

MINERAL PRODUCTION

1968-69



**COMMONWEALTH BUREAU OF CENSUS AND STATISTICS
CANBERRA, AUSTRALIA**

Reference No. 10.51

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<u>Table</u>	<u>CONTENTS</u>	<u>Page</u>
..	Explanatory Notes	3
1.	Quantity of Minerals Produced , States and Territories, 1968-69	6
2.	Value of Minerals Produced , States and Territories, 1968-69	11
3.	Quantity of Minerals Produced , Australia, 1965 to 1968-69	16
4.	Value of Minerals Produced Australia, 1965 to 1968-69	21
5.	Value of Minerals Produced , Mining Establishments and Other Producers, Australia, 1968-69	25
6.	Contents of Metallic Minerals Produced , States and Territories, 1968-69	26
7.	Contents of Metallic Minerals Produced , Australia, 1965 to 1968-69	30

EXPLANATORY NOTESGeneral

This bulletin presents details of the output (quantities and values) of minerals during the year ended June 1969 for each State and Territory and for Australia, together with information for Australia for the four preceding years. Figures for 1968-69 are preliminary and subject to revision.

2. It should be noted that details for the four preceding years relate to a year ended December. The change in 1969 to a June year was made to bring the mineral production collection and the mining census (which in previous years also related to a December year) to the same time basis as the other economic censuses conducted during that year (manufacturing, electricity and gas, retail trade and wholesale trade).

3. Minerals are classified into five major groups, namely metallic minerals, coal, crude petroleum (including natural gas), construction materials and other non-metallic minerals. In the statistics published in this bulletin the minerals are arranged in these five groups.

4. The statistics are derived from information supplied in returns to the various State Mines Departments and this Bureau, supplemented in some cases by information made available by the Department of National Development and by data compiled by this Bureau from other sources.

5. Monthly statistics of the quantity of output of minerals are published in the Series "Minerals and Mineral Products" (Reference No. 10.19) and quarterly statistics in the "Australian Mineral Industry, Quarterly Review" (a joint publication with the Bureau of Mineral Resources).

Scope of mineral statistics

6. The statistics of mineral production for the year ended June 1969, apart from the change to a June year basis, are comparable with those for earlier years. Although the integration of the mining census for 1968-69 with other economic censuses conducted in that year (manufacturing, electricity and gas, retail trade and wholesale trade) was accompanied by major changes in the scope of the mining census and thus in the scope of the mining industry statistics, these changes had little effect on the scope of the mineral production statistics now published. This is because mineral production data were collected, not only from establishments coming within the scope of the mining census as now defined, but also from those establishments classified as non-mining establishments which, as a subsidiary activity, carried out mining or quarrying activities (e.g. brick and cement manufacturing establishments extracting clays, limestone), and from itinerant and part-time miners.

7. It should be noted, however, that as in past years, coverage is deficient in the case of some minerals, principally because of the difficulties in obtaining complete lists of producers and collecting satisfactory returns. The standard of coverage of the major groups of minerals is discussed below and the major deficiencies of coverage are outlined.

8. Coverage of metallic minerals, coal and crude petroleum (including natural gas) is fairly complete, although adequate records of production of metallic minerals by fossickers and small parties are not always available.

Details of production of uranium minerals are excluded from coverage because of the confidential nature of this information.

9. There are problems in the coverage of non-metallic minerals in some States due to the fact that the extraction of some of these minerals is outside the administrative control of Mines Departments. Products chiefly affected are clays, limestone, salt, silica or loam and in these cases the Deputy Commonwealth Statisticians, wherever possible, collect statistics direct from the producers. It is recognised that coverage of gemstone production is deficient to a considerable extent. This deficiency exists because production is usually on a small scale, and hence it is difficult to establish lists of producers and obtain statistical returns.

10. Coverage of construction materials is incomplete in most States. This is due primarily to the difficulties of obtaining complete lists of quarries (including those operated by governmental authorities) many of which operate intermittently and in changing locations. There is difficulty also in obtaining satisfactory returns from quarries operated in conjunction with some other activity, e.g. dam construction, brickmaking etc. Important deficiencies in the coverage of construction materials are sand and gravel in Western Australia.

11. Details of the changes made to the 1968-69 Mining Census referred to in paragraph 6, together with some preliminary 1968-69 "Mining Industry" statistics are contained in the publication "Economic Censuses : 1968-69 - Mining Establishments - Preliminary Statement" (Reference No. 10.48) issued 5 February 1971.

12. As mentioned in paragraph 6, the mineral production statistics in this bulletin cover production (subject to the qualifications set out in paragraphs 7-10) by all producers whether classified as mining establishments or not. Table 5, however, in addition to giving details of total production during 1968-69 also gives details of the production attributable to establishments coming within the scope of the mining census and thus to the mining industry as now defined.

Principles for measuring output of minerals

13. The quantities of individual minerals produced are recorded, in general, in the form in which the minerals are dispatched from the mine or from associated treatment works in the locality of the mine. Thus for metallic minerals, the output is recorded as ore if no treatment is undertaken at or near the mine, and as concentrate if ore dressing operations are carried out in associated works in the locality of the mine. In addition to the basic quantity data, the content of metallic minerals (based on assay) are recorded. No allowance has been made for losses in smelting and refining and the quantities shown are therefore in general, greater than the contents actually recoverable.

14. The output of individual minerals is valued at the mine or at associated treatment works in the locality of the mine. This valuation is derived, in general, by valuing the quantity produced during the year at the unit selling value (including any subsidy) less any transport costs from the mine or associated treatment works to the point of sale. For some metals, however, special values of output, based on actual or estimated realisations are supplied by certain large mineral producers.

15. It should be noted that, commencing with the year 1968-69, the output of minerals by enterprises for their own consumption in Australia has been valued on a different basis to that used in previous years. The effect of these changes was that the overall value of coal produced in 1968-69 was somewhat lower and the value of certain other minerals somewhat higher than if the earlier valuation methods had been retained.

SYMBOLS AND USAGES

The symbol .. means nil or less than half the final digit shown.
n.a. means not available.

Any discrepancies between totals and sums of
components are due to rounding.

TABLE 1. -- QUANTITY OF MINERALS PRODUCED, 1968-69

Mineral			N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	Aust.
METALLIC MINERALS										
Antimony concentrate	..	tons	261	..	..	..	..	..	..	261
Bauxite	..	'000 tons	11	4	4,127	..	2,075	..	..	6,217
Beryllium ore	..	tons	4	..	..	..	10	..	..	14
Bismuth concentrate	..	tons	..	..	37	..	..	..	1,491	1,528
Chromite	..	tons	..	..	..	..	..	..	..	..
Copper -										
Concentrate	..	tons	44,141	..	354,598	..	3,353	60,417	29,920	492,429
Ore	..	"	(a)4,367	865	28,520	(b)	(b)	6,896	884	44,781
Ore for fertiliser	..	"	..	..	..	6	1,040	..	268	1,314
Precipitate	..	"	154	..	23	22	..	106	303	608
Gold -										
Bullion	..	oz	395	11,139	52,302	2	668,618	160	89,932	822,548
Ore	..	tons	6	..	..	..	..	..	..	6
Iron ore	..	'000 tons	..	..	..	6,328	23,345	(c)1,446	908	32,027
Iron oxide for -										
Cement manufacture	..	tons	15,081	..	3,158	..	..	12,562	..	30,801
Coal washing	..	"	..	..	14,740	..	..	..	..	14,740
Flux	..	"	..	..	..	..	..	..	..	..
Gas purification	..	"	40	559	..	..	..	..	..	599
Lead concentrate	..	tons	332,046	..	289,837	..	1,202	13,737	1,895	638,717
Lead-copper concentrate	..	tons	..	..	..	..	..	12,827	..	12,827
Lead ore (d)	..	tons	9,201	..	42,809	400	..	..	..	52,410
Lead-zinc middlings	..	tons	3,246	..	..	..	..	..	..	3,246

(a) Includes 3,968 tons of copper slag valued at \$30,000. (b) Not available for publication. (c) Iron concentrate.

(d) Includes silver-lead ore, silver-lead slimes and lead slag.

TABLE 1. -- QUANTITY OF MINERALS PRODUCED, 1968-69 - continued

Mineral			N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	Aust.
METALLIC MINERALS - continued										
Manganese ore -										
Metallurgical grade	..	tons	..	..	..	..	163,169	..	670,418	833,587
Other grades	..	"	..	..	..	45	..	..	186	231
Mineral sands -										
Ilmenite concentrate	..	tons	11,607	..	6,553	..	638,533	..	..	656,693
Leucoxene concentrate	..	"	..	..	..	..	8,730	..	..	8,730
Monazite concentrate	..	"	726	..	488	..	3,014	..	..	4,228
Rutile concentrate	..	"	206,310	..	102,390	..	1,260	1,702	..	311,662
Xenotime concentrate	..	"	..	..	..	..	38	..	..	38
Zircon concentrate	..	"	(a)207,167	..	(b)80,555	..	51,785	2,213	..	341,720
Molybdenite concentrate	..	tons	..	..	47	..	..	..	..	47
Nickel concentrate	..	tons	..	..	..	..	51,140	..	..	51,140
Pyrite concentrate	..	tons	..	..	..	79,413	17,153	36,238	..	132,804
Tantalite-columbite concentrate	..	lb	..	..	..	..	202,868	..	..	202,868
Tin concentrate	..	tons	2,463	61	1,632	..	899	6,583	63	11,701
Tin-copper concentrate	..	tons	..	..	..	..	..	2,111	..	2,111
Tungsten concentrates -										
Scheelite concentrate	..	tons	..	..	3	..	..	1,560	..	1,563
Wolfram concentrate	..	"	1	..	164	..	..	523	46	734

(a) Excludes 57,777 tons of zircon-rutile concentrates valued at \$1,911,000 shipped to Queensland for final separation.

(b) Excludes 104,244 tons of wet mixed concentrates valued at \$2,284,000 shipped to N.S.W. for final separation.

TABLE 1. - QUANTITY OF MINERALS PRODUCED, 1968-69 - continued

Mineral			N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
METALLIC MINERALS - continued											
Zinc concentrate	..	tons	546,657	..	150,644	..	..	85,569	3,072	..	785,942
Zinc ore	..	"	..	..	..	11,200	..	..	..	..	11,200
COAL											
Black coal -											
Semi-anthracite	..	'000 tons	..	..	20	..	..	2	..	..	22
Bituminous	..	" "	31,887	13	7,000	..	..	108	..	..	39,008
Sub-bituminous	..	" "	..	..	375	2,143	1,103	..	..	..	3,621
Total	..	" "	31,887	13	7,395	2,143	1,103	109	..	..	42,650
Underground	..	" "	29,973	13	3,265	..	479	109	..	..	33,840
Open-cut	..	" "	1,914	..	4,130	2,143	624	..	..	..	8,810
Brown coal (lignite) (a)	..	'000 tons	..	23,128	..	..	..	..	..	..	23,128
Brown coal briquettes	..	'000 tons	..	1,471	..	..	..	..	..	..	1,471
CRUDE PETROLEUM (including NATURAL GAS)											
Crude oil	..	'000 bls	..	..	2,415	..	11,649	..	..	..	14,064
Natural gas	..	mil. cu ft	..	(b) 725	2,005	..	144	..	..	..	2,874
Natural gas condensate	..	bls	..	..	2,333	..	..	..	..	..	2,333
CONSTRUCTION MATERIALS											
Sand	..	'000 tons	6,772	4,757	1,848	2,553	n.a.	290	} 483	530 {	(c) 16,711
Gravel	..	'000 tons	3,439	2,301	2,094	522	n.a.	1,465			(c) 10,343
Dimension stone	..	'000 tons	34	9	(d)	53	179	1	} 169	496 {	286
Crushed and broken stone	..	'000 tons	9,595	12,952	2,988	10,687	4,614	1,437			42,925
Other (decomposed rock, etc.)	..	'000 tons	21,278	1,600	(d)	..	..	186			23,376

(a) Includes brown coal used for briquette production. (b) Source : Department of National Development.
 (c) Incomplete, see individual States. (d) Not available for publication.

TABLE 1. -- QUANTITY OF MINERALS PRODUCED, 1968-69 - continued

Mineral			N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	Aust.
METALLIC MINERALS - continued										
Manganese ore -										
Metallurgical grade	..	tons	..	..	..	..	163,169	..	670,418	833,587
Other grades	..	"	..	..	..	45	..	..	186	231
Mineral sands -										
Ilmenite concentrate	..	tons	11,607	..	6,553	..	638,533	..	..	656,693
Leucoxene concentrate	..	"	..	..	..	..	8,730	..	..	8,730
Monazite concentrate	..	"	726	..	488	..	3,014	..	..	4,228
Rutile concentrate	..	"	206,310	..	102,390	..	1,260	1,702	..	311,662
Xenotime concentrate	..	"	..	..	..	..	38	..	..	38
Zircon concentrate	..	"	(a)207,167	..	(b)80,555	..	51,785	2,213	..	341,720
Molybdenite concentrate	..	tons	..	..	47	..	..	..	..	47
Nickel concentrate	..	tons	..	..	..	..	51,140	..	..	51,140
Pyrite concentrate	..	tons	..	..	..	79,413	17,153	36,238	..	132,804
Tantalite-columbite concentrate	..	lb	..	..	..	..	202,868	..	..	202,868
Tin concentrate	..	tons	2,463	61	1,632	..	899	6,583	63	11,701
Tin-copper concentrate	..	tons	..	..	..	..	..	2,111	..	2,111
Tungsten concentrates -										
Scheelite concentrate	..	tons	..	..	3	..	..	1,560	..	1,563
Wolfram concentrate	..	"	1	..	164	..	..	523	46	734

(a) Excludes 57,777 tons of zircon-rutile concentrates valued at \$1,911,000 shipped to Queensland for final separation.

(b) Excludes 104,244 tons of wet mixed concentrates valued at \$2,284,000 shipped to N.S.W. for final separation.

TABLE 1. - QUANTITY OF MINERALS PRODUCED, 1968-69 - continued

Mineral			N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
METALLIC MINERALS - continued											
Zinc concentrate	..	tons	546,657	..	150,644	..	..	85,569	3,072	..	785,942
Zinc ore	..	"	..	..	..	11,200	..	..	..	..	11,200
COAL											
Black coal -											
Semi-anthracite	..	'000 tons	..	..	20	..	..	2	..	..	.22
Bituminous	..	" "	31,887	13	7,000	..	..	108	..	..	39,008
Sub-bituminous	..	" "	..	..	375	2,143	1,103	..	..	..	3,621
Total	..	" "	31,887	13	7,395	2,143	1,103	109	..	..	42,650
Underground	..	" "	29,973	13	3,265	..	479	109	..	..	33,840
Open-cut	..	" "	1,914	..	4,130	2,143	624	..	..	..	8,810
Brown coal (lignite) (a)	..	'000 tons	..	23,128	..	..	..	..	..	..	23,128
Brown coal briquettes	..	'000 tons	..	1,471	..	..	..	..	..	..	1,471
CRUDE PETROLEUM (including NATURAL GAS)											
Crude oil	..	'000 bls	..	..	2,415	..	11,649	..	..	..	14,064
Natural gas	..	mil. cu ft	..	(b)725	2,005	..	144	..	..	..	2,874
Natural gas condensate	..	bls	..	..	2,333	..	..	..	..	..	2,333
CONSTRUCTION MATERIALS											
Sand	..	'000 tons	6,772	4,757	1,848	2,553	n.a.	290	} 483	530{	(c)16,711
Gravel	..	'000 tons	3,439	2,301	2,094	522	n.a.	1,465			(c)10,343
Dimension stone	..	'000 tons	34	9	(d)	53	179	1	} 169	496{	286
Crushed and broken stone	..	'000 tons	9,595	12,952	2,988	10,687	4,614	1,437			42,925
Other (decomposed rock, etc.)	..	'000 tons	21,278	1,600	(d)	..	..	186			23,376

(a) Includes brown coal used for briquette production. (b) Source : Department of National Development.
 (c) Incomplete, see individual States. (d) Not available for publication.

TABLE 1. - QUANTITY OF MINERALS PRODUCED, 1968-69 - continued

Mineral		N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	Aust.
OTHER NON-METALLIC MINERALS									
Asbestos -									
Chrysotile -	short tons	821	..	..	..	..	..	..	821
Fibre	" "	814	..	..	..	..	..	..	814
Fines	" "	7	..	..	..	..	..	..	7
Barite	tons	5,663	..	..	38,832	1,084	..	..	45,579
Clays -									
Bentonite ..	tons	..	..	96	..	..	..	..	96
Bentonitic clay ..	"	..	..	133	..	271	..	..	404
Brick clay and shale	'000 tons	3,355	1,673	375	481	1,031	162	..	7,077
Cement clay and shale	tons	107,582	..	(a)	38,392	(a)	29,840	..	355,332
Damouritic clay ..	"	..	..	..	506	..	..	..	506
Fireclay n.e.i. ..	"	99,970	21,209	(a)	38,642	(a)	..	..	189,709
Fuller's earth ..	"	105	..	..	..	..	..	..	105
Kaolin (incl. ball clay)	"	28,290	17,095	1,192	8,317	258	..	..	55,152
Pipe and tile clay ..	"	97,081	61,043	(a)	..	(a)	8,435	..	285,002
Stoneware clay ..	"	167,133	116,523	60,291	33,430	683	10,246	..	388,306
Other clays ..	"	1	463	..	..	..	..	..	464
Diatomite	tons	2,183	..	460	..	..	..	..	2,643
Dolomite	tons	7,766	..	8,965	286,705	..	2,208	..	305,644
Felspar (incl. cornish stone)	tons	2,087	..	..	3,076	579	..	..	5,742
Garnet concentrate ..	tons	40	..	282	..	..	..	..	322

(a) Not available for publication.

TABLE 1. - QUANTITY OF MINERALS PRODUCED, 1968-69 - continued

Mineral			N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	Aust.
OTHER NON-METALLIC MINERALS - continued										
Gypsum	..	tons	28,075	80,355	..	678,276	107,854	..	..	894,560
Limestone (including shell and coral)	..	'000 tons	2,730	1,966	1,320	1,679	832	552	..	9,078
Lithium ores	..	tons	..	..	..	..	817	..	..	817
Lithia (Li ₂ O) content	..	units*	..	..	..	..	3,443	..	..	3,443
Magnesite, crude	..	tons	23,343	..	..	..	..	..	..	23,343
Mineral pigments - red ochre	..	tons	..	..	..	..	588	66	..	654
Peat (a)	..	tons	549	..	..	..	1,120	144	..	1,813
Pebbles - for grinding	..	tons	..	..	..	78	..	1,022	..	1,100
Perlite	..	tons	..	..	795	..	..	..	..	795
Phosphate rock	..	tons	..	..	..	10,557	..	..	..	10,557
Pyrophyllite	..	tons	1,933	..	..	..	..	..	..	1,933
Salt	..	'000 tons	..	(b)	(b)	586	196	..	..	1,001
Silica	..	tons	316,466	..	198,754	60,815	24,172	18,220	..	618,427
Sillimanite	..	tons	1,484	..	..	424	..	..	..	1,908
Talc (incl. steatite and chlorite)	..	tons	2,449	..	..	9,898	29,159	..	..	41,506

*22.41b. (a) Comprises peat for fertiliser and peat moss. (b) Not available for publication.

TABLE 2.- VALUE OF MINERALS PRODUCED, 1968-69

(\$'000)

Mineral	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	Aust.
METALLIC MINERALS								
Antimony concentrate	83	..	..	..	..	..	..	83
Bauxite	18	20	(a)	..	(a)	..	..	(a)
Beryllium ore	2	..	..	..	5	..	..	7
Bismuth concentrate	..	..	49	..	..	..	2,038	2,087
Chromite	..	..	..	..	..	..	..	..
Copper -								
Concentrate	10,100	..	69,600	..	647	16,661	6,643	103,651
Ore	(b)53	41	(a)	79	(a)	167	106	2,387
Ore for fertiliser	..	..	..	..	57	..	23	80
Precipitate	112	..	23	13	..	25	180	352
Gold -								
Bullion	13	347	593	..	18,935	4	3,060	22,953
Ore	..	..	..	..	..	..	..	..
Iron ore	..	..	..	39,552	140,075	8,353	5,455	193,435
Iron oxide for -								
Cement manufacture	65	..	8	..	..	59	..	132
Coal washing	..	..	404	..	..	..	..	404
Flux	..	..	..	..	..	..	..	..
Gas purification	1	5	..	..	..	..	..	5
Lead concentrate	52,664	..	25,587	..	104	1,764	437	80,556
Lead-copper concentrate	..	..	..	..	..	4,043	..	4,043
Lead ore (c)	161	..	613	23	..	..	..	797
Lead-zinc middlings	303	..	..	..	..	..	..	303

(a) Not available for publication. (b) See footnote (a) on page 6. (c) Includes value of silver-lead ore, silver-lead slimes and lead slag.

TABLE 2. VALUE OF MINERALS PRODUCED, 1968-69 - continued
(\$'000)

Mineral		N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	Aust.
METALLIC MINERALS - continued									
Manganese ore -									
Metallurgical grade	.. ..	..	..	..	..	1,159	..	9,565	10,723
Other grades	.. ..	..	..	..	1	..	..	10	10
Mineral sands -									
Ilmenite concentrate	.. ..	37	..	9	..	5,334	..	..	5,380
Leucoxene concentrate	.. ..	..	..	..	..	358	..	..	358
Monazite concentrate	.. ..	99	..	55	..	348	..	..	501
Rutile concentrate	.. ..	15,658	..	7,518	..	100	136	..	23,413
Xenotime concentrate	.. ..	..	..	..	..	76	..	..	76
Zircon concentrate	.. ..	(a)7,492	..	(b)2,763	..	1,194	66	..	11,515
Molybdenite concentrate	.. ..	..	..	76	..	..	..	..	76
Nickel concentrate	.. ..	..	..	..	..	(c)	..	..	(c)
Pyrite concentrate	.. ..	..	..	..	1,112	188	413	..	1,713
Tantalite - columbite concentrate	.. ..	..	..	..	..	261	..	..	261
Tin concentrate	.. ..	3,849	81	2,840	..	1,773	10,601	55	19,200
Tin-copper concentrate	.. ..	..	..	..	..	..	469	..	469
Tungsten concentrates -									
Scheelite concentrate	.. ..	..	..	8	..	..	4,629	..	4,636
Wolfram concentrate	.. ..	2	..	485	..	..	1,537	63	2,087

(a) See footnote (a) page 7. (b) See footnote (b) page 7. (c) Not available for publication.

TABLE 2. VALUE OF MINERALS PRODUCED, 1968-69 - continued
(\$'000)

Mineral	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Australia
METALLIC MINERALS - continued									
Zinc concentrate	23,430	..	7,231	..	..	4,519	105	..	35,285
Zinc ore	..	..	..	112	..	..	..	..	112
<u>Total metallic minerals</u> ..	114,142	495	143,317	40,891	183,047	53,445	27,740	..	563,077
COAL									
Black coal -									
Semi anthracite	..	..	132	..	..	11	..	..	142
Bituminous	148,772	105	40,249	..	..	451	..	..	189,577
Sub-bituminous	..	..	1,012	3,129	4,853	..	..	..	8,993
<u>Total</u>	148,772	105	41,392	3,129	4,853	462	..	..	198,713
Brown coal (lignite) ..	..	20,880	..	..	..	..	..	..	20,880
<u>Total coal</u>	148,772	20,985	41,392	3,129	4,853	462	..	..	219,593
CRUDE PETROLEUM (including NATURAL GAS)									
Crude oil	..	..	6,039	..	33,549	..	..	..	39,589
Natural gas	..	(a) 250	598	..	72	..	..	..	920
Natural gas condensate ..	..	..	5	..	..	..	..	..	5
<u>Total crude petroleum</u> <u>(including natural gas)</u>	..	250	6,642	..	33,621	..	..	..	40,513
CONSTRUCTION MATERIALS									
Sand	6,342	6,470	2,673	2,165	n.a.	341	742	659	(b) 18,605 (b) 15,622
Gravel	7,766	1,251	4,045	403	n.a.	1,369			
Dimension stone	427	170	(c)	371	357	10	888	891	1,423 70,490 8,921
Crushed & broken stone ..	17,176	22,718	4,755	11,500	10,073	2,530			
Other (decomposed rock, etc.) ..	7,400	1,046	(c)	..	..	221			
<u>Total construction materials</u>	39,112	31,655	11,774	14,439	10,430	4,471	1,630	1,550	115,062

(a) Source: Department of National Development. (b) Incomplete, see individual States. (c) Not available for publication.

TABLE 2. VALUE OF MINERALS PRODUCED 1968-69 - continued
(\$'000)

Mineral	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	Aust.
OTHER NON-METALLIC MINERALS								
Asbestos -								
Chrysotile -	180	..	..	..	..	..	..	180
Fibre	180	..	..	..	..	..	..	180
Fines	..	..	..	..	..	..	..	..
Barite	23	..	..	370	16	..	..	409
Clays -								
Bentonite	..	..	5	..	..	..	..	5
Bentonitic clay	..	..	3	..	2	..	..	4
Brick clay and shale	3,772	1,427	170	577	804	155	..	6,905
Cement clay and shale	104	..	(a)	48	(a)	15	..	239
Damouritic clay	..	..	..	6	..	..	..	6
Fireclay n.e.i.	260	28	(a)	77	(a)	..	..	388
Fuller's earth	1	..	..	..	..	..	..	1
Kaolin (incl. ball clay)	159	191	(a)	86	(a)	..	..	451
Pipe and tile clay	118	39	(a)	..	(a)	7	..	223
Stoneware clay	217	119	(a)	100	(a)	12	..	489
Other clays	..	3	..	..	..	..	..	3
Diatomite	18	..	3	..	..	..	..	21
Dolomite	125	..	50	510	..	12	..	699
Felspar (incl. cornish stone)	27	..	..	22	9	..	..	57
Garnet concentrate	..	..	5	..	..	..	..	5
Gems -								
Opal	2,240	..	3	5,200	..	..	..	7,443
Sapphire	1,134	..	579	..	..	..	..	1,713
Other	13	..	75	5	11	..	..	104

(a) Not available for publication.

TABLE 2. VALUE OF MINERALS PRODUCED, 1968-69 - continued
(\$'000)

Mineral	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Australia
OTHER NON-METALLIC MINERALS - continued									
Gypsum	148	145	..	1,677	315	..	..	..	2,284
Limestone (including shell and coral)	3,130	(a)	3,896	2,533	(a)	578	..	..	13,364
Lithium ores	..	..	..	..	13	..	..	..	13
Magnesite, crude ..	238	..	..	..	..	..	..	..	238
Mineral pigments - red ochre ..	..	..	..	..	9	1	..	..	10
Peat (b)	14	..	..	..	4	7	..	..	26
Pebbles - for grinding ..	..	..	..	2	..	15	..	..	17
Perlite	..	..	5	..	..	..	..	..	5
Phosphate rock	..	..	..	42	..	..	..	..	42
Pyrophyllite	22	..	..	..	..	..	..	..	22
Salt	..	(a)	(a)	2,345	613	..	..	..	4,474
Silica	781	..	543	73	21	69	..	..	1,486
Sillimanite	33	..	..	11	..	..	..	..	44
Talc (incl. steatite and chlorite)	22	..	..	182	413	..	..	..	617
<u>Total non-metallic minerals</u>	12,777	5,263	6,307	13,865	2,903	871	..	..	41,987
TOTAL									
TOTAL ALL MINERALS AND CONSTRUCTION MATERIALS	314,802	58,648	209,432	72,325	234,854	59,250	29,370	1,550	980,231

(a) Not available for publication. (b) Comprises peat for fertiliser and peat moss.

TABLE 3. - QUANTITY OF MINERALS PRODUCED, AUSTRALIA

Mineral				1965	1966	1967	1968	1968-69
METALLIC MINERALS								
Antimony -								
Concentrate	..	..	tons	55	150	152	241	261
Ore	..	..	"	..	..	2	3	..
Bauxite			'000 tons	1,168	1,798	4,176	4,877	6,217
Beryllium ore	..	..	tons	38	52	55	15	14
Bismuth concentrate		..	tons	..	1	106	1,553	1,528
Chromite	..	..	tons	23	..	138	86	..
Copper -								
Concentrate	..	..	tons	389,398	477,987	391,954	451,521	492,429
Ore	..	..	"	40,132	52,340	29,230	(a)37,772	(a)44,781
Ore for fertiliser		..	"	1,193	1,123	2,223	1,430	1,314
Precipitate	..	..	"	299	723	725	579	608
Gold -								
Bullion	..	..	oz	1,118,503	1,078,587	997,793	908,286	822,548
Ore	..	..	tons	..	..	6	6	6
Iron ore	..	..	'000 tons	6,695	10,893	17,036	(b)26,204	(b)32,027
Iron oxide for -								
Cement manufacture		..	tons	26,114	24,183	27,949	32,241	30,801
Coal washing	..	..	"	5,019	11,565	13,952	14,955	14,740
Flux	..	..	"	10,500	11,554	10,520	15,673	..
Gas purification	..	..	"	420	1,072	579	224	599

(a) Includes copper slag.

(b) Includes iron concentrate.

TABLE 3. - QUANTITY OF MINERALS PRODUCED, AUSTRALIA - continued

Mineral			1965	1966	1967	1968	1968-69
METALLIC MINERALS - continued							
Lead concentrate	..	tons	503,356	515,573	537,193	601,709	638,717
Lead-copper concentrate	..	tons	10,424	12,083	12,227	12,558	12,827
Lead ore (a)	..	tons	24,906	19,221	18,224	51,461	52,410
Lead-zinc middlings	..	tons	..	14,254	14,685	5,373	3,246
Manganese ore -							
Battery grade	..	tons	1,166	3,663	..	..	..
Metallurgical grade	..	"	97,903	306,361	559,600	731,867	833,587
Other grades	..	"	716	679	367	210	231
Mineral sands -							
Ilmenite concentrate	..	tons	441,034	513,011	544,216	551,501	656,693
Leucocene concentrate	..	"	380	756	696	1,607	8,730
Monazite concentrate	..	"	2,305	1,984	2,313	2,055	4,228
Rutile concentrate	..	"	217,330	243,858	265,514	287,617	311,662
Xenotime concentrate	..	"	..	..	18	18	38
Zircon concentrate	..	"	226,863	235,649	283,682	294,195	341,720
Molybdenite concentrate	..	tons	44,855	8,844	..	22,539	47
Nickel concentrate	..	tons	..	..	15,753	36,880	51,140
Osmiridium - native	..	oz	..	..	..	12	..
Pyrite concentrate	..	tons	204,011	245,998	252,748	165,265	132,804
Tantalite-columbite concentrate	..	lb	25,581	10,550	79,587	238,134	202,868
Tin concentrate	..	tons	6,237	7,604	8,557	10,420	11,701
Tin-copper concentrate	..	tons	..	..	..	877	2,111
Tungsten concentrates -							
Scheelite concentrate	..	tons	1,150	1,308	1,202	1,465	1,563
Wolfram concentrate	..	"	487	498	448	559	734

(a) Includes silver-lead ore, silver-lead slimes and lead slag.

TABLE 3. - QUANTITY OF MINERALS PRODUCED, AUSTRALIA - continued

Mineral			1965	1966	1967	1968	1968-69
METALLIC MINERALS - continued							
Zinc concentrate	..	tons	604,211	638,788	702,792	718,311	785,942
Zinc ore	..	tons	..	..	..	2,700	11,200
Zinc ore for fertiliser	..	tons	..	325	198	..	..
COAL							
Black coal -							
Semi anthracite	..	'000 tons	70	45	38	31	22
Bituminous	..	" "	28,228	30,045	31,299	36,665	39,008
Sub-bituminous	..	" "	3,140	3,243	3,370	3,488	3,621
	<u>TOTAL</u>	" "	31,439	33,334	34,707	40,183	42,650
Underground	..	" "	26,876	28,084	29,267	32,252	33,840
Open-cut	..	" "	4,562	5,250	5,440	7,931	8,810
Brown coal (lignite) (a)	..	'000 tons	20,659	21,783	23,384	22,971	23,128
Brown coal briquettes	..	'000 tons	1,908	1,857	1,849	1,553	1,471
CRUDE PETROLEUM (including NATURAL GAS)							
Crude oil	..	'000 bls	2,622	3,390	7,600	13,877	14,064
Natural gas	..	mil. cu ft	143	143	152	216	2,874
Natural gas condensate	..	bls	122	121	..	..	2,333
CONSTRUCTION MATERIALS							
Sand (b)	..	'000 tons	11,444	10,666	11,149	14,406	16,711
Gravel (b)	..	'000 tons	7,760	8,549	9,048	8,340	10,343
Dimension stone	..	'000 tons	467	241	286	275	286
Crushed and broken stone	..	'000 tons	39,733	46,796	46,268	44,375	42,925
Other (decomposed rock, etc.)	..	'000 tons	21,363	22,216	25,202	26,581	23,376

(a) Includes brown coal used for briquette production. (b) Incomplete owing to difficulties of coverage in some States.

TABLE 3. - QUANTITY OF MINERALS PRODUCED, AUSTRALIA - continued

Mineral				1965	1966	1967	1968	1968-69
OTHER NON-METALLIC MINERALS								
Asbestos -		short tons		11,556	13,458	600	897	821
Chrysotile	..	" "		1,172	627	600	897	821
Crocidolite	..	" "		10,394	12,841	..	..	..
Barite	..	tons		11,976	13,724	15,666	39,155	45,579
Clays -								
Bentonite	..	tons		160	160	150	100	96
Bentonitic clay	..	"		1,027	655	207	202	404
Brick clay and shale	..	'000 tons		5,056	5,187	5,697	6,422	7,077
Cement clay and shale	..	tons		252,953	239,380	159,234	251,173	355,332
Damouritic clay	..	"		674	614	487	486	506
Fireclay n.e.i.	..	"		233,182	186,182	238,716	294,924	189,709
Fuller's earth	..	"		152	..	75	75	105
Kaolin (incl. ball clay)	..	"		58,447	50,110	65,379	59,343	55,152
Pipe and tile clay	..	"		174,092	167,953	174,218	225,903	285,002
Stoneware clay	..	"		262,395	264,941	304,837	541,986	388,306
Other clays	..	"		24,058	42,480	17,792	22,062	(a)464
Diatomite	..	tons		7,063	7,592	11,103	6,725	2,643
Dolomite	..	tons		258,661	256,008	290,659	316,731	305,644
Felspar (incl. cornish stone)	..	tons		8,726	7,259	4,450	4,838	5,742
Garnet concentrate	..	tons		130	239	591	167	322

(a) Excludes Western Australian production of Stoneware and Tile clays which was classified to "Other clays" in previous years.

TABLE 3. - QUANTITY OF MINERALS PRODUCED, AUSTRALIA - continued

Mineral				1965	1966	1967	1968	1968-69
OTHER NON-METALLIC MINERALS - continued								
Gypsum	..	..	tons	833,521	801,552	914,084	843,744	894,560
Limestone (including shell and coral)	'000	tons		7,516	7,730	8,355	8,470	9,078
Lithium ores	..	..	tons	310	933	667	738	817
Lithia (Li ₂ O) content	..	..	units*	1,302	3,919	2,906	3,112	3,443
Loam - for foundry moulding	..	..	tons	15,580	9,506	n.a.	n.a.	n.a.
Magnesite, crude	..	..	tons	26,362	19,556	23,653	23,146	23,343
Mineral pigments - red ochre	..	..	tons	227	272	358	526	654
Peat (a)	..	..	tons	n.a.	n.a.	n.a.	n.a.	1,813
Pebbles - for grinding	..	..	tons	1,049	1,043	1,305	1,321	1,100
Perlite	..	..	tons	764	1,544	1,389	1,049	795
Phosphate rock	..	..	tons	4,519	5,715	11,770	5,744	10,557
Pyrophyllite	..	..	tons	..	..	..	501	1,933
Salt	..	..	'000 tons	655	645	703	900	1,001
Serpentine	..	..	tons	151	..	..	..	..
Silica	..	..	tons	320,937	347,123	443,555	542,680	618,427
Sillimanite	..	..	tons	2,554	2,664	1,183	2,115	1,908
Talc (incl. steatite and chlorite)	..	..	tons	19,719	17,327	17,779	38,280	41,506

* 22.4 lb. (a) Comprises peat for fertiliser and peat moss.

TABLE 4.-VALUE OF MINERALS PRODUCED, AUSTRALIA
(\$'000)

Mineral	1965	1966	1967	1968	1968-69
METALLIC MINERALS					
Antimony -					
Concentrate	21	43	54	83	83
Ore	4,600	(a)	(a)	(a)	(a)
Bauxite	8	14	21	7	7
Beryllium ore	..	2	139	1,979	2,087
Bismuth concentrate	..	..	7	4	..
Chromite					
Copper -					
Concentrate	50,790	87,523	72,515	(b)92,396	103,651
Ore					(b)2,387
Ore for fertiliser					80
Precipitate					352
Gold -					
Bullion	25,619	26,371	24,456	23,525	22,953
Ore	..	..	..	..	..
Iron ore	14,640	41,728	82,994	131,482	193,435
Iron oxide	212	289	501	578	542
Lead concentrate					80,556
Lead-copper concentrate	87,947	76,831	73,654	89,705	4,043
Lead ore (c)					797
Lead-zinc middlings					303

(a) Not available for publication. (b) Includes value of copper slag. (c) Includes value of silver-lead ore, silver-lead slimes and lead slag.

TABLE 4.-VALUE OF MINERALS PRODUCED, AUSTRALIA - continued
($\$1000$)

Mineral	1965	1966	1967	1968	1968-69
METALLIC MINERALS - continued					
Manganese ore	808	3,462	8,007	8,358	10,734
Mineral sands -					
Ilmenite concentrate ..	3,755	4,242	4,390	4,752	5,380
Leucoxene concentrate ..	14	29	33	70	358
Monazite concentrate ..	224	203	289	237	501
Rutile concentrate ..	15,038	17,068	19,615	21,528	23,413
Xenotime concentrate ..	..	..	45	45	76
Zircon concentrate (a) ..	6,136	8,255	10,937	10,967	11,515
Molybdenite concentrate ..	49	6	..	(b)	76
Nickel concentrate	..	..	(b)	(b)	(b)
Osmiridium-native	..	..	..	2	..
Pyrite concentrate	3,040	(b)	(b)	1,842	1,713
Tantalite-columbite concentrate ..	21	19	(b)	(b)	261
Tin concentrate	12,237	14,332	15,011	16,691	19,200
Tin-copper concentrate	..	..	..	(b)	469
Tungsten concentrates	2,692	4,469	4,509	5,514	6,723
Zinc concentrate					35,285
Zinc ore	36,818	32,890	29,354	30,398	112
Zinc ore for fertiliser					..
<u>Total metallic minerals</u>	264,668	327,633	370,892	468,353	563,077

(a) Excludes value of mixed concentrates shipped interstate for final separation. (b) Not available for publication.

TABLE 4.-VALUE OF MINERALS PRODUCED, AUSTRALIA - continued
(\$'000)

Mineral	1965	1966	1967	1968	1968-69
COAL					
Black coal	143,703	151,380	160,099	188,785	198,713
Brown coal (lignite)	18,436	20,064	20,686	21,555	20,880
<u>Total coal</u>	162,139	171,444	180,785	210,340	219,593
CRUDE PETROLEUM (including NATURAL GAS)					
Crude oil	5,266	9,148	21,200	39,191	39,589
Natural gas	77	80	86	116	920
Natural gas condensate	1	1	..	..	5
<u>Total crude petroleum (including natural gas)</u>	5,344	9,229	21,286	39,307	40,513
CONSTRUCTION MATERIALS					
<u>Total construction materials (a)</u>	80,183	83,449	91,789	96,812	115,062
OTHER NON-METALLIC MINERALS					
Asbestos	1,916	2,224	108	181	180
Barite	150	199	214	410	409
Clays -					
Brick clay and shale	5,560	6,004	6,472	7,042	6,905
Other clays	1,782	1,650	1,729	2,122	1,808
Diatomite	24	62	71	52	21
Dolomite	511	579	674	720	699
Felspar (incl. cornish stone)	103	81	43	42	57
Garnet concentrate	2	4	4	2	5
Gems	3,958	5,064	4,605	6,575	9,260

(a) Incomplete owing to difficulties of coverage in some States.

TABLE 4. VALUE OF MINERALS PRODUCED, AUSTRALIA - continued
(£'000)

Mineral	1965	1966	1967	1968	1968-69
OTHER NON-METALLIC MINERALS - continued					
Gypsum	2,015	2,006	2,119	2,171	2,284
Limestone (including shell & coral) ..	9,397	10,277	11,700	11,963	13,364
Lithium ores	4	14	9	9	13
Loam - for foundry moulding	24	17	n.a.	n.a.	n.a.
Magnesite, crude	273	196	256	228	238
Mineral pigments - red ochre	2	3	5	7	10
Peat (a)	n.a.	n.a.	n.a.	n.a.	26
Pebbles - for grinding	17	19	22	23	17
Perlite	1	3	3	7	5
Phosphate rock	18	23	47	23	42
Pyrophyllite	..	..	..	7	22
Salt	2,556	2,626	2,769	3,600	4,474
Serpentine	..	..	..	..	..
Silica	538	533	772	1,038	1,486
Sillimanite	61	58	29	47	44
Talc (incl. steatite and chlorite) ..	331	278	295	657	617
<u>Total non-metallic minerals</u>	29,244	31,921	31,946	36,928	41,987
TOTAL					
TOTAL ALL MINERALS AND CONSTRUCTION MATERIALS	541,578	623,678	696,701	851,742	980,231

(a) Comprises peat for fertiliser and peat moss.

TABLE 5. VALUE OF MINERALS PRODUCED
MINING ESTABLISHMENTS AND OTHER PRODUCERS (a)
AUSTRALIA, 1968-69
(\$'000)

	Value of minerals produced by		
	Mining establishments	Other producers	Total
<u>Mineral group -</u>			
Metallic minerals	561,379	1,698	563,077
Coal	219,199	394	219,593
Crude petroleum (including natural gas)	40,513	..	40,513
Construction materials	94,083	(b)20,978	115,062
Other non-metallic minerals	31,403	(c)10,584	41,987
<u>TOTAL</u>	946,577	33,654	980,231
<u>States and Territories -</u>			
New South Wales	300,863	13,940	314,802
Victoria	53,838	4,810	58,648
Queensland	206,330	3,102	209,432
South Australia	65,444	6,881	72,325
Western Australia	233,207	1,645	234,854
Tasmania	56,977	2,273	59,250
Northern Territory	28,438	932	29,370
Australian Capital Territory	1,480	70	1,550

(a) See Explanatory Notes, paragraph 6. (b) Principally producers classified to the construction and transport industries, local government authorities and other small producers. (c) Principally brick and cement manufacturing establishments producing clay and limestone.

TABLE 6. - CONTENTS OF METALLIC MINERALS PRODUCED, 1968-69

In this table the contents of the various minerals have been re-assembled to show the aggregate quantity of each metal or element contained in the various metallic minerals produced. The totals compiled in this way are known as "Mine Production" and, as no allowance has been made for losses in smelting and refining, they are, in general, greater than the quantities actually recovered.

Mineral in which contained			N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	Australia
ALUMINA (Al_2O_3) ('000 tons)										
Bauxite	..	..	4	2	2,414	..	787	..	..	3,207
ANTIMONY (tons)										
Antimony concentrate	..	..	170	..	..	..	..	..	..	170
Lead concentrate	..	..	679	..	..	..	..	..	..	679
Lead-zinc middlings	..	..	5	..	..	..	..	..	..	5
<u>Total</u>			854	..	..	..	..	..	..	854
BERYLLIUM OXIDE (BeO) (units of 22.4 lb)										
Beryllium ore	..	..	1	..	..	..	122	..	..	123
BISMUTH (lb)										
Bismuth concentrate	..	..	..	..	20,720	..	..	..	400,960	421,680
CADMIUM (tons)										
Lead concentrate	..	..	54	..	..	..	..	..	..	54
Lead-zinc middlings	..	..	1	..	..	..	..	..	..	1
Zinc concentrate	..	..	1,062	..	..	..	..	77	16	1,155
<u>Total</u>			1,117	..	..	..	..	77	16	1,210
COBALT (tons)										
Nickel concentrate	..	..	..	..	..	..	99	..	..	99
Zinc concentrate	..	..	113	..	..	..	..	..	..	113
<u>Total</u>			113	..	..	..	99	..	..	212

TABLE 6. - CONTENTS OF METALLIC MINERALS PRODUCED, 1968-69 - continued

Mineral in which contained	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	Australia
COPPER (tons)								
Bismuth concentrate	..	..	..	..	..	..	158	158
Copper concentrate	10,226	..	78,268	..	775	16,337	7,494	113,100
Copper ore	181	30	1,398	77	6	162	111	1,965
Copper ore - for fertiliser	..	..	..	..	117	..	31	148
Copper precipitate	118	..	17	12	..	24	184	355
Lead concentrate	2,773	..	9	..	..	106	40	2,928
Lead-copper concentrate	..	..	..	..	..	1,339	..	1,339
Lead-zinc middlings	14	..	..	..	..	..	..	14
Nickel concentrate	..	..	..	..	767	..	..	767
Tin concentrate	..	..	8	..	..	..	..	8
Tin-copper concentrate	..	..	..	..	..	378	..	378
Zinc concentrate	569	..	..	..	..	286	..	855
<u>Total</u>	13,881	30	79,700	89	1,665	18,632	8,018	122,015
GOLD (fine oz)								
Bismuth concentrate	..	..	..	..	..	..	25,602	25,602
Copper concentrate	..	..	62,322	..	1,385	9,902	17,376	90,985
Copper ore	13	..	263	24	..	60	..	360
Copper precipitate	..	..	..	..	..	..	368	368
Gold ore	30	..	..	..	..	..	..	30
Gold - other forms	361	8,613	14,446	2	477,739	127	72,039	573,327
Lead concentrate	7,784	..	..	..	..	3,677	16	11,477
Lead-copper concentrate	..	..	..	..	..	22,872	..	22,872
Lead ore	..	..	..	42	..	..	..	42
Lead-zinc middlings	74	..	..	..	..	..	..	74
Zinc concentrate	1,522	..	..	..	..	2,906	..	4,428
<u>Total</u>	9,784	8,613	77,031	68	479,124	39,544	115,401	729,565
IRON ('000 tons)								
Iron ore	..	..	..	4,053	14,872	(a) 1,008	568	20,502
LEAD (tons)								
Copper concentrate	1,039	..	..	..	..	..	..	1,039
Lead concentrate	249,224	..	111,492	..	876	8,026	1,119	370,737
Lead-copper concentrate	..	..	..	..	..	4,757	..	4,757
Lead ore	939	..	2,548	79	..	..	..	3,566
Lead-zinc middlings	910	..	..	..	..	..	..	910
Zinc concentrate	5,267	..	2,776	..	..	2,435	47	10,525
<u>Total</u>	257,379	..	116,816	79	876	15,218	1,166	391,534

(a) Contained in iron concentrate.

TABLE 6. - CONTENTS OF METALLIC MINERALS PRODUCED, 1968-69 - continued

Mineral in which contained	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	Australia
MANGANESE (tons)								
Manganese ore - metallurgical grade ..	..	..	..	..	75,613	..	291,156	366,769
Zinc concentrate ..	5,499	..	..	..	..	257	..	5,756
<u>Total</u>	5,499	..	..	..	75,613	257	291,156	372,525
MANGANESE DIOXIDE (MnO ₂) (tons)								
Manganese ore - other grades ..	..	..	..	30	..	..	118	148
MOLYBDENUM DISULPHIDE (MoS ₂) (lb)								
Molybdenite concentrate ..	124	..	89,500	..	..	..	..	89,624
MONAZITE (tons)								
Monazite concentrate ..	652	..	419	..	2,713	..	..	3,784
NICKEL (tons)								
Nickel concentrate ..	..	..	..	..	6,086	..	..	6,086
SILVER (fine oz)								
Bismuth concentrate ..	..	..	..	..	..	..	6,750	6,750
Copper concentrate ..	257,213	..	560,576	..	5,965	84,765	111,831	1,020,350
Copper ore ..	20	..	784	..	..	3,990	..	4,794
Copper precipitate ..	..	..	..	..	..	..	39	39
Gold ore ..	6	..	..	..	..	..	..	6
Gold - other forms ..	24	185	30,510	..	160,031	..	71	190,821
Lead concentrate ..	8,876,347	..	9,206,887	..	64	373,339	177,104	18,633,741
Lead-copper concentrate ..	..	..	..	..	..	1,072,249	..	1,072,249
Lead ore ..	68,112	..	132,384	1,902	..	..	..	202,398
Lead-zinc middlings ..	93,995	..	..	..	..	..	..	93,995
Zinc concentrate ..	490,478	..	490,868	..	..	254,986	28,854	1,265,186
<u>Total</u>	9,786,195	185	10,422,009	1,902	166,060	1,789,329	324,649	22,490,329
SULPHUR (tons)								
Lead concentrate ..	49,372	..	..	..	..	2,744	380	52,496
Lead-copper concentrate ..	..	..	..	..	..	3,322	..	3,322
Lead-zinc middlings ..	340	..	..	..	..	..	..	340
Pyrite concentrate ..	..	..	..	34,259	7,508	17,291	..	59,058
Zinc concentrate ..	170,459	..	..	..	..	27,218	943	198,620
<u>Total</u>	220,171	..	..	34,259	7,508	50,575	1,323	313,836

TABLE 6. - CONTENTS OF METALLIC MINERALS PRODUCED 1968-69 - continued

Mineral in which contained	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	Australia
TANTALITE-COLUMBITE ($Ta_2O_5 + Nb_2O_5$) (lb)								
Tantalite-columbite concentrate	..	..	..	..	17,645	..	..	17,645
TIN (tons)								
Tin concentrate	1,485	41	1,129	..	619	3,949	34	7,257
Tin-copper concentrate	..	..	..	..	..	135	..	135
Tantalite-columbite concentrate	..	..	..	..	19	..	..	19
<u>Total</u>	1,485	41	1,129	..	638	4,084	34	7,411
TITANIUM DIOXIDE (TiO_2) (tons)								
Ilmenite concentrate	5,225	..	3,089	..	349,539	..	..	357,853
Leucoxene concentrate	..	..	..	..	7,748	..	..	7,748
Rutile concentrate	198,056	..	99,580	..	1,215	1,598	..	300,449
<u>Total</u>	203,281	..	102,669	..	358,502	1,598	..	666,050
TUNGSTIC OXIDE (WO_3) (units of 22.4 lb)								
Scheelite concentrate	..	..	237	..	..	111,300	..	111,537
Wolfram concentrate	49	..	11,925	..	..	37,500	2,100	51,574
<u>Total</u>	49	..	12,162	..	..	148,800	2,100	163,111
YTTRIUM OXIDE (Y_2O_3) (lb)								
Xenotime concentrate	..	..	..	..	16,312	..	..	16,312
ZINC (tons)								
Copper concentrate	1,983	..	..	..	..	..	..	1,983
Lead concentrate	12,886	..	..	..	..	2,398	96	15,380
Lead-copper concentrate	..	..	..	..	..	1,456	..	1,456
Lead ore	513	..	..	..	..	..	..	513
Lead-zinc middlings	370	..	..	..	..	..	..	370
Zinc concentrate	287,701	..	78,285	..	..	46,763	1,574	414,323
Zinc ore	..	..	..	3,360	..	..	..	3,360
<u>Total</u>	303,453	..	78,285	3,360	..	50,617	1,670	437,385
ZIRCONIUM DIOXIDE (ZrO_2) (tons)								
Zircon concentrate	137,884	..	50,853	..	40,338	2,159	..	231,234

TABLE 7. - CONTENTS OF METALLIC MINERALS PRODUCED, AUSTRALIA

In this table the contents of the various minerals have been re-assembled to show the aggregate quantity of each metal or element contained in the various metallic minerals produced. The totals compiled in this way are known as "Mine Production" and, as no allowance has been made for losses in smelting and refining, they are, in general, greater than the quantities actually recovered.

Mineral in which contained			1965	1966	1967	1968	1968-69
ALUMINA (Al_2O_3) ('000 tons)							
Bauxite	..	..	613	939	2,258	2,633	3,207
ANTIMONY (tons)							
Antimony ore and concentrate	..	..	35	98	91	159	170
Lead concentrate	..	..	909	873	810	672	679
Lead-zinc middlings	..	..	..	..	29	11	5
<u>Total</u>			944	971	930	842	854
BERYLLIUM OXIDE (BeO) (units of 22.4 lb)							
Beryllium ore	..	..	457	637	675	178	123
BISMUTH (lb)							
Bismuth concentrate	..	..	..	717	25,536	403,200	421,680
CADMIUM (tons)							
Lead concentrate	..	..	71	65	66	57	54
Lead-zinc middlings	..	..	..	..	11	3	1
Zinc concentrate	..	..	1,084	1,147	1,247	1,299	1,155
<u>Total</u>			1,155	1,212	1,324	1,359	1,210
CHROMIC OXIDE (Cr_2O_3) (tons)							
Chromite	..	..	10	..	44	27	..

TABLE 7. - CONTENTS OF METALLIC MINERALS PRODUCED, AUSTRALIA - continued

Mineral in which contained	1965	1966	1967	1968	1968-69
COBALT (tons)					
Nickel concentrate	..	..	45	121	99
Zinc concentrate	90	84	101	114	113
<u>Total</u>	90	84	146	235	212
COPPER (tons)					
Bismuth concentrate	..	..	6	130	158
Copper concentrate	82,889	101,322	81,927	98,037	113,100
Copper ore	1,757	1,975	1,759	2,551	1,965
Copper ore - for fertiliser	184	165	186	196	148
Copper precipitate	214	545	472	330	355
Gold ore	..	..	..	1	..
Lead concentrate	3,558	3,522	3,624	3,683	2,928
Lead-copper concentrate	1,085	1,196	1,246	1,333	1,339
Lead ore	48	132	39	..	..
Lead-zinc middlings	..	..	84	27	14
Nickel concentrate	..	..	264	538	767
Tin concentrate	..	..	..	..	8
Tin-copper concentrate	..	..	..	169	378
Zinc concentrate	653	680	754	911	855
<u>Total</u>	90,388	109,537	90,361	107,906	122,015
GOLD (fine oz)					
Bismuth concentrate	..	..	1,578	27,535	25,602
Copper concentrate	90,495	160,355	111,481	94,499	90,985
Copper ore	137	153	157	136	360
Copper precipitate	..	..	..	378	368
Gold ore	..	..	3	30	30
Gold - other forms	753,033	720,010	653,073	623,032	573,327
Lead concentrate	11,358	10,842	10,460	10,008	11,477
Lead-copper concentrate	18,732	21,430	23,162	21,557	22,872
Lead ore	..	..	71	37	42
Lead-zinc middlings	..	..	681	223	74
Zinc concentrate	3,888	4,195	4,670	4,347	4,428
<u>Total</u>	877,643	916,985	805,336	781,782	729,565
IRON ('000 tons)					
Iron ore	4,297	6,956	10,928	(a)16,920	(a)20,502

(a) Including iron contained in iron concentrate.

TABLE 7. - CONTENTS OF METALLIC MINERALS PRODUCED, AUSTRALIA - continued

Mineral in which contained			1965	1966	1967	1968	1968-69
LEAD (tons)							
Copper concentrate	..	..	..	..	..	1,114	1,039
Lead concentrate	..	..	349,236	348,654	356,218	361,487	370,737
Lead-copper concentrate	..	..	3,858	4,497	4,605	4,679	4,757
Lead ore	..	..	2,064	1,422	1,644	3,337	3,566
Lead-zinc middlings	..	..	..	2,309	5,195	1,788	910
Zinc concentrate	..	..	6,979	8,016	8,117	10,266	10,525
<u>Total</u>			362,137	364,898	375,779	382,671	391,534
MANGANESE (tons)							
Manganese ore - metallurgical grade	..	..	48,874	145,017	258,325	339,519	366,769
Zinc concentrate	..	..	6,406	6,384	6,335	5,580	5,756
<u>Total</u>			55,280	151,401	264,660	345,099	372,525
MANGANESE DIOXIDE (MnO ₂) (tons)							
Manganese ore - battery grade	..	..	1,166	3,663	..	..	..
- other grades	..	..	486	428	228	134	148
<u>Total</u>			1,652	4,091	228	134	148
MOLYBDENUM DISULPHIDE (MoS ₂) (lb)							
Molybdenite concentrate	..	..	41,911	5,549	..	19,164	89,624
MONAZITE (tons)							
Monazite concentrate	..	..	2,165	1,836	2,163	1,849	3,784

TABLE 7. - CONTENTS OF METALLIC MINERALS PRODUCED, AUSTRALIA - continued

Mineral in which contained			1965	1966	1967	1968	1968-69
NICKEL (tons)							
Nickel concentrate	..	..	..	..	2,061	4,603	6,086
OSMIRIDIUM (oz)							
Osmiridium (native)	..	..	..	..	..	12	..
PLATINUM (oz)							
Gold - other forms	..	..	..	13	..	..	..
SILVER (fine oz)							
Bismuth concentrate	..	..	..	..	331	4,540	6,750
Copper concentrate	..	..	817,299	1,130,036	891,377	893,960	1,020,350
Copper ore	..	..	7,234	10,656	10,021	4,218	4,794
Copper precipitate	..	..	..	..	..	40	39
Gold ore	..	..	..	..	5	6	6
Gold - other forms	..	..	260,435	257,346	253,016	209,270	190,821
Lead concentrate	..	..	14,368,054	15,202,175	15,985,173	17,773,261	18,633,741
Lead-copper concentrate	..	..	1,034,888	1,107,854	1,113,584	1,053,590	1,072,249
Lead ore	..	..	95,543	57,738	150,014	144,659	202,398
Lead-zinc middlings	..	..	..	273,017	476,410	167,033	93,995
Zinc concentrate	..	..	697,386	848,869	962,192	1,143,306	1,265,186
<u>Total</u>			17,280,839	18,887,691	19,842,123	21,393,883	22,490,329
SULPHUR (tons)							
Lead concentrate	..	..	60,500	57,695	56,490	50,244	52,496
Lead-copper concentrate	..	..	2,744	3,160	3,081	3,260	3,322
Lead-zinc middlings	..	..	..	..	2,206	589	340
Pyrite concentrate	..	..	88,833	107,157	111,202	71,792	59,058
Zinc concentrate	..	..	193,447	203,555	219,392	224,105	198,620
<u>Total</u>			345,554	371,567	392,371	349,990	313,836
TANTALITE-COLUMBITE ($Ta_2O_5 + Nb_2O_5$) (lb)							
Tantalite-columbite concentrate	..	..	10,281	5,698	32,906	56,179	17,645
TIN (tons)							
Tin concentrate	..	..	3,849	4,807	5,586	6,477	7,257
Tin-copper concentrate	..	..	..	..	..	60	135
Tantalite-columbite concentrate	..	..	..	..	..	..	19
<u>Total</u>			3,849	4,807	5,586	6,537	7,411

TABLE 7. - CONTENTS OF METALLIC MINERALS PRODUCED, AUSTRALIA -- continued

Mineral in which contained			1965	1966	1967	1968	1968-69
TITANIUM DIOXIDE (TiO ₂) (tons)							
Ilmenite concentrate	..	..	238,844	280,841	297,385	301,069	357,853
Leucorene	..	..	347	630	617	1,444	7,748
Rutile concentrate	..	..	209,127	235,274	254,892	276,207	300,449
Total			448,318	516,745	552,894	578,720	666,050
TUNGSTIC OXIDE (WO ₃) (units of 22.4 lb)							
Scheelite concentrate	..	..	82,246	94,133	86,406	105,432	111,537
Tin concentrate	..	..	..	..	..	60	..
Wolfram concentrate	..	..	35,426	36,643	32,804	39,060	51,574
Total			117,672	130,776	119,210	144,552	163,111
YTTRIUM OXIDE (Y ₂ O ₃) (lb)							
Xenotime content	..	..	..	..	9,475	9,500	16,312
ZINC (tons)							
Copper concentrate	..	..	..	..	..	2,124	1,983
Lead concentrate	..	..	25,265	26,705	27,754	33,053	15,380
Lead-copper concentrate	..	..	1,202	1,391	1,342	1,414	1,456
Lead ore	..	..	1,556	1,040	1,073	738	513
Lead-zinc middlings	..	..	..	3,342	1,325	441	370
Zinc concentrate	..	..	321,208	336,808	368,999	377,142	414,323
Zinc ore	..	..	..	..	..	810	3,360
Zinc ore for fertiliser	..	..	..	55	34	..	..
Total			349,231	369,341	400,527	415,722	437,385
ZIRCONIUM DIOXIDE (ZrO ₂) (tons)							
Zircon concentrate	..	..	151,035	156,581	188,462	195,585	231,234

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COMMONWEALTH BUREAU OF CENSUS AND STATISTICS

CANBERRA, A.C.T. 2600

9 AUGUST 1971

NOTE. Inquiries concerning these statistics may be made in Canberra by telephoning 49 0211 extension 391 or, in each State capital, by telephoning the office of the Deputy Commonwealth Statistician.