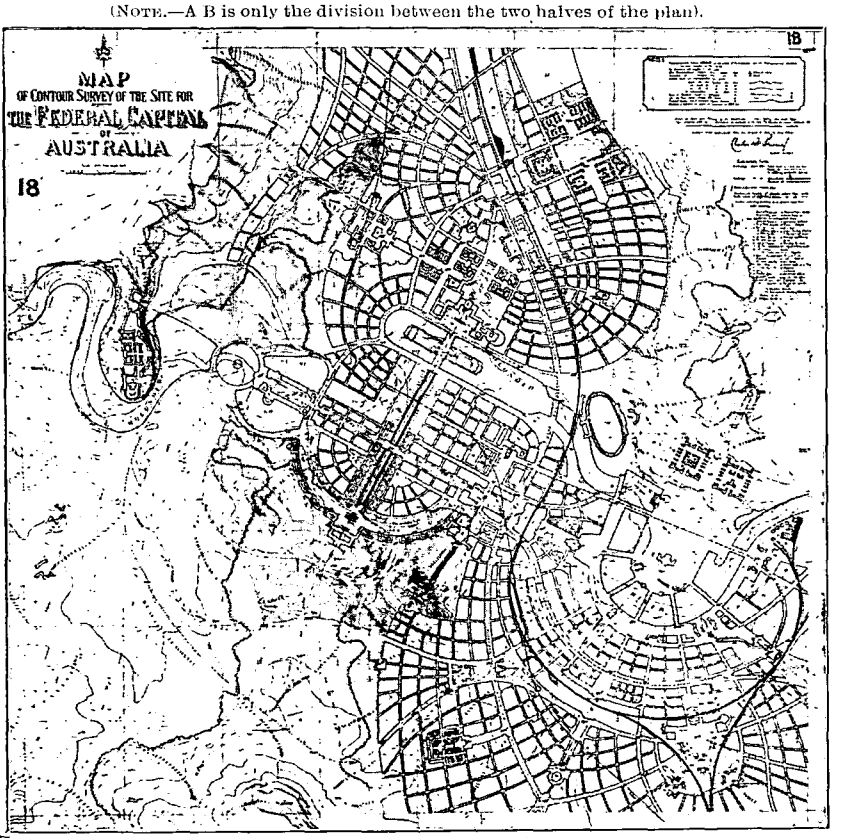
(vi.) *Power.* Power will be required in the early stages of the work for lighting, brickmaking, woodworking, pumping, possibly quarrying, and other purposes, and tenders have accordingly been called for the first unit of prime mover and generator in order to provide the necessary power. The project will be considered as part of a comprehensive scheme to be installed in units.

(vii). *River Gauging.* Gauge weirs have been constructed on the Molonglo and Queanbeyan Rivers for the purpose of determining the available flow.

FEDERAL CAPITAL—PREMIATED DESIGNS FOR LAYING OUT CAPITAL CITY.
(Nos. 29 and 18 awarded first and second Premiums respectively).

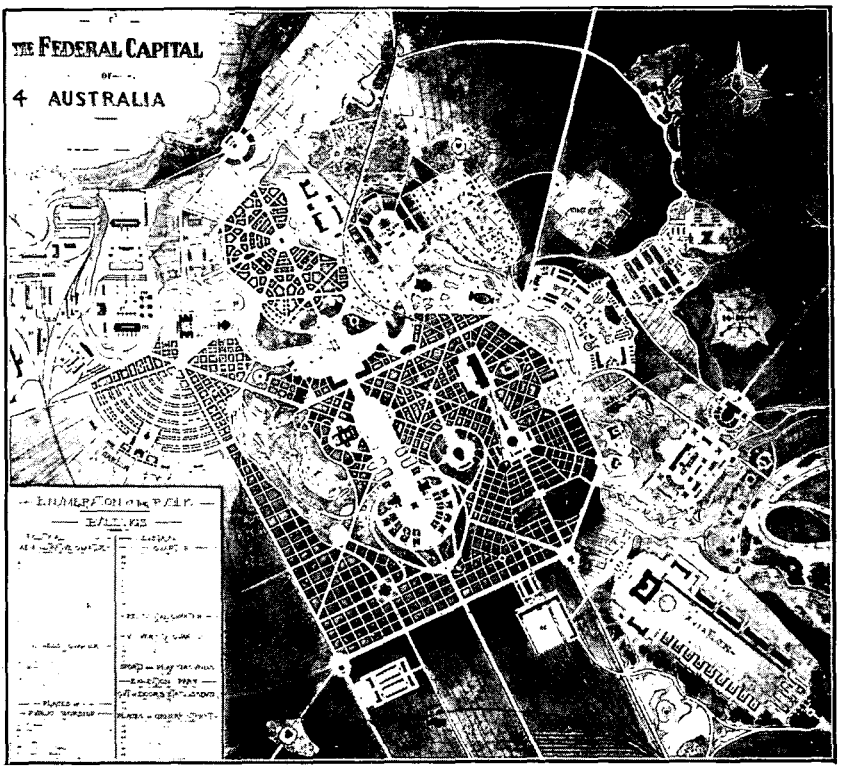


(NOTE.—A B is only the division between the two halves of the plan).



(For remarks see next page).

FEDERAL CAPITAL—PREMIATED DESIGNS FOR LAYING OUT CAPITAL CITY.
(No. 4. awarded third Premium).



REMARKS.

The names and particulars attached to the premiated designs were as follows:—

DESIGN No. 29 awarded first Premium (see preceding page).

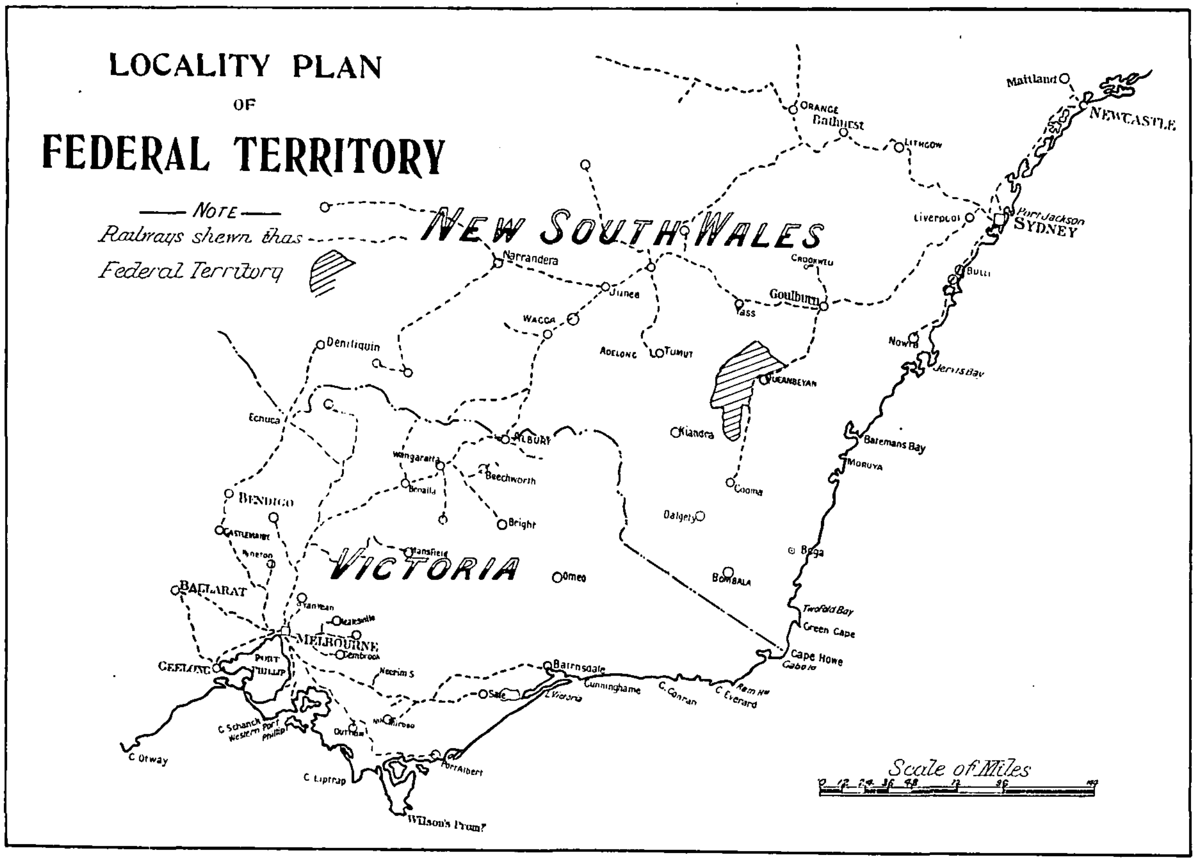
WALTER BURLEY GRIFFIN,
Architect and Landscape Architect,
Chicago, Illinois, U.S.A.

DESIGN No. 18 awarded second Premium (see preceding page).

ELIEL SAARINEN,
Architect,
Helsingfors, Finland.

DESIGN No. 4 awarded third Premium (see above).

D. ALF. AGACHE,
Architect Diplomé par le Gouvernement Français,
Professeur au Collège libre des Sciences Sociales.
Paris, France.


LOCALITY PLAN
OF
FEDERAL TERRITORY
—— NOTE ——
Railways shewn thus
Federal Territory
NEW SOUTH WALES
VICTORIA
Maitland
NEWCASTLE
Port Jackson
SYDNEY
Liverpool
Orange
Bathurst
Lithgow
Bulli
Nowra
Jervis Bay
Batemans Bay
Moruya
Bega
Twofold Bay
Green Cape
Cape Howe
Gabo Is
Crookwell
Goulburn
Yass
Queanbeyan
Tumut
Adelong
Kiandra
Cooma
Dalgety
Bombala
Narrandera
Junee
Wagga
Deniliquin
Echuca
Albury
Wangaratta
Beechworth
Benalla
Bright
Mansfield
Omeo
Bendigo
Castlemaine
Kyneton
Ballarat
Kilmore
Melbourne
Geelong
Port Phillip
Neerim S
Bairnsdale
Sale
L Victoria
Cunninghame
C Conran
C Everard
Ram Hd
C Otway
C Schanck
Western Port
C Liptrap
Wilson's Prom
Port Albert
Scale of Miles
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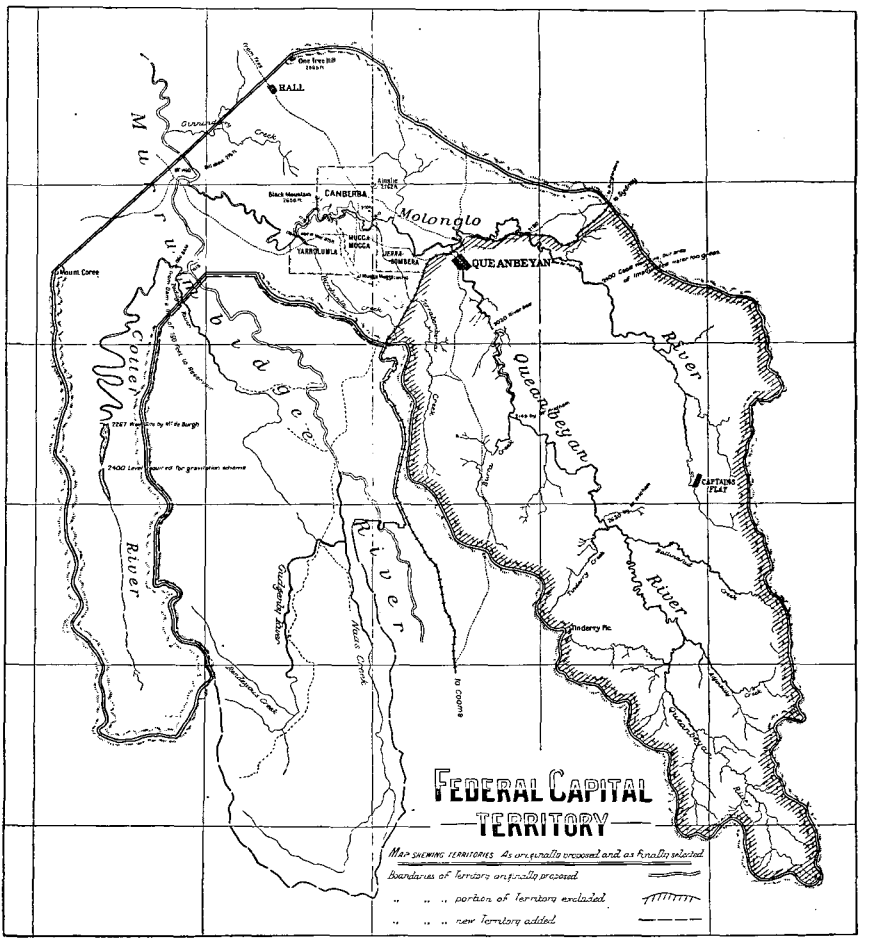
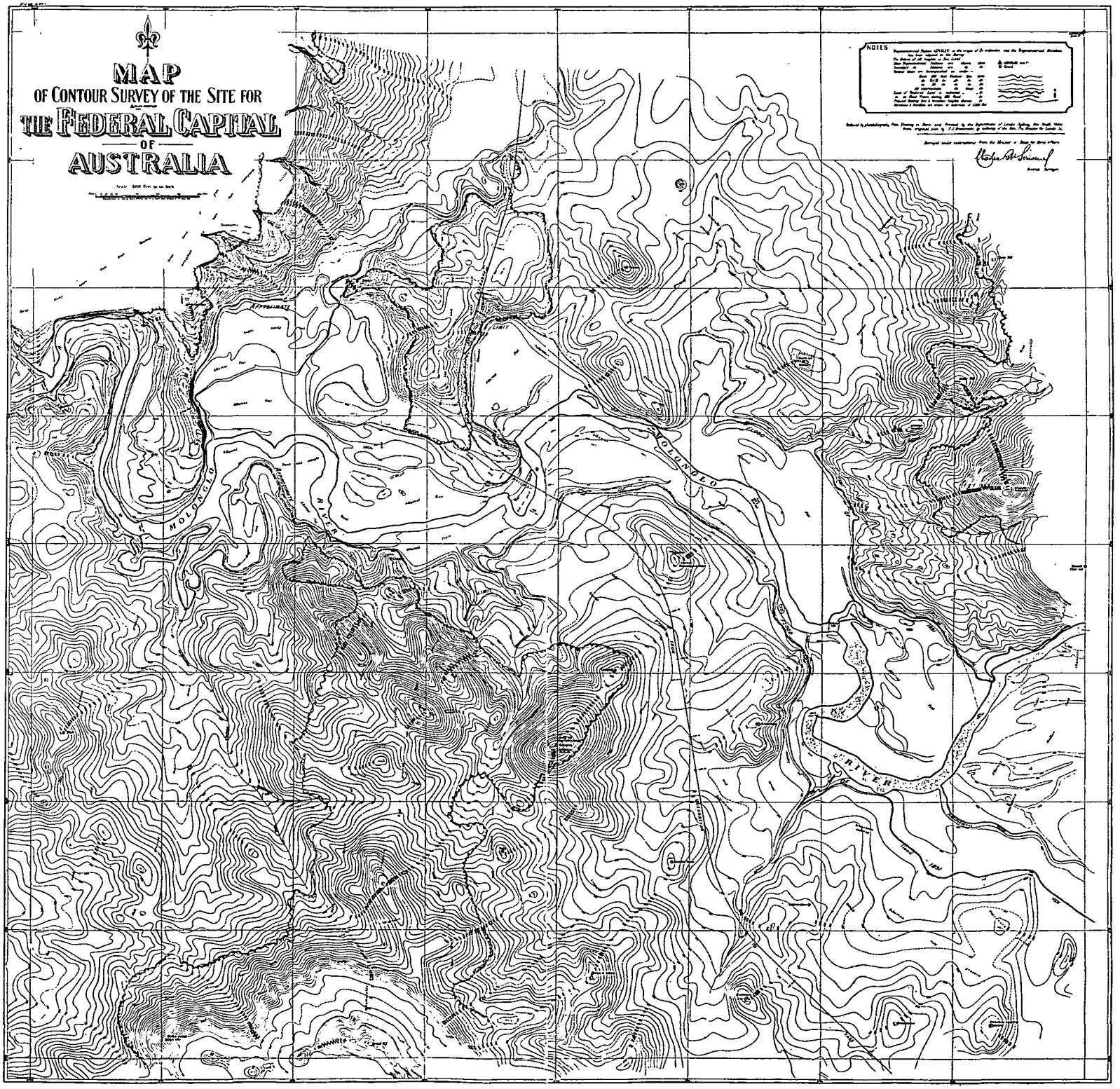
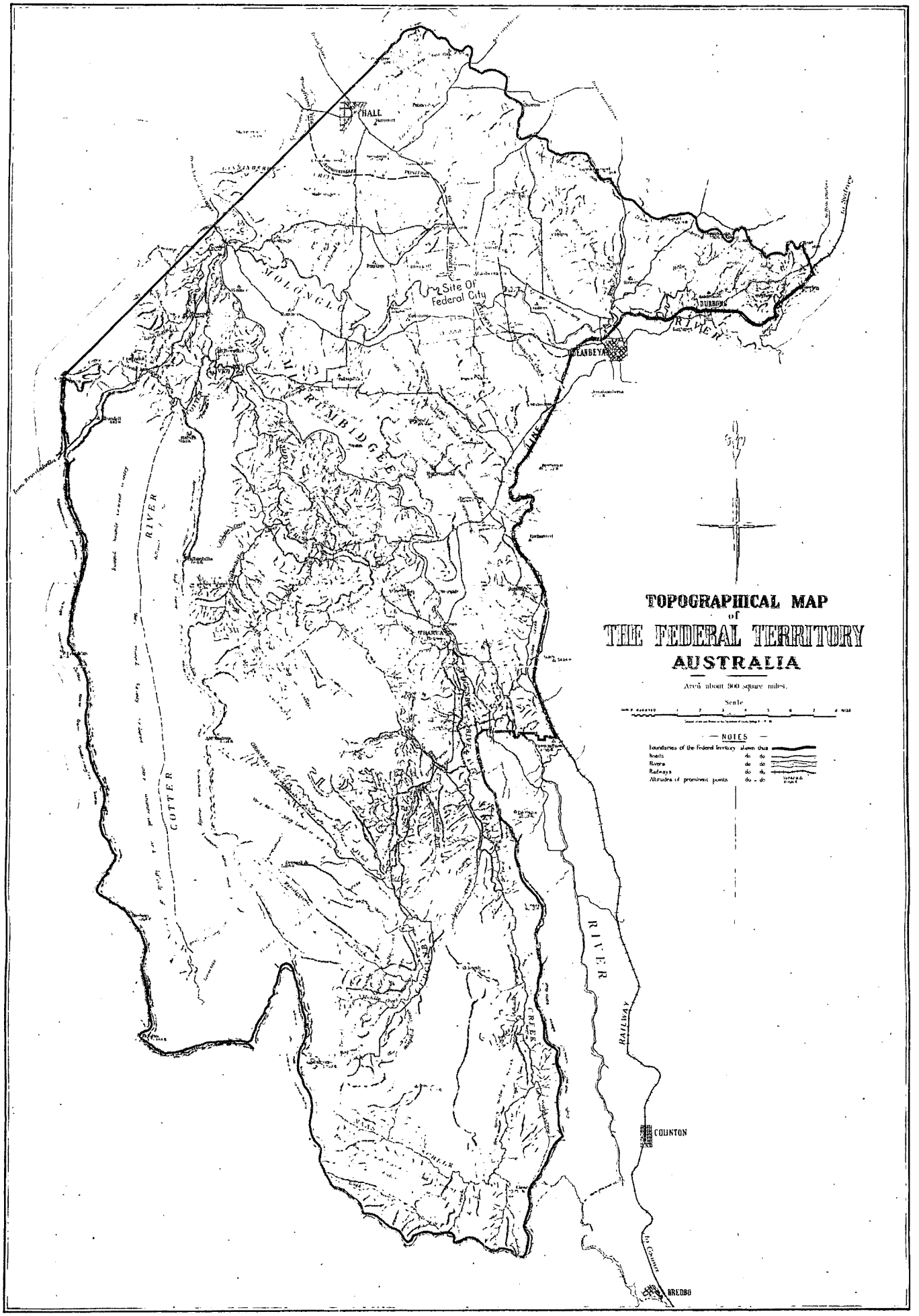

HALL
CANBERRA
Molonglo
QUEANBEYAN
Queanbeyan River
Molonglo River
Cotter River
Murrumbidgee River
CAPTAINS FLAT
Mount Coree
Tinderry Mt.
FEDERAL CAPITAL TERRITORY
Map shewing TERRITORIES As originally proposed and as finally selected
boundaries of Territory originally proposed
portion of Territory excluded
new Territory added


MAP
OF CONTOUR SURVEY OF THE SITE FOR
THE FEDERAL CAPITAL
OF
AUSTRALIA
NOTES
MOLONGLO
RIVER


THALL
Site Of
Federal City
QUEANBEYAN
MOLONGLO
MURRUMBIDGEE
RIVER
COTTER
RIVER
RIVER
RAILWAY
COOMA
BREDBO
TOPOGRAPHICAL MAP
of
THE FEDERAL TERRITORY
AUSTRALIA
Area about 900 square miles.
Scale
NOTES
Boundaries of the Federal territory shown thus
Roads do do
Rivers do do
Railways do do
Altitudes of prominent points do do

2. **Probable Successive Stages of Works.**—A scheme, setting forth the proposed successive stages of the works involved in the establishment of the capital city, has been prepared by the Director-General of Works. Although the entire undertaking does not involve any one engineering work of great magnitude, it is necessary that the successive steps should be planned in such a manner that each may become a permanent step obviating temporary expedients. It is also necessary that the whole undertaking should be designed so that certain projects may initially form units or parts, which can be repeated or developed in course of time to meet increase of population. The probable stages in the evolution of the city, as set out hereunder, may overlap, and in some cases projects will continue through successive stages.

(i.) *First Stage. Transport, Materials, and Power.* Country roads and bridges; railway connection with Goulburn-Cooma line; brickworks; lime kilns; and timber (first instalment); generation and transmission of power for construction.

(ii.) *Second Stage. Hydraulic Engineering Works outside City Area.* Water-supply; storm-water drainage; sewerage outfall works; main sewer; sewerage district for workmen; timber (second instalment); railway bridge over the Molonglo River.

(iii.) *Third Stage. Engineering Works within the City Area preparatory to Occupation.* Street tunnels; power plant (permanent station and distribution; construction of housing for workmen; service reservoirs; and impounding weir on Cotter River.

(iv.) *Fourth Stage. Building Construction within the City and Completion of Engineering Works.* Public buildings (offices for use during construction); gasworks; compensating weir on Queanbeyan River; railway to Hall (Queanbeyan to Yass line); impounding weir on the Molonglo for ornamental water; erection of public offices and buildings; erection of Parliament House; completion of city roads.

3. **Outline of Principal Projects.**—A provisional scheme has been formulated setting out the sequence of most of the important projects involved in the building of the city, together with the estimated time necessary for their design and completion, and their approximate cost. There are, however, certain matters which cannot be dealt with even provisionally at present—such as bridges over the Molonglo River and the impounding weir on that river for ornamental purposes—since the location and height of these will depend upon the level of the waters provided for in the accepted designs for laying out the city. Other important works, *e.g.*, the compensating weir on the Queanbeyan River, street tramways, the railway to Jervis Bay, and refuse destructor, are not included in the scheme, since it is considered that they are not essential for the first years of occupation. The scheme provides, subject to the approval and the appropriation by Parliament of the necessary funds, for the completion of the designs and buildings ready for occupation within a period of eight years.

(i.) *Water Supply.* There are two aspects of this matter, viz., one as regards workmen during construction, the other regarding the supply for the city. The former has already been referred to herein (see page 1145). It is proposed that a supply from the permanent source, the Cotter River, shall be provided before the time when there will be any considerable aggregation of workmen and dependents within the city area. In the meantime a supply of water will be provided for the men engaged on preliminary works, probably by pumping from the Molonglo River through sand filters into reservoirs. A weir has been erected on the Cotter River, and the discharge is determined by readings taken daily. The results of the records obtained shew that the mean daily flow between May, 1910, and December, 1910, was over 43,000,000 gallons; since that time it has increased to approximately 57,000,000 gallons daily, which is regarded as very satisfactory, taking into consideration the fact that the domestic and civic requirements of the city in its earlier years are estimated at only 2,500,000 gallons daily (based on a population of 25,000 at 100 gallons a day). A site for an impounding weir on the Cotter River

has been provisionally selected at a place about one mile from the confluence of that river and the Murrumbidgee, and at a level of about 1560 feet. It is estimated that a weir at that place, 70 feet in height, will impound 800 millions gallons of water; if the height were increased to 200 feet, the quantity impounded would be 4800 million gallons. Approval has been given to expend £2000 on investigations to determine the site of the weir. The results of the investigations which have so far been made under this approval are satisfactory. A permanent survey to determine the route of the road from the capital site to the Cotter River has been authorised, and a ford across the Murrumbidgee River has been constructed at a place about 200 feet above the confluence of the Cotter River. This ford provides easy access to the weir site, where, in the near future, extensive works will be carried out. The pipe line, after crossing the Murrumbidgee River, will lead to the pipe head reservoir on a hill near Mount Stromlo (2465 feet), thus necessitating a lift of about 800 or 900 feet. The proposed site for the service reservoir is at Red Hill (2300 feet), near the south-western boundary of the city site. It is proposed that the power for the pumping plant shall be transmitted electrically from the central power station.

(ii.) *Sewerage Scheme.* Various considerations demand that efficient measures should be taken to ensure the innocuous disposal of the sewage effluent. Any system adopted will involve land filtration, and the configuration of the country indicates the slopes of the Molonglo below (*i.e.*, to the west of) the city site as the most suitable place for sewage treatment works. It is proposed that a system of bacteriological treatment combined with broad irrigation shall be adopted.

Until the design for laying out the city is finally adopted, the lowest levels from which sewage will be taken cannot be determined, but it is stated that the engineering surveys, which have already been carried out, demonstrate that the areas available for irrigation by gravitation alone will be too small, and that pumping will be necessary. The lift required will, however, be small even to command a large irrigable area. The relative advantages of pumping the sewage or effluent are under consideration.

(iii.) *Power Supply and Distribution.* In distinction to a system under which independent power-generating units would be installed at various places—for example, at the sewage outfall works and at the pumping station at the Cotter—the adoption of a central station scheme is of importance. It is proposed that the permanent central station shall consist of two generating units each of 500 kilowatts, and one spare unit. Until a proper water-supply is provided, the permanent power station cannot be erected. In the meantime, since power supply is necessary in connection with preliminary works (see page 1146 hereinbefore), the first unit is to be installed in a temporary building on the bank of the Molonglo River, conveniently situated for condensing and feed water. When the permanent station is erected, the first unit will probably be moved from the temporary building and become part of the complete plant.

(iv.) *Buildings.* The scheme provides for the sequence of designs and for the erection of public buildings without intermission, including the Governor-General's residence, Courts of Justice, police buildings and gaol, administrative offices, military depôt and offices, schools, observatory, medical and hospital buildings, railway station, Prime Minister's residence, accommodation for Members of Parliament, post office, Government printing office, and Town Hall. Other buildings will probably be erected within the first few years of, but not prior to, occupation, such as State House and necessary educational institutions. It has been decided that competitive designs should be invited for Parliament House after the design for laying out the city has been adopted.

The scheme provides for the design and erection of public buildings only. It is proposed that buildings for commercial and residential purposes should be constructed by private enterprise, at a time when the engineering and other works of the city are considered to be sufficiently advanced.

(v.) *Gasworks.* It is considered that gas-supply for cooking and heating will be essential, and that such a supply will also be utilised to a large extent for lighting purposes. It is proposed, therefore, to produce a gas of calorific value suitable for modern lighting, as well as for heating and power. On the basis of available statistics regarding towns having both electric and gas supplies, the consumption for 20,000 people, including town street lighting, will be 80 million cubic feet per annum.

(vi.) *Compensating Weirs on Queanbeyan and Molonglo Rivers.* The proposal to construct a weir to impound ornamental waters in the city site will entail the erection of compensating weirs on the Queanbeyan and Molonglo Rivers. It is considered that the construction of one of the latter weirs should preferably precede that of the impounding weir at the city, and that it would be advantageous to first construct the weir on the Queanbeyan River. The area of the ornamental water will presumably be determined by the accepted city design, but in any case a constant flow of water will be required to maintain a definite level and to avoid so far as possible still waters in any arms or bays. The evaporation losses, deduced from the data obtained at Lake George, will be considerable, as also will be the loss by soakage. The requisite flow cannot be definitely stated until the extent of ornamental water is determined.

(vii.) *Other Matters.* Other matters (in addition to the foregoing and to the preliminary measures specified in paragraph 1 hereof) dealt with in the scheme comprise lime-kilns, storm-water drains, military college, street tunnels, and city streets.

4. **Military College of Australia.**—On the 27th June, 1911, a Military College was opened by the Governor-General at Duntroon, near the eastern boundary of the capital city area, for occupation by the cadets and staff. Particulars regarding the establishment of this College may be found in Year Book No. 4 (p. 1159). Further information is given in the section of this book dealing with Defence (see p. 1087 hereinbefore).

5. **Designs for the Capital City:**—In 1911 the Commonwealth Government invited competitive designs throughout the world for laying out the capital city, with the object of embodying in the construction of the Federal capital the most desirable features from the standpoint of general efficiency for its purposes, of engineering, hygiene, etc. The city will be the permanent seat of Government of the Commonwealth, the place at which the Federal Parliament will meet, where all Commonwealth legislation will be enacted, and where the Governor-General will have his official residence. It will therefore be primarily the official centre of the Commonwealth.

The creation of a capital is a unique opportunity, and it is hoped to reflect in the designs thereof the finest features of modern cities. The Commonwealth will have, as a precedent in the undertaking, the whole experience of the past in architecture and city planning. With the object of inducing experts of world-wide celebrity and reputation to place their talents at the disposal of the Commonwealth Government, it was decided to award premiums of £1750, £750, and £500, respectively, for the three designs considered most meritorious. In response to the invitation thus issued 149 designs were received; these were submitted to a board for investigation and the Minister for Home Affairs has finally adjudicated upon the three premiated designs. The board referred to consisted of three members, viz.:—J. M. Coane, Esq., licensed surveyor, Melbourne; J. A. Smith, Esq., engineer, Melbourne; and J. Kirkpatrick, Esq., architect, Sydney. The last two members submitted a report making recommendations as to the designs for which the premiums should be awarded, and these recommendations were adopted by the Minister for Home Affairs. The first-named member of the board recommended, in a minority report, that the premiums should be paid for three designs, none of which was included in the report of the other two members of the board. The three premiated designs are reproduced on pages 1147 and 1148 hereof, and explanatory notes may be found on the latter page.