

CHAPTER XXVI.

MISCELLANEOUS.

§ 1. Patents, Trade Marks, and Designs.

1. *Patents.*—(i) *General.* The granting of patents is regulated by the Commonwealth Patents Act 1903–21, 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 Australia, Papua and the Territory of 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) *Summary.* The number of separate inventions in respect of which applications were filed during the years 1924 to 1928 is given in the following table, which also shows the number of letters patent sealed in respect of applications made in each year:—

PATENTS, AUSTRALIA.—SUMMARY, 1924 TO 1928.

Particulars.	1924.	1925.	1926.	1927.	1928.
No. of applications .. .. .	5,432	5,306	5,391	5,683	6,530
No. of applications accompanied by provisional specifications .. .. .	3,637	3,405	3,515	3,627	3,993
Letters patent sealed during each year	2,313	2,479	2,706	2,633	2,615

(iii) *Revenue.* The revenue of the Commonwealth Patents Office during the years 1924 to 1928 is shown hereunder:—

PATENTS, AUSTRALIA.—REVENUE, 1924 TO 1928.

Particulars.	1924.	1925.	1926.	1927.	1928.
	£	£	£	£	£
Fees collected under—					
States Patents Acts .. .. .	..	..	..	..	..
Patents Acts 1903–21 .. .. .	26,259	29,017	30,967	30,602	32,573
Receipts from publications	1,004	926	733	1,101	1,331
<b>Total .. .. .</b>	<b>27,263</b>	<b>29,943</b>	<b>31,700</b>	<b>31,703</b>	<b>33,904</b>

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 1906–1912. Under this Act a Commonwealth Designs Office has been established, and the Commissioner of Patents appointed “Registrar of Designs.”

(iii) *Summary.* The following table shows the applications for trade marks and designs received and registered during the years 1924 to 1928 :—

TRADE MARKS AND DESIGNS, AUSTRALIA.—SUMMARY, 1924 TO 1928.

Applications.	1924.	1925.	1926.	1927.	1928.
RECEIVED.					
Trade Marks .. ..	2,829	2,770	2,821	2,960	2,882
Designs .. ..	498	554	329	580	574
REGISTERED.					
Trade Marks .. ..	1,801	2,029	1,971	2,177	2,175
Designs .. ..	453	439	537	546	694

(iv) *Revenue.* The revenue of the Trade Marks and Designs Office during the years 1924 to 1928 is given hereunder :—

TRADE MARKS AND DESIGNS, AUSTRALIA.—REVENUE, 1924 TO 1928.

Particulars.	1924.			1925.			1926.			1927.			1928.		
	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.	Trade Marks.	Designs.	Publications.
Fees collected under Commonwealth Acts	£ 8,710	£ 561	£ 238	£ 9,310	£ 629	£ 186	£ 9,246	£ 407	£ 210	£ 9,709	£ 722	£ 198	£ 9,420	£ 795	£ 264

No fees in respect of Trade Marks have been collected under State Acts since the year 1922.

## § 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 and scheduled to the Australian law.

Reciprocal protection of unpublished works was extended in 1918 to citizens of Australia and of the United States under which copyright may be secured 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 observance of the conditions therein contained.

2. **Applications and Registrations.**—The following table shows under the various headings the number of applications for copyright received and registered, and the total revenue obtained for the years 1924 to 1928 :—

**COPYRIGHT, AUSTRALIA.—SUMMARY, 1924 TO 1928.**

Particulars.	1924.	1925.	1926.	1927.	1928.
Applications received—					
Literary .. .. No.	1,145	1,269	1,166	1,256	1,241
Artistic .. .. No.	150	134	115	176	160
International .. .. No.	2	15	23	13	4
Applications registered—					
Literary .. .. No.	1,059	1,257	1,105	1,180	1,176
Artistic .. .. No.	138	117	105	171	152
International .. .. No.	2	4	19	10	3
Revenue .. .. £	336	360	340	376	366

**§ 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 areas generally conterminous 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.**—(i) *Local Option.* The Liquor Act of 1912 made provision 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. This vote was to take place simultaneously with that for a general election. Three such polls were taken, but under the Liquor (Amendment) Act of 1919, further taking of polls was suspended pending a referendum on the question of prohibition with compensation, to be taken within eighteen months after the passing of this Act. This referendum was not held, and a later amendment of the Act in 1923 fixed the first Saturday in September, 1928, as the day on which the vote was to be taken.

(ii) The referendum referred to in the previous paragraph was taken on 1st September, 1928, and the following statement shows the result of the poll, at which voting was compulsory. The question asked of the electors read—“ *Are you in favour of prohibition with compensation?* ”

*Prohibition Referendum, 1928.*

Number of Qualified Voters .. ..	1,436,450
Votes cast for “ Yes ” .. ..	357,684
Votes cast for “ No ” .. ..	896,752
Invalid Votes .. ..	13,683
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Total votes recorded .. ..	1,268,119
Percentage on total qualified voters .. ..	88.28 per cent.

(iii) *Licences Reduction Board.* The Liquor (Amendment) Act of 1923 provided for the reconstitution, as from 1st July, 1924, of the Licences Reduction Board and of the Licensing Courts which control the issue of licences. Three Licensing Magistrates constitute the Licensing Court in each licensing district, as well as the Licences Reduction Board, so that one tribunal controls all matters relating to the issue and withdrawal of licences. The funds for compensation in respect of publicans' licences were obtained

by a levy at the rate of 3 per cent. on the value of all liquor purchased during the preceding year, of which the licensees pay one-third and the owners two-thirds. Since the beginning of 1923 the Board has also been empowered to reduce the number of Australian wine licences, the holders of which were liable to pay fees into the compensation fund at the rate of 1 per cent. of their purchases. Contributions to the compensation fund ceased at 31st December, 1926, the accumulated funds at that date being sufficient to meet all possible claims.

The Board, which was established by the Liquor (Amendment) Act of 1919, commenced operations in 1920, and up to 30th June, 1929, had terminated 291 publicans' licences and 65 wine licences, and had accepted the surrender of 83 publicans' licences and 7 wine licences. The compensation awarded was £627,185 in respect of 371 publicans' licences and £60,250 for 71 wine licences, while compensation had not been awarded in respect of three publicans' licences, and was not claimed in respect of one wine licence. The reductions made by the Board in the Sydney electoral district were 74 hotel licences and 31 wine licences, and the compensation awarded amounted to £157,480 and £28,075 respectively. In the Newcastle electoral district the reductions were 23 hotel licences and the compensation awarded £29,470. The fees payable into the compensation fund amounted to £1,515,245. During the period of nine and a half years ended June, 1929, 65 hotel licences were terminated by other than the Board's action, and 37 new licences were granted, while during the past six and a half years 11 wine licences were terminated and 3 new licences granted. At 30th June, 1929, there were in existence 2,137 hotel licences and 361 Australian wine licences.

3. *Victoria.*—(i) *Licensing Districts.* 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 on the issue of "no licence," the first of such votes to be taken in the year 1930. 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. Under the Redistribution of Seats Act passed in 1927 the new electorates became new licensing districts. Except by means of petitions under the special provisions for additional licences in areas proclaimed by the Governor in Council after recommendation by the Licensing Court, no licences to retail liquor can be obtained in these new electorates beyond the number existing therein on 1st January, 1917. The new electorates are in many cases widely different from the old areas.

(ii) *Licences Reduction Board.* This Board was established in 1906, and in 1916 was constituted the Licensing Court. It has power to reduce the number of licences in each district by one-fourth of the number existing at 1st January, 1917. It has also the duty of fixing and awarding compensation to the owners and licensees of closed hotels and to the holders of Australian wine, of grocers' and of spirit merchants' licences if delicensed. The compensation fund was in 1916 merged into the licensing fund, which, in addition to the fees received from billiard table licences and permits for special facilities, is derived from all vendors of liquor who must pay in proportion to the cost of liquor purchased. The amount charged to the wholesale trade is 4 per cent. of the cost of all liquors sold to non-licensed persons, in addition to a fixed charge covering all other sales. 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 Licensing Fund, and, in addition, £23,000 is paid annually to the Police Superannuation Fund, and £63,000 to the municipalities which formerly granted licences. The balance is available for compensation purposes, but any surplus at the end of the financial year over an increment in the fund of £20,000 annually is carried to Consolidated Revenue. The balance in the Fund at the 30th June, 1928, was £421,715, and the amount transferred to Consolidated Revenue for the same year amounted to £238,662.

Under the 1922 Act, the Court has held deprivation sittings each year in different licensing districts, and has taken away 174 victuallers', 38 Australian wine, 3 spirit merchants', and 2 grocers' licences. When the Board came into existence in 1906, the number of hotels licensed was 3,521, of which 73 were roadside victuallers', and up to the 31st December, 1928, the number closed was 1,686. Of these, 1,252 represented hotels delicensed, and 434 hotels surrendered, the compensation paid to owners and licensees amounting to £904,156 and £190,635 respectively.

(iii) *Mallee and Additional Licences.* Under the 1916 Act, special provisions were made for the granting of victuallers' licences in proclaimed areas in the Mallee, and by the 1922 Act these provisions as amended by that Act extended to any area outside the Mallee country proclaimed for the purpose. Only one victualler's licence may be granted in any area in which at least 500 electors must reside. Licences have been granted in 12 such areas.

4. *Queensland.*—Local option is regulated in Queensland by the Liquor Act of 1912, as amended by the Liquor Act Amendment Acts of 1920, 1923, and 1926. 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 if undivided into electoral divisions, or (b) an electoral division of an electoral district if divided into electoral divisions: Provided that any local option area duly constituted prior to the passing of "The Liquor Acts Amendment Act of 1926" shall remain a local option area if the electoral district comprised thereof is divided into electoral divisions. A separate request is necessary for each resolution on which a vote is to be taken.

By the amending Act of 1926 every local option vote must be taken in the month of May in every seventh year, after the vote taken in 1923. On the 12th May, 1928, 30 polls were taken as requested in local option areas defined by the petitioners on the questions of reduction in 4 areas, and new licences in 26 areas. Increase of licence was carried in 10 areas, while the polls for reduction were defeated.

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.

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.

Early in 1927 petitions were presented from 30 local option districts requesting polls in the various districts.

The poll was taken in conjunction with the General State Elections on 26th March, 1927, the results being that the second resolution, "That the number of licences be not increased or reduced," was carried in all 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 was constituted, and charged with the duty of reducing the number of licences throughout the State over a period of 6 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. More extended reference to this subject was made in Official Year Book No. 18, page 1030.

(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. Where a resolution of prohibition is carried, no compensation is payable. A poll was taken on the 4th April, 1925, with the following result:—In favour of prohibition, 41,362; against, 77,113; informal, 658; total, 119,133. The percentage of persons voting on the number enrolled (200,212) was 59.5.

7. **Tasmania.**—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 situated once in every third year. The most recent polls taken were Launceston, December, 1926; Hobart, May, 1927; and all other municipalities, April, 1927. In one municipality (New Norfolk) the resolution for continuance was carried. In each of the remaining 41 municipalities in which polls were taken, the statutory proportion of electors failed to vote and accordingly no resolution was carried.

8. **Federal Capital Territory.**—The Liquor Poll Ordinances 1928 being the Liquor Poll Ordinance 1928 as amended by the Liquor Poll Ordinance (No. 2) 1928 made provision for taking a vote of enrolled residents in the Territory on the question of the continuance of the existing law in force prohibiting the sale of liquor, or its sale either under public control or in licensed premises.

The poll was taken on 1st September, 1928, and the voting was as follows:—

	Votes.
Prohibition of the Possession of Liquor in the Territory .. .. .	228
Continuance of the Present Law in Force in the Territory Prohibiting the Sale of Liquor .. .. .	841
Sale of Liquor in the Territory under Public Control .. .. .	1,092
Sale of Liquor in the Territory in Licensed Premises .. .. .	2,218
Informal .. .. .	34
	4,413

Pending permanent arrangements, the Liquor Ordinance (No. 24 of 1928) made temporary provision for the sale of liquor by the Federal Capital Commission in certain of its hotels and in temporary cafés in the shopping centres.

#### § 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  $\frac{1}{4}$  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 it 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. Commonwealth Council for Scientific and Industrial Research.

1. **General.**—By the Science and Industry Research Act 1926, the previously existing Commonwealth Institute of Science and Industry was reorganized under the title of the Council for Scientific and Industrial Research. An account of the organization and work of the former Institute was given in previous issues of the Official Year Book. (See No. 18, p. 1062.)

2. Science and Industry Research Act 1926.—This Act provides for a Council, consisting of—

- (a) Three members nominated by the Commonwealth Government.
- (b) The Chairman of each State Committee constituted under the Act.
- (c) Such other members as the Council, with the consent of the Minister, co-opts by reason of their scientific knowledge.

The three Commonwealth nominees form an Executive Committee which may exercise, between meetings of the Council, all the powers and functions of the Council, of which the principal are as follow:—(a) The initiation and carrying out of scientific researches in connexion with primary or secondary industries in the Commonwealth; (b) the training of research workers and the establishing of industrial research studentships and fellowships; (c) the making of grants in aid of pure scientific research; (d) the establishment of industrial research associations in any industries; (e) the testing and standardization of scientific apparatus and instruments; (f) the establishment of a Bureau of information; and (g) the function of acting as a means of liaison between the Commonwealth and other countries in matters of scientific research.

State Committees have been constituted in accordance with regulations that have been prescribed, and their main function is to advise the Council as to matters that may affect their respective States. A sum of £250,000 was appropriated under the terms of the Act for the purpose of scientific and industrial investigations. Subsequently an additional sum of £250,000 has been appropriated for a similar purpose.

3. Science and Industry Endowment Act 1926.—Under this Act the Government has established a fund of £100,000, the income from which is to be used to provide assistance (a) to persons engaged in scientific research, and (b) in the training of students in scientific research. Provision is made for gifts or bequests to be made to the fund, which is controlled by a trust consisting of the three Commonwealth nominees on the Council. In accordance with the Act arrangements have been made to send a number of qualified graduates abroad for training in special fields of work.

4. Work of the Council.—The full Council held its first meeting in June, 1926, since which time it has held meetings at about half-yearly intervals. It has adopted a policy of placing each of its major fields of related researches under the direction of an officer having a standing at least as high as, if not higher than, that of a University Professor.

The main branches of work of the Council are (i) plant problems; (ii) irrigation settlement problems; (iii) entomological problems; (iv) animal nutrition; (v) animal diseases; and (vi) forests products. As regards plant problems, a Division of Economic Botany has been established, inter alia, to undertake researches on various diseases of plants of economic value, the breeding of plants, and the control of weeds. The Division will also arrange for the introduction from abroad of plants likely to be of value in Australia and for their testing as regards diseases. Special attention is being given to bitter pit in apples, water blister in pineapples, tomato wilt, and blue mould in tobacco. Laboratories exist at Merbein (Victoria) and Griffith (New South Wales) where cultural problems connected with viticulture and citriculture, respectively, are being investigated. A Division of Economic Entomology has been organized to carry out an extensive investigation of the possibilities of controlling by biological means various Australian plant and insect pests. In the early stages insect problems such as those of the blowfly, the buffalo fly, codlin moth, etc., and plant problems such as St. John's wort, ragwort, etc., will be investigated. As regards animal nutrition, a laboratory in which this work will be undertaken has been completed in the grounds of the University at Adelaide. This investigation is of a very fundamental nature and for many years will be confined to the sheep. Considerable progress in the breeding up of a stock of laboratory animals and in the establishment of several small field stations has already been made. In the field of animal diseases, six veterinary investigators are engaged in researches into such problems as the sheep blowfly pest, stomach and lung parasites of sheep, caseous lymphadenitis, and braxy disease. The Division of Forest Products Research is the most recently formed Division of the Council. It will give special attention to problems of seasoning, of timber preservation, and the utilization of wood waste and forest products generally.

In addition to the activities mentioned above, the Council is engaged on a number of miscellaneous researches, such as the prickly pear pest, tannin extracts, poison plants, cold storage problems, mineragraphy, etc. A number of special Committees and Boards has also been formed, e.g., a Committee on the Maintenance of Standards and a Radio Research Board.

In carrying out its functions it is the policy of the Council to co-operate closely not only with existing scientific institutions and State Government Departments in Australia, but also with similar organizations in other parts of the Empire.

As far as Australia itself is concerned an important scheme of co-operation in agricultural research has been set up in the shape of a Standing Committee on Agriculture. This Committee consists of the permanent heads of the State Departments of Agriculture and of representatives of the Council. All agricultural research projects are referred to the Committee prior to the actual initiation of the work, and in that way unnecessary duplication of effort is avoided.

## § 6. The Commonwealth Solar Observatory.

1. **Reasons for Foundation.**—The Commonwealth Solar Observatory was established for the study of solar phenomena, for allied stellar and spectroscopic research, and for the investigation of associated terrestrial phenomena. Its situation is such that it will fill a gap in the chain of existing astrophysical observatories; with its completion there will be stations separated by 90 degrees of longitude round the globe. In addition to advancing the knowledge of the universe and the mode of its development, it is hoped that the eventual discovery of the true relation between solar and terrestrial phenomena may lead to results which will prove of direct value to the country.

2. **History of Inauguration.**—A short account of the steps leading up to the establishment of the Observatory will be found in Official Year Book No. 19, p. 979. Limits of space preclude its repetition in this issue.

3. **Site of the Observatory.**—The site selected for the Observatory is on Mount Stromlo, a ridge of hills about 7 miles west of Canberra. The highest point is 2,560 feet above sea level, or about 700 feet above the general level of the Federal Capital City. A road has been constructed to the summit, upon which has been erected the temporary building to house the Oddie telescope. From the summit clear views are obtained in all directions. The approach to the Observatory passes the reservoir which supplies Canberra with water, and thence follows the eastern side of the ridge past several sheltered sites suitable for residences for the members of the staff, who will thus be within easy reach of the instruments housed on its crest.

4. **Buildings.**—The temporary structure for housing the Oddie telescope, which was the first building erected on Mount Stromlo, is a concrete building, comprising a central dome 17 feet in diameter, with four rooms opening off it. A 60,000 gallon reservoir built near the summit is fed with water pumped from the main reservoir 120 feet below. In December, 1926, the administrative building upon Mount Stromlo was occupied, and the apparatus, which had previously been housed and operated at the Hotel Canberra, transferred thereto and installed.

The building programme which has recently been completed includes the dome to house the 30-in. reflecting telescope, the library, sun-telescope, electric substation, store, workshop and spectroscopic laboratory. With the exception of the first-named, these buildings are centred about the administrative building, with which they are connected by covered ways. Electric light and power have already been conveyed to the residential area and to the summit. The station is connected by telephone with the Canberra Post Office.



5. *Equipment.*—The bulk of the telescopic equipment is due to the generosity of supporters of the movement in England and Australia. The gifts include a 6-in. Grubb refracting telescope, presented by the late W. E. Wilson, F.R.S., and Sir Howard Grubb F.R.S., trustees of the late Lord Farnham; a 9-in. Grubb refractor with a 6-in. Dallmeyer lens, both presented by the late Mr. James Oddie, of Ballarat; while Mr. J. H. Reynolds of Birmingham, has presented a large reflecting telescope with a mirror 30 inches in diameter. Donations amounting to over £2,500 have been received, and will form the nucleus of a Foundation and Endowment Fund. With these generous gifts as testimony to the value of Australia's co-operation in solar and astrophysical research, it is hoped that the Government will liberally equip and endow the institution so that it may rank with the great observatories of the world.

6. *Observational Work.*—(i) *Solar Research.* Observations are made daily of the intensity of the radiation received from the sun, both normal and upon a horizontal surface. An automatic record is also traced of the total energy received on a blackened area throughout the 24 hours. The standard instruments include pyranometers and pyrheliometers by Abbot and Angstrom. A beginning has been made of attempting to discover any correlation that may exist between the total energy received on the earth's surface and the rate of growth of sample plots of *pinus insignis* upon the mountain. This work is being done in conjunction with the Forestry School. Preparations are being made for the installation of a sun telescope, with which it is hoped to examine the magnetic field about sun spots, the flow of solar vapours about sun spots, and other spectroscopic problems relating to the sun. Daily observations are made of the outlines and approximate areas of sun spots. The Perth Observatory co-operates by taking a daily photograph of the solar disc for this purpose also.

(ii) *Stellar Research.* A spectroscopic examination is made of the brighter stars of the southern hemisphere with a 9-in. objective telescope. The immediate object is the determination of their absolute brightness and parallaxes. Researches should be shortly possible with the 30-in. reflector upon colour indices and temperatures of stars in the southern skies. The addition of a photoelectric photometer to the Farnham telescope enables extremely small fluctuations in the brightness of some of the brighter variables to be determined.

(iii) *Spectroscopic Researches.* Researches into the physics of the atom which have bearing upon the condition of the atoms in the atmospheres and interiors of stars are being undertaken; in particular, researches are in progress into the broadening and relative intensities of spectrum lines under varying conditions of their production. The equipment includes spectroscopes for the examination of spectra in the infra-red, violet and ultra-violet regions.

(iv) *Atmospheric Electricity.* Investigations into the variation of the potential gradient of the atmosphere are in progress and are the subject of daily record.

(v) *Ozone Content of the Atmosphere.* The amount of ozone present in the upper levels of the atmosphere is determined by a spectroscopic method. A spectroscope specially designed for this research by Dr. Dobson is employed. The photographs are reduced by means of the Moll microphotometer.

(vi) *Night Sky.* Observations are made of the luminosity of the night sky with a view to determining the intensity of radiation of various wave lengths. Auroral radiation is always present, reaching its maxima at certain times of the year.

(vii) *Meteorological Observations.*—Automatic instruments provide continuous records of the atmospheric pressure, temperature, humidity, rainfall, wind strength and direction. These are checked against the readings of standard instruments at 9 a.m., 3 p.m., and 9 p.m.

7. *Staff.*—The staff consists of a Director (at present vacant owing to the death of Dr. W. G. Duffield), five Assistants, a Research Fellow, clerical assistant, two mechanics, and two groundsmen.

### § 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. The Department administers the Gas Act 1924, the Inflammable Oils Acts, and the provisions of the Marine Board and Navigation Act relating to explosives. At first the Department 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, of which the Director of the Department is Vice-Chairman. Researches have been carried out for the Wheat Weevil Committee, and investigations have been made into the lignites at Moorlands, the conditions of safe storage of petrol in tanks, the utilization of grapes and surplus lemons, cold-water paints, calorific values of South Australian firewoods, charcoal and coke, kernel oil from peaches and apricots, and a survey of the tannin resources of South Australia. 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 Government technical 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. Eleven reports have been issued during the years 1919 to 1927, which contain a summary of the work done, together with reports of investigations, including the "Wheat Pests Problem;" "Utilization of Surplus Lemons;" "Cold Water Paint;" "Calorific Values of Different Firewoods;" "Peach and Apricot Kernel Oil;" "Tannin Resources of South Australia;" "Brown Coal Experiments;" "A Gauge for Petrol Tanks;" "The Safe Storage of Petrol in Bulk;" "A Process for Preventing Infestation of Insect Pests in Dried Fruits;" and "The Use of Aluminium Vessels for Cooking Foods," etc. The Council also distributes information forwarded by the Commonwealth Department of Markets.

### 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 1916 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 specified :—

## ESTIMATED VALUE OF PRODUCTION.—AUSTRALIA, 1916 TO 1927-28.

Year.	Agriculture.	Pastoral.	Dairy, Poultry, and Bee-farming.	Forestry and Fisheries.	Mining.	Manufacturing.(a)	Total.
	£1,000.	£1,000.	£1,000.	£1,000.	£1,000.	£1,000.	£1,000.
1916 ..	61,255	83,003	27,931	6,062	23,192	60,502	261,945
1917 ..	59,641	91,917	31,326	6,147	24,998	65,327	279,356
1918 ..	59,036	96,573	33,738	6,890	25,462	70,087	291,786
1919-20 ..	72,202	111,594	38,830	9,670	18,982	92,330	343,608
1920-21 ..	112,801	90,573	52,613	11,136	21,613	101,778	390,514
1921-22 ..	81,890	74,982	44,417	10,519	19,977	112,517	344,302
1922-23 ..	84,183	97,029	43,542	11,124	20,316	123,188	379,382
1923-24 ..	81,166	110,075	42,112	11,866	22,232	132,732	400,183
1924-25 ..	107,163	126,773	45,190	12,357	24,646	137,977	454,106
1925-26 ..	89,267	113,327	48,278	12,784	24,592	143,256	431,504
1926-27 ..	98,295	111,718	46,980	12,790	24,007	153,634	447,424
1927-28 ..	84,256	125,063	50,261	12,181	22,983	158,562	453,311

(a) These amounts differ from those given in Chapter XXII., Manufacturing Industry, which include certain products included under 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 might have the effect of making an equal production to that of a time when prices were lower, and show an increase which would, of course, be misleading. For example, the annual figures relating to 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. production price index-numbers are given; it is assumed that these index-numbers reflect, with substantial accuracy, variations in 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 1927-28.

Year.	I.		II.	III.	IV.
	Estimated Value of Production.		Relative Value of Production per Head (Year 1911 = 1,000).	Production Price Index-Numbers (Year 1911 = 1,000. (a))	Estimated Relative Productive Activity Index-Numbers (Year 1911 = 1,000. (a))
	(i) Total (000 omitted)	(ii) Per Head of Population.			
	£	£			
1871 .. .. .	46,700	27.46	667	1,229	543
1881 .. .. .	71,116	30.83	749	1,121	668
1891 .. .. .	96,087	29.65	720	945	762
1896 .. .. .	92,605	26.06	633	922	686
1901 .. .. .	114,585	29.96	728	974	747
1906 .. .. .	147,043	35.94	873	948	921
1911 .. .. .	188,359	41.18	1,000	1,000	1,000
1916 .. .. .	261,945	53.26	1,293	1,412	916
1922-23 .. .. .	379,382	67.35	1,636	1,774	922
1923-24 .. .. .	400,183	69.60	1,690	1,925	878
1924-25 .. .. .	454,106	77.31	1,877	1,930	973
1925-26 .. .. .	431,504	72.01	1,748	1,880	930
1926-27 .. .. .	447,424	73.22	1,778	1,835	969
1927-28 .. .. .	453,311	72.71	1,766	1,954	904

(a) Production Price Index-numbers are not available prior to 1908, and Wholesale Price Index numbers are substituted therefor.

It should be noted, however, that the index-numbers from the year 1911 onwards in Columns III. and IV., are not comparable with those appearing in the same table shown in previous Year Books. This is due to an alteration in the method of computing the index-number for Production in Column III. and consequently the index-number in Column IV. has been adjusted accordingly. Fuller particulars of the change in method may be found in Production Bulletin No. 22.

The total production from all recorded industries during 1927-28 was £453,311,000, equal to an average of £72.71 per inhabitant.

The index of productive activity given above is based on total population and is that most usually employed for such a purpose. As a measure of the efficiency of the whole community to provide with its existing organization the commodities produced in the industries concerned the index is correct, but it does not necessarily indicate the variation in efficiency of the workers engaged in those industries, since these workers may not represent a constant proportion of the total population. As a fact this proportion is diminishing, and if the index were based on persons engaged in the industries rather than on total population it would be increased from 1 to 6 per cent. in the later years of the period, and the index for 1927-28 instead of falling short of the 1911 standard would be in excess of it by more than 1 per cent. This aspect of the question is at present the subject of further investigation.

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.

**§ 10. Film Censorship.**

1. **General.**—(i) *Legislation.* The censorship of films derives its authority from section 52 (g) of the Customs Act, which is the section giving authority to prohibit the importation of goods. Under this section proclamations have been issued prohibiting the importation of films and relative advertising matter except under certain conditions and with the consent of the Minister. The conditions governing importation are contained in regulations issued under the Customs Act and provide, *inter alia*, that no film shall be registered which in the opinion of the censor is (a) blasphemous, indecent or obscene; (b) likely to be injurious to morality, or to encourage or incite to crime; (c) likely to be offensive to the people of any friendly nation; (d) likely to be offensive to the people of the British Empire; or (e) depicts any matter the exhibition of which is undesirable in the public interests.

The regulations governing the exportation of Australian-made films are similar, with the addition that no film may be exported which in the opinion of the Censor is likely to prove detrimental or prejudicial to the Commonwealth of Australia.

The Censorship consists of a Censorship Board of three persons and an Appeal Board of the same number, the headquarters of both Boards being in Sydney. Importers have the right of appeal to the Minister.

(ii) *Imports of Films.* Imported films dealt with by the Censorship for the years 1927 and 1928 were as follows :—

**IMPORTS OF FILMS, 1927 AND 1928.**

Heading.	1927.		1928.	
	Films No.	Feet (one copy).	Films No.	Feet (one copy).
Passed without eliminations .. .. .	1,725	3,581,026	1,492	3,029,898
Passed after eliminations .. .. .	336	2,076,515	420	2,359,071
Rejected in first instance .. .. .	90	539,797	58	334,347
<b>Total .. .. .</b>	<b>2,151</b>	<b>6,197,338</b>	<b>1,970</b>	<b>5,723,316</b>

The countries of origin of the abovementioned films will be found in the following table :—

**IMPORTS OF FILMS.—COUNTRY OF ORIGIN, 1927 AND 1928.**

Country of Origin.	1927.		1928.	
	Films No.	Feet (one copy).	Films No.	Feet (one copy).
United States of America .. .. .	1,681	5,119,241	1,366	4,148,460
United Kingdom .. .. .	271	492,869	369	914,609
Other Countries .. .. .	199	585,228	235	660,247
<b>Total .. .. .</b>	<b>2,151</b>	<b>6,197,338</b>	<b>1,970</b>	<b>5,723,316</b>

(iii) *Export of Films.* The regulations governing the export of films came into force on the 16th September, 1926. The number of films exported for the year 1928 and their length were 546, and 553,701 feet (one copy) respectively, and were consigned to New Zealand, England, Territory of New Guinea, United States of America, Straits Settlements and Pacific Islands.

(iv) *Royal Commission.* The Royal Commission on the Moving Picture Industry in Australia presented its report to Parliament on 17th March, 1928. Over 250 witnesses were examined in the course of the Commission's inquiries, and the report embodies numerous recommendations relating to (a) Film censorship; (b) Distribution of films; (c) Exhibitors and the exhibition of films; (d) Film production in Australia; (e) The quota system; (f) The film and native races; (g) Films for children; (h) Educational films; (i) Taxation; (j) British films; (k) Customs duty; and (l) Customs and State legislation. The subject-matter of the recommendations is, however, too voluminous to be dealt with in this work. A number of recommendations have been put into operation, but the majority are awaiting legislation by the States to enable the Commonwealth to control the motion picture industry.

## § 11. Marketing of Australian Commodities.

1. **Introduction.**—Particulars in respect of the various Commonwealth Acts and Regulations, together with the operations of the Boards or Councils appointed to assist or control the marketing of Australian commodities, are set out below :—

2. **Dairy Produce.**—(i) *Dairy Produce Export Control Act 1924.* This Act, which was introduced at the request of the dairying industry, was passed by the Commonwealth Parliament with the object of organizing the marketing overseas of Australian dairy produce. Regulations were approved providing for a poll of producers to enable the Act to operate and for the election of members to the Dairy Produce Control Board. This Board, consisting of thirteen members, of whom nine are producers' representatives, was appointed under the Act to supervise the export, and the sale and distribution after export, of Australian dairy produce. In conjunction with its London Agency the Board has improved organization on overseas markets, ensured continuity of supply, regulated shipments, stabilized overseas prices, obtained reductions in overseas freight and insurance, and participated in an advertising campaign in the United Kingdom. Provision was made for the issue, under certain conditions, of licences to exporters to permit of butter and cheese being exported from Australia.

(ii) *Dairy Produce Export Charges Acts 1924 and 1929.* The Act of 1924 provided for the imposition of a levy on all butter and cheese exported from the Commonwealth to cover administrative expenses of the Board, and for advertising and other purposes. Regulations were issued to lower the rate of levy fixed upon the export of butter and cheese.

The Act of 1929 provided for the exemption of butter or cheese from the levy imposed after recommendation by the Board.

3. **Dried Fruits.**—(i) *Dried Fruits Export Control Act 1924.* This act was passed by the Commonwealth Parliament at the request of the dried fruit industry to organize the oversea marketing of Australian dried fruit. Regulations providing for a poll of dried fruit growers were issued to enable the Act to operate and to hold an election of members to the Dried Fruits Control Board. The Board, composed of seven members, including four growers' representatives, was appointed to control the export, and the sale and distribution after export, of Australian sultanas, currants and lexias. In conjunction with its London agency the Board has improved the oversea marketing and increased the demand for Australian dried fruits. Its system of appraisalment has resulted in more satisfactory realizations, and its methods of ensuring continuity of supply, regulating shipments, advertising and securing reductions in freight and insurance have benefited the industry considerably. Regulations were framed providing for the issue, under certain conditions, of licences to exporters to enable Australian sultanas, currants and lexias to be shipped overseas.

(ii) *Dried Fruits Export Charges Acts 1924 and 1927.* The Act of 1924 provided for the imposition of a levy on all sultanas, currants and lexias exported from the Commonwealth for the purpose of defraying the administrative expenses of the Board and the cost of advertising, &c. Regulations were issued to lower the rate of levy fixed upon the export of currants, sultanas and lexias.

Under the 1927 Act provision was made for the exemption of sultanas, currants or lexias from the levy imposed after recommendation by the Board.

4. *Canned Fruits.*—(i) *Canned Fruits Export Control Act 1926.* This legislation was introduced at the request of canners and representative organizations of fruit growers, and provides for the establishment of a Canned Fruits Control Board. The Act could not come into operation until a poll of canners was taken to determine whether a majority favoured the system of control provided under the Act. The poll was accordingly taken on 29th November, 1926, and a substantial majority of votes was cast in favour of the Act.

The Board is composed of three members—one representative of proprietary and privately-owned canneries, one representative of co-operative and State-controlled canneries, and one representative appointed by the Commonwealth Government. The terms and conditions of office are similar to those adopted in connexion with the Dried Fruits and Dairy Produce Boards. The Board controls the export of canned apricots, peaches, and pears only, but provision is made in the Act for the inclusion of pineapples or any other variety of canned fruits should the canners concerned at any time desire it. No canned fruits to which the Act applies are permitted to be exported from Australia unless under a licence issued to the exporter by the Department of Markets and Transport, subject to conditions recommended by the Board. The system of orderly marketing adopted by the Board, supported by advertising, had resulted in the satisfactory disposal of the annual exportable surplus of canned fruits during the last three years, and has stabilized prices, widened distribution, and generally increased the confidence of overseas distributors in Australian canned fruits.

(ii) *Canned Fruits Export Charges Act 1926 and 1929.* The canning industry finances the Board by means of a levy imposed on all canned fruits exported. Under the Act of 1926 a levy not exceeding one-fourth of one penny per 30-oz. tin (3d. per dozen tins) may be imposed. The Board has determined that a levy of 1d. per dozen tins on exports will produce sufficient revenue for its present requirements, and Regulations providing for that rate were adopted. The charge was imposed as from 14th February, 1927.

The Act of 1929 provides for the exemption of canned fruits from the levy after recommendation by the Board.

5. *Fresh Fruits.*—(i) *Fresh Fruits Overseas Marketing Act 1927.* This Act was passed by the Commonwealth Government at the request of the fresh fruit industry, to organize the overseas marketing of Australian fresh fruit. This Act, which is dependent for operation upon a poll of fresh fruit growers, does not operate in view of the adverse result of the poll.

(ii) *Fresh Fruits Export Charges Act 1927.* This Act was subsidiary to the Fresh Fruits Overseas Marketing Act, and does not operate in view of the adverse decision at the poll.

6. *Pearl-shell.*—(i) *Pearl-shell Overseas Marketing Act 1927.* This measure provides for the control of the export and sale overseas of pearl-shell produced in the Commonwealth. The Act provides for taking a poll of producers to decide whether it shall be brought into operation. Should the result of the poll be favourable, a Pearl-shell Overseas Marketing Board will be appointed consisting of one representative elected by the producers of Western Australia, one representative elected by the producers of Queensland and the Territory of North Australia, and a representative of the

Commonwealth Government, appointed by the Governor-General. The Act provides for the prohibition of the export of pearl-shell except by licence issued by the Minister subject to such conditions and restrictions as are prescribed after recommendation to the Minister by the abovementioned Board. The Board may accept control of any pearl-shell placed under its control, and will have full authority to make arrangements for its handling, marketing, storage, shipment, sale and all other matters necessary in connexion with its disposal.

Regulations issued under the Act provide for the preparation of a roll of producers, for taking the poll, and for conducting the election of members of the Pearl-shell Overseas Marketing Board.

(ii) *Pearl-Shell Export Charges Act 1927.* This Act provides for a levy on pearl-shell exported from Australia at the rate of £3 per ton, but this rate may be reduced by regulation. The funds collected as a result of this levy will be used in the payment of the administrative and other expenses of the Pearl-Shell Overseas Marketing Board, and any surplus will be invested in securities of, or guaranteed by, the Commonwealth or any State Government.

7. *Wine.*—(i) *Wine Overseas Marketing Act 1929.* This Act was introduced at the request of the viticultural interests in Australia, and was passed by the Commonwealth Parliament with the object of placing the marketing overseas of Australia's surplus wine on an organized basis. The Act provides for the establishment of a Wine Overseas Marketing Board, comprising eight members, including one representative appointed by the Commonwealth Government. The Act could not come into operation until a poll of owners of wineries and distilleries was taken and a majority of votes cast in favour of the legislation. The poll was held on 28th May, 1929, and the Act was approved by a substantial majority. The Board was appointed to supervise the export, and sale and distribution after export of Australian wine. Its first meeting was held on 21st June, 1929.

Regulations issued under the Act provide for (a) the preparation of rolls of voters for the poll and election of members to the Board, and (b) the taking of the poll and election of members to the Board.

(ii) *Wine Grapes Charges Act 1929.* This Act provides for the imposition of a levy not exceeding 5s. per ton on all grapes used in the Commonwealth for the manufacture of wine or spirit. The proceeds of the levy are to be used to defray the administrative and other expenses of the Wine Overseas Marketing Board. Provision is made in the Act for such exemptions from the levy as may be recommended by the Board.

8. *Export Guarantee Act 1924-25.*—(i) *General.* Under this measure the Minister may, by *Gazette* notice, declare that the Act shall apply to any particular produce, the export or marketing of which is controlled by a Board. The Treasurer may guarantee to the Commonwealth Bank or any other prescribed Bank the amount of any balance made by the Bank to a Board in connexion with the financing of any scheme for the export and marketing of the produce under the control of the Board. Any such guarantee shall not be more than 80 per cent. of the market value of the produce, which market value shall be determined by the Minister. The Treasurer may revoke the guarantee if it appears to him that its conditions have not been observed. Under this Act the Minister may also, upon the receipt of a report and recommendation from the Commonwealth Board of Trade, grant assistance :—

(a) in relation to the export and marketing of primary produce ;

(b) to the growers of primary produce used or to be used in the manufacture or preparation of goods of a kind suitable for export from the Commonwealth.

The sum of £500,000 has been appropriated for granting such assistance.

(ii) *Assistance granted to 30th June, 1929.* Assistance under the *Export Guarantee Act 1924-25* granted to 30th June, 1929, amounted to £480,003.