

CHAPTER XXVI.

MISCELLANEOUS.

§ 1. Patents, Trade Marks, and Designs.

1. **Patents.**—(i) *General.* The granting of patents is regulated by the Commonwealth Patents Act 1903-16, which, in regard to principle and practice, has the same general foundation as the Imperial Statutes, modified to suit Australian conditions. The Act is administered by a Commissioner of Patents. Comparatively small fees, totalling £8, are now sufficient to obtain for an inventor protection throughout the Commonwealth and the Territories of Papua and New Guinea, and the only renewal fee (£5) is payable before the expiration of the seventh year of the patent, or within such extended time, not exceeding one year, and upon payment of further fees, as may be allowed.

(ii) *Applications Filed, Provisional Specifications Accepted, and Letters Patent Sealed.* The number of separate inventions in respect of which applications were filed during each year from 1918 to 1922 inclusive is given in the following table, which also shows the number of patents sealed in respect of applications made in each year.

PATENTS, COMMONWEALTH.—SUMMARY, 1918 TO 1922.

Year	1918.	1919.	1920.	1921.	1922.
No. of applications	3,543	4,166	5,481	5,072	5,431
No. of applications accompanied by provisional specifications	2,405	2,468	2,875	3,378	3,643
Letters patent sealed during each year	1,130	1,452	2,033	2,573	3,273

(iii) *Revenue of Patents Office.* The revenue of the Commonwealth Patents Office for each year from 1918 to the end of the year 1922 is shown in the subjoined table :—

PATENTS, COMMONWEALTH.—REVENUE, 1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
	£	£	£	£	£
Fees collected under—					
States Patents Acts ..	15	4	31	5	4
Patents Acts 1903-16 ..	16,223	19,764	27,100	28,516	30,912
Receipts from publications	317	414	417	385	561
Total	16,555	20,182	27,548	28,906	31,477

2. **Trade Marks and Designs.**—(i) *Trade Marks.* Under the Trade Marks Act 1905, the Commissioner of Patents is also Registrar of Trade Marks. This Act has been amended from time to time, the last amendment having been made in 1922. Special provisions for the registration of a “ Commonwealth Trade Mark ” are contained in the

Act of 1905 and are applicable to all goods included in or specified by a resolution passed by both Houses of Parliament that the conditions as to remuneration of labour in connexion with the manufacture of such goods are fair and reasonable.

(ii) *Designs.* The Designs Act 1906 as amended by the Patents, Designs and Trade Marks Act 1910, and the Designs Act 1912, is now cited as the Designs Act 1906-12. Under this Act a Commonwealth Designs Office has been established, and the Commissioner of Patents appointed "Registrar of Designs."

(iii) *Applications for Trade Marks and Designs.* The following table gives particulars of applications for trade marks and designs received and registered under the Commonwealth Acts from 1918 to 1922 inclusive :—

TRADE MARKS AND DESIGNS, COMMONWEALTH.—SUMMARY, 1918 TO 1922.

Applications.			1918.	1919.	1920.	1921.	1922.
RECEIVED.							
Trade Marks	..	..	1,739	2,634	3,045	2,410	2,763
Designs	..	..	262	256	278	357	427
REGISTERED.							
Trade Marks	..	..	1,095	1,229	1,651	2,542	1,991
Designs	..	..	223	203	226	300	380

(iv) *Revenue of Trade Marks and Designs Office.* The following table shows the revenue of the Trade Marks and Designs Office during the years 1918 to 1922 :—

TRADE MARKS AND DESIGNS, COMMONWEALTH.—REVENUE, 1918 TO 1922.

Particulars.	1918.			1919.			1920.			1921.			1922.		
	Trade Marks.	Designs.	Publi-cations.	Trade Marks.	Designs.	Publi-cations.	Trade Marks.	Designs.	Publi-cations.	Trade Marks.	Designs.	Publi-cations.	Trade Marks.	Designs.	Publi-cations.
	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£
Fees collected under State Acts	14	..	..	192	..	..	9	..	..	1	..	..	1	..	..
Fees collected under Commonwealth Acts	4,330	318	114	5,314	346	101	12,607	368	107	10,557	427	122	9,282	499	131
Total	4,344	318	114	5,506	346	101	12,616	368	107	10,558	427	122	9,283	499	131

§ 2. Copyright.

1. *Legislation.*—Copyright is regulated by the Commonwealth Copyright Act of 1912, details of which will be found in previous issues of the Official Year Book (see No. 8, p. 1066), while, subject to modifications relating to procedure and remedies, the British Copyright Act of 1911 has been adopted as law and declared to be in force within the Commonwealth.

Reciprocal protection was extended in 1918 to citizens of Australia and of the United States under which copyright may be preserved in the latter country by registration at the Library of Congress, Washington. The Commonwealth Government promulgated a further Order in Council which came into operation on the 1st February, 1923, and extended the provisions of the Copyright Act to the foreign countries of the Copyright Union, subject to the accomplishment of the conditions and facilities therein contained.

2. **Applications and Registrations.**—The following table gives particulars of applications for copyright received and registered, and the amount of revenue received for the years 1918 to 1922 :—

COPYRIGHT, AUSTRALIA.—SUMMARY, 1918 TO 1922.

Particulars.	1918.	1919.	1920.	1921.	1922.
Applications received—					
Literary No.	816	923	922	953	1,027
Artistic No.	261	216	203	146	185
International No.	4	1	..	5	14
Applications registered—					
Literary No.	750	850	879	809	942
Artistic No.	232	197	185	138	160
International No.	3	..	..	4	..
Revenue £	309	284	287	292	312

§ 3. Local Option, and Reduction of Licences.

1. **General.**—Local option concerning the sale of fermented and spirituous liquors is in force in all the States, the States being divided into districts generally coterminous with electoral districts, and a poll of the electors taken from time to time in each district regarding the continuance of the existing number of licensed premises, the reduction in number, or the closing of all such premises. Provision is made for giving effect to the results of the poll in each district in which the vote is in favour of a change.

2. **New South Wales.**—Under the Liquor Act of 1912, provision was made for taking a vote of the electors on the parliamentary rolls on the question of continuance of existing licences, the reduction of the same, or that no licence be granted of public houses, wine-shops and clubs. The polling was to take place simultaneously with that for a general election. Three such polls were taken, but in 1919, by an amending Act, further taking of polls was suspended pending a referendum on the question of prohibition, which was to have been taken within eighteen months after the passing of the amending Act. This referendum has not yet been held. Other clauses of the 1919 amendment provided for the establishment of the Licences Reduction Board and the Compensation Assessment Board, the former to determine the amount of compensation to be paid in cases where cancellations are recommended, and to fix the compensation fees to be paid by licensees; and the latter to assess the cost to the State for compensation if prohibition be carried. Compensation is made from a fund into which fees are paid by licensees, the amount being 3 per cent. of the value of all liquor purchased during the preceding year. Up to the 4th April, 1923, 68 licences were withdrawn in the Sydney electorate, 23 in the Newcastle electoral district, and 108 in other country electoral districts, the respective amounts of compensation awarded being £45,650, £29,470, and £87,380. The balance of the Compensation Fund at the 31st March, 1923, was £419,673; of which a sum of £12,210 remained to be paid. In 85 cases compensation has not yet been awarded, and 49 hotels have been closed by other than the Board's action. Five wine licences, for which compensation has not yet been awarded, were withdrawn in other country electorates.

3 **Victoria.** (i) *Local Option.* Under the Licensing Act of 1922, the previous system of local option was abolished, and provision was made for a vote of the electors for the Legislative Assembly to be taken once in every eighth year, the first of such votes to be taken in the year 1930. The resolution to be then submitted is :—" That licences shall be abolished." If that resolution is carried, the following resolution shall be submitted to the electors at each subsequent vote, until carried :—" That licences shall be restored." This provision makes the vote State-wide instead of being restricted to the individual licensing districts.

The Act also prescribes that each licensing district shall consist of an electoral district, instead of the subdivisions which under the previous Acts formed licensing districts. The Licensing Court is also empowered to reduce the number of licences (i.e., victuallers' licences, grocers' licences, Australian wine licences, spirit merchants' licences, and registered clubs) which in its opinion is greater than the number necessary for the convenience of the public or the requirements of the locality; such reduction, however, is not to exceed one-fourth of the number of licences of each description which the Court was empowered to renew in the licensing district at the commencement of the Act, nor shall it exceed the extent to which there are moneys available for compensation in the Licensing Fund.

(ii) *Licences Reduction Board.* This Board was established in 1906 with power to reduce the number of licensed victuallers' premises in districts in which there were more than the statutory number of licences. It has also the duty of fixing and awarding compensation to the owners and licensees of closed hotels. The compensation fund is derived from vendors of liquor who must all pay in proportion to the benefit they derive from their licences. The amount charged to the wholesale trade is 4 per cent. of the cost of all liquors sold to non-licensed persons, no charge being made on sales to other licensed vendors. The retail trade is charged 6 per cent. on liquor purchases, except the holders of Australian wine licences, who are charged 4 per cent. The expenses of operating the Licensing Act are a charge on the Compensation Fund, and, in addition, £23,000 is paid annually to the Police Superannuation Fund, and £68,000 to the municipalities which formerly granted licences. The balance is available for compensation purposes.

The maximum compensation, so far as victuallers' licences are concerned, is now governed by the trading results for the ten years ending on the 31st December, 1916, and that payable to any of the holders of other licences is based on the loss accruing on a lease for a period not exceeding three years. In fixing the amount, allowance must be made for the percentage fees paid in respect of the licence for the three years following the passing of the Licensing Act 1916.

Under the 1922 Act, the Court has held deprivation sittings in three licensing districts and has ordered that twenty victuallers' licences shall not be renewed at the end of the current year. When the Board came into existence in 1906, the number of licensed premises was 3,521, of which 73 were roadside victuallers', and up to the 30th June, 1922, the number closed was 1,510. The following table gives the total number of hotels deprived of licences, or which have had their licences surrendered, and the amount of compensation awarded in each case to the owner and licensee :—

LICENCES REDUCTION BOARD.—VICTORIA, 30th JUNE, 1923.

Districts.	Hotels De-licensed.	Compensation Awarded.		Hotels Surren- dered.	Compensation Awarded.		Total Com- pensation Awarded.
		Owner.	Licensee.		Owner.	Licensee.	
	No.	£	£	No.	£	£	No.
Metropolitan and Suburban ..	413	304,497	66,893	19	9,673	2,734	383,797
Country ..	722	309,783	53,432	(b) 356	96,028	11,796	471,039
Total ..	(a) 1,135	614,280	120,325	375	105,701	14,530	854,836

(a) Including 20 metropolitan victuallers' licences deprived, but not awarded compensation.

(b) Including 7 roadside licences.

In addition to the above closings, there have been taken away under the local option vote the following licences :—one Australian wine, one club, four grocers', and five spirit merchants', and under the 1922 Act, two spirit merchants' and two grocers' licences have been taken away, and two Australian wine licences surrendered.

(iii) *Mallee Licences.* Under the 1916 Act special provisions were made for the granting of victuallers' licences in the Mallee, and by the 1922 Act, these provisions, as amended by that Act, are extended to any area outside the Mallee country proclaimed for the purpose. Power is given to proclaim areas containing 500 resident electors, when petitions signed by a majority of the residents are lodged, and where the Licensing Court, after inquiry, recommends this course. On the proclamation of an area, a poll of the electors is to be taken, at which, if the poll is to be recognized, one-third of those enrolled must vote. A majority of those voting decides whether a licence is to issue or not. The annual value by which such licence adds to the annual value of the land and buildings is to be fixed by the Court, and the amount so fixed is to be paid by the licensee into the Licensing Fund. Under these provisions, nine areas have been proclaimed, in six of which polls were taken and resulted in favour of licence. Licences have now been granted in six such areas.

4. *Queensland.* (i) *Local Option.* Local Option is regulated in Queensland by the Liquor Act of 1912, as amended by the Liquor Act Amendment Act of 1920. A vote on the question is to be taken on the request of one-tenth of the number of electors in an area, which is defined in the request, and such area may be (a) an electoral district, or (b) an electoral division of an electoral district, or (c) a group of two or more divisions of an electoral district, provided that the whole of such local option area is wholly comprised within one and the same electoral district. A separate request is necessary for each resolution on which a vote is to be taken. The resolutions on which a vote may be taken are :—(a) that the number of licences in the area be reduced by one-fourth of the existing number, (b) that the number of licences be further reduced by one-fourth of the number existing when resolution (a) was carried, (c) that the number of licences be still further reduced by one-fourth of the number existing when resolution (a) was carried, (d) that the sale of intoxicating liquors in the area shall be prohibited, and (e) that new licences may be granted in the area. Any resolution shall be carried if at least 35 per cent. of the electors of the area have voted and if, in the case of resolutions (a), (b), or (c) the majority of votes has been given in favour of the resolution, or, in the case of resolutions (d) or (e), at least three-fifths of the votes have been given in favour of the resolution.

Provision is made by the amending Act of 1920 under which every local option vote must be taken in the month of May in every third year on a day to be fixed by the Governor in Council, but no vote may be taken on the same day as the State General Election or a Commonwealth General or Senate Election, and every request must be made before the first of December in the year next preceding the year in which the local option vote is to be taken.

The last polls were taken in 1919, in which year there were eleven on the question of increase or new licences, and one on the question of reduction of licences. Increase was carried in five areas, but in two of these a sufficient number of electors did not vote. The poll in one area resulted in a majority against reduction.

For the next polling on Saturday, 26th May, 1923, thirteen requests have been received by the Home Secretary, and the voting will be on the question of increase or new licences.

(ii) *State Management, Prohibition, or Continuance of the Present System.* The Liquor Act Amendment Act of 1920 provides that a poll shall be taken of the electors of every electoral district every three years on the following resolutions :—(a) State management of manufacture, importation, and sale of fermented and spirituous liquors ; (b) prohibition of manufacture, importation, and retail of fermented and spirituous liquors, to take effect in July, 1925 ; (c) continuance of the present (or if (a) or (b) has been carried, return to the earlier) system of manufacture, importation, and retail of fermented and spirituous liquors.

The first poll was taken in October, 1920. Voting was compulsory under a compulsory preferential system, and State management was everywhere defeated. In

fourteen areas majorities were recorded for (b), and in fifty-eight areas continuance was carried, with a majority for the whole State of 38,092 votes. The second poll will be held in October, 1923.

5. South Australia.—In this State the subject of local option is regulated by Part VIII. of the Licensing Act 1917. Under this Act, each electoral district for the House of Assembly is constituted a local option district, and each electoral district may, by proclamation of the Governor, be divided into local option districts. A quorum of 500 electors, or of one-tenth of the total number of electors—whichever is the smaller number—in any district may petition the Governor for a local option poll. The persons entitled to vote are those whose names appear on the electoral roll and who reside in the local option district. A local option poll is taken on the same date as a general election. The resolutions to be submitted are—(a) that the number of licences be reduced; (b) that the number of licences be not increased or reduced; and (c) that the Court may in its discretion increase the number of licences. No polls have been taken since 1915.

In order to settle any doubt as to the validity of the proclamation of 1917 relating to local option districts, an Act was passed in 1922 by which such proclamation was declared to be valid, and the local option resolutions in force in old districts at the time of the proclamation were declared to be still in force, notwithstanding any alterations in the boundaries of the districts.

6. Western Australia.—(i) *General.* By an Amending Act No. 39 of 1922, the Local Option provisions of the Licensing Act 1911 were repealed, and in lieu thereof a Licences Reduction Board is to be constituted, and charged with the duty of reducing the number of licences throughout the State over a period of six years from 1st January, 1923, to the extent of the money for the time being to the credit of a fund to enable compensation to be paid to the lessors and licensees of premises deprived of a licence. The fund is formed by a levy of 2 per cent. per annum on the amount of liquor purchased for licensed premises, excluding duties thereon. The Licensing Magistrates (three in number) having jurisdiction throughout the State constitute the Reduction Board. Owners and licensees must be summoned before the Board to show cause why their premises should not be deprived of a licence; and in determining which licences shall cease to be in force the Board must consider the convenience of the public and the requirements of the locality, and subject thereto the character and accommodation afforded by the licensed premises, the manner in which the business has been conducted, and the distance between the premises and other licensed premises nearest thereto. Subject to the foregoing considerations, regard must be paid to convictions of the licensee within the preceding three years for offences against the licensing laws. The determination of the Board to deprive any premises of a licence is final; and on payment or tender of compensation the licence becomes void at the expiration of the current period for which it is granted. Compensation to an owner for the diminution in the value of the premises is limited to the difference in the rental value for three years; and to the licensee to the amount of net profits for two years, based on the average of the three years next preceding notice of deprivation. Provision is made to enable the lessee of premises deprived of a licence to surrender the lease, or require the rent to be adjusted by arbitration. Provision is also made for an apportionment between lessor and licensee of the contribution to the compensation fund, if the Board thinks fit.

(ii) *Prohibition.* In addition to the above provisions, the Act of 1922 provides that in the year 1925 and in every fifth year thereafter on a day to be fixed by proclamation a poll shall be taken in each electoral district as to whether prohibition shall come into force. It also provides that where prohibition has been carried and is in force the proposal shall be that the licences for sale of intoxicating liquor be restored. Every person entitled to vote at an election of members of the Legislative Assembly is entitled to vote at the poll. The proposal is carried if three-fifths at least of the number of votes given throughout the State are in favour thereof, provided that it shall not be carried unless 30 per cent., or more of the number of Assembly electors throughout the State vote for the proposal. If prohibition comes into force it takes effect at the expiration of the year in which the

vote was taken, and all licences for the sale of intoxicating liquor cease, and the registration of all clubs is annulled, and until licences are restored no licences may be granted or certificates of clubs be registered. Nothing, however, shall prohibit the sale of alcoholic liquor for use in arts or manufacture, or for medical, scientific, sacramental or industrial purposes. Where a resolution of prohibition is carried, no compensation will be payable to any person whomsoever. The poll shall not be taken on the same day as elections for the Legislature.

7. *Tasmania.*—(i) *General.* In this State the subject of Local Option is dealt with in Part V. (Sections 39 to 53) of "The Licensing Act 1908" as amended by the "Licensing Act 1917". The provisions of Part V. of the Act of 1908 did not come into force until 1st January, 1917. It was thereby provided that a poll of ratepayers was to be taken in each city, and in each municipality in which more than one licensed house was situate, once in every third year. The most recent polls taken were in the years 1920 in Hobart and Launceston, and in 1921 in other municipalities. The resolutions submitted at the polls in accordance with the Act were (a) for continuance of the existing number of licences, (b) for reduction in such number. The Act provided that a resolution was carried if a majority in number of the votes was given in favour thereof, provided that such resolution should not be carried unless 25 per cent. or more of the number of the electors on the roll voted upon such resolution. In neither of the cities (Hobart and Launceston) was either resolution carried, the statutory proportion of the electors not having voted at either poll. In one municipality only was the resolution for reduction carried. In two municipalities resolutions for continuance were carried. In each of the remaining 37 municipalities in which polls were taken, the statutory proportion of electors failed to vote, and accordingly no resolution was carried.

(ii) *Results of Polls.* The following table shows the results of the Local Option Polls taken in each of the cities (Hobart and Launceston) in December, 1920, and in the municipalities in April, 1921:—

LOCAL OPTION POLLS.—TASMANIA, 1920 AND 1921.

Poll taken at—	Electors on Roll.	Votes for Continuance.	Votes for Reduction.	Informal Votes.
	No.	No.	No.	No.
Hobart	11,147	499	1,498	62
Launceston	6,041	535	1,242	106
Municipalities	37,140	4,097	4,058	379
Totals	54,328	5,131	6,798	547

§ 4. Lord Howe Island.

1. *Area, Location, etc.*—Between Norfolk Island and the Australian coast is Lord Howe Island, in latitude 31° 30' south, longitude 159° 5' east. It was discovered in 1788. The total area is 3,220 acres, the island being 7 miles in length and from $\frac{1}{2}$ to 1 $\frac{1}{2}$ miles in width. It is distant 436 miles from Sydney, and in communication therewith by monthly steam service. The flora is varied and the vegetation luxuriant, with shady forests, principally of palms and banyans. The highest point is Mount Gower, 2,840 feet. The climate is mild and the rainfall abundant, but on account of the rocky formation only about a tenth of the surface is suitable for cultivation.

2. *Settlement.*—The first settlement was by a small Maori party in 1853; afterwards a colony was settled from Sydney. Constitutionally, it is a dependency of New South Wales, and is included in the electorate of Sydney. A Board of Control manages the affairs of the island and supervises the palm seed industry referred to hereunder.

3. **Population.**—The population at the Census of 3rd April, 1921, was 65 males, 46 females—total 111.

4. **Production, Trade, etc.**—The principal product is the seed of the native or *Kentia* palm. The lands belong to the Crown. The occupants pay no rent, and are tenants on sufferance.

§ 5. Commercial and Industrial Bureau of the Board of Trade.

1. **Initiation.**—The initial step towards the creation of a trade promotion organization was taken in February, 1918, when the Prime Minister called a conference of the various associations connected with primary industries, manufactures, and commerce. On behalf of the Commonwealth Government the Prime Minister undertook to provide somewhat similar machinery to that set up by Governments of other countries with the object of co-operating with producers, manufacturers, and merchants in the improvement of methods and the finding of profitable markets. The proposals of the Government were endorsed by the conference, and the Bureau of Commerce and Industry was initiated, and, under the charge of a Director, attached to the Department of Trade and Customs.

Associated with the first Director, in an honorary capacity, there was a temporary general council containing representatives of the primary producers, the Associated Chambers of Manufactures, the Associated Chambers of Commerce, together with representatives of the banking, shipping, metals, coal and timber interests, and the Commercial Travellers' Association. The first Director resigned in March, 1919, and the new Director was later on appointed a member of the Board of Trade, and the Bureau of Commerce and Industry, as it was then termed, was merged into that body, under the title of "The Commercial and Industrial Bureau of the Board of Trade." The direction of the Bureau was assumed by the Board of Trade, and the temporary general council ceased to function.

2. **Functions.**—The functions of the Bureau now closely resemble those of the Departments of Trade of Great Britain and of the Bureau of Foreign and Domestic Commerce of the United States of America, the two latter, in their present form, being comparatively recent creations. The aim of the Bureau is to foster and develop the foreign and domestic commerce, the manufacturing industries, and the transportation facilities of Australia.

Amongst its duties also are the direction of the work of the Trade Commissioner for the East, and the investigation of markets for Australian products. In fulfilling its prime function of assisting commerce and manufacturing, the Bureau collects information from the Australian Trade Commissioners, from British and foreign official sources, from Trade Representatives and other sources; and it distributes this information to the Council of Industrial Development of Western Australia, the Advisory Council of Science and Industry of South Australia, the Queensland State Trade Commissioner, Trade Associations, Chambers of Commerce and Manufactures in the various States, the Press, and sometimes confidentially to individuals.

3. **Activities.**—(i) *General.* The scope and usefulness of the Bureau's service may be gauged to a certain extent by the figures hereunder relating to routine work carried out during the last three years—

Commercial inquiries attended to by interview, mail, and telephone (over) ..	6,000
Trade inquiries circulated to Chambers of Manufactures and Commerce,	
all States	511
Foreign trade inquiries (other than U.S.A. and China)	984
China	1,033
United States of America	98
Through High Commissioner, London	415

It may be noted that there is an increasing disposition on the part of manufacturers, merchants, and exporters in all States to use the Bureau as a source of information, while general trade inquiries from other countries, and requests for information from overseas manufacturers with regard to the possibility and advisableness of establishing works in Australia have also considerably grown in volume.

(ii) *Nature of Inquiries dealt with.* Inquiries received and answered by the Bureau may, for convenience, be divided under two heads :—

(a) *From Overseas manufacturers*—(1) The availability, cost and quality of raw materials. (2) Import duties. (3) Tariff considerations. (4) Rates of wage and labour conditions generally. (5) Assistance in transferring plant and skilled operatives. (6) Local markets and possibility of export, etc.

(b) *General inquiries*—(1) By oversea merchants asking to be put in touch with suitable representatives in the Commonwealth. (2) By Australian exporters asking to be put in touch with reliable representatives in oversea countries. (3) By Australian producers regarding possible markets, local and external, for their products. (4) By oversea buyers regarding supplies of materials produced in Australia. (5) General and technical inquiries for varied information by local merchants, manufacturers, and producers.

(iii) *The Woollen Manufacturing Industry.* The Bureau has been particularly active in its endeavours to assist in the development of the woollen manufacturing industry in Australia, and the ease with which many of the recently-formed companies have been floated may, in some measure, be ascribed to the information collected and disseminated by the Bureau.

(iv) *Publications.* Further particulars concerning the activities of the Bureau may be found in the Reports which are issued annually.

§ 6. Commonwealth Institute of Science and Industry.

1. *General.*—An account of the origin of the temporary Institute was given in Official Year Book No. 9, pp. 1135–8, while the progress of its activities has been outlined in succeeding issues.

The “Institute of Science and Industry Act 1920,” assented to 14th September, 1920, provides for the establishment of the Institute on a permanent basis.

The Act also provides that the Institute shall establish (a) a Bureau of Agriculture, (b) a Bureau of Industries, and (c) such other Bureaux as the Governor-General determines. Power is given for the establishment of a General Advisory Council and Advisory Boards in each State to advise the Director with regard to—(a) the general business of the Institute or any Bureau thereof, and (b) any particular matter of investigation or research.

The term for which the appointment of Director is made is five years, and any person so appointed shall at the expiration of his term of office be eligible for reappointment. The first director of the permanent Institute is Sir G. H. Knibbs, K.B., C.M.G., President of the Australian Association for the Advancement of Science, Hon. F.S.S., M.I.I.S., Hon. M.S.S., Paris, Hon. M. Amer., S.A., etc., etc., formerly Commonwealth Statistician, who was appointed on the 18th March, 1921.

Under the Act the Director shall co-operate, so far as is possible, with existing State organizations in the co-ordination of scientific investigations. The statutory powers and functions of the Director are as follow :—(a) the initiation and carrying out of scientific researches in connexion with, or for the promotion of, primary or secondary industries in the Commonwealth ; (b) the establishing and awarding of industrial research studentships and fellowships ; (c) the making of grants in aid of pure scientific research ; (d) the recognition or establishment of associations of persons engaged in any industry or industries for the purpose of carrying out industrial scientific research, and the co-operation with and the making of grants to such associations when recognized or established ; (e) the testing and standardization of scientific apparatus and instruments, and of apparatus, machinery, materials and instruments used in industry ; (f) the establishment of a Bureau of Information for the collection and dissemination of information relating to scientific and technical matters ; and (g) the collection and dissemination of information regarding industrial welfare and questions relating to the improvement of industrial conditions.

2. *Work of the Institute.*—The Institute has made investigations into various matters of importance to the Commonwealth, and has issued a number of bulletins and

pamphlets. The subjects considered in previous years are briefly indicated on page 1037 of Year Book No. 15. The more important subjects studied in the past year are :—

- A. Agricultural and Pastoral Industries.* (i) Prickly Pear, (ii) White Ant Pest, (iii) Cereals, (iv) Viticultural Problems, (v) Sheep Blow-fly, (vi) Food Preservation, (vii) Cattle Tick, (viii) Castor Beans, (ix) Fruit By-products, (x) Dehydration of Fruit and Vegetables, (xi) Milk Products, (xii) Fertilizers, (xiii) Herbicides, (xiv) Animal Pests.
- B. Forest and Vegetable Products.* (i) Paper Pulp, (ii) Tanning Materials, (iii) Preservation of Timber, (iv) Wood Borers, (v) Essential Oils, (vi) Wood Waste.
- C. Manufacturing Industries.* (i) Leather and Tanning, (ii) Pottery, (iii) Engineering Standardization, (iv) Liquid Fuels, (v) Power Alcohol, (vi) Paints, (vii) Animal Products, (viii) Textiles, (ix) Building Materials, (x) Oil, Fat and Waxes.
- D. Mining and Metallurgy.* (i) Malleable Iron, (ii) Economic Minerals, e.g., Magnesite, Barytes, etc., (iii) Pigments, (iv) Metals and Alloys, (v) Ores, (vi) Oil Shale.
- E. Miscellaneous.* (i) Carburettors, (ii) Power, (iii) Clays.

In addition to these investigations, the nucleus of a Bureau of Information has been established, with a library of scientific books and journals catalogued and indexed. A large amount of information has been disseminated among Government Departments, technologists, manufacturers and others vitally interested in Australian Industry.

3. Publications.—A list of the publications issued up to the 14th March, 1921, is given in Year Book No. 14, p. 1063, since which date the following bulletins have also been issued :—(i) A Classification and detailed Description of the Barleys of Australia, (ii) A Classification and detailed Description of the Oats of Australia, (iii) The Production of Liquid Fuels from Oil Shale and Coal in Australia, (iv) The Manufacture of Pulp and Paper from Australian Woods. A pamphlet has also been published on "The Co-operative Development of Australia's Natural Resources," as well as circulars on the following subjects :—(i) Weevils in Wheat Stacks, (ii) Leaks in Fruit Containers, (iii) Scientific Road-making, (iv) a Forest Policy for Australia, (v) Cotton, its Cultivation in Australia, (vi) The Water Hyacinth, (vii) New Tanning Materials. The publication of "Science and Industry," the Journal of the Institute, has been suspended since the end of 1920.

§ 7. Department of Chemistry, South Australia.

In South Australia, a Department of Chemistry was formed in 1915. The Department is principally engaged in general routine chemical examinations and analyses in pursuance of various Acts of Parliament and for Government Departments, but the chemical investigation of local products and industries forms an important branch of its work. At first the Departments issued bulletins, of which nine have been published, but since 1918 the results of investigations made have been embodied in the reports of the Advisory Council of Science and Industry of South Australia. Researches have been carried out for the Wheat Weevil Committee, and investigations have been made into the lignites at Moorlands, the utilization of grapes and surplus lemons, cold-water paints and tannins. Further investigations into South Australian lignite are reported in the South Australian Mining Review.

§ 8. State Advisory Council of Science and Industry of South Australia.

The Advisory Council of Science and Industry of South Australia is the result of the fusion of the members of the Committee of Scientific Research and the Committee on Post-war Problems. The members of the Council, who all act in an honorary capacity, are the nominees of the different public bodies in the State, such as the Chamber of Commerce, the Chamber of Manufactures, Associated Banks, United Trades and Labour Council, Employers' Federation, etc., and include a number of technical Government officials and University professors.

For the purposes of investigation, the Council is divided into Committees, under the headings Agriculture, Pastoral, Mineral, Manufacture, Trade, Commerce, and Transport. These Committees consider and take evidence on subjects proper to their provinces, and report to the Government.

The office of the Council is attached to the Department of Chemistry, where research work is carried out at the instance of the Council, the Director of Chemistry being Vice-Chairman of the Council. Four reports have been issued for the years 1919 to 1922, and contain a summary of the work done, with reports of investigations, including the "Wheat Pests Problem," "Utilization of Surplus Lemons," "Cold Water Paint," "Tannins," etc. The Council also distributes information forwarded by the Commercial and Industrial Bureau of the Board of Trade.

§ 9. Valuation of Australian Production.

1. **Value of Production.**—The want of uniformity in methods of compilation and presentation of Australian statistics renders it an extremely difficult task to make anything like a satisfactory valuation of the various elements of production. At present there is so little accurate statistical knowledge regarding such industries as forestry, fisheries, poultry, and bee-farming, that any valuation of the production therefrom can only be regarded as the roughest approximation. As a matter of fact, complete information as to value of production in all States is available in regard to the mining industry alone, and even in this case adjustments have to be made before the returns are strictly comparable. Careful estimates have been made in connexion with the value of production from the agricultural and pastoral industries, which, it is believed, in the main give fairly accurate results. The returns given in the following table for 1911 and subsequent years may be taken as substantially correct. The table hereunder shows the approximate value of the production from all industries during the years 1911 to 1921-22 :—

ESTIMATED VALUE OF PRODUCTION.—AUSTRALIA, 1911 TO 1921-22.

Year.	Agriculture.	Pastoral.	Dairy, Poultry, and Bee-farming.	Forestry and Fisheries.	Mining.	Manufacturing.(a)	Total.
1911	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000	£1,000
1911 ..	38,774	50,725	19,107	5,728	23,303	50,767	188,404
1912 ..	45,754	51,615	20,280	6,432	25,475	57,022	206,578
1913 ..	46,162	57,866	20,341	6,338	25,594	61,586	217,887
1914 ..	36,052	61,055	21,562	6,419	22,053	62,956	210,097
1915 ..	75,475	66,180	21,156	5,777	22,060	62,883	253,531
1916 ..	61,255	76,142	26,949	5,505	23,192	64,205	257,248
1917 ..	59,641	82,322	31,326	5,523	24,998	69,797	273,607
1918 ..	59,036	86,793	33,738	7,137	25,462	75,362	287,528
1919-20 ..	72,202	100,920	38,830	10,170	18,982	98,162	339,266
1920-21 ..	112,801	86,882	52,613	10,490	21,613	109,435	393,834
1921-22 ..	81,890	69,254	44,417	10,373	19,977	120,751	346,662

(a) These amounts differ from those given in Chapter XXII., Manufacturing Industry, owing to certain products which are there included having been included in Dairy Farming and Forestry in this table.

2. **Relative Productive Activity.**—The relative output or production per head of population measured quantitatively cannot be gauged from a mere statement of the total value of production from year to year. If measured by mere value, increase of price would have the effect of making an equal production with that of a time when prices were lower, and show an increase which would, of course, be misleading. For example, the annual figures showing the estimated value of production from Australian industries do not directly show whether there has been any increase in the *quantity* produced, since the price-level at the time is itself a factor in the determination of the values. Before, therefore, any estimate of the relative increase or decrease in production (that is, in the

relative quantity of output) can be formed, the variations due to the price element must be eliminated. This is done in the following table, in which Column I. shows the estimated *value* of production (i) in the aggregate and (ii) per head of mean population. In Column II. the estimated value of production per head of population is shown in the form of index-numbers with the year 1911 as base; that is to say, the production per head in 1911 is made equal to 1,000, and the values for the other years computed accordingly. In Column III. wholesale and production price index-numbers are given; it is assumed that these index-numbers reflect, with substantial accuracy, variations in wholesale and production prices in Australia as a whole. The figures in Column IV. are obtained by dividing the figures for each year in Column II. by the corresponding figures in Column III. They show the estimated relative productive activity per head of population, taking the year 1911 as the basic or standard year, the fluctuations due to variations in prices having been eliminated.

RELATIVE PRODUCTIVE ACTIVITY.—AUSTRALIA, 1871 TO 1921-22.

Year.	I.		II.	III.		IV.	
	Estimated Value of Production.		Relative Value of Production per Head (Year 1911 = 1,000).	(a) Wholesale Price Index-Number (Year 1911 = 1,000).	(b) Production Price Index-Number (Year 1911 = 1,000).	Estimated Relative Productive Activity Index-Numbers (Year 1911 = 1,000).	
	(i) Total (000 omitted)	(ii) Per Head of Population.					
	£	£				(a)	(b)
1871 ..	46,700	27.46	666	1,229	..	542	..
1881 ..	71,116	30.83	748	1,121	..	667	..
1891 ..	96,087	29.65	719	945	..	761	..
1892 ..	95,244	28.81	699	918	..	761	..
1894 ..	83,773	24.45	593	749	..	792	..
1896 ..	92,605	26.06	632	922	..	685	..
1899 ..	112,273	30.21	733	809	..	906	..
1901 ..	114,585	29.96	727	974	..	746	..
1902 ..	109,615	28.29	686	1,051	..	653	..
1903 ..	117,672	30.04	729	1,049	..	695	..
1904 ..	122,343	30.78	747	890	..	839	..
1905 ..	135,846	33.68	817	910	..	898	..
1906 ..	147,043	35.94	872	948	..	920	..
1907 ..	166,042	39.90	968	1,021	..	948	..
1908 ..	164,934	38.97	945	1,115	1,073	848	880
1909 ..	174,195	40.29	977	993	1,000	984	977
1910 ..	187,741	42.43	1,029	1,003	969	1,026	1,062
1911 ..	188,404	41.19	1,000	1,000	1,000	1,000	1,000
1912 ..	206,578	43.52	1,057	1,170	1,110	903	952
1913 ..	217,887	44.52	1,081	1,088	1,051	994	1,029
1914 ..	210,097	42.25	1,026	1,149	1,263	893	812
1915 ..	253,531	51.01	1,238	1,604	1,431	772	865
1916 ..	257,248	52.30	1,270	1,504	1,499	844	847
1917 ..	273,607	54.91	1,333	1,662	1,607	802	829
1918 ..	287,528	56.58	1,374	1,934	1,770	710	776
1919-20 ..	339,266	63.96	1,553	2,312	2,117	672	734
1920-21 ..	393,834	72.77	1,767	2,266	2,097	780	843
1921-22 ..	346,662	62.91	1,527	1,741	1,564	877	976

(a) Relative Production computed by application of Wholesale Price Index-numbers. (b) Index-numbers computed by application of Production Price Index-numbers.

The total production from all industries during 1921-22 was £346,662,000, equal to an average of £62.91 per inhabitant.

In Year Book No. 5 (page 1217) will be found the value of production in each State at decennial intervals since 1871, and for the year 1909. Details for individual States are not available for subsequent years owing to discontinuance by the Customs Department of the collection of statistics of interstate trade.