

Governor in Council under the 3rd section of the Coroners Statute 1865 (28 Vict. No. 253).

610. Only five fire inquests were held during 1877, as against 15 in Fireinquests. 1876. Fire inquests are not held now as often as formerly, which is shown by the fact that in the three years ended with 1868 as many as 480 such inquiries were held, but no more than 240 in the succeeding nine years. This change has occurred, partly because fires have of late years been less numerous than formerly, but chiefly owing to the circumstance that, since the 19th August 1869, at which date the Amending Coroners Statute (33 Vict. No. 338) came into operation, fire inquests have not been held except upon the payment of a fee of £5 5s. by or on behalf of some one applying to have the enquiry made, or in pursuance of authority from the Minister of Justice, which is only given when circumstances appear sufficiently suspicious to warrant action being taken.

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## PART VIII.—PRODUCTION.

611. Changes at various periods have taken place in the mode of disposing of Crown lands in Victoria. A detailed account of these was given in the *Victorian Year-Book* 1874.\* It will therefore only be necessary on this occasion to describe the system at present in force. Disposal of Crown lands.

612. The Land Act in operation is that of 1869 (33 Vict. No. 360). Land Act 1869. Under this Statute an extent of land not exceeding 320 acres is allowed to be selected by one person. The selection is held under license for three years, within which period the licensee must reside on his selection at least two years and a half, must enclose it, cultivate 1 acre out of every 10 acres, and generally effect improvements to the value of 20s. per acre. The rent payable during this period is 2s. per acre per annum, which is credited to the selector as part payment of the principal. At the expiration of the three years' license, the selector, if he obtain a certificate from the Board of Land and Works that he has complied with these conditions, may either purchase his holding by paying the balance of 14s. per acre, or may convert his license into a lease extending over seven years, at an annual rental of 2s. per acre, which is also credited to the selector as part payment of the fee-simple. On the expiry of this lease the land becomes the freehold of the selector. The Statute also contains provision for the sale of Crown lands by

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\* Paragraphs 366 to 370.

auction at an upset price of £1 per acre, or such higher sum as the Governor may direct, the whole amount to be so sold in any one year not to exceed 200,000 acres.

Crown lands  
alienated,  
to end of  
1877.

613. The total extent sold up to the end of 1877 was 11,147,070 acres, and the extent granted without purchase was 4,050 acres. The whole area alienated in fee-simple was thus 11,151,120 acres.

Crown lands  
selected.

614. The selected lands of which the purchase had not been completed up to the end of the year amounted to 8,092,045 acres. Of this extent it is estimated that 1,037,000 acres had been forfeited or abandoned, and had reverted to the Crown. The remainder, representing approximately the whole area in process of alienation under deferred payments, amounted to 7,055,045 acres.

Crown lands  
unalien-  
ated.

615. According to the latest estimate, the total area of the colony is 56,446,720 acres; and if from this be deducted the sum of the lands granted, sold, and selected, amounting to 18,206,165 acres, it will follow that the residue, representing the Crown lands neither alienated nor in process of alienation, amounted at the end of 1877 to 38,240,555 acres.

Public  
estate,  
1877.

616. The whole of this residue, however, is not available for selection, for it embraces lands occupied by roads, the unsold portions of the sites of towns, the State forests, auriferous, pastoral, and timber reserves, and land which is at present useless, owing to its mountainous character or to its being covered with mallee scrub, lakes, or lagoons. Deducting these lands from the extent unalienated and unselected, already stated to have been 38,240,555 acres, it will be found that the area open for selection is narrowed to 12,002,587 acres. This will be at once seen by the following table, which shows the condition of the public estate at the end of 1877 :—

PUBLIC ESTATE OF VICTORIA ON 31ST DECEMBER 1877.

Condition of Land.	Number of Acres.
Land alienated in fee-simple ... ..	11,151,120
Land in process of alienation under deferred payments ... ..	7,055,045
Roads in connection with the above ... ..	962,176
Unsold land included in town reserves ... ..	242,922
Reserves in connection with pastoral occupation (about) ... ..	350,000
Auriferous lands (about) ... ..	1,047,000
State forests, not included in unavallable mountain ranges ... ..	243,000
Timber reserves ... ..	392,870
Mallee scrub, unavailable mountain ranges, lakes, lagoons, &c. (about) ... ..	23,000,000
Area available for selection at end of 1877 ... ..	12,002,587
Total area of Victoria ... ..	56,446,720

617. Omitting the 23,000,000 acres covered by mallee scrub, unavailable mountain ranges, lakes, lagoons, &c., the remainder of the colony, amounting to 33,446,720 acres, or about 59 per cent. of the total area, may be said to be suitable for occupation. Of this extent, at the end of 1877, 18,206,165 acres, or 54 per cent., were already alienated or in process of alienation ; 3,237,968 acres, or 10 per cent., were occupied by reserves ; and 12,002,587 acres, or 36 per cent., were available for selection.

Crown lands available for selection.

618. The difference between the extent available for selection at the end of 1876 and at the end of 1877 was 992,233 acres. The extent so available was equal at the former period to 23 per cent., and at the latter period to 21 per cent. of the whole area of the colony.

Extent available for selection, 1876 and 1877.

619. The land alienated from the Crown in fee-simple during 1877 amounted to 323,341 acres. Of this extent, 323,082 acres were sold, and 259 acres were granted without purchase.

Crown lands alienated, 1877.

620. Of the area sold, 76,006 acres, or less than a fourth, was disposed of by auction. Nearly the whole of the remainder was in the first instance selected under the system of deferred payments.

Crown lands sold by auction.

621. The amount realised for Crown lands sold in 1877 was £375,494, or at the rate of £1 3s. 3d. per acre. Of this sum, only £218,075 was received during the year, the remainder having been paid in former years as rents and license fees. The proportion sold by auction realised £127,975, or an average of £1 13s. 8d. per acre ; and the proportion sold otherwise than at auction realised £247,519, or an average of £1 0s. 0½d. per acre.

Amount realised on Crown land sales, 1877.

622. From the period of the first settlement of the colony to the end of 1877 the amount realised by the sale of Crown lands was £18,376,606, or at the rate of £1 13s. 0d. per acre.

Amount realised, 1836 to 1877.

623. The squatting runs in 1877 numbered 801, or 21 less than in 1876. The area of Crown lands embraced in runs amounted in 1877 to 20,854,615 acres, or 1,051,925 acres less than in 1876.

Squatting runs: number and area.

624. The average size of squatting runs was 26,650 acres in 1876, and 26,036 acres in 1877. This is exclusive of any purchased land attached thereto.

Squatting runs: average size.

625. The rent of runs is assessed in accordance with the quantity of stock the land is estimated to be able to depasture, viz., 5s. yearly for each head of cattle or horses, or 1s. yearly for each sheep. In 1876 the amount of rent received was £152,644, or 1.672d. (nearly 1¾d.) per acre ; and in 1877 the amount of rent received was £138,475, or 1.594d. (a fraction over 1½d.) per acre.

Rent of runs.

626. The number of squatting runs with purchased land held in connection therewith was 493 in 1876, and 469 in 1877. The purchased land so held was 1,685,811 acres in the former, and 1,690,317 acres in

Squatting runs with purchased land attached.

the latter year. In explanation of the falling off in the number of runs with purchased land attached, it is to be understood that as soon as the Crown lands attached to a run are altogether purchased it drops out of the list of runs and is considered a farm. The term "run" is applied to such holdings only as are subject to pastoral licenses.

Land  
revenue.

627. The revenue from the sale and occupation of Crown lands may be divided into,—(1) receipts from the alienation of land in fee-simple, including the price realised from land sales, and from rents which count towards the purchase money ; (2) receipts on account of temporary occupation, which include payments for squatting and grazing licenses, rents for business, factory, and hotel sites, &c., and rents of land which do not count towards the purchase money ; (3) penalties, interest, and fees for grants, leases, licenses, &c. The receipts under all these heads were less in 1877 than in 1876, as will be seen by the following figures :—

#### LAND REVENUE, 1876 AND 1877.

Heads of Land Revenue.	Amounts Received.		Decrease.
	1876.	1877.	
	£	£	£
Alienation in fee-simple and progressive ...	834,663	757,495	77,168
Temporary occupation ...	194,535	184,070	10,465
Penalties, fees, and interest ...	118,659	73,247	45,412
Total ...	1,147,857	1,014,812	133,045

Agricultural  
statistics.

628. The agricultural statistics of Victoria are collected by the municipal bodies, who, under the Local Government Act (38 Vict., No. 506) are required each year to furnish the Government Statist, on or before the 31st March, at their own cost, such agricultural and other statistics relating to their districts on such forms and in such manner as the Governor in Council may direct. All persons are required to give correct information to the best of their knowledge and belief, and should they fail to do so they render themselves liable to a penalty not exceeding ten pounds. Collectors divulging or making extracts from the information they receive, except under the special direction or authority of the Government Statist, also render themselves liable to a penalty of ten pounds.

Agricultural  
statistics,  
1877-8.

629. The agricultural statistics\* to which reference will now be made are those for the year ended 31st March 1878. Tables embodying the

\* A summary of the agricultural statistics of each year since the first settlement of the colony will be found at the commencement of this work (second folding sheet). The mode of collecting agricultural statistics is described in the *Victorian Year-Book*, 1874, paragraphs 381 to 384.

general results of these statistics were sent for publication in the *Government Gazette* on the 14th May last, and these, with additional tables, have since been printed and laid before Parliament, in Part IV. of the *Statistical Register of Victoria*.

630. The holdings which the collectors are required to visit are all blocks of alienated land above one acre in extent, which are occupied for agricultural or pastoral purposes. Each distinct occupation is considered to be a holding, without reference to its proprietorship, and each of several holdings in different localities owned by one person is necessarily reckoned as a distinct holding. Holdings visited by collectors.

631. The extent of land in occupation of which a return is made is always less than the whole area alienated. The collectors are not required to take account of holdings of a smaller extent than one acre, nor of gardens or grounds attached to residences which are kept merely for ornament and pleasure, nor of any lands which are unoccupied, or which are used for other purposes than agriculture or the keeping of stock. It is, moreover, possible that in a few instances the collectors may not be aware of the existence of, and consequently may not penetrate to, some isolated blocks of purchased land held in connection with squatting stations at a distance from agricultural districts. Land in occupation.

632. Returns of the small or medium-sized holdings are obtained without much trouble, but difficulty is often experienced in getting particulars respecting the large estates, especially in regard to their size. Sometimes an overseer is in charge who does not know even the gross area, much less the extent of the portions which are let off as farms, and which, being returned in the name of the tenant, should be subtracted from the total. Not unfrequently the owner himself professes to be unable to furnish the collectors with correct information. Returns of large holdings obtained with difficulty.

633. A statement of the number of holdings, and of the extent of land occupied, enclosed, and cultivated in the year under review, and the previous one, will be found in the following table. All the items show increase :— Land occupied, enclosed, and cultivated.

**HOLDINGS AND LAND\* OCCUPIED, ENCLOSED, AND CULTIVATED,  
1877 AND 1878.**

Year ended 31st March.	Number of Holdings larger than 1 acre.	Acres Occupied.	Acres Enclosed.	Acres under Tillage.
1877 ...	43,057	13,855,003	12,702,051	1,231,105
1878 ...	45,448	14,806,926	13,888,383	1,420,502
Increase ...	2,391	951,923	1,186,332	189,397

\* The holdings and land referred to are exclusive of Crown lands held under squatting licenses. See also paragraphs 630 and 631 ante.

Increase in occupied land, &c.

634. During the decenniad ended with the year under review the holdings, the land occupied, and that enclosed, have nearly doubled, and the land under cultivation, has more than doubled. The following are the figures :—

INCREASE IN 1878 AS COMPARED WITH 1868.

Holdings	...	...	...	...	...	19,620
Acres occupied	...	...	...	...	...	6,698,461
„ enclosed	...	...	...	...	...	6,552,531
„ cultivated	...	...	...	...	...	789,295

Area cultivated per head in Australasian colonies.

635. In proportion to population, South Australia places much more land under cultivation, and New South Wales and Queensland much less, than any other colonies of the group. The following table shows the area so placed in each Australasian colony during the four seasons ended with that of 1876-7, also the mean of those seasons. The colonies are placed in order according to the average extent of land per head that each cultivates :—

CULTIVATION PER HEAD IN AUSTRALASIAN COLONIES, 1874 TO 1877.\*

Colony.	Acres under Tillage per Head of Population.				
	1873-4.	1874-5.	1875-6.	1876-7.	Mean of Four Years.
1. South Australia ...	6·18	6·50	6·86	6·71	6·56
2. Tasmania ...	1·61	3·13	3·21	3·15	2·77
3. Western Australia...	2·01	1·73	1·78	1·68	1·80
4. New Zealand ...	1·27	1·61	1·62	1·97	1·62
5. Victoria ...	1·22	1·25	1·37	1·47	1·33
6. New South Wales...	·82	·80	·74	·82	·80
7. Queensland ...	·43	·39	·43	·46	·43

Land under principal crops.

636. The following table shows the extent of land in Victoria placed under the principal crops in 1877 and 1878. An increase will be observed in the land under wheat, hay, and green forage, but a falling off in that under oats, barley, and potatoes :—

LAND UNDER PRINCIPAL CROPS, 1877 AND 1878.

Year ended 31st March.	Wheat.	Oats.	Barley.	Potatoes.	Hay.	Green Forage.
	acres.	acres.	acres.	acres.	acres.	acres.
1877 ...	401,417	115,209	25,034	40,450	147,408	362,554
1878 ...	564,564	105,234	19,116	37,107	176,951	390,330
Increase ...	163,147	...	...	...	29,543	27,776
Decrease...	...	9,975	5,918	3,343	...	...

\* For the population and number of acres under tillage in each Australasian colony during the five years ended with 1877-8, see Summary of Australasian Statistics (third folding sheet) ante.

637. The gross produce of the same crops, except green forage, is shown as follows for 1877 and 1878. It will be observed that the yield of wheat and hay was greater in the latter year than in the former, but the reverse was the case as regards oats, barley, and potatoes :—

GROSS PRODUCE OF PRINCIPAL CROPS, 1877 AND 1878.

Year ended 31st March.	Wheat.	Oats.	Barley.	Potatoes.	Hay.
	bushels.	bushels.	bushels.	tons.	tons.
1877 ...	5,279,730	2,294,225	530,323	134,082	180,560
1878 ...	7,018,257	2,040,486	378,706	115,419	207,251
Increase ...	1,738,527	...	...	...	26,691
Decrease ...	...	253,739	151,617	18,663	...

Produce of  
principal  
crops.

638. I pointed out last year that five-sixths of the wheat raised in Victoria during the season 1876-7 was grown in 11 counties, which, for the most part, lay between the 36th and 37th parallels of latitude, and the 143rd and 147th meridians. In the past season about six-sevenths of the wheat crop was raised in the same counties. The following are their names, and the quantity of wheat raised in each one during the past two seasons :—

Wheat-  
producing  
counties.

WHEAT RAISED IN THIRTEEN COUNTIES, 1877 AND 1878.

			Number of Bushels Produced.	
			1876-7.	1877-8.
Bendigo	...	...	763,984	795,398
Bogong	...	...	264,571	333,414
Borong	...	...	336,156	720,007
Dalhousie	...	...	170,817	192,080
Delatite	...	...	252,946	278,947
Gladstone	...	...	342,485	472,224
Gunbower	...	...	169,105	250,298
Kara Kara	...	...	436,834	598,661
Moirā	...	...	568,004	889,774
Rodney	...	...	697,027	1,016,849
Talbot	...	...	462,695	449,405
Total	...	...	4,464,624	5,997,057

639. With the exception of Talbot, every one of these counties produced considerably more wheat in the past season than in the previous one. Their order, however, in regard to the quantity they respectively raised, will be found to have somewhat varied. The county which raised most in 1876-7 was Bendigo, the next Rodney, the next Moira, and the next Talbot; whilst, in 1877-8, the county which

Wheat yields  
of 1877 and  
1878 com-  
pared.

produced the greatest quantity was Rodney, the next Moira, the next Bendigo, and the next Borung.

Yield of  
wheat in  
each  
county.

640. In the following list, all the Victorian counties are arranged according to the average quantity of wheat per acre they produced in 1877-8, the eleven counties just referred to being marked with asterisks. It will be observed that 14 counties stand before the first of these, and that all but 3 are in the lower half of the list:—

AVERAGE PRODUCE OF WHEAT IN EACH COUNTY, 1878.

Bushels per Acre.			Bushels per Acre.		
Villiers	...	22·27	*Delatite	...	14·16
Follett	...	22·13	Tambo	...	13·91
Benambra	...	20·56	Anglesey	...	13·75
Mornington	...	20·53	Ripon	...	13·38
Dargo	...	20·17	Hampden	...	13·26
Tanjil	...	18·24	*Talbot	...	13·02
Heytesbury	...	17·95	*Rodney	...	12·82
Dundas	...	17·85	Grenville	...	12·42
Grant	...	17·55	*Bendigo	...	11·48
Buln Buln	...	17·10	*Gladstone	...	10·78
Normanby	...	16·77	Wonnangatta	...	10·15
Polwarth	...	16·56	*Kara Kara	...	10·14
Evelyn	...	16·31	*Borong	...	10·05
Bourke	...	16·06	Lowan	...	9·63
*Dalhousie	...	15·09	*Gunbower	...	9·18
*Moira ...	...	14·64	Croajingolong	...	6·69
*Bogong	...	14·59	Tatchera	...	5·45

Yield of  
other prin-  
cipal crops  
in each  
county.

641. The average produce per acre of the other principal crops is given in the following table. It will be noticed that the highest acreable yield of both oats and hay was in Polwarth, that of barley in Wonnangatta, where, however, only a small quantity was grown, and that of potatoes in Dargo ; also, that the lowest acreable yield of oats was in Tatchera, that of hay in Karkarooc, that of barley in Croajingolong, and that of potatoes in Rodney :—

AVERAGE PRODUCE OF OATS, BARLEY, POTATOES, AND HAY IN EACH COUNTY, 1878.

Counties.		Average Produce to the Acre of—			
		Oats.	Barley.	Potatoes.	Hay.
		bushels.	bushels.	tons.	tons.
Anglesey	...	19·48	21·04	1·85	1·25
Benambra	...	25·49	14·24	3·43	1·35
Bendigo	...	14·34	10·68	1·83	·94
Bogong	...	23·51	17·95	2·68	1·12
Borong	...	14·18	10·46	·81	·71
Bourke	...	22·10	24·40	3·59	1·57
Buln Buln	...	22·95	21·06	3·23	1·49



**AVERAGE PRODUCE OF OATS, BARLEY, POTATOES, AND HAY IN EACH COUNTY, 1878—continued.**

Counties.	Average Produce to the Acre of—			
	Oats.	Barley.	Potatoes.	Hay.
	bushels.	bushels.	tons.	tons.
Croajingolong ...	16·56	2·86	2·55	·98
Dalhousie ...	19·30	17·11	2·83	1·44
Dargo ...	18·16	12·82	4·23	1·69
Delatite ...	19·34	21·99	2·03	1·13
Dundas ...	22·26	30·65	1·25	1·42
Evelyn ...	21·65	12·75	3·01	1·36
Follett ...	28·57	34·69	2·40	1·66
Gladstone ...	12·43	9·36	·58	·86
Grant ...	24·48	22·46	3·76	1·14
Grenville ...	17·29	17·24	2·98	1·22
Gunbower ...	11·47	11·19	...	·72
Hampden ...	21·40	24·34	2·25	1·30
Heytesbury ...	20·84	30·00	2·42	1·67
Kara Kara ...	13·98	10·03	·65	·74
Karkaroc ...	...	...	...	·16
Lowan ...	16·33	10·55	·67	·90
Moir ...	17·88	18·15	·92	·98
Mornington ...	22·33	17·99	3·38	1·25
Normanby ...	20·41	19·90	2·38	1·35
Polwarth ...	30·46	31·77	2·51	1·83
Ripon ...	17·79	26·85	1·64	1·50
Rodney ...	15·75	19·34	·44	·79
Talbot ...	19·80	18·87	2·42	1·35
Tambo ...	29·44	4·05	4·17	1·75
Tanjil ...	24·29	25·93	2·88	1·47
Tatchera ...	2·66	5·32	...	·33
Villiers ...	25·06	39·52	3·57	1·76
Wonnangatta ...	18·34	50·00	3·63	1·48
Total ...	19·39	19·81	3·11	1·17

642. Taking the colony as a whole, the average produce of wheat per acre in the year under review was 12·41 bushels, that of oats was 19·39 bushels, that of barley was 19·81 bushels, that of potatoes was 3·11 tons, that of hay was 1·17 ton. The average of wheat was exceeded in every year of the previous decenniad except 1871; that of oats in all the years except 1868, 1871, 1872, 1874, and 1875; that of barley in all the years except 1869 and 1871; that of potatoes in all the years except 1869, 1870, and 1874; and that of hay in all the years except 1869 and 1871. The following table shows the acreable yield of these crops during each of the last eleven years, also the average during the whole period:—

Yield of  
principal  
crops, 1868  
to 1878.

## AVERAGE PRODUCE OF PRINCIPAL CROPS, 1868 TO 1878.

Year ended 31st March.	Average Produce per Acre of—				
	Wheat.	Oats.	Barley.	Potatoes.	Hay.
	bushels.	bushels.	bushels.	tons.	tons.
1868 ...	15·72	18·61	20·32	3·29	1·30
1869 ...	16·28	19·65	15·23	2·21	1·09
1870 ...	19·75	25·98	24·55	3·09	1·60
1871 ...	10·10	14·98	12·26	3·27	1·13
1872 ...	13·45	18·76	20·00	3·22	1·40
1873 ...	16·51	19·55	20·86	3·45	1·32
1874 ...	13·58	15·69	19·84	2·86	1·27
1875 ...	14·57	18·46	21·01	3·53	1·32
1876 ...	15·49	21·92	22·20	3·37	1·33
1877 ...	13·15	19·91	21·18	3·31	1·22
1878 ...	12·41	19·39	19·81	3·11	1·17
Average of eleven years	14·39	19·39	20·12	3·16	1·28

Average  
produce in  
Austral-  
asian  
colonies.

643. In the following table the average yield of wheat, oats, potatoes, and hay in Victoria is placed side by side with the average of the same crops in the other Australasian colonies during each of the five years ended with 1877. The only one of the colonies for which the particulars are wanting is Queensland. That colony has hitherto published no return of the produce of any crop except wheat, and that only for certain selected districts, the average of which does not afford reliable data for ascertaining the average produce of wheat over the colony taken as a whole:—

## AVERAGE PRODUCE OF PRINCIPAL CROPS IN AUSTRALASIAN COLONIES, 1873 TO 1877.

Name of Colony.	Year ended 31st March.					Mean.
	1873.	1874.	1875.	1876.	1877.	
WHEAT : BUSHELS PER ACRE.						
Victoria ...	16·51	13·58	14·57	15·49	13·15	14·66
New South Wales	16·32	13·43	12·87	14·66	16·43	14·74
South Australia	11·50	7·87	11·75	11·95	5·40	9·69
Western Australia	6·02	13·44	12·00	11·00	12·00	10·89
Tasmania ...	18·62	16·17	18·51	16·38	19·30	17·80
New Zealand ...	24·19	25·61	28·15	31·54	28·63	27·62
OATS : BUSHELS PER ACRE.						
Victoria ...	19·55	15·69	18·46	21·92	19·91	19·11
New South Wales	19·94	18·71	16·31	18·72	21·16	18·97
South Australia	16·39	10·61	14·61	16·69	10·65	13·79
Western Australia	13·24	19·22	16·00	15·00	15·00	15·69
Tasmania ...	25·85	20·98	26·82	25·40	24·21	24·65
New Zealand ...	27·00	29·81	35·22	39·34	31·24	32·52

**AVERAGE PRODUCE OF PRINCIPAL CROPS IN AUSTRALASIAN  
COLONIES, 1873 TO 1877—continued.**

Name of Colony.	Year ended 31st March.					Mean.
	1873.	1874.	1875.	1876.	1877.	
POTATOES : TONS PER ACRE.						
Victoria ...	3·45	2·86	3·53	3·37	3·31	3·30
New South Wales	2·98	2·98	2·83	2·98	3·03	2·96
South Australia	3·28	3·41	3·72	4·52	2·84	3·55
Western Australia	2·34	2·67	3·00	3·00	3·00	2·80
Tasmania ...	3·92	3·16	3·75	3·54	3·43	3·56
New Zealand ...	4·92	4·46	5·24	4·89	5·36	4·97

**HAY : TONS PER ACRE.**

Victoria ...	1·32	1·27	1·32	1·33	1·22	1·29
New South Wales	1·61	1·54	1·37	1·15	1·43	1·42
South Australia	1·21	1·02	1·26	1·21	1·95	1·33
Western Australia	1·51	2·00	1·50	1·00	1·00	1·40
Tasmania ...	1·39	1·08	1·35	1·42	1·21	1·29
New Zealand ...	1·25	1·43	·84	1·46	1·31	1·26

NOTE.—All the calculations in this table were made in the office of the Government Statist, Melbourne. For the land under and total produce of each crop in the respective colonies during the five years ended with 1877-8, see Summary of Australasian Statistics (third folding sheet) *ante*.

644. The next table shows the acreage under wheat, oats, barley, and potatoes in the United Kingdom and as many Foreign countries as the particulars are available for. All the information has been taken from official documents:—

Land under  
crop in  
Britain and  
Foreign  
countries.

**LAND UNDER CERTAIN CROPS IN THE UNITED KINGDOM AND FOREIGN  
COUNTRIES (000's OMITTED).**

Country.	Year.	Number of Acres under—			
		Wheat.	Oats.	Barley.	Potatoes.
The United Kingdom ...	1877	3,321	4,239	2,652	1,393
Austria ...	1875	2,403	4,349	2,693	2,350
Baden ...	1876	89	139	153	207
Belgium ...	1866	700	567	108	423
Denmark ...	1876	140	864	699	96
France ...	1874	17,153*	8,018	2,675	2,887
Holland ...	1875	236	278	122	327
Hungary ...	1875	5,654	2,429	2,242	944
Italy ...	1874	11,551	985	1,148	169
Norway ...	1870	12	223	124	...
Prussia ...	1876	4,196	6,714	3,357	...
Russia in Europe	1872	28,743	32,819	15,512	3,169
Saxony ...	1876	108	411	98	253
Sweden ...	1875	...	...	...	373
United States ...	1875	26,382	11,915	1,790	1,510
Wurtemberg ...	1876	47	331	244	189

\* Including spelt.

Gross yield  
of crops in  
Foreign  
countries.

645. The agricultural statistics collected by the Imperial Board of Trade do not give the amount of produce raised in the United Kingdom. The official returns of many Foreign countries, however, contain statements of produce, and these, so far as they are available, are given in the following table. The produce of potatoes is not returned in tons, as in the Australasian colonies, but in bushels :—

GROSS PRODUCE OF CERTAIN CROPS IN FOREIGN COUNTRIES (000's OMITTED).

Country.			Year.	Number of Bushels* raised of—			
				Wheat.	Oats.	Barley.	Potatoes.
Austria	...	...	1875	29,934	70,301	36,230	257,014
Baden*	...	...	1876	719	1,062	1,317	12,214
Belgium	...	...	1866	14,203	23,364	3,666	33,869†
Denmark	...	...	1875	4,460	28,952	22,081	11,561
France	...	...	1874	375,011‡	196,711	55,017	406,738
Holland	...	...	1875	6,190	12,648	5,415	54,481
Hungary	...	...	1875	47,392	21,516	20,913	39,707
Italy...	...	...	1874	142,423	19,370	18,418	19,387
Norway	...	...	1875	255	8,846	4,324	18,825
Prussia	...	...	1876	86,640	224,245	89,698	...
Russia in Europe	...	...	1872	157,938	543,623	124,754	370,876
Saxony*	...	...	1876	1,320	4,958	1,114	22,266
Sweden	...	...	1875	2,892	38,543	12,993	44,835
United States*	...	...	1875	292,136	354,317	36,909	166,877
Wurtemberg	...	...	1876	836	9,300	5,673	22,419

Average  
yield of  
crops in  
Foreign  
countries.

646. The average produce per acre in most of the countries named has been ascertained, and is given in the following table :—

AVERAGE PRODUCE PER ACRE OF CERTAIN CROPS IN FOREIGN COUNTRIES.

Country.			Year.	Bushels* per Acre of—			
				Wheat.	Oats.	Barley.	Potatoes.
Austria	...	...	1875	12·5	16·2	13·5	109·4
Denmark	...	...	1876	31·8	33·5	31·6	120·7
France	...	...	1874	21·8‡	24·5	20·6	140·8
Holland	...	...	1875	26·3	45·6	44·3	166·6
Italy...	...	...	1874	12·3	19·7	16·0	114·5
Norway	...	...	1870	22·1	35·7	30·3	...
Prussia	...	...	1876	20·7	33·4	26·7	...
Russia in Europe	...	...	1872	5·5	16·5	8·0	117·0
Sweden	...	...	1875	...	...	...	120·0
United States*	...	...	1875	11·0	29·7	20·6	110·5
Wurtemberg	...	...	1876	17·8	28·1	23·2	118·8

\* Imperial bushels, except in the case of Baden, Saxony, and the United States, the produce of the two first of which is given in centners, each equal to 110·232 lbs., and that of the last in Winchester bushels, each equal to  $\frac{32}{33}$  nearly, or, more accurately to '969,447 of an Imperial bushel.

† Given in cwts.

‡ Including spelt.

647. Only in four years, since Port Phillip was first settled, has the colony raised enough breadstuffs for the consumption of its own inhabitants. The year 1877 was one of these, the transactions in it having resulted in a net export of 284,118 bushels, which is the largest surplus of breadstuffs ever exported from the colony during any year. This will be seen by the following table which shows for each of the years from 1840 to 1877 the quantity of breadstuffs available for consumption, distinguishing the Victorian grown from the imported; also the probable manner of consumption, distinguishing the estimated quantity of wheat used for seed from the wheat, flour, bread, and biscuit used for food :—

Breadstuffs  
available  
for con-  
sumption.

### BREADSTUFFS AVAILABLE FOR CONSUMPTION, 1840-1877.

Year.	Mean Popula- tion.	Wheat, Flour, Bread, and Biscuit.*					
		Available for Consumption.			Probable Manner of Consumption.		
		Grown in Victoria.	Imported after deduct- ing Exports.	Total.	For Seed.†	For Food.	
						Total.	Per Head.
		bushels.	bushels.	bushels.	bushels.	bushels.	bushels.
1840	8,056	12,600	57,771	70,371	3,880	66,491	8·25
1841	15,353	50,420	116,350	166,770	3,404	163,366	10·64
1842	22,107	47,840	119,004	166,844	4,864	161,980	7·33
1843	23,951	55,360	58,616	113,976	9,348	104,628	4·37
1844	25,418	104,040	98,581	202,621	13,839	188,782	7·43
1845	29,007	138,436	74,699	213,135	22,933	190,202	6·56
1846	34,807	234,734	43,928	278,662	31,604	247,058	7·10
1847	40,635	345,946	36,871	382,817	35,359	347,458	8·55
1848	47,163	349,730	64,726	414,456	38,775	375,681	7·97
1849	58,805	410,220	76,092	486,312	48,494	437,818	7·45
1850	71,191	525,190	55,564	580,754	57,020	523,734	7·36
1851	86,825	556,167	216,811	772,978	59,247	713,731	8·22
1852	132,905	733,321	1,208,006	1,941,327	33,646	1,907,681	14·35
1853	195,378	498,704	1,499,994	1,998,698	15,107	1,983,591	10·15
1854	267,371	154,202	1,385,465	1,539,667	25,654	1,514,013	5·66
1855	338,315	250,091	1,985,496	2,235,587	85,372	2,150,215	6·36
1856	380,942	1,148,011	2,236,406	3,384,417	160,310	3,224,107	8·46
1857	430,347	1,858,756	1,958,905	3,817,661	174,460	3,643,201	8·47
1858	483,827	1,808,439	1,504,760	3,313,199	156,468	3,156,731	6·52
1859	517,226	1,563,113	1,957,610	3,520,723	214,185	3,306,538	6·39
1860	539,337	2,296,157	1,565,423	3,861,580	322,503	3,539,077	6·56
1861	541,012	3,459,914	1,522,517	4,982,431	393,844	4,588,587	8·48
1862	548,450	3,607,727	183,106	3,790,833	324,018	3,466,815	6·32
1863	561,322	3,008,487	191,107	3,199,594	298,784	2,900,810	5·17
1864	589,160	1,338,762	1,868,990	3,207,752	250,080	2,957,672	5·02
1865	616,375	1,899,378	1,800,932	3,700,310	357,256	3,343,054	5·42
1866	634,077	3,514,227	1,754,699	5,268,926	417,176	4,851,750	7·65

\* The quantities of flour, bread, and biscuit imported and exported are reduced to their equivalent in bushels, on the assumption that 1 bushel of wheat produces 45 lbs. of either of those articles.

† Calculated at 2 bushels per acre of land returned as being under wheat in the year following that to which the figures in any line relate.

## BREADSTUFFS AVAILABLE FOR CONSUMPTION, 1840-1877—continued.

Year.	Mean Population.	Wheat, Flour, Bread, and Biscuit.*					
		Available for Consumption.			Probable Manner of Consumption.		
		Grown in Victoria.	Imported after deducting Exports.	Total.	For Seed.†	For Food.	
						Total.	Per Head.
		bushels.	bushels.	bushels.	bushels.	bushels.	bushels.
1867	649,826	4,641,205	15,190	4,656,395	433,978	4,222,417	6·50
1868	671,222	3,411,663	162,038	3,573,701	519,608	3,054,093	4·55
1869	696,942	4,229,228	719,589	4,948,817	577,028	4,371,789	6·27
1870	709,839	5,697,056	— 95,654	5,601,402	568,334	5,033,068	7·09
1871	738,725	2,870,409	1,179,583	4,049,992	669,218	3,380,774	4·58
1872	760,991	4,500,795	389,963	4,890,758	653,128	4,237,630	5·57
1873	780,362	5,391,104	— 138,088	5,253,016	699,952	4,553,064	5·83
1874	798,688	4,752,289	— 40,714	4,711,575	665,872	4,045,703	5·06
1875	815,034	4,850,165	200,369	5,050,534	642,802	4,407,732	5·41
1876	830,679	4,978,914	258,931	5,237,845	802,834	4,435,011	5·34
1877	849,870	5,279,730	— 384,118	4,895,612	1,129,128	3,766,484	4·43

NOTE.—The minus sign (—) indicates that the exports exceeded the imports by the quantity represented by the figures to which it is prefixed.

Consumption of breadstuffs per head.

648. The estimated average quantity of breadstuffs available for food to each individual of the population is shown in the last column of the table. This will be found to vary in different years, ranging from over 14 bushels in 1852, and between 10 and 11 bushels in 1841 and 1853, to 4½ bushels in 1843, and about 4½ bushels in 1868, 1871, and 1877. The quantity in the last named year appears to have been less than that in any other year since 1843.

Average consumption of breadstuffs.

649. The quantity of breadstuffs available for annual food-consumption per head has averaged 6⅞ bushels over the whole period of thirty-eight years. It has averaged 5⅝ bushels during the last ten years, and 5½ bushels during the last five years. In the present state of our population, it may be fair to assume that an allowance of from 5 to 5½ bushels per head, irrespective of the quantity required for seed, is amply sufficient to supply the wants of any given year.

Imports and exports of breadstuffs, 1837 to 1877.

650. The imports and exports of breadstuffs during the forty-one years, 1837 to 1877, are set down in the following table. It will be observed that, after deducting the value of the quantities sent away, there remains a balance amounting to 11½ millions sterling paid by the colony for breadstuffs imported :—

\* The quantities of flour, bread, and biscuit imported and exported are reduced to their equivalent in bushels, on the assumption that 1 bushel of wheat produces 45 lbs. of either of those articles.

† Calculated at 2 bushels per acre of land returned as being under wheat in the year following that to which the figures in any line relate.

## IMPORTS AND EXPORTS OF BREADSTUFFS,\* 1837 TO 1877.

Wheat, Flour, Bread, and Biscuit.				Quantity.	Value.
				bushels.	£.
Imported, 1837 to 1877	...	...	...	31,959,429	13,687,593
Exported, „ „	...	...	...	5,964,778	2,024,453
Imports in excess of exports...				25,994,651	11,663,140

651. The following are the values of the net imports—i.e., the values of imports after the values of the exports have been deducted—of certain articles of farm and garden produce during each of the three years ended with 1877. All the articles named are capable of being produced, and all, or nearly all, are to a certain extent now produced in the colony. It will be observed that wheat, oatmeal, and preserved vegetables are absent from the list for 1877, the exports of those articles during that year having exceeded the imports :—

Net imports  
of agricul-  
tural pro-  
ducts.

## NET IMPORTS† OF CERTAIN ARTICLES OF AGRICULTURAL PRODUCE, 1875 TO 1877.

Articles.				Balance of Imports over Exports in—		
				1875.	1876.	1877.
				£	£	£
Wheat	...	...	...	65,913	87,247	...
Oats	...	...	...	170,957	112,430	95,071
Oatmeal	...	...	...	511	261	...
Barley	...	...	...	24,569	35,318	25,481
Pearl barley	...	...	...	4,623	2,825	1,368
Malt	...	...	...	93,009	68,401	76,867
Maize	...	...	...	114,609	117,951	123,357
Maizena	...	...	...	1,624	4,988	7,365
Beans, peas, and split peas	...	...	...	5,528	2,266	2,456
Fruit—green, bottled, dried, currants and raisins	...	...	...	104,916	116,202	153,414
Jams, jellies, and preserves	...	...	...	4,799	6,450	350
Nuts, almonds, walnuts	...	...	...	6,255	7,774	6,064
Hops	...	...	...	42,960	64,600	43,782
Chicory	...	...	...	2,413	1,798	3,300
Pickles	...	...	...	9,160	12,892	4,284
Tobacco, cigars, and snuff	...	...	...	36,485	78,192	148,688
Vegetables (preserved)	...	...	...	930	1,397	...
Canary seed	...	...	...	2,117	4,970	1,857
Grass and clover seed	...	...	...	17,786	10,985	19,618
Total	...	...	...	709,164	736,947	713,322

\* The quantity and value of breadstuffs imported and exported during each year will be found in the Statistical Summary of Victoria (first folding sheet) *ante*.

† The total imports and total exports of these articles will be found in the table of imports and exports published in Part VII., Interchange, *ante*, chiefly under Order 22.

Net imports  
of eggs.

652. In addition to the articles named in the above table, eggs, of which it might reasonably be supposed that Victoria would produce sufficient for her own consumption, were imported in 1875 to the value of £12,471, but none were exported. The value of the imports of eggs in 1876 exceeded that of the exports by £16,093, and in 1877 by £13,550.

Proportion of  
land under  
each crop.

653. Of every thousand acres cultivated during the past season, 397 acres were placed under wheat; 74 under oats;  $13\frac{1}{2}$  under barley; 26 under potatoes; 125 under hay; 275 under green forage; and  $89\frac{1}{2}$  under other kinds of crops. The tendency of late years has been to crop a larger extent of land, relatively to the whole area under tillage, with wheat, hay, and green forage, and a smaller extent with the remaining crops. The following table shows the proportion that the land under different crops has borne to the total area under tillage during each of the last five years:—

PROPORTION OF LAND UNDER EACH CROP TO TOTAL UNDER CULTIVATION, 1874 TO 1878.

Land under—			Proportion to Total Land under Tillage.				
			1873-4.	1874-5.	1875-6.	1876-7.	1877-8.
			per cent.	per cent.	per cent.	per cent.	per cent.
Wheat	...	...	36·27	32·90	28·52	32·61	39·74
Oats	...	...	11·50	11·36	11·01	9·36	7·41
Barley	...	...	2·63	2·92	2·80	2·03	1·35
Potatoes	...	...	3·97	3·48	3·27	3·29	2·61
Hay	...	...	11·99	11·76	13·78	11·97	12·46
Green forage	...	...	22·08	25·14	27·37	29·45	27·48
Other tillage	...	...	11·56	12·44	13·25	11·29	8·95
Total...	...	...	100·00	100·00	100·00	100·00	100·00

Minor crops.

654. In addition to the principal crops of which mention has been made, various descriptions of minor crops are also raised. It is not, however, presumed that the whole of such crops, or the full measure to which they are grown, is recorded by the collectors. It is certain that they are often raised in gardens, in which case the different kinds would not be distinguished in the returns. It is also probable that they may be sometimes grown upon allotments of a smaller extent than one acre, which the collectors are not called upon to visit. The following list must therefore be looked upon as indicating the nature of certain minor crops grown in Victoria rather than the extent to which those crops have been cultivated during the last four years:—



## MINOR CROPS,\* 1875 TO 1878.

Nature of Crop.			1874-5.	1875-6.	1876-7.	1877-8.
Beet, carrots, parsnips, and cabbage	...	acres	721	807	571	470
		tons	3,887	4,268	3,430	2,272
Broom millet	...	acres	56	96	8	7
		fibre, cwt.	264	338	8	...
		seed, bush.	1,000	2,095	...	...
Buckwheat	...	acres	5	2	...	2
		bushels	20	40	...	11
Canary	...	acres	...	50	30	82
		bushels	...	300	183	825
Chicory	...	acres	109	174	225	256
		tons	531	652	980	1,333
,, for seed...	...	acres	...	3	...	...
		lbs.	...	168	...	...
Clover for seed	...	acres	...	45	...	...
		bushels	...	614	...	...
Cucumbers	...	acres	...	...	1	...
		tons	...	...	12	...
Flax	...	acres	7	17	3	33
		fibre, cwt.	48	93	2 $\frac{1}{4}$	40
		linseed, bush.	63	80	52	125
Garden seeds—Carrot	...	acres	1	...	...	...
		lbs.	560	...	...	...
,, „ Mixed	...	acres	...	...	50	16
		acres	...	...	1	...
,, „ Radish	...	lbs.	...	...	560	...
		acres	5	1	13	3
Grass seeds—Cocksfoot	...	bushels	140	15	230	75
		acres	20	13	...	...
,, „ Cow	...	bushels	37	15	...	...
		acres	...	...	29	10
,, „ Mixed	...	bushels	...	...	399	174
		acres	21	45	75 $\frac{1}{2}$	35
,, „ Prairie	...	bushels	619	948	12 $\frac{1}{2}$	1,220
		acres	...	...	...	21
,, „ Rib	...	bushels	...	...	...	120
		acres	3,036	2,130	1,851	1,758
,, „ Rye	...	bushels	35,202	32,602	28,209	27,043
		acres	...	...	25	19
,, „ Yorkshire fog	...	bushels	...	...	379	208
		acres	...	...	11	...
Green peas	...	tons	...	...	18	...
		acres	126	145	225	274
Hops	...	lbs.	99,624	113,344	129,136	218,848
		acres	...	1	...	...
Kohl-rabi	...	cwt.	...	300	...	...
		acres	...	6	...	...
Lucerne for seed	...	bushels	...	42	...	...
		acres	1,523	2,346	1,609	1,215
Maize	...	bushels	24,263	37,177	25,909	22,050
		acres	1,281	1,223	1,285	1,320
Mangel-wurzel	...	tons	17,899	16,795	15,386	15,465
		acres	...	...	1	...
Medicinal herbs	...	tons	...	...	5	...
		acres	10	16	...	13
Melons	...	tons	17	18	...	9

\* Exclusive of those grown in gardens.

† Of this area 72 acres are reported to have failed.

‡ Grown on 3 acres only.

## MINOR CROPS,\* 1875 TO 1878—continued.

Nature of Crop.				1874-5.	1875-6.	1876-7.	1877-8.
Mulberry trees ...	...	{	acres ...	1	23	11†	21
			number ...	6,500	30,650	11,010	14,310
Mustard ...	...	{	acres ...	31	40	74	58
			cwt. ...	100	166	185	167
Olives ...	...	{	acres ...	...	10	10	10
			acres ...	347	552	720	816
Onions ...	...	{	tons ...	2,794	4,780	3,579	3,055
			acres ...	10	4	4	3
Opium poppies ...	...	{	lbs. ...	168	100	60	...
			acres ...	4	3	5	...
Osiers ...	...	{	acres ...	16,170	18,854	21,235	17,286
			bushels ...	317,382	450,948	373,857	241,007
Peas and beans ...	...	{	acres ...	36	39	19	33
			tons ...	233	49	77	150
Pumpkins ...	...	{	acres ...	7	34	10	...
			bushels ...	30	...	20	...
Rape for seed ...	...	{	acres ...	...	3	10	17
			cwt. ...	...	60	51	224
Raspberries ...	...	{	acres ...	...	...	...	3
			tons ...	...	...	...	10
Rhubarb ...	...	{	acres ...	1,096	1,292	1,153	1,075
			bushels ...	15,620	19,356	15,277	9,852
Rye and bere ...	...	{	acres ...	...	...	2	...
			lbs. ...	...	...	1,500	...
Sheep's parsley ...	...	{	acres ...	21	24	21	19
			cwt. ...	210	215	273	208
Strawberries ...	...	{	acres ...	1	11	3	...
			number ...	121,000	1,079,000	19,000	...
Teazles ...	...	{	acres ...	733	782	1,479	2,327
			cwt. ...	6,839	501‡	14,413	15,827
Tobacco ...	...	{	acres ...	...	...	...	5
			cwt. ...	...	...	...	721
Tomatoes ...	...	{	acres ...	241	284	224	315
			tons ...	1,901	2,668	1,769	2,346
Turnips ...	...	{	acres ...	...	...	2	...
			tons ...	...	...	55	...
Vegetable marrows ...	...	{	acres ...	3	26	8	...
			bushels ...	28	492	47	...
Vetches and tares for seed	...	{	acres ...	4,937	5,081	4,765	4,419
			wine, galls....	577,493	755,000	481,588	457,535
Vines ...	...	{	brandy, galls.	148	256	3,725	840

Vines. 655. A falling-off in 1876-7, and a further falling off in the year under review, appears in the acreage under vines, as shown in the last table, and the vine crop returned in both those years is also smaller than that in any other year since 1868-9.§ There is no doubt that the effects of the oidium, phylloxera, and other diseases to which the vine is subject, materially reduce its productiveness, and that, in consequence of the importation and subsequent multiplication of frugivorous birds,

\* Exclusive of those grown in gardens.

† A large plantation of mulberry trees is reported to have been abandoned in 1876-7.

‡ The tobacco crop 1875-6 failed in most of the districts.

§ A statement of the acreage and produce of vines during each year will be found in the Summary of Agricultural Statistics (second folding sheet) ante.

especially sparrows, more grapes are now destroyed by birds than there were formerly. It is right, however, to point out, that this part of the statistics is not quite so reliable as the other portions, since, as grapes come to maturity later than the other crops of which returns are made, only the acreage under vines can be returned for the year to which the remainder of the statistics relate, and the grape crop is necessarily that of the previous season. This partial dealing with the returns of two years may sometimes cause confusion in the minds of the vine-growers, who may also not always remember the exact particulars of their previous year's crop.

656. Ten acres under olives and 21 acres under mulberry trees were also returned in the year under review. The mulberry trees numbered 14,310, and are grown for the purpose of feeding and rearing silkworms, this being an industry which, so far as it has gone, has been attended with great success in Victoria. No particulars respecting the olive crop are given. Mulberry and olive trees are frequently grown in gardens; and there is no doubt that both are much more extensively cultivated than the agricultural statistics indicate. This is also the case with raspberries and strawberries as well as the vegetable crops; Osiers, for basket-making, are often grown in swamps and on the banks of streams. They are usually planted in small patches, which do not come under the notice of the collectors of statistics. This is probably the reason that whereas 5 acres were returned last year and 3 acres the year before, no returns of osiers were made in 1877-8.

Mulberry and olive grounds, &c.

657. The following table shows the land under gardens and orchards in 1877 and 1878. No return is made of the nature of the crops grown or the quantity of produce raised. The increase in area during the year amounted to 929 acres :—

Gardens and orchards.

LAND UNDER GARDENS AND ORCHARDS, 1877 AND 1878.

Year ended 31st March.				Gardens.	Orchards.	Total.
				acres.	acres.	acres.
1877	...	...	...	12,241	6,400	18,641
1878	...	...	...	12,396	7,174	19,570
Increase				155	774	929

658. Land in fallow is included in the area under tillage. The quantity in this condition amounted in 1878 to 75,675 acres, or 8,484 acres less than in the previous year.

Land in fallow.

Classifica-  
tion of  
holdings as  
to size.

659. The following table shows the number of holdings of various sizes, and the extent of occupied and cultivated land embraced therein according to the returns of the present year. It must be borne in mind that all the land alienated from the Crown is not included, but only that embraced in holdings above a certain minimum size, and showing sufficient evidence of occupation for agricultural or pastoral purposes to cause it to come under the notice of the collectors of agricultural statistics\* :—

### CLASSIFICATION OF HOLDINGS AS TO SIZE, 1877-8.

Size of Holdings.					Number of Holdings.	Extent of Sold or Selected Land in Occupation.	Extent of Land under Tillage.
						acres.	acres.
1 acre	to	4 acres	...	...	1,722	4,953	2,646
5 acres	14	"	...	...	3,627	31,946	14,512
15	"	29	...	...	3,835	79,229	24,744
30	"	49	...	...	3,224	123,722	33,368
50	"	99	...	...	5,889	424,013	93,971
100	"	199	...	...	8,319	1,178,829	212,694
200	"	320	...	...	13,201	3,761,211	518,983
321	"	400	...	...	1,392	495,928	80,873
401	"	500	...	...	1,075	484,321	68,477
501	"	600	...	...	635	351,067	46,666
601	"	700	...	...	619	399,943	46,475
701	"	800	...	...	267	200,686	23,735
801	"	900	...	...	189	160,702	17,406
901	"	1,000	...	...	209	199,501	20,964
1,001	"	1,500	...	...	447	557,175	42,886
1,501	"	2,000	...	...	177	305,240	20,374
2,001	"	3,000	...	...	142	375,635	22,353
3,001	"	4,000	...	...	88	307,334	12,586
4,001	"	5,000	...	...	59	267,082	11,865
5,001	"	7,500	...	...	76	466,733	19,605
7,501	"	10,000	...	...	52	453,991	11,583
10,001	"	15,000	...	...	79	962,193	24,159
15,001	"	20,000	...	...	47	816,281	7,557
20,001	"	30,000	...	...	51	1,268,459	35,835
30,001	"	40,000	...	...	17	576,229	3,049
40,001	"	and upwards	...	...	10	554,523	3,636
Total					45,448	14,806,926	1,420,502

Estates  
under and  
over 320  
acres.

660. Under the present Land Act the maximum extent allowed to be selected by one individual is 320 acres. It appears, therefore, that the policy of the State of late years has been to discourage the enlargement of estates beyond this limit. It will be interesting to discover what proportion of the total number of holdings, the total quantity of occupied land, and the total quantity of cultivated land, is on blocks which do and do not exceed it. This may be done by analysing the above table, whereby it will be found that—

\* See also paragraphs 630 and 631 *ante*.

- (a.) Out of every 100 holders, 11, on the average, occupied lots exceeding, and 89 not exceeding, 320 acres in extent.
- (b.) Out of every 100 acres in occupation, 62, on the average, formed portion of lots exceeding, and 38 of lots not exceeding, 320 acres in extent.
- (c.) Out of every 100 acres cultivated, 37, on the average, were on lots exceeding, and 63 on lots not exceeding, 320 acres in extent.
- (d.) Whilst holders of upwards of 320 acres cultivated, on the average, only  $5\frac{1}{2}$  per cent. of their holdings, holders of 320 acres and under cultivated, on the average, 16 per cent. of theirs.

661. It may further be ascertained from the same table that 48 per cent. of the holdings, 33 per cent. of the occupied land, and 52 per cent. of the cultivated land, are on lots from 100 to 320 acres ; also that, whilst holders of less than 100 acres cultivated, on the average, 25 per cent. of their holdings, holders of from 100 to 320 acres cultivated, on the average, only 15 per cent. of theirs. It has been already stated, that holders of upwards of 320 acres cultivated no more, on the average, than 5 per cent. of their holdings.\*

662. The following is the average size of holdings in the year under review, and at the beginning of the two previous quinquennial periods. It will be noticed that holdings were largest at the third and smallest at the middle period :—

AVERAGE SIZE OF HOLDINGS.†

1867-8	...	...	...	...	314 acres
1872-3	...	...	...	...	310 "
1877-8	...	...	...	...	326 "

663. The average area in occupation to each person in the colony has been steadily increasing since the first period, as will be seen by the following figures :—

AVERAGE AREA IN OCCUPATION† TO EACH PERSON IN THE COLONY.

1867-8	...	...	...	...	12.2 acres
1872-3	...	...	...	...	13.8 "
1877-8	...	...	...	...	17.2 "

664. The following figures show a gradual increase in the proportion of land enclosed since the first period :—

PROPORTION OF OCCUPIED LAND† ENCLOSED.

1867-8	...	...	...	...	90.5 per cent.
1872-3	...	...	...	...	91.4 "
1877-8	...	...	...	...	93.8 "

\* The cultivation on holdings of this size is generally confined to laying the land down in permanent artificial grass.

† Including alienated land or land in process of alienation only.

Area cultivated to each holder.

665. An increase at each successive period will be noticed in the average extent of land placed under cultivation by each holder :—

AVERAGE AREA CULTIVATED BY EACH HOLDER.

1867-8	...	...	...	...	24.4 acres
1872-3	...	...	...	...	27.8 "
1877-8	...	...	...	...	31.3 "

Area cultivated per head of population.

666. The area in cultivation was less than an acre per head of the population at the first period, but over an acre per head at the second and third periods. The exact amounts were as follow :—

AVERAGE AREA CULTIVATED TO EACH PERSON IN THE COLONY.

1867-8	...	...	...	...	.95 acres
1872-3	...	...	...	...	1.24 "
1877-8	...	...	...	...	1.64 "

Occupied land cultivated.

667. At each successive period an increase will be noticed in the proportion of occupied land in cultivation :—

PROPORTION OF OCCUPIED\* LAND CULTIVATED.

1867-8	...	...	...	7.78 per cent.
1872-3	...	...	...	8.99 "
1877-8	...	...	...	9.59 "

Leases and rental of farms.

668. The average duration of leases of farms from private persons was returned by the collectors of statistics as averaging from 3 to 7 years; the extreme figures being 1 and 14 years. The average rental of agricultural land per acre was stated to be from 6s. 6d. to 17s.; the extreme figures being 4s., and 40s. The average rental of pastoral land was said to be from 2s. 6d. to 7s. 6d.; the extreme figures being 1s. and 12s., the latter being for certain paddocks of artificial grass in the county of Tanjil.

Prices of agricultural produce.

669. Each collector furnishes a statement of the price of the principal articles of agricultural produce in his district at the time he makes his rounds. The following is an average deduced from the returns of all the districts during each of the last eleven years :—

PRICES OF AGRICULTURAL PRODUCE,† 1868 TO 1878.

During February and March.				Wheat.	Oats.	Barley.	Potatoes.	Hay.
				per bushel.	per bushel.	per bushel.	per ton.	per ton.
				s. d.	s. d.	s. d.	s. d.	s. d.
1868	...	...	...	7 3	3 11	4 4	82 0	72 6
1869	...	...	...	5 5	4 6	4 11	124 10	113 4
1870	...	...	...	4 3	3 7	4 0	75 0	77 0
1871	...	...	...	5 4	3 9	4 11	70 0	76 0
1872	...	...	...	4 8	2 11½	3 6¼	65 6	64 0
1873	...	...	...	4 9	3 5	4 1	67 4	81 0
1874	...	...	...	5 9	5 6	5 3	118 3	88 0
1875	...	...	...	4 5	4 3	4 6	89 0	89 0
1876	...	...	...	4 7	3 3	3 10	87 0	82 0
1877	...	...	...	5 10	3 7	3 10	114 0	93 0
1878	...	...	...	5 1	4 6	4 4	115 0	86 9

\* Including alienated land or land in process of alienation only.  
† See also table of prices published in Part VI., Interchange, ante.

670. It will be observed that the price of wheat was highest in 1868 and lowest in 1870 ; that of oats and barley was highest in 1874 and lowest in 1872 ; and that of potatoes and hay was highest in 1869 and lowest in 1872. Years of highest and lowest prices.

671. Subjoined is an estimate of the value of the crops raised during the year ended 31st March 1878. It will be seen the total amount exceeded five and three quarter millions sterling :— Value of agricultural produce.

#### VALUE OF AGRICULTURAL PRODUCE, 1877-8.

Name of Crop.	Gross Produce and Price.			Estimated Value.		
		£	s. d.	£	s. d.	
Wheat ... ..	7,018,257 bushels @	0	5 1	1,783,756	19 9	
Oats ... ..	2,040,486 „ @	0	4 6	459,109	7 0	
Barley ... ..	378,706 „ @	0	4 4	82,052	19 4	
Other cereals ... ..	272,909 „ @	0	4 8	63,678	15 4	
Potatoes ... ..	115,419 tons @	5	15 0	663,659	5 0	
Other green crops ... ..	23,138 „ @	5	0 0	115,690	0 0	
Hay ... ..	207,251 „ @	4	6 9	898,951	4 3	
Green forage ... ..	390,330 acres @	3	0 0	1,170,990	0 0	
Tobacco ... ..	15,827 cwt. @	2	16 0	44,315	12 0	
Grapes, not made into wine ...	13,807 „ @	1	0 0	13,807	0 0	
Wine ... ..	457,535 gallons @	0	4 0	91,507	0 0	
Brandy ... ..	840 „ @	0	10 0	420	0 0	
Other crops ... ..	2,712 acres @	5	0 0	13,560	0 0	
Garden and orchard produce	19,570 „ @	20	0 0	391,400	0 0	
	Total ... ..			5,792,898	2 8	

672. The standard weight of crops in Victoria is reckoned to be 60 lbs. to the bushel for wheat, 56 lbs. for maize, 40 lbs. for oats, and 50 lbs. for barley. The actual weight, however, differs in different districts. Thus, wheat, during the past year, ranged from 54 lbs. to 65 lbs.; oats, from 35 lbs. to 48 lbs. ; barley, from 37 lbs. to 53 lbs. ; and maize, from 48 lbs. to 60 lbs. The average weight per bushel of these crops in all the districts during the past two years was as follows :— Weight of crops.

#### SPECIFIC WEIGHT OF CROPS, 1877 AND 1878.

Average Weight per Bushel of—				1876-7.	1877-8.
				lbs.	lbs.
Wheat ... ..				61	60
Oats ... ..				40	40
Barley ... ..				51	49
Maize ... ..				55	55

673. As compared with the numbers returned in 1877, a falling off took place in the hands employed on stations ; but this was much more than counterbalanced by the increase of the hands on farms. The following are the returns of the two years. The proprietors or managers of farms and stations are included :— Hands employed.

HANDS EMPLOYED ON FARMS AND STATIONS,\* 1877 AND 1878.

Year ended 31st March.				Hands employed on Farms.		
				Males.	Females.	Total.
1877	...	...	...	63,394	28,747	92,141
1878	...	...	...	68,178	29,198	97,376
Increase ...				4,784	451	5,235

Year ended 31st March.				Hands employed on Stations.		
				Males.	Females.	Total.
1877	...	...	...	4,276	1,332	5,608
1878	...	...	...	4,222	1,266	5,488
Decrease ...				54	66	120
Net increase on farms and stations ...				4,730	385	5,115

674. A return of the average rates of labor on farms in the last two years is given below. A slight increase will be observed in the wages of all those descriptions of labor which do not compete with machinery, but otherwise a decrease. Rations are allowed in all cases in addition to the wages quoted :—

RATES OF LABOR ON FARMS,† 1877 AND 1878.

Description of Labor.				1876-7.		1877-8.	
				s.	d.	s.	d.
Ploughmen,	per week	...	...	21	3	21	9
Farm laborers,	"	...	...	17	4	17	11
Married couples,	"	...	...	26	3	26	6
Females,	"	...	...	10	8	10	9
Mowers,	"	...	...	31	1	29	0
"	per acre	...	...	5	9	5	5
Reapers, per week	...	...	...	33	4	31	4
"	per acre	...	...	12	11	11	6
Threshers, per bushel	...	...	...	0	8	0	6

675. The average rates returned as paid for pastoral labor will be found in the next table. These are in addition to rations, which are in every case supplied. It will be observed that, in most cases, the rates in 1877 are higher than those in 1878 :—

\* The word "farm," as used in connection with the agricultural statistics, implies a holding of which no portion is subject to a squatting license. The word "station" implies a holding of which portion is subject to a squatting license. "Farms" consist of alienated land only. "Stations" consist either of Crown lands only, or of Crown and alienated lands occupied in the same holdings.

† See also table of wages published in Part VI., Interchange, ante. For definition of the term "farm," see last footnote.

Rates of labor on farms.

Rates of labor on stations.



## RATES OF LABOR ON STATIONS,\* 1877 AND 1878.

Description of Labor.	1876-7.			1877-8.		
	£	s.	d.	£	s.	d.
Stockmen, per annum ...	49	8	0	47	6	6
Boundary riders, „	43	1	0	43	12	6
Shepherds, „	38	1	0	36	13	6
Hutkeepers, „	32	13	0	27	14	0
Married couples, „	59	13	0	61	0	0
Females, „	28	16	0	29	7	0
Station laborers, per week	0	17	11	0	17	6
Sheépwashers, „	1	2	7	1	1	0
Shearers, per 100 sheep shorn	0	14	9	0	13	6

676. The live stock on farms and land not attached to squatting stations, and the live stock on squatting stations, were returned as follow for the last two years. An increase both on farms and stations will be observed in the number of horses, cattle, and pigs, but a falling-off in the number of sheep; a reduction, however, in the number of cattle used for dairying purposes. The live stock on farms is returned by the collectors of agricultural statistics, who are instructed to supplement the information they obtain at the holdings they visit with estimates of the stock running on commons, of that kept by persons having allotments of less than an acre in extent, of that stalled and stabled in towns and villages, and of that belonging to road carters traversing their districts. For some of the larger towns the collectors have been unable to furnish estimates, and for these the census figures have been taken. The return of stock on stations has been compiled, as far as possible, from estimates furnished by the squatters in reply to enquiries made by the Government Statist. In a considerable number of instances, however, these enquiries have not been responded to, and in such cases it has been necessary to supply the particulars from the returns of former years. Every endeavor is made to give as true a statement as possible of the numbers of all the stock in the colony; but it is necessary to point out that portion of the information is derived from estimates which can only be verified at a general census:—

\* See also table of wages published in Part VI., Interchange, *ante*. For definition of the term "station," see footnote to table following paragraph 673 *ante*.

## LIVE STOCK ON FARMS AND ON STATIONS,\* 1877 AND 1878.

Year ended 31st March.	Horses.	Cattle.			Sheep.	Pigs.
		Milch Cows.	Exclusive of Milch Cows.	Total.		

## ON FARMS AND LAND UNCONNECTED WITH STATIONS.

1877	...	...	177,483	264,648	694,498	959,146	6,444,786	171,729
1878	...	...	185,671	256,780	741,489	998,269	5,611,964	179,209
Increase	...	...	8,188	...	46,991	39,123	...	7,480
Decrease	...	...	...	7,868	...	...	832,822	...

## ON STATIONS.

1877	...	...	17,285	12,424	156,695	169,119	4,834,107	3,849
1878	...	...	17,479	11,330	164,577	175,907	4,502,303	4,182
Increase	...	...	194	...	7,882	6,788	...	333
Decrease	...	...	...	1,094	...	...	331,804	...

## TOTAL LIVE STOCK.

1877	...	...	194,768	277,072	851,193	1,128,265	11,278,893	175,578
1878	...	...	203,150	268,110	906,066	1,174,176	10,114,267	183,391
Increase	...	...	8,382	...	54,873	45,911	...	7,813
Decrease	...	...	...	8,962	...	...	1,164,626	...

Live stock  
in Foreign  
countries.

677. The following table contains a statement of the number of horses, cattle, sheep, and pigs in the United Kingdom and the principal Foreign countries. The information has been derived entirely from official documents, and has never before been published in its present form :—

\* A definition of the terms "farm" and "station," as used in connection with these returns, has already been given in the footnote to the table following paragraph 673 *ante*. It may, however, be necessary still further to explain that these designations refer not to the size of the holding, but simply to the tenure under which it is held. All holdings are set down as farms except those subject to a pastoral license. Holdings of which any portion is subject to a pastoral license are set down as stations. When the last portion of a run has been purchased or selected by the occupier or others, and the pastoral license is consequently thereafter no longer in existence, the holding which previously had been a "station" thenceforth becomes a "farm," and this notwithstanding that the area of the holding may not at all or only very slightly have been reduced. In the more settled districts a gradual process of removal of holdings from the list of stations to that of farms has, for some time since, been going on.

LIVE STOCK IN THE UNITED KINGDOM AND FOREIGN COUNTRIES  
(000's OMITTED).

Country.	Year.	Number of—			
		Horses.	Cattle.	Sheep.	Pigs.
Great Britain* ...	1877	1,398	5,736	28,231	2,516
Ireland ...	1877	496	3,996	3,989	1,468
Total United Kingdom...	1877	1,894†	9,732	32,220	3,984
Austria ...	1869	1,390	7,425	5,026	2,551
Baden ...	1876	69	568	142	321
Bavaria ...	1873	354	3,066	1,342	872
Denmark ...	1876	352	1,348	1,719	504
France ...	1874	2,748	11,486	23,937	5,487
Holland ...	1875	260	1,466	941	339
Hungary ...	1870	1,900	4,600	14,289	3,693
Italy ...	1875	658‡	3,489	6,986	1,554
Norway ...	1875	152	1,017	1,687	101
Portugal ...	1870	71	520	2,707	777
Prussia ...	1873	2,279	8,612	19,625	4,279
Russia ...	1870	16,160	22,770	48,132	9,799
Saxony ...	1873	116	648	207	301
Sweden ...	1875	459	2,186	1,609	415
Switzerland ...	1876	101	1,036	368	335
United States ...	1876	9,735	27,871	35,935	25,727
Wurtemberg ...	1873	97	946	577	267

678. The live stock slaughtered in Victoria during 1877, and the purposes to which the carcasses were appropriated, were returned as follow by the local bodies. It is probable that the returns do not in every case include the animals slaughtered by private persons and on farms and stations, and, therefore, that more were really slaughtered than the figures show :—

Live stock  
slaughtered.

LIVE STOCK SLAUGHTERED, 1877.

Description of Live Stock.	Numbers Slaughtered for—			
	The Butcher and Private Use.	Preserving or Salting.	Boiling Down for Tallow.	Total Number Slaughtered.
Sheep and lambs ...	1,756,154	287,687	135,895	2,179,736
Cattle and calves ...	158,044	411	...	158,455
Pigs ...	46,810	19,579	...	66,389
Total ...	1,961,008	307,677	135,895	2,404,580

\* Including Isle of Man and Channel Islands.

† Horses used solely for agricultural purposes, unbroken horses and mares kept for breeding.

‡ In the year 1876.

679. The following is an estimate of the value of pastoral produce raised on holdings of all descriptions in 1877-8 :—

VALUE OF PASTORAL PRODUCE, 1877-8.

Nature of Produce.	Value.
	£
Milk, butter, and cheese, from average number of milch cows kept, viz., 268,110, @ £10 ... ..	2,681,100
Estimated net numbers of stock slaughtered in 1877 :—	
Cattle, 141,698, @ £11 ... ..	1,558,678
Sheep, 652,891, @ 12s. ... ..	391,735
Pigs, 74,235, @ £2 10s. ... ..	185,588
Estimated value of produce of horse stock, 10,158, @ £8 ... ..	81,264
Excess of exports over imports of wool, Customs value ... ..	3,640,742
Estimated value of wool used in the colony for manufacturing purposes, 1,511,514 lbs., @ 1s. 6d. ... ..	113,364
Total ... ..	8,652,471

NOTE.—The gross numbers of live stock slaughtered in the year may be estimated as follow :— Cattle 165,000, sheep 2,250,000, pigs 70,000. The “net numbers” slaughtered are made up by adding to these figures those showing the increase of stock appearing in the returns of 1877-8 as compared with those of 1876-7, viz., cattle 45,911, pigs 7,813; also those showing the live stock exported in 1877, viz., cattle 2,604, sheep 338,401, pigs 7, and deducting from the sum of these numbers the figures showing the decrease of stock appearing in the returns of 1877-8 as compared with those of 1876-7, viz., sheep 1,164,626; also the figures showing the stock imported in 1877, viz., cattle 71,817, sheep 770,884, pigs 3,585. The produce of horse stock has been arbitrarily estimated at 5 per cent. upon the total number of horses in the colony. The quantity of wool manufactured in Victoria has been ascertained from the various woollen mills. No estimate has been made of the value of meat, tallow, lard, hides, skins, horns, hoofs, bones, &c., as this is supposed to be included in the value of stock slaughtered.

680. The returns show a slight decrease in the use of steam machinery in the furtherance of both agricultural and pastoral pursuits during the year under review as compared with the previous one. The following are the figures :—

STEAM ENGINES ON FARMS AND STATIONS,\* 1877 AND 1878.

Year ended 31st March.	Steam Engines.					
	On Farms.		On Stations.		Total.	
	Number.	Horse-power.	Number.	Horse-power.	Number.	Horse-power.
1877 ... ..	315	2,332	27	237	342	2,569
1878 ... ..	302	2,291	24	193	326	2,484
Decrease ...	13	41	3	44	16	85

681. An increase appears in the value of agricultural implements and machines on both farms and stations. The following are the figures :—

\* For definition of the terms “farm” and “station,” see footnotes to tables following paragraphs 673 and 676 ante.

# IMPLEMENTS AND MACHINES ON FARMS AND STATIONS,\* 1877 AND 1878.

Year ended 31st March.	Value of Implements and Machines.		
	On Farms.	On Stations.	Total.
	£	£	£
1877 ... ..	1,734,976	74,883	1,809,859
1878 ... ..	1,954,080	77,434	2,031,514
Increase ... ..	219,104	2,551	221,655

682. An increase also appears in the value of improvements on farms, but a falling-off in the value of those on stations, of which a statement is given in the following table. The improvements to which reference is made are buildings of all descriptions, fencing, dips, wells, dams, &c., but the cost of clearing or cropping land is not given :—

Improvements on farms and stations.

## IMPROVEMENTS ON FARMS AND STATIONS,\* 1877 AND 1878.

Year ended 31st March.	Value of Improvements.		
	On Farms.	On Stations.	Total.
	£	£	£
1877 ... ..	13,757,526	1,869,725	15,627,251
1878 ... ..	15,036,139	1,773,278	16,809,417
Increase ... ..	1,278,613	...	1,182,166
Decrease ... ..	...	96,447	...

683. The following figures, which have been obtained by means of averages struck from the returns of the collectors in all the districts, show the rates paid for machine labor in the last two years :—

Machine labor.

## MACHINE LABOR, 1877 AND 1878.

Average Rates Paid for—	1876-7.	1877-8.
	£ s. d.	£ s. d.
Machine reaping, per acre ... ..	0 6 3	0 5 10
„ mowing, „ ... ..	0 5 1	0 5 1
„ threshing, per 100 bushels ... ..	1 3 6	1 4 0

684. The flour mills in operation in 1878 were fewer by 2 than those in the previous year. These were worked by water-power, the same number of mills worked by steam having been returned in 1878 as in 1877. An increase took place in the horse-power and stones used, in the hands employed, the wheat operated upon, the flour made, and the

Flour mills.

\* For definition of the terms “farm” and “station,” see footnotes to tables following paragraphs 673 and 676 ante.

value of plant, lands, and buildings. A slight falling-off, however, occurred in the grain other than wheat operated upon, and in the quantity of meal manufactured.

FLOUR MILLS, 1877 AND 1878.

Year ended 31st March.	Number of Mills.	Mills employing—		Amount of Horse-power.	Number of Pairs of Stones.	Number of Hands employed.
		Steam-power.	Water-power.			
1877 ...	152	141	11	2,811	458	707
1878 ...	150	141	9	2,871	487	721
Increase	...	...	...	60	29	14
Decrease	2	...	2	...	...	...

Year ended 31st March.	Bushels of Grain operated upon.		Tons of Flour made.	Tons of Meal made.	Approximate Total Value of—		
	Wheat.	Other.			Machinery and Plant.	Lands.*	Buildings.
1877 ...	5,069,850	309,839	117,473	3,724	£ 213,723	£ 54,616	£ 201,815
1878 ...	5,629,436	169,777	119,953	1,798	225,500	62,777	208,040
Increase	559,586	...	2,480	...	11,777	8,161	6,225
Decrease	...	140,062	...	1,926	...	...	...

Breweries. 685. An increase of 7 took place in the number of breweries, and a corresponding increase in all the items relating thereto. The results of the two years are compared in the following table:—

BREWERIES, 1877 AND 1878.

Year ended 31st March.	Number of Breweries.	Materials used.			Number of Hands employed.	Number of Horses employed.
		Sugar.	Malt.	Hops.		
		lbs.	bushels.	lbs.		
1877 ...	102	10,777,453	628,963	945,529	902	633
1878 ...	109	11,157,151	1,071,261	1,220,598	939	647
Increase	7	379,698	442,298	275,069	37	14

Year ended 31st March.	Number of Drays and Waggon employed.	Gallons of Beer made.	Approximate Total Value of—		
			Machinery and Plant.	Lands.†	Buildings.
1877 ...	356	14,236,359	£ 152,995	£ 68,839	£ 203,832
1878 ...	367	15,141,835	163,216	75,776	219,012
Increase	11	905,476	10,221	6,937	15,180

\* Five mills in 1877, and 4 in 1878, were upon Crown lands. In these cases no estimate of the value of the land is given.  
† Five of the breweries in 1877, and 4 in 1878, were upon Crown lands. In these cases no estimate of the value of the land is given.

686. The beer made in Victoria during 1876 amounted to nearly 14 $\frac{1}{4}$  million gallons, or an average of 17 gallons to each inhabitant. That made in 1877 amounted to over 15 million gallons, or an average of 17 $\frac{2}{3}$  gallons to each inhabitant. Gallons of beer per head.

687. The brickyards returned were fewer by 17, and the bricks made were less by about 5 millions, in 1878 than in 1877. An increase, however, took place in the value of pottery made more than commensurate with the falling-off in the value of the bricks. The total value of articles manufactured in these establishments was thus £173,088 in 1878, as against £169,451 in 1877. The following are the returns of the two years:— Brickyards and potteries.

#### BRICKYARDS AND POTTERIES, 1877 AND 1878.

Year ended 31st March.	Number of Brick- yards and Potteries.	Number of Machines in use.		Brickyards, &c., employing—			Amount of Horse- power of Steam Engines.	Number of Hands employed.
		For tempering or crushing Clay.	For making Bricks or Pottery.	Steam- power.	Horse- power.	Manual Labor.		
1877 ...	241	164	111	16	97	128	239*	1,194
1878 ...	224	173	99	18	101	105	277	1,104
Increase	...	9	...	2	4	...	38	...
Decrease	17	...	12	...	...	23	...	90

Year ended 31st March.	Number of Bricks made.	Approximate Total Value of—				
		Bricks made.	Pottery made.	Machinery and Plant.	Lands.†	Buildings.
1877 ...	75,081,000	£ 152,139	£ 17,312	£ 45,110	£ 47,959	£ 49,260
1878 ...	69,950,400	145,766	27,322	56,326	62,521	54,221
Increase	...	...	10,010	11,216	14,562	4,961
Decrease	5,130,600	6,373	...	...	...	...

688. An increase of 3 took place between 1877 and 1878 in the number of tanneries and fellmongeries, but a falling-off in the value of articles produced to the extent of £24,000. The value of machinery and plant also shows a falling-off of £1,467, but the value of lands and buildings was set down as being higher by £18,000 in the year under review than the previous one. The results of the two years are thus summarised:— Tanneries and fellmongeries.

\* This number is less by 97 than that shown in the *Victorian Year-Book*, 1876-7, in consequence of the power of a number of horses used to work machines having been wrongly included in that year.

† Fifty-six of the brickyards in 1877, and 43 in 1878, were upon Crown lands. In these cases no estimate of the value of the land is given.

## TANNERIES AND FELLMONGERIES, 1877 AND 1878.

Year ended 31st March.	Number of Establish- ments.	Establishments employing—			Amount of Horse-power of Steam Engines.	Number of Hands employed.	Number of Pits.
		Steam- power.	Horse- power.	Manual Labor.			
1877 ...	113	43	38	32	478	1,510	3,251
1878 ...	116	37	32	47	384	1,570	3,101
Increase ...	3	...	...	15	...	60	...
Decrease ...	...	6	6	...	94	...	150

Year ended 31st March.	Number of Hides and Skins operated on.	Approximate Total Value of—				
		Leather, Basils, &c., produced.	Wool, Pelts, and other articles produced.	Machinery and Plant.	Lands.*	Buildings.
		£		£	£	£
1877 ...	3,026,058	680,563	630,236	82,507	39,580	105,336
1878 ...	3,309,162	639,874	646,968	81,040	36,365	126,534
Increase ...	283,104	...	16,732	...	...	21,198
Decrease ...	...	40,689	...	1,467	3,215	...

689. The same number of woollen mills was returned in 1878 as in 1877, but an increase in the figures under almost all the heads of information obtained respecting them shows that their operations had been extended. In the year under review the wool used exceeded by 300,000 lbs., and the value of articles manufactured exceeded by £27,000, the quantity and value of the same items in the previous year. The following table shows the results of the two years:—

## WOOLLEN MILLS, 1877 AND 1878.

Year ended 31st March.	Woollen Mills.		Horse- power of Steam Engines.	Quantity of Wool used.	Goods Manufactured : Quantity of—		
	Total Number.	Worked by Steam- power.			Tweed, Cloth, Flannel, &c.	Blan- kets.	Shawls.
				lbs.	yards.	number.	number.
1877 ...	8	8	471	1,205,595	719,887	2,816	2,941
1878 ...	8	8	530	1,511,514	957,265	2,984	2,496
Increase ...	...	...	59	305,919	237,378	168	...
Decrease ...	...	...	...	...	...	...	445

  

Year ended 31st March.	Hands employed.		Approximate Total Value of—			
	Males.	Females.	Goods Manufactured	Machinery and Plant.	Lands.	Buildings.
			£	£	£	£
1877 ...	428	282	148,182	127,203	4,182	59,293
1878 ...	457	279	175,139	130,871	5,004	60,738
Increase ...	29	...	26,957	3,668	822	1,445
Decrease ...	...	3	...	...	...	...

\* Eleven of the establishments in 1877, and 9 in 1878, were upon Crown lands. In these cases no estimate of the value of the land is given.



690. The manufactories and works, exclusive of those of which Other manu-  
 mention has already been made—viz., flour mills, breweries, brickyards, factories,  
 potteries, tanneries, fellmongeries, and woollen mills—increased from works, &c.  
 1,686 in 1877 to 1,763 in 1878. The steam engines used in these works  
 increased by 12, the hands employed by 1,163, and the capital invested,  
 so far as it is represented by the stated value of machinery, plant,  
 lands, and buildings, increased by £528,104. Most of the establish-  
 ments are of an extensive character, and over 40 per cent. of them,  
 both in 1877 and 1878, used steam-power. The following is a comparison  
 of the results of the two years :—

### MANUFACTORIES, WORKS, ETC., 1877 AND 1878.

(Exclusive of Flour Mills, Breweries, Brickyards, Potteries, Tanneries, Fellmongeries, and Woollen Mills.)

Year ended 31st March.	Number of Manufactories, Works, &c.	Manufactories, &c., employing—					Amount of Horse-power employed.
		Steam.	Water.	Wind.	Horse- power.	Manual Labor.	
1877* ...	1,686	713	13	4	93	863	8,760
1878 ...	1,763	725	8	1	72	957	8,636
Increase ...	77	12	...	...	...	94	...
Decrease ...	...	...	5	3	21	...	124

Year ended 31st March.	Number of Hands employed.		Approximate Total Value of—		
	Males.	Females.	Machinery and Plant.	Lands.†	Buildings.
1877* ...	21,663	4,792	£ 2,086,130	£ 1,069,382	£ 1,413,983
1878 ...	22,275	5,343	2,157,052	1,145,414	1,795,133
Increase ...	612	551	70,922	76,032	381,150

NOTE.—It was formerly customary, wrongly as I conceive, to include certain waterworks in the returns of manufactories. They are now excluded from all the manufactory tables. A general table of waterworks will be found in the table following paragraph 694 *post*.

691. By summarising the returns of manufactories and works of all descriptions, including not only such as are embraced in the above  
 table, but those excluded therefrom—viz., flour mills, breweries, pot-  
 teries, tanneries, fellmongeries, and woollen mills—it is found that,  
 with a trifling exception in the matter of horse-power of steam engines,  
 the latter year shows larger numbers than the former in all the columns.  
 The establishments increased by 68, and those using steam by 8; the  
 hands employed by 1,210, and the capital invested in lands, buildings,  
 machinery, and plant, by £639,795. The following are the figures  
 relating to the two years :—

\* The figures in these lines are in many cases less than those shown in the *Victorian Year-Book*, 1876–7, in consequence of the items relating to fellmongeries having been removed and included with tanneries in table following paragraph 688 *ante*.

† One hundred and ninety-five of the manufactories in 1877, and 206 in 1878, were upon Crown lands. In these cases no estimate of the value of the land is given.

## MANUFACTORIES, WORKS, ETC., 1877 AND 1878.

(Including Flour Mills, Breweries, Brickyards, Potteries, Tanneries, Fellmongeries, and Woollen Mills, as well as other Manufactories, Works, &amp;c.)

Year ended 31st March.	Total Number of Establishments.	Number of Establishments using Steam.	Horse-power of Engines.*	Number of Hands employed.	Approximate Value of Lands, Buildings, Machinery, and Plant.†
1877 ...	2,302	921	12,759	31,478	£ 6,025,745
1878 ...	2,370	929	12,698	32,688	6,665,540
Increase ...	68	8	...	1,210	639,795
Decrease...	...	...	61	...	...

Names of manufactories.

692. The manufacturing establishments of all kinds, respecting which returns are obtained, are named in the following table, and their numbers are given for the year under review, and for the first year of each of the two previous quinquennials; also the number of hands employed, and the approximate value of plant, lands, and buildings, during the year under review. The establishments are for the most part of an extensive character, the only exception being in cases where the existence of industries of an unusual or interesting nature might seem to call for notice. No attempt is made to enumerate mere shops, although some manufacturing industry may be carried on thereat. Were this done, the "manufactories" in the colony might be multiplied to an almost indefinite extent. It is customary to note all establishments where machinery worked by steam, water, wind, or horse-power is used‡:—

\* It is possible that the numbers in this column may include the power of a few water and wind machines used in manufacturing, in addition to the power of steam engines.

† In the case of establishments standing upon Crown lands no estimate of the value of the land is given. The number of such establishments was 272 in 1877, and 266 in 1878.

‡ The collectors of statistics, being furnished with instructions as to the nature of the establishments they are expected to visit, do not, as a rule, return those which do not fulfil the conditions described in this paragraph. Each year, however, some of the returns sent in by them are rejected by the Government Statist as not being of sufficient importance to warrant their being placed in the list. The following are those which have been excluded on this ground during the last three years:—

	1876.	1877.	1878.		1876.	1877.	1878.
Printing establishments ..	9	6	5	Life-preserving apparatus manufactory	..	1	..
Wax model manufactory ..	..	1	..	Patent medicine manufactory ..	1	1	..
Wax flower manufactory ..	..	1	..	Boot manufactories ..	17	11	14
Architectural modelling works..	1	..	..	Clothing factories ..	6	5	2
Picture-frame manufactories ..	2	2	1	Hat, cap—manufactories..	16	12	6
Turnery and carving works ..	12	2	..	Umbrella manufactory ..	..	..	1
Philosophical instrument manufactory	..	1	..	Wig manufactories ..	..	3	..
Medical galvanic apparatus manufactory	1	1	..	Rope works ..	..	1	..
Surgical instrument manufactory	..	1	..	Tarpaulin manufactories ..	..	2	..
Agricultural implement manufactories	..	4	1	Biscuit manufactories ..	..	8	7
Bellows manufactory ..	..	1	..	Confectionery works ..	..	1	..
Cutlery works ..	..	1	..	Gingerbeer manufactory..	..	..	1
Engine, machine—manufactories	2	1	1	Coffee works ..	..	..	1
Machine—merchants' establishments	..	..	2	Fancy leather manufactory ..	..	1	..
Coach, waggon, &c.—manufactories	14	9	..	Glue manufactory ..	..	1	..
Saddle, harness—manufactories	34	20	13	Tallow-rendering works ..	..	1	..
Wheelwrights' establishments ..	2	4	1	Wool-washing establishments ..	..	1	..
Boat builder ..	..	..	1	Basket-making works ..	..	1	5
Joinery works ..	..	6	3	Blind (window) manufactory ..	1	1	..
Window-frame works ..	..	1	2	Cooperage works ..	..	7	4
Bedding and upholstery manufactories	6	4	4	Tent manufactories ..	..	..	2
Cabinet works ..	11	4	1	Goldsmiths' and jewellers' establishments	..	8	..
Electric bell manufactory ..	..	1	..	Electro-plating works ..	..	..	2
				Brass works ..	..	..	..
				Iron and tin works ..	..	4	18
				Wire-working establishments ..	..	2	..
				Total ..	135	144	98

## MANUFACTORIES, WORKS, ETC., 1868, 1873, AND 1878.

Description of Manufactory, Work, &c.	Number of Establishments.			1877-8.	
	1867-8.	1872-3.	1877-8.	Number of Hands Employed.	Approximate Value of Lands, Buildings, Machinery, and Plant.
<b>BOOKS AND STATIONERY.</b>					
Account-book manufactories, manufacturing stationers	9	8	10	575	£ 79,567
Printing establishments ... ..	15	26	47	1,617	259,037
<b>MUSICAL INSTRUMENTS.</b>					
Organ-building establishments ... ..	1	2	2	18	3,220
Pianoforte manufactories ... ..	5	9	8	37	7,600
<b>PRINTS, PICTURES, ETC.</b>					
Picture-frame makers, carvers, and gilders ...	...	...	10	40	18,045
<b>CARVING, FIGURES, ETC.</b>					
Indiarubber stamp manufactories ... ..	...	...	2	3	1,857
Modelling (architectural and figure), &c.—works	...	...	4	12	4,680
Statuary works ... ..	...	...	1	2	2,000
Turnery works ... ..	...	...	10	27	6,990
Wood-carving and ornamental works ... ..	...	...	1	10	600
Wooden pipe manufactories ... ..	...	2	1	3	1,050
<b>DESIGNS, MEDALS, AND DIES.</b>					
Diesinkers, engravers, medalists, trade-mark makers	...	...	4	29	6,000
<b>PHILOSOPHICAL INSTRUMENTS, ETC.</b>					
Philosophical instrument manufactories ...	...	...	6	14	4,310
Spectacles manufactories ... ..	...	...	1	3	1,250
<b>SURGICAL INSTRUMENTS.</b>					
Surgical instrument, truss—manufactories ...	...	...	8	30	6,603
<b>ARMS, AMMUNITION, ETC.</b>					
Blasting powder, dynamite, &c.—manufactories	...	1	3	51	8,150
Fuse manufactories ... ..	...	...	1	16	4,000
Gunmakers ... ..	...	...	7	26	10,367
<b>MACHINES, TOOLS, AND IMPLEMENTS.</b>					
Agricultural implement manufactories ...	21	42	40	879	90,705
Bellows manufactories ... ..	...	1	2	8	1,580
Cutlery, machine-tool—manufactories ...	...	2	8	22	7,560
Engine, machine—manufactories ... ..	25	26	45	1,052	158,554
<b>CARRIAGES AND HARNESS.</b>					
Coach, waggon, &c.—manufactories ... ..	2	6	127*	1,499	165,453
Saddle, harness—manufactories ... ..	...	...	39	348	68,821
Saddle-tree, &c.—manufactories ... ..	...	...	1	8	700
Saddlers' ironmongery and coach-spring manufactories	...	...	5	22	5,375
Whip manufactories ... ..	...	2	4	39	3,940

\* Including all extensive manufactories, whether employing steam or not, For 1868 and 1873 those only which used steam were returned.

MANUFACTORIES, WORKS, ETC.—*continued.*

Description of Manufactory, Work, &c.	Number of Establishments.			1877-8.	
	1867-8.	1872-3.	1877-8.	Number of Hands Employed.	Approximate Value of Lands, Buildings, Machinery, and Plant.
					£
SHIPS AND BOATS.					
Ship, boat—builders ... ..	13	12	17	80	8,450
Ships' wheels, blocks, &c.—manufactories ...	...	...	2	7	2,600
Floating-docks ... ..	3	8	...	...	...
Graving-docks ... ..			4	99	422,468
Patent slips ... ..			1	50	14,000
HOUSES, BUILDINGS, ETC.					
Door and window-frame works ( <i>see also</i> Moulding, &c., mills, <i>post</i> )	...	...	2	24	4,280
Lime works ... ..	27	31	26	148	10,044
Patent ceiling ventilator manufactories ...	...	...	2	7	1,950
Roof-covering composition manufactories ...	...	...	1	2	520
FURNITURE.					
Bedding and upholstery manufactories ...	...	4	15	251	25,635
Cabinet works, including billiard-table makers	2	5	36*	531	49,885
Earth-closet manufactories ... ..	1	2	3	25	4,300
Iron safe manufactories ... ..	2	1	2	10	1,470
Looking-glass manufactories ... ..	2	2	6	36	16,180
CHEMICALS.					
Chemical works ... ..	5	9	5	53	26,500
Dye works ... ..	7	13	13	74	18,855
Essential oil manufactories ... ..	...	3	2	3	880
Ink, blacking, blue, washing-powder, &c.—manufactories	1	4	8	95	11,900
Match (vesta) manufactories ... ..	...	...	1	27	1,100
Paint, varnish—manufactories ... ..	1	1	2	16	6,200
Salt works ... ..	1	4	4	24	3,122
Sulphate of ammonia—works ... ..	...	...	1	2	1,170
Tar-distilling, asphalte—works ... ..	2	1	4	26	4,110
TEXTILE FABRICS.					
Woollen mills ... ..	1	3	8	736	196,613
DRESS.					
Boot manufactories ... ..	8	24	76	2,470	109,975
Clothing factories ... ..	38	33	66	4,123	181,127
Fur manufactories ... ..	...	1	2	12	2,240
Hat, cap—manufactories ... ..	6	8	29	271	41,385
Oilskin, waterproof-clothing—manufactories	...	1	3	20	3,605
Umbrella and parasol manufactories ...	...	...	6	25	8,110
FIBROUS MATERIALS.					
Bag and sack manufactories ... ..	1	...	...	...	...
Jute factories ... ..	...	...	1	150	23,500
Oilcloth—manufactories ... ..	...	1	...	...	...
Rope, twine—works ... ..	5	12	15	311	56,991

\* Including all extensive manufactories, whether employing steam or not. For 1868 and 1873 those only which used steam were returned.

MANUFACTORIES, WORKS, ETC.—*continued.*

Description of Manufactory, Work, &c.	Number of Establishments.			1877-8.	
	1867-8.	1872-3.	1877-8.	Number of Hands Employed.	Approximate Value of Lands, Buildings, Machinery, and Plant.
					£
<b>ANIMAL FOOD.</b>					
Cheese factories ... ..	...	...	24	83	13,437
Meat-curing establishments ... ..	12	22	16	390	59,285
<b>VEGETABLE FOOD.</b>					
Biscuit manufactories ... ..	8	7	10	342	36,650
Confectionery works ... ..	4	5	8	162	30,610
Flour mills ... ..	118	163	150	721	496,317
Jam manufactories ... ..	2	4	8	207	23,115
Macaroni works ... ..	...	1	2	3	445
Maizena, oatmeal, starch—manufactories ... ..	1	2	3	17	4,400
Rice mills ... ..	...	1	...	...	...
<b>DRINKS AND STIMULANTS.</b>					
Aërated waters, gingerbeer, liqueur, &c.—works	68	113	104	592	110,873
Breweries ... ..	82	117	109	939	458,004
Coffee, chocolate, spice—works ... ..	10	10	11	139	57,790
Chicory mills ... ..	...	2	2	10	2,550
Distilleries ... ..	4	6	5	39	31,200
Malthouses ... ..	8	14	13	77	57,550
Sauce, pickle—manufactories ... ..	...	4	4	25	5,345
Sugar (beet-root)—manufactories ... ..	...	1	...	...	...
Sugar refineries ... ..	1	1	2	184	202,000
Tobacco, cigars, snuff—manufactories ... ..	9	12	13	725	66,250
Vinegar works ... ..	...	1	4	31	8,050
<b>ANIMAL MATTERS.</b>					
Boiling-down establishments ... ..	10	13	23	94	13,434
Bone-cutting mills ... ..	...	...	1	4	590
Bone manure manufactories ... ..	10	19	15	83	28,600
Brush manufactories ... ..	2	2	7	136	16,400
Catgut manufactories ... ..	...	2	...	...	...
Curled hair manufactories ... ..	...	...	3	19	3,580
Wool-washing—establishments ... ..	31*	43*	27	389	46,873
Flock manufactories ... ..	3	5	3	13	8,600
Glue, oil—manufactories ... ..	3	6	8	40	9,850
Morocco, fancy leather—manufactories ... ..	...	3	2	9	2,575
Parchment and skin manufactories ... ..	...	1	...	...	...
Portmanteau, trunk—manufactories ... ..	...	...	6	38	12,168
Soap, candle, tallow—works ... ..	32	41	38	434	136,775
Tanneries and fellmongeries ... ..	49†	73†	116	1,570	243,939
<b>VEGETABLE MATTERS.</b>					
Bark mills ... ..	...	...	11	61	13,595
Basket-making works ... ..	...	...	8	40	5,605
Blind (window) manufactories ... ..	...	...	11	107	10,080
Broom manufactories ... ..	...	3	1	16	5,200

\* These figures include fellmongeries.

† Exclusive of fellmongeries.

MANUFACTORIES, WORKS, ETC.—*continued.*

Description of Manufactory, Work, &c.	Number of Establishments.			1877-8.	
	1867-8.	1872-3.	1877-8.	Number of Hands Employed.	Approximate Value of Lands, Buildings, Machinery, and Plant.
VEGETABLE MATTERS—continued.					
Chaff-cutting, corn-crushing—works* ...	90	187	179	607	£ 148,538
Cooperage works ...	...	8	17	91	17,536
Cork manufactories ...	...	...	1	4	770
Fancy-box manufactories ...	...	2	2	25	2,550
Hat-box manufactories ...	...	...	2	8	1,200
Ladders and steps joineries ...	...	...	1	4	410
Last manufactory ...	...	1	...	...	...
Moulding, framing, turning, and saw mills ( <i>see</i> also Houses, buildings, &c., <i>ante</i> )	99	152	150	2,768	328,145
Packing-case manufactories ...	2	...	...	...	...
Paper manufactories ...	...	2	1	131	31,000
Paper-bag manufactories ...	...	4	5	142	14,450
Tent, tarpaulin—manufactories ...	...	...	8	58	13,627
COAL.					
Fuel (patent) manufactories ...	...	1	...	...	...
Gasworks ...	11	12	16	311	881,059
STONE, CLAY, EARTHENWARE, AND GLASS.					
Brickyards and potteries ...	173	304	224	1,104	173,068
Filter manufactories ...	1	...	2	8	1,292
Glass manufactories, works ...	3	3	5	109	13,600
Marble and monumental works ...	...	3	28	286	44,130
Stone-breaking works ...	...	2	{ 5	137	7,370
Stone-sawing, polishing works ...	2			{ 2	42
WATER.†					
Ice manufactories ...	1	2	3	19	9,940
GOLD, SILVER, AND PRECIOUS STONES.					
Electro-plating and gilding works ...	...	2	6	33	9,600
Goldsmiths and jewellers (manufacturing) ...	...	...	19	361	55,400
Lapidaries ...	...	...	1	2	1,250
METALS OTHER THAN GOLD AND SILVER.					
Antimony-smelting works ...	...	3	4	45	6,900
Bell foundries ...	...	...	1	2	1,300
Iron and tin works ...	5	11	61	833	144,254
Iron, brass, and copper foundries ...	43	62	88	1,663	295,557
Lead works ...	3	2	1	12	18,000
Tin-smelting works ...	...	...	1	2	200
Type foundries ...	2	...	1	2	2,700
Wire-working establishments ...	...	...	8	42	13,380
Total ...	1,106	1,770	2,370	32,688	6,665,540

\* All these establishments used machinery, worked by steam, wind, or horse-power. They must not be confounded with chaff-cutting and corn-crushing machines in use on farms and stations, which numbered 12,596 in 1877-8.

† Works for the storage and supply of water are not included in the manufacturing tables. A table of waterworks follows paragraph 694 *post*.

693. Summarised particulars respecting these manufactories are given for the same three periods in the following table. Greatly increased numbers at each successive period will be observed in all the columns, the augmentation shown being no doubt almost entirely due to the starting of fresh works and the extension of old ones. It is possible, however, that in consequence of the greater care exercised of late years by the collectors in returning every establishment, an appearance of increase may have sometimes resulted without any actual increase having occurred :—

Summary of  
manufac-  
tories.

**SUMMARY OF MANUFACTORIES, WORKS,\* ETC., 1868, 1873, AND 1878.**

Year ended 31st March.	Total Number of Establishments.	Number of Establishments using Steam.	Horse-power of Engines.†	Number of Hands employed.	Approximate Value of Lands, Buildings, Machinery, and Plant.
					£
1868	1,106	454	6,733	14,152	2,671,338
1873	1,770	750	10,100	21,493	3,944,900
1878	2,370	929	12,698	32,688	6,665,540

694. The following table contains a list of the works for the storage and supply of water for domestic, mining, and irrigation purposes, situated in various parts of the colony; also a statement of the estimated capacity of each work, and its actual or estimated cost. Some of these works have been completed, and others are in course of construction. It was formerly the practice to include some of the waterworks with the manufactories, but it is now thought better to remove them from that portion of the statistics, and to embody them all in a special table. It will be observed that the storage capacity of these works is over twelve thousand million gallons, and their cost over three and a third millions sterling :—

Waterworks.

**WATERWORKS IN VICTORIA.**

Name of Town or District to be supplied.	Reservoir.		Actual or Estimated Cost.
	Where situated.	Storage Capacity.	
		gallons.	£
Melbourne and suburbs	Yan Yean ...	6,400,000,000	1,518,000
	Morang (pipe head) ...	2,800,000	
	Preston ...	15,000,000	
Castlemaine ...	Barker's Creek, Harcourt	611,500,000	34,500
	Expedition Pass ...	128,000,000	
Taradale ...	Taradale (tank) ...	...	864,000
Sandhurst ...	Spring Gully ...	149,000,000	
	Crusoe Gully ...	320,000,000	
	Big Hill ...	68,000,000	
Coliban scheme (Castlemaine and Sandhurst districts)	Malmsbury ...	2,841,000,000	

\* Including flour mills, brickyards, potteries, tanneries, fellmongeries, and woollen mills, as well as other manufactories, works, &c.

† It is possible that the numbers in this column may include the power of a few water and wind machines used in manufacturing, in addition to the power of the steam engines.

## WATERWORKS IN VICTORIA—continued.

Name of Town or District. to be supplied.	Reservoir.		Actual or Estimated Cost.
	Where situated.	Storage Capacity.	
		gallons.	£
Geelong and suburbs	{ Stony Creek (Old) ... Stony Creek (New) ... Lovely Banks ...	157,000,000 141,000,000 6,000,000	} 320,000
Creswick ...	... Bullarook ...	45,000,000	
Tarnagulla ...	... Tarnagulla ...	5,000,000	
Inglewood (New) ...	... Inglewood ...	13,000,000	4,116
Maryborough ...	... Maryborough ...	8,100,000	1,065
Maldon ...	... Maldon ...	8,591,504	2,102
Ararat ...	{ Oliver's Gully ... Langi-Giran ... Opossum Gully ...	19,615,554 14,600,000 24,621,547	1,731 37,253 1,831
Beechworth ...	... Lake Kerferd ...	60,000,000	35,640
Chiltern ...	... Barrambogie Springs ...	...	5,000
Wangaratta ...	... Tank at Railway Station	40,000	3,909
Rutherglen ...	... Rutherglen ...	27,000,000	3,500
Beaufort ...	{ Beaufort ... Service Reservoir ...	85,881,110 1,200,000	1,991 3,500
Ballarat ...	... Three in Bungaree ...	212,960,000	300,000
Clunes ...	... Newlyn ...	237,000,000	80,500
Blackwood ...	... Lerderderg River ...	64,441,237	1,090
Buninyong ...	... Buninyong ...	10,462,485	1,047
Ovens ...	... Sandy Creek ...	70,000,000	2,835
Indigo ...	... Suffolk Lead ...	1,701,562	437
Sandhurst ...	{ Grassy Flat (1) ... Grassy Flat (2) ...	56,860,375 26,769,369	4,003 1,755
Kilmore ...	... Kilmore ...	14,466,000	845
Myers Creek ...	... Myers Creek ...	13,000,000	844
Echuca ...	... Echuca (tank) ...	40,000	2,748
Dunolly ...	... Dunolly ...	17,200,000	1,912
Inglewood (Old) ...	... Inglewood ...	5,670,000	1,112
St. Arnaud ...	... St. Arnaud ...	40,600,000	6,352
Redbank ...	... Redbank ...	27,100,000	2,785
Lamplough ...	... Lamplough ...	9,261,946	1,232
Talbot ...	... Amherst ...	13,813,284	10,650
Wedderburn ...	... Wedderburn ...	3,100,000	1,013
Chewton ...	... Commissioner's Gully ...	7,000,000	1,203
Daylesford ...	... Wombat Creek ...	31,284,413	2,527
Eryerstown ...	{ Crocodile Gully ... Spring Gully ...	5,407,462 7,000,000	767 1,049
Stawell ...	{ Quartz Reefs (1) ... Pleasant Creek (2) ... Pleasant Creek (3) ... Four Posts (4) ... Fyan's Creek ...	9,725,627 17,000,000 7,905,750 3,100,000 ...	1,080 ... 775 802 81,210
Moyston ...	... Campbell's Reef ...	5,400,000	1,054
Woodend ...	... Newham ...	...	3,712
Total ...		12,070,219,225	3,368,720



695. If the value of the lands, buildings, plant, and machinery used in connection with manufactories be added to the actual or estimated cost of the waterworks, their sum will represent an amount equal to over ten millions sterling. The following are the figures :—

Value of lands, buildings, machinery, &c., used in connection with manufactories, 1878	...	...	...	£ 6,665,540
Actual or estimated cost of waterworks	...	...	...	3,368,720
				£10,034,260

Capital invested in manufactories and water-works.

696. The number of stone quarries at work in 1878 was less by 15 than that in 1877, and a decrease also took place in the quantity and value of stone raised, and in the value of plant and buildings. The following are the figures:—

Stone quarries.

STONE QUARRIES, 1877 AND 1878.

Year ended 31st March.	Number of Quarries.	Cubic Yards of Stone raised.					Steam Engines in use.	
		Bluestone.	Slate and Flagging.	Sandstone.	Granite.	Other.	Number.	Horse-power.
1877	155	373,975	865	11,165	4,400	...	9	114
1878	140	212,644	1,202	7,173	900	400	7	58
Increase	...	...	337	...	...	400	...	...
Decrease	15	161,331	...	3,992	3,500	...	2	56

Year ended 31st March.	Number of Hands employed.	Approximate Total Value of—			
		Stone raised.	Machinery and Plant.	Lands.*	Buildings.
		£	£	£	£
1877	808	62,721	17,074	13,582	3,192
1878	516	48,015	13,130	16,817	1,369
Increase	...	...	...	3,235	...
Decrease	292	14,706	3,944	...	1,823

697. The quantity of gold raised in Victoria during any given year may be estimated in several ways; the following are the results for 1877 of four different methods of making the calculation :—

Gold raised, 1877.

ESTIMATES OF GOLD YIELD, 1877.

	Estimated Quantity.		
	oz.	dwt.	gr.
1. Exported gold entered as the produce of Victoria, added to Victorian gold received at Melbourne Mint ...	799,612	19	0
2. Gross exports of gold, less gross imports, added to gross quantity of gold received at Melbourne Mint...	791,480	0	0
3. Gold raised, according to estimates made by the mining registrars throughout the country ...	809,653	4	16
4. Gold purchased, according to returns made by managers of banks and others ...	790,147	8	10

\* Fifty-one of the stone quarries in 1877, and 49 in 1878, were upon Crown lands. In these cases no estimate of the value of the land has been given.

Estimates of  
mining  
registrars.

698. As the mining registrars live in the gold-producing districts, and, it may be presumed, have every opportunity of obtaining correct information, I propose to adopt their estimate. It will be observed that it gives a somewhat higher result than that obtained by any of the other methods.

Gold raised,  
1876 and  
1877.

699. This quantity, and its value at £4 per oz., are compared in the following table with the quantity and assumed value of the gold estimated to have been raised in 1876 :—

#### QUANTITY AND VALUE OF GOLD RAISED IN 1876 AND 1877.

Year.	Gold raised in Victoria.	
	Estimated Quantity.	Estimated Value, at £4 per oz.
	oz.	£
1876 ... ..	963,760	3,855,040
1877 ... ..	809,653	3,238,612
Decrease ...	154,107	616,428

Gold raised,  
1870 to  
1877.

700. The following figures give an estimate of the quantity of gold raised in 1870 and each subsequent year. It will be seen that since 1871 the yield of gold has been steadily decreasing :—

#### ESTIMATED QUANTITY OF GOLD RAISED, 1870 TO 1877.

	oz.		oz.
1870 ... ..	1,222,798	1874 ... ..	1,155,972
1871 ... ..	1,355,477	1875 ... ..	1,095,787
1872 ... ..	1,282,521	1876 ... ..	963,760
1873 ... ..	1,241,205	1877 ... ..	809,653

Gold raised,  
1851 to  
1877.

701. Carrying on to the end of 1877 the calculations given in previous Year-Books, the following may be estimated as the total quantity and value of the gold raised in Victoria from the period of its first discovery in 1851 :—

#### ESTIMATED TOTAL QUANTITY AND VALUE OF GOLD RAISED IN VICTORIA, 1851 TO 1877.

Gold raised in Victoria.		Estimated Quantity.	Estimated Value, at £4 per oz.
		oz.	£
Prior to 1877 ...		46,473,724	185,894,896
During 1877 ...		809,653	3,238,612
Total ...		47,283,377	189,133,508

Value of gold  
per miner.

702. The estimated value of gold raised in proportion to the number of miners at work\* was much less in 1877 than in 1876, or than in any other year since 1870. The following figures, which have been taken from the reports of the Secretary for Mines, express this proportion for each of the last eight years :—

\* For the number of miners at work at the end of each year, see paragraph 57 ante.

VALUE OF GOLD PER MINER,\* 1870 TO 1876.

		£	s.	d.			£	s.	d.
1870	...	81	0	6.46	1874	...	99	8	3.07
1871	...	93	6	0.62	1875	...	104	4	4.02
1872	...	93	17	1.47	1876	...	89	19	6.84
1873	...	93	16	2.62	1877	...	82	6	1.69

703. The mining surveyors and registrars estimate that in 1877 513,452 oz., or 64 per cent. of the gold exported and minted, was obtained from quartz reefs, and 286,161 oz., or 36 per cent., was obtained from alluvial deposits. In the previous year the same officers estimated that 63 per cent. of the gold was raised from quartz, and 37 per cent. from alluvial mines.

Gold derived from alluvial and quartz workings.

704. Of the steam engines employed in connection with gold mining about a fourth are used on alluvial, and three-fourths on quartz workings. The following is the number of engines in use and their horse-power in each of the last five years. It will be noticed that a slight falling-off has taken place from year to year:—

Steam engines used in mining.

STEAM ENGINES USED IN GOLD MINING, 1873 TO 1877.

	Number.	Horse-power.		Number.	Horse-power.
1873	... 1,151	... 25,100	1876	... 1,081	... 23,947
1874	... 1,141	... 24,866	1877	... 1,067	... 23,416
1875	... 1,101	... 24,224			

705. The number of mining machines of all descriptions fell from 4,893 in 1876 to 4,540 in 1877, but the value of such machines, as estimated by the Department of Mines, increased from £1,989,500 in 1876 to £2,029,962 in 1877.

Mining machinery.

706. The number of quartz reefs proved to be auriferous was returned by the mining surveyors and registrars as 3,307 in 1876, and 3,328 in 1877. It has been pointed out, however, that these cannot in every case be distinct reefs, as parts of the same reef in different localities are held to be independent veins, and named accordingly; and, moreover, as the lines of reef are further explored, it is found that what were supposed to be separate reefs are in reality not distinct.

Auriferous reefs.

707. The area of auriferous ground worked upon was stated to be approximately 1,134 square miles in 1876, and 1,185½ square miles in 1877. The figures are derived from estimates, not from actual surveys, and they vary from year to year. As the shallow alluviums of the older goldfields are abandoned by the miners, they are often occupied by agriculturists and gardeners, and ground which one year is included in the area embraced in gold workings is properly excluded in another.

Extent of auriferous ground.

\* These amounts are sometimes incorrectly spoken of as the "average earnings" of the miners. I have pointed out on former occasions that, as a very large proportion of the miners are working on wages, the gold they raise no more represents their individual earnings than do the products of a manufactory represent the earnings of its operatives.

Average  
yield of  
quartz.

708. It is impossible to obtain an exact statement of the yield of auriferous quartz in any year, owing to the fact that many of the owners of machines for crushing quartz are unable to give, or are precluded from giving, information respecting their operations. The officers of the Mining Department, however, succeeded in obtaining particulars respecting the crushing of 1,011,808 tons in 1876, and 965,574 tons in 1877. The average yield per ton of these crushings was 10 dwt. 13·48 gr. in the former, and 9 dwt. 9·38 gr. in the latter year. From similar estimates, extending over a series of years, and embodying information respecting the crushing of more than 14,000,000 tons of quartz, an average is furnished of 11 dwt. 3·28 gr. of gold to the ton of quartz crushed.

Gold-mining  
leases.

709. Since the first issue of gold-mining leases, the total number granted has been 10,421, giving the right to mine over an area amounting in the aggregate to 189,641 acres. Of these leases, 274, for 4,491 acres, were granted in 1877, and 1,317, for 18,016 acres, were in force at the end of that year.

Gold-mining  
companies.

710. The number of gold-mining companies registered in 1877 was 60, the number of shares was 755,566, and the nominal capital £667,316. In the previous quinquenniad 1,251 mining companies were registered, with 23,064,713 shares, and a nominal capital amounting in the aggregate to £16,049,518.

Leases for  
other  
minerals.

711. At the end of 1877 the following leases of Crown lands, conferring the privilege of working for minerals and metals other than gold, were in force. The leases were fewer by 3, but the area embraced therein exceeded by 70 acres the same item at the end of 1876:—

#### LEASES FOR MINERALS AND METALS OTHER THAN GOLD, 1877.

Metals and Minerals.	Leases in force at end of 1877.	
	Number.	Area.
		acres.
Antimony ... ..	20	397
Argentiferous galena ... ..	1	154
Coal ... ..	9	5,438
Coal shale and lignite ... ..	1	640
Copper and the ores of copper ... ..	2	873
Flagging ... ..	1	10
Lignite ... ..	1	476
Silver ... ..	2	354
Slate ... ..	1	50
Slate and flagging ... ..	2	20
Ironstone ... ..	1	320
Red ochre clay ... ..	1	2
Tin and iron ... ..	1	52
Tin and the ores of tin ... ..	5	1,196
Total ... ..	48	9,982

712. According to the estimate of the Mining Department, the following are the values of metals and minerals other than gold raised in Victoria from 1851 to the end of 1877. Of these productions, the value in 1877 amounted to £35,637 :—

Minerals  
other than  
gold raised.

#### VALUE OF METALS AND MINERALS OTHER THAN GOLD, 1851 TO 1877.

£			£		
Silver ...	...	26,136	Flagging ...	...	43,158
Tin ...	...	340,692	Slates ...	...	940
Copper ...	...	10,987	Magnesite ...	...	12
Antimony ...	...	137,401	Ores, mineral earthy clays, &c., unenumerated ...	...	2,608
Lead ...	...	4,892	Diamonds ...	...	107
Iron ...	...	2,111	Sapphires, &c. ...	...	630
Coal ...	...	13,505			
Lignite ...	...	2,320			
Kaolin ...	...	7,444	Total ...	...	£592,943

713. The following, according to the estimate of the same department, is the number of miners engaged in raising or searching for minerals or metals other than gold\* at the end of 1877 :—

Miners for  
minerals  
other than  
gold.

Mineral or Metal Mined for.	Number of Miners.
Silver ...	4
Argentiferous galena ...	3
Tin ...	9
Copper ...	54
Antimony ...	268
Ironstone ...	5
Limestone ...	6
Coal ...	28
Slate and flag ...	39
Kaolin ...	2
Total ...	418

714. The weekly rates of wages paid for different descriptions of mining labor in the year 1877 are thus quoted by the Mining Department :—

Wages of  
miners, &c.

#### RATES OF MINING LABOR, 1877.

	Per Week, without Rations.		Per Week, without Rations.
General manager ...	£2 to £12	Carpenter ...	£2 2s. to £4
Legal manager ...	10s. to £6	Foreman of shift ...	£2 2s. to £3 10s.
Mining manager ...	£2 10s. to £7	Miner ...	£1 10s. to £3
Engineer ...	£2 5s. to £6	Surface man (laborer) ...	£1 10s. to £3
Engine-driver ...	£2 to £3 5s.	Boy ...	12s. to £2 10s.
Pitman ...	£2 to £4	Chinese ...	12s. to £1 16s.
Blacksmith ...	£2 2s. to £4		

715. The estimated value of the produce raised from Victorian mines and quarries in 1877 was as follows :—

Value of  
mining  
produce.

#### VALUE OF MINING PRODUCE, 1877.

£				
Value of gold raised ...	...	...	...	3,238,612
" other metals and minerals ...	...	...	...	35,637
" stone, slate, and flagging ...	...	...	...	48,015
Total ...	...	...	...	£3,322,264

\* For number of gold miners see paragraph 56 ante.

Agricultural,  
pastoral,  
and mining  
produce.

716. The estimated value of the agricultural, pastoral, and mining produce raised in Victoria during each of the last four years is given in the following table. In all the years the value of the pastoral produce exceeded that of the other two industries combined :—

VALUE OF AGRICULTURAL, PASTORAL, AND MINING PRODUCE,  
1874 TO 1877.

Year.	Estimated Value of—			Total.
	Agricultural Produce.	Pastoral Produce.*.	Mining Produce.	
	£	£	£	£
1874 ...	4,410,436	9,840,562	4,740,679	18,991,677
1875 ...	4,835,894	9,541,551	4,475,876	18,853,321
1876 ...	5,574,239	10,069,570	3,949,135	19,592,948
1877 ...	5,792,898	8,652,471	3,322,264	17,767,633

Patents.

717. The patents for inventions applied for in 1877 numbered 145, as against 155 in the previous year. Since 1854 the total number of patents applied for has been 2,481.

Copyrights.

718. The Victorian Copyright Act (33 Vict. No. 350) came into force in December 1869. Since then the following copyrights have been registered :—

COPYRIGHTS, 1870 TO 1877.

Subject of Copyright.	Copyrights Registered.		
	Prior to 1877.	During 1877.	Total.
DESIGNS.			
Articles of manufacture, chiefly of—			
Metals ... ..	107	12	119
Wood, stone, cement, or plaster ...	34	...	34
Glass ... ..	2	1	3
Earthenware ... ..	1	...	1
Ivory, bone, papier-maché, &c. ...	8	...	8
Woven fabrics ... ..	10	...	10
Miscellaneous ... ..	12	...	12
LITERARY PRODUCTIONS.			
Literary works ... ..	565	57	622
Dramatic " ... ..	22	7	29
Musical " ... ..	62	1	63
WORKS OF ART.			
Paintings ... ..	2	...	2
Drawings ... ..	11	...	11
Engravings ... ..	539	30	569
Photographs ... ..	601	60	661
Total ... ..	1,976	168	2,144

\* The pastoral produce referred to is that derived from the live stock kept by both farmers and squatters.