CHAPTER XXI.
MINERAL INDUSTRY.
§ 1. The Mineral Wealth of Australia.

1. **Place of Mining in Australian Development.**—The value of production from the mineral industry is now considerably less than that returned by the agricultural or the pastoral industry, nevertheless it was the discovery of gold in payable quantities that first attracted population to Australia, and thus laid the foundation of its nationhood.

2. **Extent of Mineral Wealth.**—The extent of the total mineral wealth of Australia cannot yet be regarded as completely ascertained, as large areas of country still await systematic prospecting. More detailed allusion to this matter will be found in preceding Official Year Books.

3. **Quantity and Value of Production during 1929.**—The quantities (where available) and the values of the principal minerals produced in each State, and in Australia as a whole during the year 1929, are given in the tables immediately following. It must be clearly understood that the figures quoted in these tables refer to the quantities and values of the various minerals in the form in which they were reported to the States Mines Departments, and represent amounts which the Mines Departments consider may fairly be taken as accruing to the mineral industry as such. They are not to be regarded as representative of Australia's potentiality as a producer of *metals*, this matter being dealt with separately in § 17 hereinafter. It may be explained, therefore, that the item pig-iron in New South Wales refers only to metal produced from locally-raised ore and so reported to the Mines Department. New South Wales is, of course, in normal times, a large producer of iron and steel from ironstone mined in South Australia. As the table shows, the latter State receives credit for this ironstone in its mineral returns, but the iron and steel produced therefrom cannot be assigned to the mineral industry of New South Wales. Similarly lead, silver-lead, and zinc are credited in the form reported to the State of origin—chiefly New South Wales—although the actual metal extraction is carried out to a large extent elsewhere.

MINERAL PRODUCTION.—QUANTITIES, 1929.

Minerals.	Unit.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T. (c)	Australia.
Antimony ..	ton	25	2	..	..	..	..	..	27
Arsenic	,,	250	..	..	..	..	..	..	250
Asbestos ..	,,	..	..	..	1	255	..	..	256
Barytes ..	,,	152	..	..	1,969	..	10	..	2,131
Bismuth ..	cwt.	65	..	2	..	..	..	..	67
Brown Coal ..	ton	..	1,741,176	..	..	..	..	..	1,741,176
Coal	,,	7,617,736	703,828	1,368,745	..	544,719	130,291	..	10,365,319
Copper (ingot, matte, etc.) ..	,,	176	..	3,748	..	..	8,689	..	12,613
Copper ore ..	,,	..	10	..	277	129	..	..	416
Diatomaceous earth	,,	1,107	..	..	..	..	..	..	1,107
Gold	fine oz.	7,496	26,275	9,476	1,009	377,176	5,597	130	427,159
Gypsum ..	ton	10,418	13,195	..	95,613	5,289	..	..	124,515
Iron (pig) (*b*) ..	,,	3,911	..	..	..	..	..	..	3,911
Iron oxide ..	,,	4,753	..	..	..	..	..	..	4,753
Ironstone ..	,,	..	..	1,236	847,813	..	..	..	849,049
Kaolin	,,	4,225	1,717	..	140	..	..	..	6,082
Lead (*b*).. ..	,,	..	..	389	..	..	5,983	..	6,372
Lead and silver-lead ore, concentrates, etc. ..	,,	285,031	..	..	6	444	..	11	285,492
Limestone flux ..	,,	69,243	..	67,219	22,382	..	68,176	..	227,020
Magnesite ..	,,	8,953	27	..	135	..	..	..	9,115
Manganese ore ..	,,	233	..	..	..	80	..	..	313
Molybdenite ..	cwt.	10	..	..	..	..	..	..	10
Osmiridium ..	oz.	..	..	..	..	..	1,360	..	1,360
Phosphate ..	ton	70	..	..	..	..	..	..	70
Pigments ..	,,	699	..	..	58	..	..	..	757
Platinum ..	oz.	128	..	..	..	..	..	..	128
Salt	ton	..	(*a*)	..	76,457	..	..	..	76,457
Sapphires ..	oz.	65	..	(*d*)	..	..	..	..	65
Shale (oil) ..	ton	..	..	..	..	..	4,299	..	4,299
Silver	fine oz.	4,471	909	52,663	1,206	49,834	864,354	..	973,437
Tin and tin ore ..	ton	934	25	988	..	77	640	59	2,723
Wolfram ..	,,	14	..	20	..	..	152	..	186
Zinc and concentrates.. ..	,,	231,237	..	..	..	..	6,997	..	238,234

(*a*) Not available for publication. (*b*) See letterpress preceding this table.
(*c*) Year ended 30th June. (*d*) Quantity not stated.

The values of the minerals raised in each State during 1929 are given in the following table:—

MINERAL PRODUCTION.—VALUE, 1929.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T. (a)	Australia.
	£	£	£	£	£	£	£	£
Antimony ..	1,877	23	..	..	..	..	..	1,900
Arsenic	6,010	..	..	..	..	..	..	6,010
Asbestos ..	..	..	..	40	..	..	..	40
Barytes ..	264	..	..	5,907	8	24	..	6,203
Bismuth ..	2,013	..	48	..	14,681	..	..	16,742
Brown Coal ..	..	178,052	..	..	..	..	..	178,052
Coal	5,952,720	813,370	1,199,599	..	426,706	105,877	..	8,498,272
Copper (ingot and matte) ..	14,183	..	294,188	..	..	740,985	..	1,049,356
Copper ore ..	..	30	..	22,982	2,778	..	..	25,790
Diamonds ..	148	..	..	..	..	..	..	148
Diatomaceous earth	2,767	..	..	..	..	..	..	2,767
Gold	31,842	111,609	40,250	4,289	1,602,142	23,772	553	1,814,457
Gypsum ..	5,916	6,000	..	83,661	7,676	..	..	103,253
Iron (pig) (b) ..	17,600	..	..	..	..	..	..	17,600
Iron Oxide ..	2,757	..	..	..	..	..	..	2,757
Ironstone ..	..	..	974	974,085	..	..	..	975,959
Kaolin	6,885	2,330	..	560	..	..	..	9,775
Lead (b) ..	..	..	9,015	..	..	138,793	..	147,808
Lead and silver-lead ore, concentrates, etc. ..	3,032,349	..	..	127	7,016	..	79	3,039,571
Limestone flux ..	25,966	..	29,940	8,393	..	66,597	..	130,896
Magnesite ..	14,161	101	..	270	..	..	..	14,532
Manganese ore ..	946	..	..	..	230	..	..	1,176
Molybdenite ..	46	..	..	..	..	..	..	46
Opal	6,071	..	600	11,056	..	..	..	17,727
Osmiridium ..	..	..	..	..	..	30,624	..	30,624
Phosphate ..	140	..	..	..	..	..	..	140
Pigments ..	925	..	..	450	..	..	..	1,375
Platinum ..	1,352	..	..	..	..	..	..	1,352
Salt	..	(a)	..	172,028	..	..	..	172,028
Sapphires ..	450	..	4,810	..	..	..	..	5,260
Shale (oil) ..	..	..	..	..	..	2,982	..	2,982
Silver	392	100	5,792	131	5,509	94,560	..	106,484
Tin and tin ore ..	191,199	3,545	114,518	..	13,432	130,014	6,958	459,666
Wolfram ..	1,402	..	1,323	..	..	18,358	..	21,083
Zinc & concentrates	802,693	..	..	..	..	185,964	..	988,657
Unenumerated ..	(c) 32,090	923	6,122	(e) 13,924	7,674	(f) 22,649	g10,755	94,137
Total ..	10,155,164	1,116,083	1,707,179	1,298,803	2,087,852	1,561,199	18,345	17,944,625

(a) Not available for publication. (b) See letterpress above table. (c) Includes dolomite £9,488, silica £6,559, and fireclay £12,991. (d) Year ended 30th June. (e) Includes fireclay £11,620. (f) Includes cadmium £7,839, and nickel £14,765. (g) Mica, £10,548, Central Australia.

It may be pointed out in connexion with the figures given in the above table that the totals are exclusive of returns relating to certain commodities, such as stone for building and industrial uses, sand, gravel, brick and pottery clays, lime, cement, and slates, which might rightly be included under the generic term "mineral." Valuations of the production of some of these may be obtained from the reports of the various Mines Departments, but in regard to others it is impossible to obtain adequate information. In certain instances, moreover, the published information is of little value. By restricting the comparison to items in connexion with which properly comparable information can be obtained for each State, it is believed that a satisfactory estimate of the progress of the mineral industry can be more readily obtained. The items excluded from the total for New South Wales in 1929 consist of—lime, £112,667; building stone, £294,366; Portland cement, £1,780,021; coke, £757,580; road materials, £1,031,957; *shell grit*, £1,336; *mineral water*, £139; sulphur and sulphuric acid £59,482; and brick and pottery clays, £387,956. Carbide, £53,841, and cement, £175,613, have been excluded from the Tasmanian figures.

4. Value of Production, 1925 to 1929.—The value of the mineral production in each State during the five years 1925 to 1929 is given in the table hereunder :—

MINERAL PRODUCTION.—VALUE, 1925 TO 1929.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Australia.
	£	£	£	£	£	£	£	£
1925 ..	16,657,585	1,000,763	2,012,456	1,028,396	2,393,890	1,477,944	21,715	24,592,749
1926 ..	16,319,265	1,082,006	1,608,661	1,032,353	2,371,864	1,573,997	19,085	24,007,231
1927 ..	15,449.702	1,176,378	1,645,111	1,188,522	2,202,437	1,301,312	19,609	22,983,071
1928 ..	12,600,668	1,098,691	1,386.016	1,032.952	2,128.109	1,335.571	14,627	19.596,634
1929 ..	10,155,164	1,116,083	1,707 179	1,298,803	2,087,852	1,561,199	18,345	17,944,625

For New South Wales the value of production in 1929 was over £6,500,000 lower than that for 1925, which was the highest ever recorded. The falling-off in 1929 was largely due to the decreased returns from coal, gold, iron, and zinc.

The increase in the Victorian returns for 1929 was chiefly due to a rise in the production of coal.

In Queensland the rise in production in 1929 was due to increases in the yields from coal, copper, and cobalt. The returns for South Australia in 1929 showed a rise of nearly £266,000 as compared with the figures for 1928, the increase being mainly due to the greater return from ironstone, which showed a value of £975,000 as compared with £711,000 in 1928. In Western Australia the returns for 1929 show a decrease of over £40,000 on the total for 1928, the fall being due chiefly to the decline in the return from gold amounting to nearly £69,000, although this was to some extent counteracted by increases in the case of asbestos and coal amounting to £14,000 and £7,000 respectively. The chief items contributing to the increased return in Tasmania for the year 1929 were copper, lead, and silver, the value of the yield from which rose by £296,000, £32,000, and £16,000 respectively. On the other hand, however, a fall of nearly £129,000 was recorded in the value of output from tin. It is stated that the decline in the Northern Territory returns for recent years is due in some measure to the fact that some of those engaged in mining forsook it to take up more profitable work in other pursuits. The number of Chinese miners in the Territory has steadily decreased and those remaining are all old men. An increase of about £6,600 in the value of mica produced was responsible for the small rise in total production in 1929.

5. Total Production to end of 1929.—In the next table will be found the estimated value of the total mineral production in each State up to the end of 1929. The figures given in the table are also exclusive of the same items referred to in connexion with the preceding table. Thus the total for New South Wales falls short by nearly £42,000,000 of that published by the State Department of Mines, the principal items excluded being coke, £13,756,000 ; cement, £17,347,000 ; lime, £1,596,000 ; and considerable values for marble, slate, granite, chert, gravels, etc., which the Department now includes in the returns for quarries.

MINERAL PRODUCTION.—VALUE TO END OF 1929.

Minerals.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter. (a)	Australia.
	£	£	£	£	£	£	£	Million. £
Gold ..	63,867,750	303,496,261	85,889,110	1,636,550	163,525,220	8,968,444	2,283,715	630
Silver and lead ..	117,915,178	265,005	4,179,892	381,652	2,269,467	8,897,407	64,059	134
Copper ..	15,570,634	216,686	26,457,188	33,140,636	1,808,726	19,773,142	232,852	97
Iron ..	7,734,483	15,641	473,759	7,921,684	36,722	52,110	..	16
Tin ..	14,388,719	976,662	11,069,768	..	1,589,666	17,169,696	621,180	46
Wolfram	273,589	11,885	1,064,072	301	1,441	224,155	216,859	2
Zinc ..	22,892,852	..	13,460	15,993	5,437	976,755	..	24
Coal ..	184,388,879	12,188,022	18,499,868	..	6,207,554	1,747,149	..	223
Other ..	7,945,549	865,535	2,966,518	4,483,459	218,157	1,735,433	54,735	18
Total ..	434,977,633	318,035,697	150,613,635	47,580,275	175,662,390	59,544,291	3,473,400	1,190

(a) To 30th June, 1929.

The "other" minerals in New South Wales include alunite, £209,000; antimony, £357,000; bismuth, £236,000; chrome, £122,000; diamonds, £145,000; molybdenite, £212,000; opal, £1,592,000; scheelite, £193,000; and oil shale £2,691,000. In the Victorian returns antimony ore was responsible for £612,000. The value for coal in this State includes £1,253,000 for brown coal. Included in "other" in the Queensland production were opal, £185,000; gems, £622,000; bismuth, £118,000; cobalt, £154,000; molybdenite, £599,000; and limestone flux, £919,000. The chief items in South Australian "other" minerals were salt, £2,642,000; limestone flux, £525,000; gypsum, £708,000; phosphate, £131,000; and opal, £124,000. In the Tasmanian returns limestone flux was responsible for £860,000, osmiridium for £555,000, scheelite for £112,000, and iron pyrites for £94,000.

6. Decline in the Metalliferous Industry.—On the 1st December, 1921, a Select Committee was appointed by the Legislative Assembly of New South Wales to inquire into and report upon the serious decline in the metalliferous industry. The result of the Committee's investigations was published in a Report issued in 1922, wherein the chief contributing causes of the decline in New South Wales and in Australia generally were summarized as follows:—(1) High cost of production: (2) Deterioration in ore values in existing mines: (3) Inadequate machinery: (4) High freights: (5) High treatment charges: (6) Imperfect labour conditions in mines: (7) Lack of new payable discoveries: (8) Lack of efficiently-supported prospecting.

7. Geophysical Methods for Detection of Ore Deposits.—The Imperial Geophysical Experimental Survey which was set up early in 1928, to carry out a two years' programme of work in Australia, completed its field operations during the first few months of the year 1930. The purpose of the Survey was to test various methods that had been developed for prospecting by geophysical means, and if possible, to demonstrate their value under conditions that are common throughout the Empire. Gravimetrical, electrical, magnetometrical and seismic methods were investigated. The field work was carried out in Gelliondale, Cooper's Creek and the Mallee (Victoria), Leadville, Gulgong, Captain's Flat (New South Wales), Chillagoe (Queensland), Moonta, Port Lincoln (South Australia), Northampton (Western Australia), Copper-Nickel, Renison Bell (Tasmania). The findings of the Survey were subsequently tested by bores and shafts put down by the various State Departments of Mines and in quite a number of cases previously unknown ore bodies were found. The complete report of the work will be published early in 1931 by the Cambridge University Press. The Survey was financed by equal contributions of £16,000 each made available by the (British) Empire Marketing Board and the Commonwealth Government, the latter's contribution being appropriated under the *Geophysical Survey Act* 1928.

§ 2. Gold.

1. Discovery in Various States.—The discovery of gold in payable quantities was an epoch-making event in Australian history, for, as one writer aptly phrases it, this event "precipitated Australia into nationhood." A more or less detailed account of the finding of gold in the various States appears under this section in Official Year Books Nos. 1 to 4, but considerations of space preclude its repetition in the present issue.

2. Production at Various Periods.—In the following table will be found the value of the gold raised in the several States and in Australia as a whole during each of the six decennial periods from 1851 to 1920, and in single years from 1921 to 1929, from the dates when payable discoveries were first reported. Owing to defective information in the earlier years the figures fall considerably short of the actual totals, for during the first stages of mining development, large quantities of gold were taken out of Australia by successful diggers, who preferred to keep the amount of their wealth secret.

GOLD.—VALUE OF PRODUCTION, 1851 TO 1929.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Australia.
	£	£	£	£	£	£	£	£
1851–60..	11,530,583	93,337,052	14,565	..	..	788,564	..	105,670,764
1861–70..	13,676,103	65,106,264	2,076,494	..	..	12,174	..	80,871,035
1871–80..	8,576,654	40,625,188	10,733,048	579,068	..	700,048	79,022	61,293,028
1881–90..	4,306,541	28,413,792	13,843,081	246,668	178,473	1,514,921	713,345	49,216,821
1891–1900	10,332,120	29,904,152	23,989,359	219,931	22,308,524	2,338,336	906,988	89,999,410
1901–10..	9,569,492	30,136,686	23,412,395	310,080	75,540,415	2,566,170	473,871	142,009,109
1911–20..	4,988,377	13,354,217	9,876,677	238,808	46,808,351	873,302	100,652	76,240,384
1921 ..	271,302	554,087	214,060	13,933	2,935,693	28,311	1,299	4,018,685
1922 ..	118,359	501,515	378,154	4,693	2,525,811	16,101	540	3,545,173
1923 ..	83,325	422,105	392,563	4,199	2,232,179	16,300	743	3,151,414
1924 ..	86,905	312,398	459,716	4,093	2,255,932	21,516	3,270	3,143,830
1925 ..	82,498	200,901	197,118	3,535	1,874,320	14,969	1,939	2,375,280
1926 ..	82,551	208,471	43,914	3,219	1,857,716	17,936	594	2,214,401
1927 ..	76,595	163,699	161,321	1,776	1,734,571	20,046	468	2,159,076
1928 ..	54,503	144,068	56,395	2,258	1,671,093	15,306	431	1,944,054
1929 ..	31,842	111,609	40,250	4,289	1,602,142	23,772	553	1,814,457
Total ..	63,867,750	303,496,204	85,889,110	1,636,550	163,525,220	8,968,372	2,283,715	629,666,921

In the figures quoted above, allowance has been made in the values for the years in which gold was at a premium.

The value of the gold yield in 1929 was the lowest recorded since the discovery of the precious metal in 1851.

The amount of gold raised in Australia in any one year attained its maximum in 1903, in which year Western Australia also reached its highest point. For the other States the years in which the greatest yields were obtained were as follows:—New South Wales, 1852; Victoria, 1856; Queensland, 1900; South Australia, 1894; and Tasmania, 1899.

The following table shows the quantity in fine ounces of gold raised in each State and in Australia during each of the last five years. A separate line is added showing the the total production in thousands of fine ounces since 1851:—

GOLD.—QUANTITY PRODUCED, 1925 TO 1929, AND TOTAL 1851–1929.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Nor. Ter. (a)	Australia.
	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs	Fine ozs.	Fine ozs.
1925 ..	19,422	47,296	46,406	832	441,252	3,524	456	559,188
1926 ..	19,435	49,078	10,339	758	437,343	4,222	140	521,315
1927 ..	18,032	38,538	37,979	418	408,353	4,861	110	508,291
1928 ..	12,831	33,917	13,277	532	393,408	3,603	101	457,669
1929 ..	7,496	26,275	9,476	1,009	377,176	5,597	130	427,159
Total(b) 1851–1929	14,989	71,325	20,127	383	37,887	2,105	537	147,353

(a) Year ended 30th June. (b) '000 omitted in each case.

Unfortunately, the general decline which has characterized Australia's gold output for a number of years has not been checked by new finds of importance, and unless more economic methods of exploiting existing low-grade deposits can be evolved the depression is likely to continue. At the present time, various monied interests are investigating the possibilities of developing these deposits in some of the States, while a considerable amount of prospecting is being carried on not only on old goldfields but in new areas.

3. Changes in Relative Positions of States as Gold Producers.—A glance at the figures in the table showing the value of gold raised will sufficiently explain the enormous increase in the population of Victoria during the period 1851 to 1861, when an average of over 40,000 persons reached the State each year. With the exception of the year 1889, when its output was surpassed by that of Queensland, Victoria maintained its position as the chief gold-producer for a period of forty-seven years, or up to 1898, when its production was outstripped by that of Western Australia, the latter State from this year onward contributing practically half, and so far as recent years are concerned more than half the entire yield of Australia. New South Wales occupied the second place on the list until 1874, when Queensland returns exceeded those of the parent State, and, with the exception of the years 1921 and 1926, maintained this pre-eminence to the end of

1929. South Australia has occupied the position of lowest contributor to the total gold yield since the year 1871. Taking the average of the last ten years, the relative position of each State in regard to the gold production of Australia was as follows :—

GOLD.—RELATIVE POSITION OF STATES AS PRODUCERS, 1920 TO 1929.

State.	Annual Average of Gold Production, 1920 to 1929.	Percentage on Total.	State.	Annual Average of Gold Production, 1920 to 1929.	Percentage on Total.
	ozs.			ozs.	
Total	631,896	100·0	New South Wales	24,004	3.8
Western Australia..	475,690	75·3	Tasmania ..	4,513	0.7
Victoria	72,185	11·4	South Australia ..	1,070	0.2
Queensland ..	54,123	8·6	Northern Territory	311	..

4. Methods of Gold Mining adopted in Each State.—Allusion to the methods of gold mining adopted in each State, and the production from the chief centres therein will be found in preceding issues of the Official Year Book, but considerations of space preclude reference to these matters in the present issue. (See Year Book No. 4.)

5. Remarkable Masses of Gold.—Allusion has already been made in preceding Year Books to the discovery of " nuggets " and other remarkable masses of gold, but it is not proposed to repeat this information in the present issue. (See Year Book No. 4, page 500.)

6. Modes of Occurrence of Gold in Australia.—This subject has been alluded to at some length in earlier issues of the Year Book, but considerations of space will not permit of repetition in the present issue. (See No. 4, page 500.)

7. Place of Australia in the World's Gold Production.—In the table given below will be found the estimated value of the world's gold production, and the share of Australia therein during the five years 1925 to 1929. The figures given in the table have been compiled chiefly from returns obtained directly by the Commonwealth Bureau of Census and Statistics from the gold-producing countries of the world.

GOLD.—WORLD'S PRODUCTION, 1925 TO 1929.

Year.	World's Production of Gold.	Gold Produced in Australia.	Percentage of Australia on Total.
	£	£	%
1925	81,701,000	2,375,000	2.9
1926	82,684,000	2,214,000	2.7
1927	82,567,000	2,159,000	2.6
1928	83,829,000	1,944,000	2.3
1929	83,287,000	1,814,000	2.2

The value of the gold yield in the ten chief producing countries during each of the five years 1925 to 1929 is given in the table hereunder. Particulars of the quantity and value of the gold production for all countries for the ten years 1920–29 will be found in the Bulletin of Australian Production issued by this Bureau.

GOLD.—PRODUCTION, CHIEF COUNTRIES, 1925 TO 1929.

Country.	1925.	1926.	1927.	1928.	1929.
	£	£	£	£	£
Union of South Africa	40,768,000	42,285,000	42,998,000	43,982,000	44,229,000
United States ..	9,854,000	9,509,000	8,993,000	9,110,000	8,736,000
Canada	7,373,000	7,451,000	7,870,000	8,031,000	8,191,000
Russia	4,507,000	4,214,000	4,507,000	5,097,000	4,248,000
Mexico	3,351,000	3,282,000	3,081,000	2,970,000	2,769,000
Rhodesia	2,470,000	2,521,000	2,470,000	2,447,000	2,382,000
Australia	2,375,000	2,214,000	2,159,000	1,944,000	1,814,000
India	1,673,000	1,631,000	1,632,000	1,597,000	1,546,000
Japan	1,189,000	1,285,000	1,374,000	1,312,000	1,419,000
Gold Coast	844,000	847,600	728,800	670,400	883,000
Colombia	1,070,000	757,000	681,000	608,000	(a) 608,000

(a) Not available; previous year's figures taken.

The next table shows the average yearly value in order of importance of the yield in the chief gold-producing countries for the decennium 1920–1929.

GOLD.—AVERAGE ANNUAL PRODUCTION, CHIEF COUNTRIES, 1920 TO 1929.

Country.	Value.	Country.	Value.
	£		£
Union of South Africa ..	42,116,000	Australia	2,967,000
United States	10,516,000	Rhodesia	2,736,000
Canada	6,661,000	India	1,813,000
Mexico	3,387,000	Japan	1,305,000
Russia	3,013,000	Colombia	1,065,000

The comparison has been restricted to countries where the average for the period is in excess of a million sterling.

8. **Employment in Gold Mining.**—The number of persons engaged in gold mining in each State in 1901 and during each of the last five years is shown in the following table :—

GOLD MINING.—PERSONS EMPLOYED, 1901, AND 1925 TO 1929.

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Total.
	No.	No.	No.	No.	No.	No.	No.	No.
1901 ..	12,064	27,387	9,438	1,000	19,771	1,112	200	70,972
1925 ..	831	2,353	347	34	5,009	103	32	8,709
1926 ..	808	1,967	321	26	4,488	107	26	7,743
1927 ..	670	1,126	304	17	4,056	65	12	6,250
1928 ..	736	655	343	30	3,863	47	12	5,686
1929 ..	684	864	326	58	4,108	63	5	6,108

The heavy decline noticeable since 1901 is of course due to the exhaustion of accessible payable deposits and the failure to locate any considerable fresh sources of supply.

9. **Bounty on Production.**—A reference to the bounty provided by the Commonwealth on gold production in Australia will be found in § 16. 1. hereinafter.

§ 3. Platinum and Platinoid Metals.

1. **Platinum.**—(i) *New South Wales.* The deposits at present worked in the State are situated at Platina in the Fifield division, near Parkes, and the production in 1929 amounted to 128 ozs., valued at £1,352 as compared with 354 ozs., valued at £4,544 in the preceding year, while the total production recorded to the end of 1929 amounted to 18,928 ozs., valued at £118,722. During the year 1929 a shipment of 10 tons of platinoid ore obtained near Broken Hill was sent overseas for experimental treatment.

(ii) *Victoria.* In Gippsland the metal has been found in association with copper, and 127 ozs. were produced in 1913, but there was no production in recent years.

(iii) *Queensland.* Platinum, associated with osmiridium, has been found in the beach sands between Southport and Currumbin, in creeks on the Russell goldfield near Innisfail, and in alluvial deposits on the Gympie gold-field, but no production has been recorded.

2. **Osmium, Iridium, etc.**—(i) *New South Wales.* Small quantities of osmium, iridium, and rhodium are found in various localities. Platinum, associated with iridium and osmium, has been found in the washings from the Aberfoil River, about 15 miles from Oban; on the beach sands of the northern coast; in the gem sand at Bingara, Mudgee, Bathurst, and other places. In some cases, as for example in the beach sands of Ballina, the osmiridium and other platinoid metals amount to as much as 40 per cent. of the platinum, or about 28 per cent. of the whole metallic content.

(ii) *Victoria.* In Victoria, iridosmine has been found near Foster, and at Waratah Range, South Gippsland.

(iii) *Tasmania.* For 1929 the yield of osmiridium was returned as 1,360 ozs., valued at £30,624, the quantity raised being about 300 ozs. less than in 1928, the decrease being due to the decline in price, which at the end of the year had fallen to £16 10s. an ounce. Efforts are being made to stabilize the industry by arranging for a better marketing scheme. It is stated that one of the reasons for the decreased demand for the metal, and the consequent fall in price, is that osmiridium itself is of no commercial value, the value being in the osmium and iridium extracted therefrom. The process of extraction is a particularly dangerous one, owing to the fact that osmium oxide, which is a deadly poison, is given off in a gaseous state. Some of the American firms have ceased producing on this account, and are using African ore containing platinum and iridium, the extraction of which is simpler and less hazardous.

§ 4. Silver and Lead.

1. **Occurrence in Each State.**—Particulars regarding the occurrence of silver in each State will be found in preceding Year Books, Nos. 1 to 5, but considerations of space preclude the repetition of this matter in the present volume.

2. **Development of Silver Mining.**—The value of the production of silver, silver-lead and ore, and lead from each State during the five years ending 1929 is given hereunder :—

SILVER AND LEAD.—PRODUCTION, 1925 TO 1929.

Year	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Australia.
	£	£	£	£	£	£	£	£
1925 ..	5,320,976	291	240,684	1,655	114,961	302,961	(a) 617	5,982,145
1926 ..	4,399,953	307	147,724	865	85,604	281,155	(a) 447	4,916,055
1927 ..	3,487,980	304	32,102	143	30,421	222,427	(a) 379	3,773,756
1928 ..	2,492,089	275	3,387	..	10,836	180,517	(a) 22	2,687,126
1929 ..	3,032,741	100	14,807	258	12,525	233,353	(a) 79	3,293,863

(a) Year ended 30th June.

Low prices coupled with increased costs of production were responsible for the decrease in values recorded in New South Wales during the period dealt with. The improvement in 1929 as compared with 1928 was mainly due to an advance in the price of lead.

It must be understood that the totals for New South Wales in the above table represent the *net* value of the product (excluding zinc) of the silver-lead mines of the State. In explanation of the values thus given, it may be noted that the metallic contents of the larger portion of the output from the silver-lead mines in the State are extracted outside New South Wales, and the Mines Department considers, therefore, that the State should not take full credit for the finished product. The real importance of the State as a producer of silver, lead, and zinc is thus to some extent lost sight of. The next table, however, which indicates the quantity of these metals locally produced, and the average contents by assay of concentrates exported during the last five years, will show, as regards New South Wales, the estimated total production and the value accruing to Australia from the three metals :—

SILVER-LEAD MINES.—NEW SOUTH WALES, TOTAL PRODUCTION, 1925 TO 1929.

Year.	Metal Produced within Australia.				Contents of Concentrates Exported.			
	Silver.	Lead.	Zinc.	Value.	Silver.	Lead.	Zinc.	Value.
	ozs. fine.	tons.	tons.	£	ozs. fine.	tons.	tons.	£
1925 ..	7,437,967	139,839	39,991	7,539,130	1,782,193	30,752	75,435	1,371,183
1926 ..	7,338,477	142,654	39,277	6,730,689	2,871,264	23,242	96,167	1,591,673
1927 ..	7,901,861	156,306	42,757	5,955,009	2,339,382	26,709	115,123	1,467,235
1928 ..	7,063,964	151,475	44,004	5,256,649	1,259,931	11,372	94,987	836,620
1929 ..	7,619,884	165,364	46,163	5,918,014	835,697	7,009	76,619	734,261

The figures given above are quoted on the authority of the Mines Department of New South Wales. Accurate details in regard to gold, copper, and antimony contained in the silver-lead ores are not available. Cadmium was first extracted in 1922 at Risdon, in Tasmania, and in 1929 the amount won from ores of New South Wales origin was given as 182 tons, valued at £81,343. As pointed out previously, credit for this value is not taken in the New South Wales returns, the value accruing to the State being taken as that of the declared value of the concentrates at the time of their dispatch.

3. **Sources of Production.**—Broken Hill, in New South Wales, is the chief centre of silver production in Australia.

(i) *New South Wales.* (*a*) *Broken Hill.* A description of the silver-bearing area in this district is given in earlier issues of the Year Book. (See No. 4, page 506.)

Although the returns are not complete in all cases, the following table relating to the companies controlling the principal mines at Broken Hill will give some idea of the richness of the field :—

SILVER.—BROKEN HILL RETURNS TO END OF 1929.

Mine.	Value of Output to end of 1929.	Dividends and Bonuses Paid to end of 1929.
	£	£
Broken Hill Proprietary Co. Ltd.	52,986,921	13,655,247
Broken Hill Proprietary Block 14 Co. Ltd.	4,664,128	670,160
British-Australian Broken Hill Co. Ltd.	5,858,998	821,280
Broken Hill Proprietary Block 10 Co. Ltd.	4,946,989	1,432,500
Sulphide Corporation Ltd. (Central and Junction Mines)	26,335,236	3,279,375
Broken Hill South Ltd.	21,158,263	4,855,000
North Broken Hill Ltd.	16,691,317	5,001,440
Broken Hill Junction Lead Mining Co.	1,185,058	87,500
Junction North Broken Hill Mine	3,511,940	171,431
The Zinc Corporation Ltd.	8,680,601	3,186,510
Barrier South Ltd.	151,517	50,000
Totals	146,170,968	33,210,443

The returns relating to dividends and bonuses paid are exclusive of £1,744,000 representing the nominal value of shares in Block 14, British, and Block 10 companies, allotted to shareholders of Broken Hill Proprietary Company. If the output of the companies engaged in treating the tailings, etc., be taken into consideration, the totals for output and dividends shown in the table would be increased to about 153 millions and 36 millions respectively. The authorized capital of the various companies amounted to £6,823,000.

(*b*) *Other Areas.* Silver is found in various other localities in New South Wales, but the production therefrom in 1929 was unimportant, with the exception of the Yerranderie area from which a yield of 86,500 ozs. was reported.

(ii) *Victoria.* The silver produced in 1929 amounted to 909 ozs., valued at £100, and was obtained in the refining of gold at the Melbourne Mint.

(iii) *Queensland.* Owing to low prices, the yields from the chief silver and lead producing centres in 1929 showed a considerable decline, the total value of the production of both metals being only £14,807, as compared with £148,000 in 1926, and £241,000 in 1925. Great hopes are entertained from the activities of the Company engaged in exploiting the immense silver-lead field at Mount Isa. It is proposed to work the deposits on a large scale, and the most modern appliances have been installed.

(iv) *South Australia.* Silver ore has been discovered at Miltalie and Poonana, in the Franklin Harbour district, also at Mount Malvern and Olivaster, near Rapid Bay, and in the vicinity of Blinman and Farina, at Baratta, and elsewhere. The production of silver in 1929 was valued at £131, and of silver-lead ore at £127.

(v) *Western Australia.* The quantity of silver obtained as a by-product and exported in 1929 was 49,834 ozs., valued at £5,509. In addition, 444 tons of lead and silver-lead ore and concentrates valued at £7,016 were exported. The production of ead ore from the Northampton mineral field amounted in 1929 to 1,075 tons.

(vi) *Tasmania.* The silver produced in 1929 amounted to 864,354 ozs., valued at £94,560, and the lead to 5,983 tons, valued at £138,793. About 715,000 ozs. of the total silver output were contained in silver lead, while 149,000 ozs. were contained in the blister copper produced by the Mount Lyell Co.

(vii) *Northern Territory.* Silver-lead ores are found near Pine Creek, and at Mount Shoobridge near Brock's Creek railway station. There are a number of fair-sized galena lodes in the Pine Creek and McArthur River districts, but, owing to costs of transport and realization little attention is devoted to them.

4. **World's Production.**—The world's production of silver during the last five years for which particulars are available is estimated to have been as follows :—

SILVER.—WORLD'S PRODUCTION, 1925 TO 1929.

Total.	1925.	1926.	1927.	1928.	1929.
World's production in 1,000 fine ozs.	245,186	253,186	251,232	257,273	262,598

The share of Australia in the world's silver production in 1919 was estimated at 7,800,000 ozs., or about 4½ per cent. of the total production, but in 1921, owing to the cessation of operations at the Broken Hill field, the total local extraction fell to 4,573,000 ozs., and the estimated silver contents of the ores, bullion, and concentrates exported to 732,000 ozs., the total being a little over 3 per cent. of the world's production. For 1929 local extraction was set down as 9,230,000 ozs., and exports as 680,000 ozs., the total being equivalent to about 3½ per cent. on the production for the world. The figures for the world's production are given on the authority of *The Mineral Industry.*

Arranged in order of importance the estimated yields in 1929 from the chief silver producing countries were as follow :—

SILVER.—PRODUCTION, CHIEF COUNTRIES, 1929.

Country.	Production.	Country.	Production.
	Fine ozs. ('000 omitted.)		Fine ozs. ('000 omitted.)
Mexico	108,700	Japan	4,500
United States	60,938	Central America ..	2,300
South America	29,500	Dutch East Indies ..	2,000
Canada	23,180	Transvaal	1,035
Europe	11,100	China	300
Australia	9,909	Rhodesia	110
British India	7,500		

5. **Prices.**—As the production of silver is dependent to a very large extent on the price realized, a statement of the average price per standard ounce in the London market during the last five years is given below :—

SILVER.—PRICES, 1925 TO 1929.

Price.	1925.	1926.	1927.	1928.	1929.
Pence per standard oz. ..	32.09	28.69	26.05	26.75	24.47

The average price in cents per fine ounce in New York fell from 69.07 in 1925 to 53.31 in 1929. The London price showed a further heavy fall in 1930, the average for the year being 17.66 pence.

6. **Employment in Silver Mining.**—The number of persons employed in silver mining during each of the last five years is given below :—

SILVER MINING.—PERSONS EMPLOYED, 1925 TO 1929.

Year.	N.S.W. (a)	Q'land.	W. Aust.	Tasmania. (a)	Nor. Ter.	Australia.
	No.	No.	No.	No.	No.	No.
1925	5,770	590	(b) 204	579	4	(c) 7,166
1926	5,924	390	(b) 138	523	2	(d) 7,002
1927	5,833	277	(b) 51	718	..	(e) 6,882
1928	4,666	282	(b) 12	627	..	(f) 5,589
1929	5,001	447	(b) 31	540	2	(g) 6,028

(a) Silver, lead, and zinc. (b) Principally lead and silver-lead ore. (c) Including 19 in South Australia. (d) Including 25 in South Australia. (e) Including 2 in Victoria and 1 in South Australia. (f) Including 2 in Victoria. (g) Including 7 in South Australia.

The bulk of the employment up to 1924, when Queensland assumed importance, was in New South Wales and Tasmania, the quantity of silver raised in the other States being unimportant. With the early development of the great silver-lead field at Mt. Isa the employment returns for Queensland will, doubtless, increase considerably. In April, 1930, the population on the field was well over 3,000.

§ 5. Copper.

1. **Production.**—The production of copper in the various States has been influenced considerably by the ruling prices, which have undergone extraordinary fluctuations. The value of the local production as reported and credited to the mineral industry for the years 1925 to 1929 is shown in the following table :—

COPPER.—PRODUCTION, 1925 TO 1929.

State.	1925.	1926.	1927.	1928.	1929.
	£	£	£	£	£
New South Wales	30,215	22,473	12,655	3,497	14,183
Queensland	254,074	73,591	218,842	177,043	294,188
South Australia	35,878	14,681	12,452	13,321	22,982
Western Australia	18,200	84	101	765	2,778
Tasmania	436,661	454,854	362,988	444,802	740,985
Northern Territory ..	(a) 15	(a) 60	..	..	..
Australia	775,043	565,743	607,038	639,428	(b)1,075,146

(a) Year ended 30th June. (b) Includes £30, value of production in Victoria.

The total value of the production in 1920 was £2,658,000, and the heavy fall during recent years was due to the low price of the metal preventing the profitable working of many of the copper mines throughout Australia. Production in 1929 was stimulated by the rise in price, but the total for the year was less than half of that recorded in 1920.

2. **Sources of Production.**—(i) *New South Wales.* The depression in this branch of the mining industry during the last few years is likely to continue, unless copper appreciates in value, and less costly methods of production are evolved. For the year 1917 the yield was valued at upwards of £814,000, in 1918 it was returned at £697,000, but in 1928 it had declined to under £4,000. The rise in price during 1929 led to a moderate increase in activity, the production being principally obtained from the Mount Royal mine at Tottenham and the Budgery mine at Hermidale.

(ii) *Queensland.* The yield in this State amounted in 1929 to 3.748 tons valued at £294,188, and shows a serious decline as compared with 1920 when nearly 16,000 tons valued at £1,552,000 were raised. The falling-off in the yield in recent years was due partly to the low prices realized for copper and partly to old-fashioned plant and methods of treatment. Returns from the chief producing areas in 1929 were as follows :—Cloncurry, 3,377 tons, £265,110; Mount Morgan, 180 tons, £14,130; Herberton, 83 tons, £6,535; and Gladstone, 64 tons. £5,060.

(iii) *South Australia.* Taking the entire period over which production extended, the yield of copper in South Australia easily outstrips that of any other State. In recent years, however, Queensland, Tasmania, and New South Wales have come to the front as copper producers, as the table on the preceding page shows. Deposits of copper ore are found over a large portion of South Australia. A short account of the discovery, etc., of some of the principal mining areas, such as Kapunda, Burra Burra, Wallaroo, and Moonta, was given in earlier issues of the Official Year Book. During the year 1928 increased attention was given to the possibility of making fresh discoveries in the Moonta and Wallaroo copper field. Opened in 1860, this field worked continuously until 1923, and produced copper to the value of £20,000,000. In 1929 the production amounted to 277 tons, valued at £22,982. A certain amount of copper precipitate is recovered from old tailings and slime dumps.

(iv) *Western Australia.* The value of the copper exported from this State in 1929 was only £2,778 as compared with £18,200 in 1925, the small production in 1929 being due to the low price ruling for the metal.

(v) *Tasmania.* The quantity of copper produced in Tasmania during 1929 was 8,689 tons, valued at £740,985, the whole of the production being due to the Mount Lyell Mining and Railway Co. Ltd. This Company treated 46,836 tons of ore and concentrates and produced 8,788 tons of blister copper, containing copper, 8,689 tons; silver, 149,424 ozs.; and gold, 2,843 ozs.

(vi) *Northern Territory.* Copper has been found at various places, but lack of capital and difficulty of transport prevent the development of the deposits. In 1926, the production was returned at 7 tons of ore, valued at £60, obtained near Kilgour gorge in the Borroloola district, but none was recorded during the last three years.

3. Prices.—The great variation in price that the metal has undergone is shown in the following table, which gives the average price in London and New York during each of the last five years. The figures are given on the authority of the *The Mineral Industry.*

COPPER.—PRICES, 1925 TO 1929.

Year.	Average London Price per Ton Standard Copper.	Average New York Price in Cents per lb. Electrolytic Copper.
	£	Cents.
1925	61.92	14.04
1926	57.97	13.80
1927	55.65	12.92
1928	63.70	14.57
1929	75.41	18.11

As evidence of the tremendous variation in the price of copper it may be noted that in December, 1916, the average London price of standard copper was £145.32 per ton, while in June, 1927, it was quoted at £54.03. In 1929 the highest average was £89.15, recorded in March. In common with other metals there was a serious drop in the price of copper in 1930, the average London market price falling to £54·68.

4. World's Production of Copper.—The world's production of copper during the five years 1925 to 1929 is estimated to have been as follows. The figures for foreign countries have been taken from the latest issue of *The Mineral Industry*:—

COPPER.—WORLD'S PRODUCTION, 1925 TO 1929.

Year	1925.	1926.	1927.	1928.	1929.
World's production—tons ..	1,419,000	1,459,000	1,502,000	1,689,000	1,879,000

The yields from the chief copper-producing countries in 1929 were as follow :—

COPPER.—PRODUCTION, CHIEF COUNTRIES, 1929.

Country.	Production.	Country.	Production.
	Tons.		Tons.
United States	916,000	Russia	26,600
Chile	311,000	Germany	25,600
Africa	143,900	Jugoslavia	14,806
Canada	108,200	Norway	14,400
Mexico	77,500	Cuba	14,100
Japan	73,500	**Australia**	**13,600**
Peru	53,600	Bolivia	6,900
Spain and Portugal ..	50,600	Austria	3,400

The Australian production in 1929 amounted to under 1 per cent. of the total.

About 50 per cent. of the world's copper output in 1929 was produced in the United States, where the cartel known as Copper Exporters Inc. holds a dominating influence in the world's market for the metal.

5. **Employment in Copper Mining.**—The number of persons employed in copper mining during each of the last five years was as follows :—

COPPER MINING.—PERSONS EMPLOYED, 1925 TO 1929.

Year.	N.S.W.	Q'land.	S. Aust.	W. Aust.	Tas.	Nor. Ter.	Australia.
	No.	No.	No.	No.	No.	No.	No.
1925	47	878	55	34	743	6	1,763
1926	31	270	26	8	697	..	1,032
1927	29	271	20	9	760	..	1,089
1928	3	517	14	10	1,181	..	1,725
1929	32	366	74	9	1,307	..	(a)1,789

(a) Including 1 in Victoria.

§ 6. Tin.

1. **Production.**—The development of tin mining is, of course, largely dependent on the price realized for the metal, and, as in the case of copper, the production has been subject to somewhat violent fluctuations. The table below shows the value of the production as reported to the Mines Departments in each of the States during the five years 1925 to 1929 :—

TIN.—PRODUCTION, 1925 TO 1929.

State.	1925.	1926.	1927.	1928.	1929.
	£	£	£	£	£
New South Wales	250,944	326,474	287,539	231,843	191,199
Victoria	11,592	5,075	11,454	12,954	3,545
Queensland	161,500	174,147	193,774	134,727	114,518
Western Australia	15,392	10,450	13,316	15,002	13,432
Tasmania	297,515	322,526	317,593	258,676	130,014
Northern Territory (a)	15,966	15,852	18,754	10,828	6,958
Total	752,909	854,524	842,430	664,030	459,666

(a) Year ending 30th June.

The rise in the price of tin during the first three years covered by the table is reflected in the increased value of production. In 1923, the average London price was £202 3s. per ton, while in 1926 it had advanced to £291 2s. per ton. There was a decline in the average for 1927 to £289 1s. 5d. per ton, although in March of that year the price was £313 9s. 5d. The sharp decline in values to £227 4s. 8d., and £203 19s. 4d., respectively, is reflected in the decreased production in 1928, and 1929. In December, 1929, the price had fallen to £179 10s. 2d. per ton.

2. **Sources of Production.**—(i) *New South Wales.* A large proportion of the output in New South Wales is obtained by dredging, principally in the New England district, the quantity so won in 1929 being 531 tons, valued at £68,345.

(ii) *Victoria.* The production in 1929 was obtained by dredging, the Cock's Pioneer Gold and Tin Co. in the Beechworth district contributing 14 tons valued at 2,000, the balance mainly coming from Toora in Gippsland.

(iii) *Queensland.* The chief producing districts in Queensland during 1929 were Herberton, 642 tons, valued at £70,657; Stanthorpe, 148 tons, £18,900; Kangaroo Hills, 99 tons, £12,512; and Chillagoe, 50 tons, £6,172. The total production valued at £114,500, was much below that of 1920, when the yield was valued at £252,000.

(iv) *Western Australia.* The export of tin from the State during 1929 amounted to 77 tons, valued at £13,432. The production from the Greenbushes field amounted to 38 tons, valued at £4,100, and from the Pilbara field 18 tons, valued at £2,500.

(v) *Tasmania.* During 1929 the output of tin amounted to 640 tons, valued at £130,014, the respective figures being less than half those recorded in 1928. The decrease is due chiefly to the closing of the mines in the North-Eastern district affected by floods, and to cessation of production at Mt. Bischoff and other mines on account of the collapse of the tin market.

(vi) *Northern Territory.* The yield of tin concentrates and ore in 1929 amounted to 59 tons, valued at £6,958, of which 43 tons were raised at Marranboy, 5 tons at Mt. Wells, 4 tons at Hayes Creek, 4 tons at Deans Camp, while small quantities were raised at Mt. Shoobridge, Collia, and elsewhere.

3. **World's Production.**—According to *The Mineral Industry* the world's production of tin during each of the last five years was as follow:—

TIN.—WORLD'S PRODUCTION, 1925 TO 1929.

1925.	1926.	1927.	1928.	1929.
Tons.	Tons.	Tons.	Tons.	Tons.
145,804	142,989	157,000	178,000	190,300

The yields from the chief producing countries in 1929 were as follow:—

TIN.—PRODUCTION, CHIEF COUNTRIES, 1929.

Country.	Production.	Country.	Production.
	Tons.		Tons.
Federated Malay States ..	67,000	**Australia .. ..**	**2,300**
Bolivia	46,300	Burma	2,300
Netherlands East Indies ..	35,000	Unfederated Malay States..	2,300
Nigeria	10,500	Spain and Portugal ..	1,500
Siam	9,900	South Africa	1,200
China	6,300	Indo-China and Japan ..	750
Great Britain	3,300		

Australia's share of the world's tin production would appear to be a little over 1 per cent.

4. **Prices.**—The average price of the metal in the London market for the years 1925 to 1929 was as follows, the figures being taken from *The Mineral Industry.*

TIN.—PRICES, 1925 TO 1929.

Year.	Average Price per Ton.	Year.	Average Price per Ton.
	£ s. d.		£ s. d.
1925..	261 1 6	1928	227 4 8
1926..	291 2 0	1929	203 19 4
1927..	289 1 5		

The production of tin in 1929 was the highest recorded in its history, but owing to the fall in price, the value of the output was only £38,000,000 as compared with an estimated value of about £41,000,000 for the preceding year. During 1930 there was a further serious fall in price, the average for the year declining to £141 19s. 1d.

5. **Employment in Tin Mining.**—The number of persons employed in tin mining during the last five years is shown below :—

TIN MINING.—PERSONS EMPLOYED, 1925 TO 1929.

Year.	N.S.W.	Victoria.	Q'land.	W. Aust.	Tas.	Nor. Ter.	Australia.
	No.	No.	No.	No.	No.	No.	No.
1925	1,012	(*a*)	653	55	1,035	118	(*b*)2,875
1926	1,235	(*a*)	714	78	1,057	112	3,196
1927	1,430	42	906	106	1,230	95	3,809
1928	1,275	118	954	119	1,113	95	3,674
1929	1,008	49	750	49	810	66	2,732

(*a*) The tin produced in Victoria was raised by a dredging company operating primarily for gold.
(*b*) Including 2 in South Australia.

§ 7. Zinc.

1. **Production.**—(i) *New South Wales.* (*a*) *Values Assigned.* The production of zinciferous concentrates is chiefly confined to the Broken Hill district of New South Wales, where zincblende forms one of the chief constituents in the enormous deposits of sulphide ores. During the earlier years of mining activity on this field a considerable amount of zinc was left unrecovered in tailings, but from 1909 onwards improved methods of treatment resulted in the profitable extraction of the zinc contents of the accumulations at the various mines.

As the metallic contents of the bulk of the concentrates, etc., raised in the Broken Hill district are extracted outside New South Wales, the mineral industry of that State is not credited by the Mines Department with the value of the finished product. During 1929 the zinc concentrates actually exported amounted to 231,000 tons, valued at £803,000.

(*b*) *Local and Foreign Extraction.* A statement of the quantity of zinc extracted in Australia and the estimated zinc contents of concentrates exported overseas during the five years 1925 to 1929 will be found in § 17 hereinafter.

(ii) *Queensland.* The total production of zinc in 1926 was returned at 200 tons, valued at £6,827, produced from ores raised in the Chillagoe area, but there was no record of production in later years.

(iii) *South Australia.* Zinc is known to exist in various localities in South Australia, but there has been no production during recent years.

(iv) *Tasmania.* During the year 1929 the production from local ores was taken as 6,997 tons, valued at £185,964, almost the entire output coming from the mines worked by the Electrolytic Zinc Co., which has erected extensive works at Rosebery. In addition, about 17 tons of cadmium, valued at £7,839, were obtained as a by-product.

The Electrolytic Zinc Co. at Risdon operated on raw materials obtained partly from the West Coast district of Tasmania, but chiefly from Broken Hill in New South Wales. Production from other than Tasmanian ores in 1929 consisted of 46,163 tons of zinc valued at £1,237,361, and 182 tons of cadmium, valued at £81,343.

2. **World's Production.**—According to *The Mineral Industry* the world's production of zinc during the five years 1925-29 was as follows:—

ZINC.—WORLD'S PRODUCTION, 1925 TO 1929.

1925.	1926.	1927.	1928.	1929.
Tons.	Tons.	Tons.	Tons.	Tons.
1,130,100	1,226,100	1,307,300	1,397,300	1,447,500

The yields from the chief producing countries in 1929 were as given hereunder.

ZINC.—PRODUCTION, CHIEF COUNTRIES, 1929.

Country.	Production.	Country.	Production.
	Tons.		Tons.
United States	570,400	Great Britain	58,300
Belgium	196,700	Netherlands	25,300
Poland (*a*)	166,400	Japan	22,600
Australia	121,900	Italy	15,400
Germany	100,200	Mexico	14,900
France	90,200	Rhodesia	12,100
Canada	76,800	Spain	11,600

(*a*) Including Upper Silesia.

The figures for Australia have been taken from returns supplied by the Australian Mines and Metals Association.

3. **Prices.**—During the four years 1911 to 1914, the London price of zinc averaged £23 15s. per ton, ranging from £21 in 1914 to £26 3s. 4d. in 1912. Owing to the heavy demand and other circumstances arising out of the war, the prices in 1915 and 1916 reached the very high average of £67 11s. 1d. and £72 1s. 5d. per ton respectively. For 1921 the average recorded was £25 16s. 11d.; for 1923, £33 1s. 2d.; for 1924, £33 14s. 7d.; for 1925, £36 12s. 6d.; for 1926, £34 2s. 1d. In 1927, the average fell to £28 10s. 3d. per ton and this was followed by further falls in 1928 and 1929 to £25 5s. 8d.. and £24 15s. 10d., respectively. There was a remarkably heavy fall in price during 1930, the average for the year being only £16 16s. 9d. per ton.

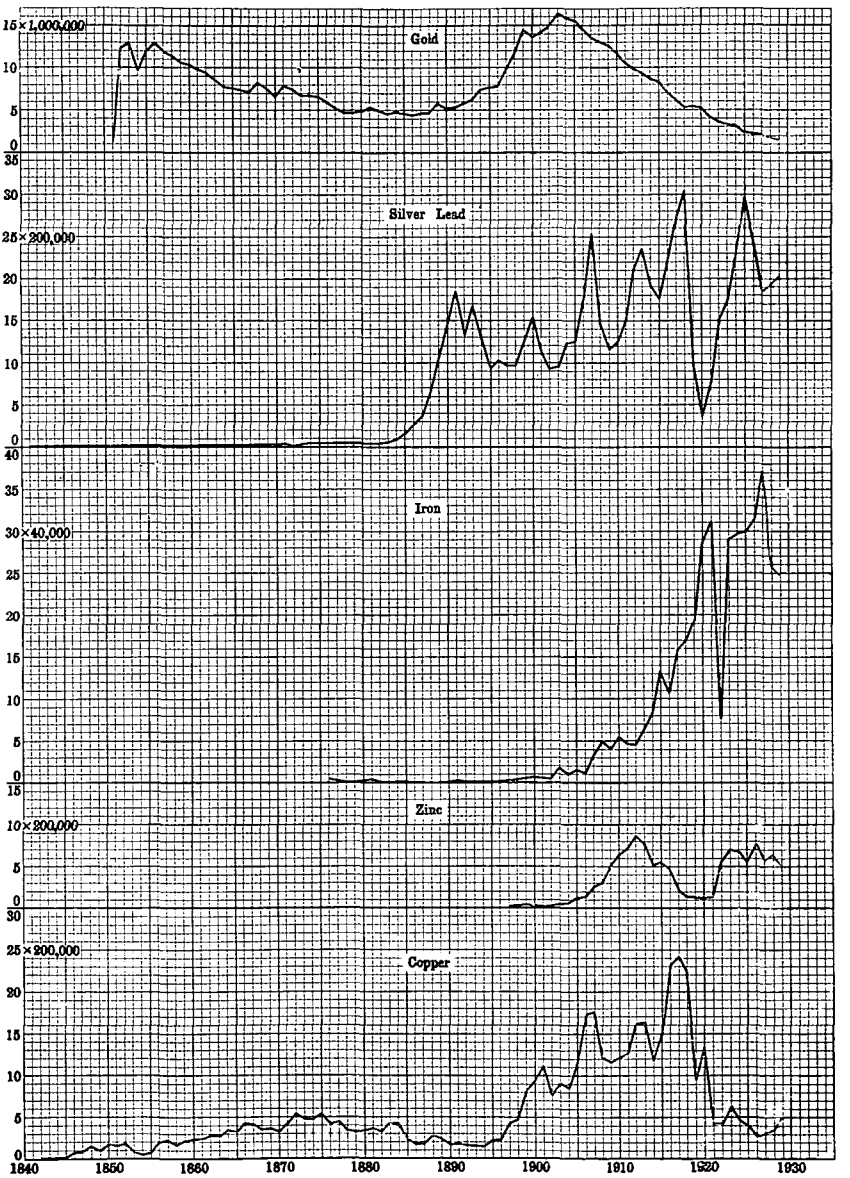
§ 8. Iron.

1. **General.**—The fact that iron ore is widely distributed in Australia has long been known, and extensive deposits have been discovered from time to time at various places throughout the States, but the utilization of these deposits for the production of iron and steel is, at present, confined to New South Wales.

2. **Production.**—(i) *New South Wales.* The production from *local* ores only in 1929 amounted to 3,911 tons, valued, at £17,600.

These figures do not, of course, represent the total production of pig iron in New South Wales, since a considerable quantity of ore raised in South Australia, and credited therefore to the mineral returns of that State, is treated in New South Wales. A quantity of iron oxide is purchased by the various gasworks for use in purifying gas, and is also

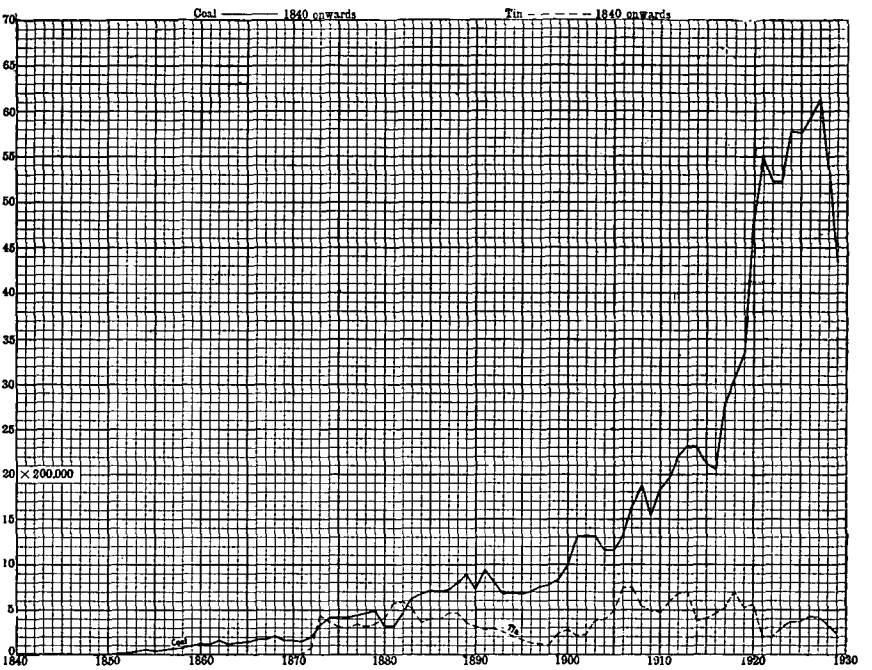
VALUES OF THE PRINCIPAL MINERALS PRODUCED—AUSTRALIA, 1840 TO 1929.

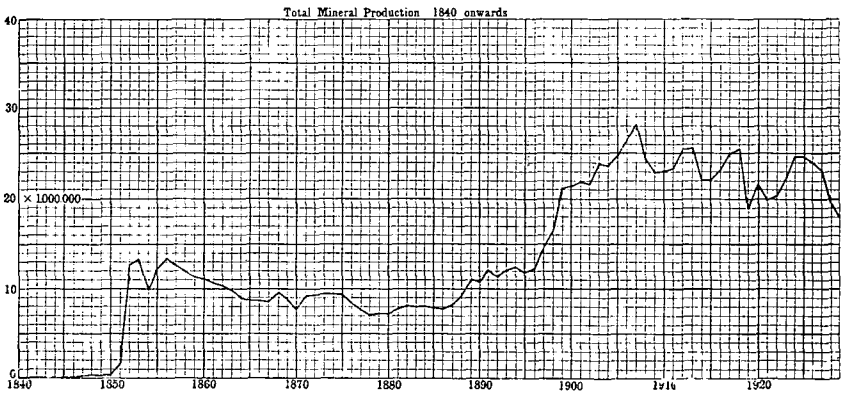


EXPLANATION.—The values shown are those of the total Australian production of certain of the most important minerals in successive years from 1840 onwards.

The base of each small square represents an interval of one year, and the vertical height represents in the case of gold £1,000,000; in the case of silver and lead, zinc and copper £200,000; and in the case of iron, £40,000.

VALUES OF PRINCIPAL MINERALS PRODUCED—AUSTRALIA, 1840 TO 1929—
continued.





EXPLANATION.—The values shown are those of the total Australian production of certain of the most important minerals in successive years from 1840 onwards.

The base of each small square represents an interval of one year, and the vertical height represents in the case of coal and tin £200,000, and in the case of total mineral production £1,000,000.

to some extent employed as a pigment, and in paper manufacture, the output in New South Wales being drawn chiefly from the deposits in the Port Macquarie, Milton, and Newcastle Divisions. During 1929 the iron oxide raised amounted to 4,753 tons, valued at £2,757.

(ii) *South Australia.* Operations on a large scale were carried on at the deposits worked by the Broken Hill Pty. Co. Ltd., at Iron Knob, and development is proceeding at the Company's immense deposits at Middlebank. The quantity of iron ore raised in 1929 was 848,000 tons valued at £975,000, the respective totals being the largest yet recorded.

(iii) *Other States.* Reference to the iron ore deposits in the other States will be found in preceding issues of the Official Year Book (see No. 22, page 779).

3. **Iron and Steel Bounties.**—During the year 1929-30 the bounties paid under the Iron and Steel Products Bounty Act on articles manufactured from locally produced materials were as follow:—fencing wire, £114,141; galvanized sheets, £89,561; wire-netting, £56,486; traction engines, £199.

4. **World's Production of Iron and Steel.**—The Australian production of iron and steel at present forms a very small proportion of the world's output. According to *The Mineral Industry*, the world's production of each commodity in the years specified for the principal countries was as follows:—

PIG IRON AND STEEL.—WORLD'S PRODUCTION, 1927 TO 1929.

Country.	Pig Iron.			Steel Ingots and Castings.		
	1927.	1928.	1929.	1927.	1928.	1929.
	Thousands of Tons.			Thousands of Tons.		
United States ..	36,566	38,156	42,614	44,935	51,544	56,433
Germany	12,870	11,618	13,401	16,090	14,517	16,246
France	9,170	9,928	10,439	8,090	9,387	9,666
Saar Territory ..	1,740	1,936	2,088	420	439	2,174
Belgium	3,650	3,825	3,970	3,640	3,870	4,039
Luxemburg	2,680	2,724	2,906	1,420	2,510	2,702
Austria	428	457	450	551	637	630
Italy	520	539	664	1,530	1,910	2,115
Spain	583	610	709	700	734	929
Czechoslovakia ..	1,240	1,400	1,643	1,661	2,100	2,145
Poland	608	662	699	1,223	1,437	1,398
Sweden	447	430	484	480	576	683
Russia	2,900	3,282	4,018	3,480	4,246	4,723
China	410	400	250	200	300	50
Japan	1,200	1,380	1,750	1,550	1,519	2,100
United Kingdom ..	7,294	6,611	7,580	9,170	8,520	9,655
India	910	1,010	1,000	550	440	600
Canada	766	1,083	1,090	870	1,239	1,380
Australia	**410**	**420**	**333**	**420**	**439**	**348**
Total—All Countries ..	84,281	86,760	95,900	98,781	109,789	118,213

The figures for Japan include Manchuria and Korea. Production of both iron and steel declined in 1929 in Australia, the fall being due principally to shortage in fuel owing to industrial disturbances on the coal-fields. The principal producers in Australia are the Broken Hill Proprietary and the Australian Iron and Steel Co., the former situated at Newcastle and the latter at Port Kembla in New South Wales.

§ 9. Other Metallic Minerals.

Detailed information in regard to the occurrence and production of other metallic minerals in each of the States will be found in Official Year Book No. 22, and preceding issues, but this information cannot be included in the present issue.

§ 10. Coal.

1. **Production in each State.**—An account of the discovery of coal in each State will be found in preceding issues of the Year Book. (See No. 3, pp. 515-6.) The quantity and value of the production in each State and in Australia during the five years 1925 to 1929 are given in the table hereunder :—

COAL.—PRODUCTION, 1925 TO 1929.

Year.	N.S.W.	Victoria. (a)	Q'land.	S. Aust.	W. Aust.	Tasmania.	Australia.
			QUANTITY.				
	Tons.	Tons.	Tons.	Tons.	Tons	Tons.	Tons.
1925 ..	11,396,199	534,246	1,177,173	..	437,461	81,698	13,626,777
1926 ..	10,885,766	591,001	1,221,059	..	474,819	102,358	13,275,003
1927 ..	11,126,114	684,245	1,099,040	..	501,505	112,056	13,522,960
1928 ..	9,448,197	658,323	1,076,340	..	528,420	128,500	11,839,780
1929 ..	7,617,736	703,828	1,368,745	..	544,719	130,291	10,365,319
			VALUE.				
	£	£	£	£	£	£	£
1925 ..	9,302,515	596,117	1,037,956	..	363,203	70,424	11,370,215
1926 ..	9,436,520	657,798	1,098,927	..	394,400	90,401	11,678,046
1927 ..	9,782,002	762,530	987,465	..	407,967	99,802	12,039,766
1928 ..	8,263,729	731,015	971,690	..	420,145	106,558	10,493,137
1929 ..	5,952,720	813,370	1,199,599	..	426,706	105,877	8,498,272

(a) Exclusive of brown coal, shown in next table.

The figures for Victoria quoted above are exclusive of brown coal, the quantity and value of which during the last five years were as follows :—

BROWN COAL.—PRODUCTION, VICTORIA, 1925 TO 1929.

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£
1925	876,468	166,404	1928	1,591,858	202,393
1926	957,935	188,899	1929	1,741,176	178,052
1927	1,455,482	220,003			

2. **Distribution and Production of Coal in each State.**—(i) *New South Wales.*—Estimates of the quantity of merchantable coal available in the deposits in each State were given in preceding issues of the Official Year Book (see No. 20, pp. 752 *et seq.*), but considerations of space preclude the repetition of the information in the present issue.

The coal from the various districts differs considerably in quality—that from the Northern district being especially suitable for gas-making and household purposes, while the product of the Southern (Illawarra) and Western (Lithgow) is an excellent steaming coal. At the present time the Greta coal seams are being extensively worked between West Maitland and Cessnock, and this stretch of country, covering a distance of 15 miles, is now the most important coal-mining district in Australasia.

The table hereunder gives the yields in each of the three districts during the five years 1925 to 1929 :—

COAL.—PRODUCTION IN DISTRICTS, NEW SOUTH WALES, 1925 TO 1929.

District.	1925.	1926.	1927.	1928.	1929.
	Tons.	Tons.	Tons.	Tons.	Tons.
Northern	7,637,953	7,257,598	7,145,116	5,978,480	3,019,693
Southern	2,052,963	2,024,520	2,155,461	1,817,225	2,339,837
Western	1,705,283	1,603,648	1,825,537	1,652,492	2,258,206
Total ..	11,396,199	10,885,766	11,126,114	9,448,197	7,617,736

The reduction in output from the Northern District in 1929, and the consequent increase in the returns from the Southern and Western Coal fields, was due to the closing down of the Associated Northern Collieries early in the year owing to the alleged high cost of production. Although the mines and plant are capable of a larger production than in the record year 1924, the output for 1929 was the lowest since 1909.

(ii) *Victoria.* (*a*) *Black Coal.* The deposits of black coal in Victoria occur in the Jurassic system, the workable seams, of a thickness ranging from two feet three inches to six feet, being all in the Southern Gippsland district.

The output of black coal in Victoria during the last five years was as follows :—

BLACK COAL.—PRODUCTION, VICTORIA, 1925 TO 1929.

Year.	State Coal Mine.	Other Coal Mines.	Total Production.	Value.
	Tons.	Tons.	Tons.	£
1925	468,146	66,100	534,246	596,117
1926	531,869	59,132	591,001	657,798
1927	610,618	73,627	684,245	762,530
1928	600,931	57,392	658,323	731,015
1929	634,805	69,023	703,828	813,370

Amongst the other coal mines the chief producers in 1929 were the Sunbeam Colliery at Korumburra, with 22,903 tons; the South Gippsland Coal Mining Co. at Kilcunda, with 17,105 tons; the Kilcunda Coal Mining Co. at Kilcunda with 9,224 tons; and the Howitt at Outtrim, with 8,347 tons.

(*b*) *Brown Coal.*—(1) *General.* Some account of the brown coal deposits and of the operations of the State Electricity Commission in connexion therewith will be found in preceding Official Year Books (see No. 22, page 785), but it is not proposed to repeat this information in the present issue. The brown coal produced in Victoria was raised chiefly at the State Open Cut at Yallourn, where the output in 1929 amounted to 1,698,813 tons, while 42,133 tons were raised at the old open cut at Morwell. Imperial Chemical Industries raised about 200 tons during the year at Gelliondale.

(2) *Production of Briquettes.* The briquetting plant started operations in November, 1924, and the output for the year 1929–30 was 161,708 tons. It should be noted, however, that the original Yallourn plant is what is known as a "half factory," and economic production necessitates an extension thereof. This work is now proceeding, and portion of the extended works came into operation in April, 1930. The Yallourn briquettes are considered to be equal in quality to those produced in the best German factories.

(3) *Distillation Products.* A new industry is in contemplation for the distillation of oil, motor spirit, and other valuable substances from brown coal, experiments in this direction on a small scale having yielded very satisfactory results.

(iii) *Queensland.* The distribution of production during the year 1929 was as follows :—

COAL PRODUCTION.—QUEENSLAND, 1929.

Districts.	1929.	Districts.	1929.
	Tons.		Tons.
Ipswich	667,640	Clermont	110,531
Darling Downs	97,619	Bowen	263,660
Wide Bay and Maryborough	146,247	Mount Mulligan (Chillagoe) ..	22,138
Rockhampton (Central) ..	60,910	Total ..	1,368,745

The output in 1929 was the highest recorded. There were 50 collieries operating in the Ipswich district, 9 in the Darling Downs, 8 in the Maryborough area, 5 in Clermont district, 1 in Rockhampton district, 1 in Chillagoe district, and 2 in the Bowen district. State coal mines are in operation at Collinsville in the Bowen field, at Mount Mulligan in the Chillagoe field, and at Baralaba and Styx in the Central area.

(iv) *South Australia.* So far no coal has been worked in South Australia (see Official Year Book No. 22, page 786).

(v) *Western Australia.* The production from the six collieries operating at Collie amounted in 1929 to 544,719 tons. The deposits at Wilga were not worked during the year.

(vi) *Tasmania.* The production in 1929 amounted to 130,000 tons, about 1,800 tons more than the total for 1928. About 63,000 tons of the total output in 1929 were contributed by the Cornwall Colliery; 38,000 tons by the Mt. Nicholas; and 18,000 tons by the Jubilee at St. Marys.

(vii) *Australia's Coal Reserves.* A summary of the information available in regard to estimated actual and possible reserves of coal for Australia as a whole was given in tabular form on p. 755 of Official Year Book No. 20, but considerations of space preclude its repetition in the present issue.

3. Production in Various Countries.—The total known coal production of the world in 1929 amounted to about 1,530 million tons, towards which Australia contributed about 12 million tons, or 0.8 per cent. The following tables show the production of the chief British and foreign countries during each of the last three years where the returns are available.

COAL PRODUCTION.—BRITISH EMPIRE, 1927 TO 1929.

Year.	Great Britain.	British India.	Canada.	Australia.	New Zealand.	Union of S. Africa.
BLACK COAL.						
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1927	251,232,300	22,082,300	12,145,700	13,523,000	1,290,500	12,381,700
1928	237,471,900	22,542,900	12,241,400	11,839,800	1,348,700	12,407,500
1929	257,906,800	23,418,700	12,079,000	10,365,300	1,367,200	12,812,800
BROWN COAL, LIGNITE.						
1927	..	..	3,414,000	1,455,500	1,076,200	..
1928	640	..	3,432,100	1,591,900	1,088,000	..
1929	320	..	..	1,741,200	1,168,700	..

COAL PRODUCTION.—FOREIGN COUNTRIES, 1927 TO 1929.

Year.	Germany.	Austria.	Hungary.	Belgium.	France. (b)	Czecho-slovakia.	Jugoslavia.
BLACK COAL.							
	Tons.	Tons.	Tons	Tons.	Tons.	Tons.	Tons.
1927 ..	151,173,500	172,800	773,400	27,115,800	50,973,800	13,794,900	283,200
1928 ..	148,478,000	198,900	770,900	27,142,700	50,554,500	14,330,300	351,900
1929 ..	160,855,800	204,700	813,200	26,506,100	52,887,800	16,485,800	435,100

Year.	Poland.	Nether-lands.	Russia.	Japan.	China.	United States.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1927	37,482,600	9,175,900	29,435,800	33,001,000	23,000,000	533,802,600
1928	39,974,900	10,525,300	34,657,100	33,325,400	20,000,000	514,368,800
1929	45,685,700	11,398,300	38,084,000	31,450,000	(c)	541,232,000

Year.	Germany.	Austria.	Hungary.	Belgium.	France.	Czecho-slovakia.	Jugoslavia.
BROWN COAL, LIGNITE.							
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1927 ..	148,126,900	3,015,700	6,144,800	..	1,065,900	19,310,800	4,388,100
1928 ..	162,972,900	3,211,000	6,405,800	..	1,046,900	20,128,400	4,620,300
1929 ..	172,411,200	3,469,100	6,932,700	..	1,168,700	21,155,600	5,363,500

Year.	Poland.	Nether-lands.	Russia.	Japan.	China.	United States.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1927	77,200	198,200	2,590,900	175,800	..	(a)
1928	72,400	193,600	(a)	120,000	..	(a)
1929	(a)	154,100	(a)	(a)	..	(a)

(a) Included with black coal. (b) Exclusive of Saar District, which produced 13,381,100 tons in 1927; 12,899,700 tons in 1928; and 13,364,900 tons in 1929. (c) Not available.

4. Exports.—The exports of coal from Australia are chiefly confined to New South Wales.

The total quantity of coal of Australian production (exclusive of bunker coal) exported to other countries in 1929–30 was 295,000 tons, valued at £347,000, of which 153,000 tons were exported from New South Wales, 141,000 tons from Queensland, while there was a shipment of about 300 tons from Victoria.

The total oversea and interstate coal exports from New South Wales in 1929 amounted to 1,932,000 tons, valued at £2,339,000.

Of the total exports of coal from New South Wales in 1929, about 62 per cent., or 1,204,000 tons, were shipped from the port of Newcastle. Victoria took 501,000 tons, South Australia 350,000 tons, other Australian States 119,000 tons, New Zealand 61,000 tons, while 63,000 tons went to the United Kingdom, 31,000 tons to India, 10,000 tons to Japan, 10,000 tons to Nauru, and slightly under 10,000 tons to Noumea. The figures quoted include bunker coal.

During the year 1929 the exports from Port Kembla, Bulli and Bellambi to other States amounted to 243,000 tons, while 56,000 tons were sent to New Caledonia, and 49,000 tons to New Zealand. The coal shipped from Sydney went principally to New Guinea, the British Solomon Islands, and the New Hebrides. For the twelve months ended 30th June, 1929, about 35,000 tons of coal were dispatched to interstate ports from the jetty at Catherine Hill Bay, near Newcastle.

The distribution of the total output from New South Wales collieries during the last five years was as follows, the particulars given of quantity exported including coal shipped as bunker coal:—

COAL.—DISTRIBUTION OF OUTPUT, NEW SOUTH WALES, 1925 TO 1929.

Year.	Exports to Australian Ports.	Exports to Foreign Ports.	Local Consumption.	Total.
	Tons.	Tons.	Tons.	Tons.
1925	3,001,823	1,769,215	6,625,161	11,396,199
1926	2,740,570	1,797,257	6,347,939	10,885,766
1927	2,651,492	1,687,716	6,786,906	11,126,114
1928	2,209,981	1,135,572	6,102,644	9,448,197
1929	1,237,272	694,913	5,685,551	7,617,736

For the period of five years shown in the table above, 23 per cent. of the total output was exported to other States, 14 per cent. was sent overseas, and 63 per cent. was consumed locally. Since 1920 the home consumption has increased from 53 per cent. to 75 per cent. of the total output.

The figures quoted in the table above are given on the authority of the New South Wales Mines Department.

5. Consumption in Australia.—An estimate of the consumption of coal in Australia may be arrived at by adding the imports to the home production, and deducting the exports (including bunker coal taken by oversea vessels). The following table shows the consumption computed in the manner specified for the last five years:—

COAL.—CONSUMPTION, AUSTRALIA, 1925 TO 1929.

Year.	Quantity of Coal Consumed.		
	Home Produce.	Produce of Other Countries.	Total.
	Tons.	Tons.	Tons.
1925	12,536,179	9,137	12,545,316
1926	12,338,644	26,080	12,364,724
1927	13,378,301	23,563	13,401,864
1928	12,273,727	17,870	12,291,597
1929	11,140,576	493,461	11,634,037

The bunker coal taken away in 1929 was estimated at 624,000 tons. Figures for brown coal produced in Victoria are included in the total for home produce. The whole of the oversea imports in 1929 came from the United Kingdom.

6. Prices.—(i) *New South Wales.* The price of New South Wales coal depends on the district from which it is obtained, the northern district coal generally realizing a much higher rate than the southern or western product. The average price on the mine in each district and for the State as a whole during the last five years was as follows :—

COAL.—PRICES, NEW SOUTH WALES, 1925 TO 1929.

Year.	Northern District.	Southern District.	Western District.	Average for State.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
1925	17 7	15 11	11 1	16 4
1926	18 10	16 5	11 9	17 4
1927	19 2	16 8	12 6	17 7
1928	19 0	16 6	13 1	17 6
1929	16 8	16 11	12 11	15 8

(ii) *Victoria.* In Victoria the average price of coal in 1925 was 22s. 4d.; in 1926, 22s 3d.; in 1927, 22s. 3d.; in 1928, 22s. 2d.; and in 1929, 23s. 1d. per ton. These averages are exclusive of brown coal, the production of which in 1929 was valued at 2s. 1d. per ton.

(iii) *Queensland.* Prices in the principal coal-producing districts during the last five years were as follows :—

COAL.—PRICES, QUEENSLAND, 1925 TO 1929.

District.	Value at Pit's Mouth.				
	1925.	1926.	1927.	1928.	1929.
	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.	Per ton. s. d.
Ipswich	16 7	17 2	17 0	16 11	16 10
Darling Downs	18 8	19 2	19 6	19 5	19 5
Wide Bay and Maryborough	24 3	24 2	23 9	23 8	23 2
Bundaberg	..	24 7	23 8	..	..
Mount Morgan	..	13 11	12 8	12 10	..
Rockhampton	16 1	17 10	22 10	23 3	22 11
Clermont	12 0	13 6	13 11	14 1	12 2
Bowen	16 0	16 2	16 3	15 2	15 4
Mackay	..	..	29 8	24 4	..
Mount Mulligan (Chillagoe)	31 3	30 4	32 0	31 11	31 9
Average for State ..	17 8	18 0	18 0	18 0	17 6

In 1901 the average value at the pit's mouth was 7s. per ton, and the average for the ten years 1901 to 1910 was about 6s. 8d.

(iv) *Western Australia.* The average price of the Collie (Western Australia) coal during the last five years was as follows :—In 1925, 16s. 7d.; in 1926, 16s. 7d.; in 1927, 16s. 3d.; in 1928, 15s. 11d.; and in 1929, 15s. 8d. per ton.

(v) *Tasmania.* The average price per ton of coal at the pit's mouth in Tasmania for the five years 1925 to 1929 was :—In 1925, 17s. 3d.; in 1926, 17s. 8d.; in 1927, 17s. 10d.; in 1928, 16s. 7d.; and in 1929, 16s. 3d. per ton.

7. Prices in the United Kingdom.—During the five years 1925 to 1929 the average selling value of coal at the pit's mouth in the United Kingdom was :—In 1925, 16s. 4d.; in 1926, 19s. 6d.; in 1927, 14s. 7d.; in 1928, 12s. 10d.; and in 1929, 13s. 5d. per ton.

8. Employment and Accidents in Coal Mining.—The number of persons employed in coal mining in each of the States during the year 1929 is shown below. The table also gives the number of persons killed and injured, with the proportion per 1,000 employed, while further columns are added showing the quantity of coal raised for each person killed and injured, this being a factor which must be reckoned with in any consideration of the degree of risk attending mining operations. A further table gives the rate of fatalities during the last five years.

COAL MINING.—EMPLOYMENT AND ACCIDENTS, 1929.

State.	Persons Employed in Coal Mining.	No. of Persons.		Proportion per 1,000 Employed.		Tons of Coal raised for each Person.	
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
New South Wales ..	14,577	12	89	0.82	6.10	634,800	85,600
Victoria	2,251	2	8	0.89	3.55	1,222,500	305,600
Queensland ..	2,773	3	150	1.08	54.09	456,200	9,100
Western Australia ..	858	4	111	4.66	12.93	136,200	4,900
Tasmania	311	..	1	..	3.22	..	130,300
Total ..	20,770	21	359	1.01	17.28	576,500	33,700

Owing to lack of uniformity in the definition of " injury," the figures relating to persons injured possess little comparative value.

The next table shows the average number of miners employed, number of fatalities, and rate per 1,000 during the quinquennium 1925-29 :—

COAL MINING.—FATALITIES, 1925 TO 1929.

State.	Average No. of Coal Miners.	Average No. of Fatal Accidents.	Rate per 1,000 Employed.
New South Wales	21,874	20.4	0.93
Victoria	2,500	2.8	1.12
Queensland	2,827	3.6	1.27
Western Australia	753	1.2	1.59
Tasmania	325	..	..
Total	28,279	28.0	0.99

According to the report of the Chief Inspector of Mines the average death-rate per 1,000 miners from accidents in coal mines in Great Britain during the quinquennium 1925-29 was 1.07, the rates varying between 1.11 in 1929, and 1.02 in 1925, while, as shown in the table preceding, the rate for Australia for the same period was 0.99. In the United States during the five years 1924-28 the death rate per 1,000 employees averaged 4.9 for bituminous coal miners, and 3.7 for anthracite miners. Rates for other coal-producing countries for the same period were—Canada, 2.5; South Africa, 3.4; Germany, 2.2; Spain, 1.7; Belgium, 1.1; France, 1.0. In comparing these rates, allowance must be made for the circumstance that the methods of calculation are not identical in all countries.

§ 11. Coke.

Notwithstanding the large deposits of excellent coal in Australia, there was, prior to the war, a fairly considerable amount of coke imported from abroad. During recent years, however, a high standard of excellence has been attained in the local product, and the necessity for import has to a large extent disappeared. For the year 1929-30 the coke imported amounted to 39,200 tons, of which 37,000 tons were obtained from the United Kingdom and 2,000 tons from Germany, the bulk of the product being taken by South Australia for use in the ore-treating works at Port Pirie. The table hereunder gives the production in New South Wales during the last five years :—

COKE.—PRODUCTION, NEW SOUTH WALES, 1925 TO 1929.

		1925.	1926.	1927.	1928.	1929.
Quantity ..	tons	609,418	597,663	709,342	520,201	464,360
Value, total ..	£	942,448	940,416	1,131,335	852,739	757,580
Value, per ton ..	..	30s. 11d.	31s. 6d.	31s. 10d.	32s. 9d.	32s. 8d.

The figures quoted refer to metallurgical coke, the product of coke ovens, and are exclusive of coke produced in the ordinary way at gas works. As regards both tonnage and value the production in 1927 was the highest recorded.

A small quantity of coke is made in Queensland, the quantity returned in 1929 being 4,079 tons, valued at £7,356. A certain amount is at times obtained from outside sources, but there was no import in 1929. The following table shows the amount manufactured locally during the last five years :—

COKE.—PRODUCTION, QUEENSLAND, 1925 TO 1929.

Year.		1925.	1926.	1927.	1928.	1929.
Quantity ..	tons	5,384	6,191	4,196	4,058	4,079

In order to avoid duplication with coal values the returns for coke have not been included in the general tables of mineral production in the early part of this chapter.

§ 12. Oil Shale and Mineral Oil.

Reference to the deposits of oil shale as well as to the efforts put forward in connexion with the search for mineral oil in Australia will be found in Official Year Book No. 22, pages 791 to 793. Tasmania was the sole producer of oil shale in 1929, the quantity raised being about 4,300 tons. So far mineral oil has not been produced in commercial quantities, but hopes are entertained of ultimate success. The Commonwealth Government encourages the search for oil by placing at the disposal of Companies and individuals the advice and experience of its technical staff appointed for this purpose.

Attention is at present being devoted to the problem of economically obtaining fuel oil and other products from black and brown coals, to a review of the wasteful practice of burning lump coal to generate power, and to the effective utilization of the known extensive deposits of oil shale, particularly in New South Wales and Tasmania.

§ 13. Other Non-metallic Minerals.

A more or less detailed statement regarding the occurrence and production of other non-metallic minerals is given in preceding Official Year Books (see No. 22, pages 793 to 796), but this information cannot be repeated in the present volume. The tables of quantity and value in § 1 of this Chapter will, however, show the production for each State during the year 1929.

§ 14. Gems and Gemstones.

1. **Diamonds.**—It is difficult to secure accurate returns in connexion with the production of precious stones, but the yield of diamonds in 1929 in New South Wales was estimated at 119 carats, valued at £148, while the total production to the end of 1929 is given at 202,578 carats, valued at £144,964. The yield in 1929 was obtained wholly at Copeton in the Tingha division. There was no production from the other States in 1929.

2. **Sapphires.**—The production of sapphires in New South Wales during 1929 was returned as 65 oz., valued at £450, obtained wholly at Sapphire in the Inverell division. Production during recent years was restricted owing to the unfavourable market.

In Queensland production in 1929 was restricted by the low price of "seconds" and machine stones although there was a fair market for good quality blue sapphires. The yield was valued at £4,810.

3. **Precious Opal.**—The estimated value of the opal won in New South Wales during the year 1929 was £6,071, obtained chiefly on the Lightning Ridge and Grawin fields, while a small production was returned from White Cliffs. Some very fine stones are at times obtained, one weighing 5 oz. and valued at £300 being recovered in 1911. Three finds of large stone were made in 1928, the gems weighing 790, 590, and 232 carats respectively, and showing fine fire and lustre. No finds of importance were made in 1929. Occasionally, black opals of very fine quality are found,

one specimen from the Wallangulla field, weighing 6½ carats, being sold in 1910 for £102, while in the early part of 1920 a specimen realized £600. It is stated that this locality is the only place in the world where the "black" variety of the gem has been found. The total value of opal won in New South Wales since the year 1890 is estimated at £1,592,000, but it is a well known fact that fine pieces of the gem have been found and sold privately without notification to the Mines Department.

Small quantities of precious opal are found in the Beechworth district in Victoria.

The opaliferous district in Queensland stretches over a considerable area of the western interior of the State, from Kynuna and Opalton as far down as Cunnamulla. The yield in 1929 was estimated at £600, and up to the end of that year at about £185,000. These figures are, however, merely approximations, as large quantities of opal, of which no record is obtained, are disposed of privately. Operations in 1929 were greatly hampered by scarcity of water.

At the Coober Pedy opal field situated in the Stuart Range in South Australia, the estimated value of the production in 1929 was £11,056. The field is extremely prolific, a large quantity of precious white opal having been raised therefrom, while only a small portion of the known opal-bearing area has been thoroughly tested.

According to a report a few years ago by the Australian Trade Commissioner in the East there is a good sale for the gems in China. It is stated that there is no difficulty in cutting and polishing as the Chinese method of dealing with jade, dating back many centuries, can also be applied to opal.

4. Other Gems.—Various other gems and precious stones have from time to time been discovered in the different States, the list including agates, amethysts, beryls, chiastolite, emeralds, garnets, olivines, moonstones, rubies, topazes, tourmalines, turquoises, and zircons. In Western Australia 17,564 carats (rough) of emeralds, valued at £910, were produced during 1928 in the Cue district on the Murchison gold-field. The production from the same area in 1929 was returned at £278.

§ 15. Numbers Engaged, Wages Paid, and Accidents in Mining.

1. Total Employment in Mining.—The number of persons engaged in the mining industry in Australia fluctuates according to the season, the price of industrial metals, the state of the labour markets, and according to the permanence of new finds, and the development of the established mines. During the year 1929 the number so employed was as follows :—

NUMBER OF PERSONS ENGAGED IN MINING, 1929.

State.	Number of Persons engaged in Mining for—						Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Coal.	Other.	
New South Wales ..	684	5,001	32	1,008	14,577	1,591	22,893
Victoria	864	..	1	49	2,251	66	3,231
Queensland	326	447	366	750	2,773	407	5,069
South Australia	58	7	74	..	..	480	619
Western Australia ..	4,108	31	9	49	858	104	5,159
Tasmania	63	785	1,307	810	311	327	3,603
Northern Territory ..	5	2	..	66	..	80	153
Australia	6,108	6,273	1,789	2,732	20,770	3,055	40,727

Included in the figures for "other" in South Australia were 155 engaged in mining for iron, 51 gypsum miners, 94 salt gatherers, and 130 opal miners. The Tasmanian figures include 279 osmiridium miners, and those for the Northern Territory 75 mica miners.

The following table shows the number of persons engaged in mining in Australia during each of the years 1891, 1901, and 1929, together with the proportion of the total population so engaged :—

NUMBER ENGAGED IN MINING PER 100,000 OF POPULATION, 1891, 1901, AND 1929.

State.	1891.		1901.		1929.	
	Miners employed.	No. per 100,000 of Population.	Miners employed.	No. per 100,000 of Population.	Miners employed.	No. per 100,000 of Population.
New South Wales	30,604	2,700	36,615	2,685	22,893	926
Victoria	24,649	2,151	28,670	2,381	3,231	183
Queensland	11,627	2,934	13,352	2,664	5,069	548
South Australia	2,683	834	7,007	1,931	619	107
Western Australia	1,269	2,496	20,895	11,087	5,159	1,254
Tasmania	3,988	2,695	6,923	4,017	3,603	1,685
Northern Territory ..	..	..	..	..	153	3,662
Australia	74,820	2,341	113,462	2,992	40,727	639

The general falling-off since 1901 is largely due to the causes mentioned in §1.6 *ante*.

2. **Wages Paid in Mining.**—Information regarding rates of wages paid in the mining industry, which in earlier issues of the Year Book was given in this chapter, is now contained in the Labour Report issued by this Bureau.

3. *Accidents in Mining, 1929.*—The following table gives particulars of the number of men killed and injured in mining accidents during the year 1929 :—

MINING ACCIDENTS, 1929.

Mining for—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	N.T.	Australia.
KILLED.								
Coal ..	12	2	3	..	4	..	..	21
Copper ..	..	..	..	..	..	1	..	1
Gold ..	..	2	..	..	7	..	..	9
Silver, lead, and zinc ..	4	..	1	..	..	..	..	5
Tin	2	..	..	..	..	14	1	17
Other minerals	..	..	..	1	..	..	..	1
Total ..	18	4	4	1	11	15	1	54
INJURED.								
Coal ..	89	8	150	..	111	1	..	359
Copper ..	..	..	4	..	..	15	..	19
Gold ..	..	..	3	..	214	..	..	217
Silver, lead, and zinc ..	41	..	12	..	1	21	..	75
Tin	..	..	15	..	..	8	..	23
Other minerals	..	..	..	9	..	1	..	10
Total ..	130	8	184	9	326	46	..	703

The number killed in mining accidents in 1929 was considerably less than that for 1921 when 132 deaths were recorded, the figures for the earlier year being swollen by the 75 fatalities in the colliery disaster at Mount Mulligan in Queensland.

§ 16. Government Aid to Mining.

1. **Commonwealth.**—Assistance to mining is given by the Commonwealth under the provisions of the *Precious Metals Prospecting Act* 1926, and the Petroleum Prospecting Acts of 1926, 1927, and of 1928.

The first-mentioned Act provides for a sum of £40,000, of which £15,000 is to be expended in the Northern Territory, and the balance is to be allocated to the States in such proportions as the Minister determines. At the 30th June, 1930, the expenditure amounted to £13,031. The States of South Australia and Western Australia had made no claim on the fund at the date specified.

Under the *Petroleum Prospecting Act* 1926–1927 a trust account of £160,000 was established to assist in the search for oil. The Minister was authorized to make advances out of the money standing to the credit of this account to persons or companies engaged in the search for oil, and to assist persons, companies, or State Governments to make geological surveys. The Petroleum Prospecting Act of 1928 provides a further sum of £50,000. The Government has decided to discontinue the granting of subsidies for deep drilling and to confine its attention to assistance in the carrying out of geological surveys and scout boring. Owing to financial stringency, however, the payment of all subsidies for oil prospecting has been temporarily suspended. A palæontologist has been appointed to give expert advice.

The *Gold Bounty Act* 1930 provides that for a period of ten years from 1st January, 1931, a bounty of £1 per ounce is payable under prescribed conditions by the Commonwealth on each ounce of fine gold produced in excess of the average production for the three years 1928–30. Under the *Financial Emergency Act* 1930 the bounty was reduced to 10s. per ounce, subject to increases of 1s. according to each decrease of 3s. per cent. in the average rate of exchange. The rate of exchange on which the reduction to 10s. per ounce was based was taken as 30 per cent.

To provide for geophysical prospecting in Australia, a sum of £32,000 was made available by the Commonwealth Government in conjunction with the Empire Marketing Board. The survey has now been completed and a comprehensive report in connexion therewith has been issued,

2. **New South Wales.**—The chief aid given in this State is in the direction of assistance to prospectors. Up to the end of 1929 the total sum expended in this manner amounted to £610,469, of which £8,395 was advanced in 1929. A sum of £500 was made available during the year for the purpose of assisting in the erection of crushing batteries or reduction plants, but no advances were made therefrom. The reward for the discovery of new mineral fields within the State has been increased from £500 to £1,000, with provision for sums of £250 and £500 in respect of fields not large enough to qualify for the full amount, and the conditions have been made more liberal.

3. **Victoria.**—During the year 1929 expenditure in connexion with mining development amounted to £27,380, of which £3,733 represented advances to miners, £1,112 aid to mining companies, while £17,265 was expended on boring, £2,621 on batteries, and £2,649 on geological surveys.

4. **Queensland.**—State assistance to the mining industry in 1929-30 amounted to £15,220, of which £8,312 was advanced to prospectors, and £6,287 was expended in connexion with State Coal Mines.

State coal mines are in operation at Bowen, Styx, Baralaba, and Mount Mulligan. There is also a State Assay Office at Cloncurry at which assays and sampling are carried out for the public, and State batteries are maintained at Kidston, Charters Towers, Irvinebank, and Bamford.

5. **South Australia.**—Aid is given to the mining industry under the terms of the Mining Act of 1893, and previous measures. Up to the end of 1929 the total amount of subsidy paid was £68,517, of which £13,653 has been repaid, and £4,549 written off, leaving a debit of over £50,000. Portion of this amount is represented by machinery that has fallen into the hands of the Government. Repayments must be provided from profits, but in only two instances have the profits enabled a full return to be made. The State maintains batteries and cyanide works at Mount Torrens, Peterborough, Tarcoola, and Glenloth, and assays for public purposes are made at the School of Mines.

6. **Western Australia.**—Under the Mining Development Act of 1902 assistance was granted in 1929 in accordance with the subjoined statement:—Advances in aid of mining work and equipment of mines with machinery, £3,586; boring, £13,015; aid to prospectors, £8,418; subsidies on stone crushed for the public, £173; total, £25,192. In addition to the foregoing the vote was also charged with rebates on water supplied to the amount of £47,337. The industry has been further assisted by Government guarantees to banks on behalf of various companies, and at the end of 1929 the liability in this respect amounted to £51,500.

In 1929 there were 21 State batteries in operation. The amount expended thereon up to the end of 1929 was £91,981 from revenue and £322,918 from loan, giving a total of £414,899. The working expenditure up to the end of 1929 exceeded the revenue by £178,268. The total value of gold and tin recovered to the end of 1929 at the State plants was £6,280,860, resulting from the treatment of 1,494,603 tons of gold ore and 81,567 tons of tin ore, together with a small amount from residues. Free assays and determinations of mineral values for prospectors are made at the Kalgoorlie School of Mines.

7. **Tasmania.**—Aid to Mining in 1929 amounted to £7,619, of which £2,378 was expended under Part II. of the *Aid to Mining Act* 1921, on drilling and boring, about £2,800 was granted under Part IV. in assistance to the Federation Tin Mines, and £1,600 represented assistance and sustenance to prospectors. The amount received from ore sales was £110, the bulk of which was paid to tributers. Receipts amounted to £458, included in which was a sum of £377 received from the Commonwealth Treasury in aid of prospecting.

Tributers' assays are made at a nominal charge, and all tribute surveys are carried out free of charge by the Assay and Survey Office at Zeehan.

8. **Northern Territory.**—During the year 1928–29 a sum of £399 was expended on State aid to mining, £26 being granted to prospectors for gold, £309 to prospectors for tin, and £64 to prospectors for tantalite.

The Government maintains a battery at Marranboy, and the Government Assayer makes free assays for prospectors, and arranges for the sampling, storage, and sale of ores.

§ 17. Metallic Contents of Ores, etc., Produced and Exported.

1. Local Production.—According to returns compiled from various sources by the Australian Mines and Metals Association, the quantities of the principal metals (exclusive of gold) extracted in Australia during the five years 1925 to 1929 were as follows :—

REFINED METALS PRODUCED IN AUSTRALIA, 1925 TO 1929.

Metal.		1925.	1926.	1927.	1928.	1929.
Silver	ozs.	8,573,506	8,946,218	9,390,070	8,053,251	9,229,514
Lead, pig ..	tons	146,129	150,460	164,480	155,076	176,820
Zinc	tons	45,698	47,356	49,155	50,223	51,872
Copper	tons	10,984	11,148	9,564	11,858	10,874
Tin	tons	3,171	3,188	2,989	3,133	2,260

The local production of pig iron during the quinquennium 1923–27 ranged between 330,000 tons in 1923, and 517,000 tons in 1927. Complete information for later years is not available from the returns published by the Association, but according to the metal extraction returns published in the Statistical Register of New South Wales, the production of pig iron in that State amounted in 1927–28 to 428,000 tons, and in 1928–29 to 461,000 tons.

2. Metallic Contents of Ores, Concentrates, etc., Exported.—The estimated metallic contents of ores, concentrates, etc., exported during the five years 1925 to 1929 are given in the following table :—

METALLIC CONTENTS OF ORES, CONCENTRATES, ETC., EXPORTED, 1925 TO 1929.

Metal.		Contained in—	1925.	1926.	1927.	1928.	1929.
Silver	ozs.	Lead—Silver—Gold Bullion	189,223	..	..	..	44,677
		Lead Concentrates and Ores	850,552	190,647	615,484	117,846	31,121
		Zinc Concentrates and Ores	1,270,166	1,206,313	1,640,891	1,453,396	604,014
		Copper and Gold Ores ..	..	..	..	..	..
		Total	2,309,941	1,396,960	2,256,375	1,571,242	679,812
Lead	tons	Lead—Silver—Gold Bullion	2,751	2,483	488	..	689
		Lead Concentrates and Ores	19,651	7,174	12,115	2,221	878
		Zinc Concentrates and Ores	12,423	13,943	14,198	12,726	5,704
		Total	34,825	23,600	26,801	14,947	7,271
Zinc	tons	Lead Concentrates and Ores	366	529	579	77	21
		Zinc Concentrates and Ores	79,996	94,043	111,755	117,858	69,958
		Total	80,362	94,572	112,334	117,935	69,979
Copper	tons	Ores, Matte, etc. ..	864	1,112	1,597	1,989	2,737
Tin	tons	Concentrates and Ores ..	..	1	12	..	4

§ 18. Oversea Exports of Ores, Metals, etc.

The following table shows the quantity and value of the principal oversea exports of ores, concentrates, and metals, the produce of Australia, together with the countries to which the respective products were forwarded, for the year 1929–30 :—

OVERSEA EXPORTS OF AUSTRALIAN ORES, METALS, ETC., 1929–30.

Article.	Total Exports.	Exports to— United Kingdom.	United States.	Belgium.	Germany.	Japan.	New Zealand.	Other Countries,
QUANTITY.								
Ores—	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.	cwt.
Copper	44,124	26,966	4,161	..	12,997	..	..	..
Silver and Silver-lead	86,159	..	80	83,442	2,637	..	..	..
Iron	11,604,841	153,360	3,854,260	..	..	3,325,500	..	(a)4,271,721
Wolfram	5,406	3,310	1,704	..	392	..	..	..
Concentrates—								
Silver and Silver-lead	87,440	..	266	84,853	2,321	..	..	..
Zinc	3,990,717	2,736,439	..	1,010,249	25,476	..	..	(b) 218,553
Cadmium—Blocks, Ingots, etc.	3,444	2,174	..	..	..	50	..	(c) 1,220
Copper—								
Matte	79,332	273	..	79,059	..	..	..	..
Ingot	140,170	120,435	13,290	3,000	2,520	..	125	(d) 800
Tin—Ingot	17,128	7,157	5,920	..	270	..	3,766	15
Lead—								
Matte	11,959	11,959	..	..	..	..	..	..
Pig	3,210,442	2,006,383	..	650,014	421,001	72,991	26,476	(e) 33,577
Zinc—Bars, Blocks, etc.	658,844	264,418	..	95,005	30,006	258,255	..	(f) 11,160
(g) Platinum, Osmium, etc.	oz. 641	oz. 415	oz. ..	oz. ..	oz. 226	oz. ..	oz. ..	oz. ..
Gold—								
Bar, Dust, etc.	407	407	..	..	..	..	..	..
Silver—								
Bar, Ingot, etc.	8,919,895	4,100	..	..	..	..	924	(h)8,914,871
VALUE—£.								
Ores—								
Copper	39,988	26,031	7,911	..	6,046	..	..	..
Silver and Silver-lead	67,086	..	180	65,321	1,585	..	..	..
Iron	374,704	4,830	128,788	..	..	92,831	..	148,255
Wolfram	27,628	15,792	10,039	..	1,797	..	..	..
Concentrates—								
Silver and Silver-lead	70,001	..	320	68,001	1,680	..	..	..
Zinc	931,560	622,223	..	241,115	4,679	..	..	63,543
Cadmium—Blocks, Ingots, etc.	55,075	30,042	..	..	..	1,050	..	14,983
Copper—								
Matte	91,394	415	..	90,979	..	..	..	..
Ingot	533,765	470,615	37,500	12,790	10,050	..	410	2,400
Tin—Ingot	167,863	69,078	59,201	..	2,351	..	37,062	171
Lead—								
Matte	5,561	5,561	..	..	..	..	..	..
Pig	3,426,378	2,147,416	..	711,556	419,870	79,495	32,621	35,420
Zinc—Bars, Blocks, etc.	810,452	326,281	..	109,000	40,007	323,821	..	11,343
Platinum, Osmium, etc.	13,141	8,133	..	..	5,008	..	..	..
Gold—								
Bar, Dust, etc.	1,170	1,710	..	..	..	..	..	..
Silver—								
Bar, Ingot, etc.	847,635	402	..	..	..	..	118	847,115

(a) Netherlands. (b) France. (c) France, 320 cwt.; Sweden, 900 cwt. (d) India, (e) Hong Kong, 11,352 cwt.; South Africa, 21,349 cwt.; Philippines, 804 cwt. (f) India, 10,999 cwt. (g) Mainly osmiridium and platinum produced in Tasmania and New South Wales. (h) India, 8,913,671 oz.