

PART VI.—PRODUCTION.

Disposal of
Crown
lands.

495. 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.

Land Acts
1869 and
1878.

496. The Land Act in operation is that of 1869 (33 Vict. No. 360), as amended by the Land Act 1878 (42 Vict. No. 634), which came into operation at the beginning of 1879. Under these Statutes an extent of land not exceeding 320 acres is allowed to be selected by one person. The selection is held under license for six years, within which period the licensee must reside on his selection at least five years, 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 1s. per acre per annum, which is credited to the selector as part payment of the principal. At the expiration of the six 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 fourteen years, at an annual rental of 1s. 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 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.

Selection
under non-
residence
clause.

497. The amending Land Act also contains provision for selection by persons who need not reside on their selections. In such cases, however, the rent is 2s. per acre, and the total price to be paid for the land £2 per acre. Improvements to the value of £2 per acre, moreover, have to be made during the six years' license, of which at least half must be made before the expiration of the third year. Such licenses are not to be issued in any one year for more than 200,000 acres.

Crown lands
alienated
to end of
1878.

498. The total extent sold up to the end of 1878 was 11,454,527 acres, and the extent granted without purchase was 4,107 acres. The whole area alienated in fee-simple was thus 11,458,634 acres.

Crown lands
selected.

499. The selected lands of which the purchase had not been completed up to the end of the year amounted to 9,114,712 acres. Of this

* Paragraphs 366 to 370.

extent it is estimated that 2,050,000 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 7,064,712 acres.

500. 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 18,523,346 acres, it will follow that the residue, representing the Crown lands neither alienated nor in process of alienation, amounted at the end of 1878 to 37,923,374 acres. Crown lands unalienated.

501. 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 37,923,374 acres, it will be found that the area open for selection is narrowed to 11,422,885 acres. This will be at once seen by the following table, which shows the position of the public estate at the end of 1878 :— Public estate, 1878.

PUBLIC ESTATE OF VICTORIA ON 31ST DECEMBER 1878.

Condition of Land.	Number of Acres.
Land alienated in fee-simple	11,458,634
Land in process of alienation under deferred payments	7,064,712
Roads in connection with the above	1,035,301
Unsold land included in town reserves	300,000
Reserves in connection with pastoral occupation (about)	350,000
Auriferous land * (about)	1,022,000
Auriferous land selected without right of purchase	132,584
State forests not included in unavailable mountain ranges	243,000
Timber reserves	417,604
Mallee scrub, unavailable mountain ranges, lakes, lagoons, &c. (about)	23,000,000
Area available for selection, with right of purchase, at end of 1878	11,422,885
Total area of Victoria	56,446,720

502. 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 1878, Crown lands available for selection.

* This land may be selected without right of purchase under section 49 of the Land Act 1869, in lots not exceeding 20 acres. The total extent so selected is shown in the next line.

18,523,346 acres, or 55 per cent., were already alienated or in process of alienation ; 3,500,489 acres, or 10 per cent., were occupied by reserves ; and 11,422,885 acres, or 35 per cent., were available for selection.

Extent available for selection, 1877 and 1878.

503. The difference between the extent available for selection at the end of 1877 and at the end of 1878 was 579,702 acres. The extent so available was equal at the former period to 21 per cent. and at the latter period to 20 per cent. of the whole area of the colony.

Crown lands alienated, 1878.

504. The land alienated from the Crown in fee-simple during 1878 amounted to 307,514 acres. Of this extent, 307,457 acres were sold, and 57 acres were granted without purchase. A gradual falling off in the area alienated annually has taken place since 1872 ; and in 1878 the extent alienated was less than in any year since 1868.

Crown lands sold by auction.

505. Of the area sold, 47,375 acres, or less than a seventh, was disposed of by auction. Nearly the whole of the remainder was in the first instance selected under the system of deferred payments. A smaller extent was sold by auction in 1878 than in any year since 1870 except 1873.

Amount realised on Crown land sales, 1878.

506. The amount realised for Crown lands sold in 1878 was £375,534, or at the rate of £1 4s. 5d. per acre. Of this sum, only £206,759 was received during the year, the remainder having been paid in former years as rents and license fees. The proportion sold by auction realised £114,173, or an average of £2 8s. 2d. per acre ; and the proportion sold otherwise than at auction realised £261,361, or an average of £1 0s. 1¼d. per acre.

Amount realised, 1836 to 1878.

507. From the period of the first settlement of the colony to the end of 1878 the amount realised by the sale of Crown lands was £18,752,140, or at the rate of £1 12s. 9d. per acre.

Area selected 1878.

508. The area selected, with right of purchase, in 1878, which amounted to 1,389,955 acres, was greater than in any previous year except 1874. The average to each selector was 185 acres.

Squatting runs : number and area.

509. The squatting runs in 1878 numbered 768, or 33 less than in 1877. The area of Crown lands embraced in runs amounted in 1878 to 19,531,083 acres, or 1,323,532 acres less than in 1877.

Decrease in number of squatting runs.

510. The decrease in the number of squatting runs from year to year is accounted for by the fact that the best portions of the runs are often taken up by selectors, and the assessment of the remainder being considered excessive, the pastoral lessees abandon their leases, which are forfeited, and the lands are offered for re-occupation for grazing purposes, subject to annual licenses, under the 47th section of the Land Act 1869. The highest tender for the grazing license, which is frequently that of the former occupant, is generally accepted.

511. The average size of squatting runs was 26,036 acres in 1877, and 25,431 acres in 1878. This is exclusive of any purchased land attached thereto. Squatting runs: average size.

512. 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 1877 the amount of rent payable was £138,475, or 1.594d. (a fraction over 1½d.) per acre; and in 1878 the amount was £122,142, or 1.501d. (1½d.) per acre.* Rent of runs.

513. 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. There was an increase of £33,000 under the first head in 1878 as compared with 1877, but the decrease under the latter heads more than counterbalanced it, as will be seen by the following figures:— Land revenue

LAND REVENUE, 1877 AND 1878.

Heads of Land Revenue.	Amounts Received.		Increase.	Decrease.
	1877.	1878.		
	£	£	£	£
Alienation in fee-simple and progressive	757,495	790,442	32,947	...
Temporary occupation	184,070	167,144	...	16,926
Penalties, fees, and interest... ..	73,247	48,884	...	24,363
Total	1,014,812	1,006,470	...	8,342†

514. 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 to 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 Agricultural statistics.

* The sums actually received were £146,043 in 1877 and £194,079 in 1878, but arrears from previous years are included in both these amounts. † Net decrease.

authority of the Government Statist, also render themselves liable to a penalty of ten pounds.

Agricultural
statistics,
1878-9.

515. The agricultural statistics* to which reference will now be made are those for the year ended 31st March 1879. Tables embodying the general results of these statistics were sent for publication in the *Government Gazette* on the 12th May last, and these, with additional tables, have since been printed and laid before Parliament, in Part VI. of the *Statistical Register of Victoria*.

Holdings
visited by
collectors.

516. 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.

Land in
occupation.

517. The extent of land in occupation of which a return is made is always less than the whole area alienated and selected. The collectors are not required to take account of holdings which do not exceed one acre, nor of gardens or grounds attached to residences which are kept merely for ornament and pleasure, nor of any lands which show no signs of occupation, 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. The agricultural statistics for the present year account for over 86 per cent. of the extent alienated and in process of alienation at the end of 1878.

Land occu-
pied and
cultivated.

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

HOLDINGS AND LAND † OCCUPIED AND CULTIVATED, 1878
AND 1879.

Year ended 31st March.	Number of Holdings larger than 1 acre.	Acres Occupied.	Acres under Tillage.
1878	45,448	14,806,926	1,420,502
1879	47,050	15,901,403	1,609,278
Increase	1,602	1,094,477	188,776

* 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.

† The holdings and land referred to are exclusive of Crown lands held under squatting licenses. See also paragraphs 516 and 517 *ante*.

519. During the decenniad ended with the year under review the holdings have increased by three-fifths, and the land occupied by four-fifths, whilst the land in cultivation has more than doubled. This will be seen by the following figures :—

INCREASE IN 1879 AS COMPARED WITH 1869.

	Numerical.	Per cent.
Holdings	17,832	61
Acres occupied	7,017,210	79
Acres cultivated	896,413	126

Increase in occupied land, &c., in ten years.

520. The following table shows the area per head cultivated in each Australasian colony during the five seasons ended with that of 1877-8, also the mean of those seasons, the colonies being placed in order according to the average extent of land per head that each cultivates. It will be observed that South Australia cultivates much more, and New South Wales and Queensland cultivate much less, per head than any of the other colonies. It is satisfactory to find, however, that in all the colonies except Western Australia the figures for the last year named in the table are higher than those for any previous year :—

Area cultivated per head in Australasian colonies.

CULTIVATION PER HEAD IN AUSTRALASIAN COLONIES, 1874 TO 1878.*

Colony.	Acres under Tillage per Head of Population.					Mean of Five Years.
	1873-4.	1874-5.	1875-6.	1876-7.	1877-8.	
1. South Australia ...	6.18	6.50	6.86	6.71	7.72	6.79
2. Tasmania ...	1.61	3.13	3.21	3.15	3.26	2.87
3. Western Australia	2.01	1.73	1.78	1.68	1.82	1.80
4. New Zealand† ...	1.27	1.61	1.62	1.97	2.30	1.75
5. Victoria ...	1.22	1.25	1.37	1.47	1.65	1.39
6. New South Wales	.82	.80	.74	.82	.83	.80
7. Queensland ...	.43	.39	.43	.46	.52	.45

521. The following table shows the extent of land in Victoria placed under the principal crops in 1878 and 1879. An increase will be observed in the land under all these crops except potatoes and hay. The extent under potatoes in 1879 was less than in any of the previous ten years, except 1869 and 1875, but that under hay—though less than in 1878—was greater than in any previous year. During the past three years wheat was much more extensively cultivated than formerly. Prior to 1877 the extent under that crop never reached 400,000 acres.

Land under principal crops.

* For the population and number of acres under tillage in each Australasian colony during the six years ended with 1878-9, see Summary of Australasian Statistics (third folding sheet) ante.

† Land under artificial grass in New Zealand is not considered to be under tillage, but it is so in some of the other colonies.

LAND UNDER PRINCIPAL CROPS, 1878 AND 1879.

Year ended 31st March.	Wheat.	Oats.	Barley.	Potatoes.	Hay.	Green Forage.
	acres.	acres.	acres.	acres.	acres.	acres.
1878 ...	564,564	105,234	19,116	37,107	176,951	390,330
1879 ...	691,622	134,428	22,871	36,527	172,799	401,427
Increase ...	127,058	29,194	3,755	...	...	11,097
Decrease...	...	...	...	580	4,152	...

Produce of
principal
crops.

522. The gross produce of the same crops, except green forage, is shown as follows for 1878 and 1879. It will be observed that the yield of wheat and potatoes was less in the latter year than in the former, but the reverse was the case as regards oats, barley, and hay. More wheat, however, was produced in 1879 than in any previous year except 1878, but the gross produce of the potato crop was less than in any year since 1869 :—

GROSS PRODUCE OF PRINCIPAL CROPS, 1878 AND 1879.

Year ended 31st March.	Wheat.	Oats.	Barley.	Potatoes.	Hay.
	bushels.	bushels.	bushels.	tons.	tons.
1878 ...	7,018,257	2,040,486	378,706	115,419	208,151
1879 ...	6,060,737	2,366,026	417,157	98,958	209,028
Increase ...	...	325,540	38,451	...	877
Decrease ...	957,520	...	...	16,461	...

Wheat-
producing
counties.

523. The following table shows for each of the last three years the produce of wheat in eleven counties, which, for the most part, lie between the 36th and 37th parallels of latitude, and the 142nd and 147th meridians, and which are above all others the wheat-producing counties of Victoria.

WHEAT RAISED IN ELEVEN COUNTIES, 1877, 1878, AND 1879.

Counties.	Number of Bushels Produced.		
	1876-7.	1877-8.	1878-9.
Bendigo ...	763,984	795,398	727,195
Bogong ...	264,571	333,414	136,574
Borong ...	336,156	720,007	1,291,947
Dalhousie ...	170,817	192,080	106,305
Delatite ...	252,946	278,947	115,639
Gladstone ...	342,485	472,224	578,157
Gunbower ...	169,105	250,298	218,348
Kara Kara ...	436,834	598,661	651,142
Moira ...	568,004	889,774	317,465
Rodney ...	697,027	1,016,849	451,435
Talbot ...	462,695	449,405	414,473
Total ...	4,464,624	5,997,057	5,008,680

524. In 1876-7 five-sixths, in 1877-8 six-sevenths, and in 1878-9 five-sixths of the wheat raised in Victoria was grown in the eleven counties named in the last table. It will be observed that the decrease in the wheat crop already alluded to* is more than accounted for by the falling-off in these counties. The three counties on the extreme west of the group—viz., Borung, Gladstone, and Kara Kara—are the only ones which show higher figures for 1878-9 than for the previous year; whilst the greatest decrease occurs in the most easterly counties, viz., Bogong, Delatite, Moira, and Rodney. The cause of the falling-off has been attributed to rust and drought. In Moira alone the crop on 17,500 acres, or more than a fifth of the area under wheat in that county, is stated to have been totally destroyed by the former.

Decreased yield of wheat in eleven counties.

525. The average produce of wheat per acre in the various counties in the colony in 1878-9 is compared in the following table with that in the previous year. The counties are arranged according to the average yield in the past season, and the eleven counties just referred to are marked with daggers. It will be observed that there is a considerable falling-off in nearly every county, and it may be stated that in only two counties in 1878-9, as against seventeen in 1877-8, was there a higher yield than the average of the whole colony during the eleven years ended with 1877-8, viz., 14½ bushels:—

Yield of wheat in each county.

AVERAGE PRODUCE OF WHEAT IN EACH COUNTY, 1878 AND 1879.

Counties.	Bushels of Wheat per Acre.		Counties.	Bushels of Wheat per Acre.	
	1877-8.	1878-9.		1877-8.	1878-9.
Tambo ...	13·91	19·12	†Borung ...	10·05	10·95
Ripon ...	13·38	14·36	†Kara Kara ...	10·14	10·73
Dundas ...	17·85	14·23	Tatchera ...	5·45	10·55
Grenville ...	12·42	13·74	Buln Buln ...	17·10	10·43
Grant ...	17·55	13·64	†Gladstone ...	10·78	10·08
Heytesbury ...	17·95	13·60	Polwarth ...	16·56	9·30
Dargo ...	20·17	13·49	†Bendigo ...	11·48	8·79
Lowan ...	9·63	13·46	†Dalhousie ...	15·09	8·42
Villiers ...	22·27	12·65	Anglesey ...	13·75	7·21
Croajingolong	6·69	12·48	†Gunbower ...	9·18	6·47
Normanby ...	16·77	12·18	†Bogong ...	14·59	6·00
Tanjil ...	18·24	12·01	Wonnangatta ...	10·15	5·99
†Talbot ...	13·02	11·99	Mornington ...	20·53	5·87
Follett ...	22·13	11·80	†Rodney ...	12·82	5·54
Benambra ...	20·56	11·44	†Delatite ...	14·16	5·38
Hampden ...	13·26	11·42	Evelyn ...	16·31	4·86
Bourke ...	16·06	11·21	†Moira ...	14·64	3·89
			Total of Victoria...	12·41	8·76

* See paragraph 522 ante.

Yield of
other prin-
cipal crops
in each
county.

526. The average produce per acre of the other principal crops during 1878-9 is given in the following table. It will be noticed that the highest acreable yield of oats was in Tambo, that of barley and hay in Villiers, and that of potatoes in Polwarth; also, that the lowest acreable yield of oats was in Polwarth, that of hay in Gunbower, that of barley in Benambra, and that of potatoes in Gladstone:—

AVERAGE PRODUCE OF OATS, BARLEY, POTATOES, AND HAY IN EACH COUNTY, 1879.

Counties.	Average Produce to the Acre of—			
	Oats. bushels.	Barley. bushels.	Potatoes. tons.	Hay. tons.
Anglesey	17·44	11·92	1·48	1·07
Benambra	17·98	9·12	3·42	1·12
Bendigo	16·75	11·46	2·29	·93
Bogong	16·80	14·62	2·19	·94
Borong	18·44	13·13	1·80	·98
Bourke	17·44	17·76	2·73	1·39
Buln Buln	16·46	20·18	3·31	1·14
Croajingolong	17·54	15·00	2·71	·74
Dalhousie	14·13	12·79	1·66	1·15
Dargo	15·88	18·33	3·43	1·27
Delatite	13·54	13·63	1·58	·89
Dundas	19·97	23·25	1·55	1·62
Evelyn	16·31	15·00	2·66	·94
Follett	19·05	23·61	1·95	1·54
Gladstone	16·25	11·01	1·06	·92
Grant	17·48	22·87	3·07	1·48
Grenville	17·79	23·61	1·99	1·26
Gunbower	14·88	9·37	2·33	·29
Hampden	21·96	26·40	2·59	1·54
Heytesbury	19·94	24·85	2·32	1·52
Kara Kara	18·01	12·13	1·50	·99
Lowan	17·93	14·27	1·44	1·14
Moira	18·27	12·86	1·38	·89
Mornington	15·72	15·26	2·97	1·02
Normanby	15·51	16·79	1·93	1·50
Polwarth	12·79	17·63	3·47	1·92
Ripon	20·12	27·41	1·62	1·57
Rodney	17·36	12·71	1·15	·83
Talbot	20·11	18·95	2·14	1·42
Tambo	22·94	24·80	3·03	1·55
Tanjil	17·31	22·96	2·32	1·23
Tatchera	13·47	12·44	2·50	·74
Villiers	22·39	36·19	3·43	2·00
Weeah ... ..	...	...	...	1·00
Wonnangatta	11·19	14·00	2·82	1·10
Total	17·60	18·24	2·71	1·21

Yield of
principal
crops, 1869
to 1879.

527. The following table shows the acreable yield of the five principal crops during each of the last eleven years, also the average during the whole period. The average produce of wheat in 1878-9

was the lowest on record ; that of oats was exceeded in every year of the previous decenniad except 1871 and 1874 ; that of barley in all the years except 1869 and 1871 ; that of potatoes in all the years except 1869 ; and that of hay in all the years except 1869, 1871, and 1878.

AVERAGE PRODUCE OF PRINCIPAL CROPS, 1869 TO 1879.

Year ended 31st March.	Average Produce per Acre of—				
	Wheat.	Oats.	Barley.	Potatoes.	Hay.
	bushels.	bushels.	bushels.	tons.	tons.
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	1·18
1879	8·76	17·60	18·24	2·71	1·21
Average of eleven years	13·39	19·28	19·93	3·04	1·27

528. 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 1878. According to the mean of the quinquenniad, the average produce of wheat, oats, and potatoes is highest in New Zealand, and that of hay in New South Wales. Victoria stands fourth in regard to the average per acre of wheat and potatoes, third in regard to that of oats, and sixth in regard to that of hay:—

Average produce in Australasian colonies.

AVERAGE PRODUCE OF PRINCIPAL CROPS IN AUSTRALASIAN COLONIES, 1874 TO 1878.

Colony.	Year ended 31st March.					Mean.
	1874.	1875.	1876.	1877.	1878.	

WHEAT : BUSHELS PER ACRE.

Victoria	13·58	14·57	15·49	13·15	12·41	13·84
New South Wales	13·43	12·87	14·66	16·43	13·84	14·25
Queensland ... ..	...	...	...	...	10·63	10·63
South Australia	7·87	11·75	11·95	5·40	7·76	8·95
Western Australia	13·44	12·00	11·00	12·00	11·00	11·89
Tasmania	16·17	18·51	16·38	19·30	18·12	17·70
New Zealand	25·61	28·15	31·54	28·63	26·03	27·99

* The produce of crops in Queensland was not given in the years prior to 1878.

AVERAGE PRODUCE OF PRINCIPAL CROPS IN AUSTRALASIAN
COLONIES, 1874 TO 1878—*continued.*

Colony.	Year ended 31st March.					Mean.
	1874.	1875.	1876.	1877.	1878.	

OATS : BUSHELS PER ACRE.

Victoria ...	15·69	18·46	21·92	19·91	19·39	19·07
New South Wales	18·71	16·31	18·72	21·16	19·31	18·84
Queensland ...	...	...	...	...	10·11	10·11
South Australia	10·61	14·61	16·69	10·65	11·96	12·90
Western Australia	19·22	16·00	15·00	15·00	14·00	15·84
Tasmania ...	20·98	26·82	25·40	24·21	22·32	23·95
New Zealand ...	29·81	35·22	39·34	31·24	31·68	33·46

POTATOES : TONS PER ACRE.

Victoria ...	2·86	3·53	3·37	3·31	3·11	3·24
New South Wales	2·98	2·83	2·98	3·03	2·52	2·87
Queensland ...	...	...	...	...	1·91	1·91
South Australia	3·41	3·72	4·52	2·84	2·51	3·40
Western Australia	2·67	3·00	3·00	3·00	2·00	2·73
Tasmania ...	3·16	3·75	3·54	3·43	3·25	3·43
New Zealand ...	4·46	5·24	4·89	5·36	5·38	5·07

HAY : TONS PER ACRE.

Victoria ...	1·27	1·32	1·33	1·22	1·17	1·26
New South Wales	1·54	1·37	1·15	1·43	1·22	1·34
Queensland ...	...	...	...	...	1·30	1·30
South Australia	1·02	1·26	1·21	1·95	1·13	1·31
Western Australia	2·00	1·50	1·00	1·00	1·00	1·30
Tasmania ...	1·08	1·35	1·42	1·21	1·13	1·24
New Zealand ...	1·43	·84	1·46	1·31	1·30	1·27

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 six years ended with 1878-9, see Summary of Australasian Statistics (third folding sheet) *ante*.

Land under
crop in
Britain and
Foreign
countries.

529. The next table shows the acreage under wheat, oats, barley, and potatoes in the United Kingdom, the Cape of Good Hope, and certain Foreign countries. All the information has been taken from official documents.

LAND UNDER CERTAIN CROPS IN THE UNITED KINGDOM, THE CAPE COLONY, AND FOREIGN COUNTRIES (000'S OMITTED).

Country.	Year.	Number of Acres under—			
		Wheat.	Oats.	Barley.	Potatoes.
The United Kingdom ...	1878	3,382	4,124	2,723	1,365
Cape of Good Hope ...	1875	188	114	29	9
Austria ...	1876	2,420	4,413	2,753	2,410
Baden ...	1876	89	139	153	207
Belgium ...	1866	700	567	108	423
Denmark ...	1876	140	864	699	96
France ...	1875	17,231†	7,859	2,576	2,954
Holland ...	1874	236	278	122	327
Hungary ...	1875	5,654	2,429	2,242	944
Italy ...	1874	11,551	985	1,148	169
Norway ...	1870	12	220	122	77
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 ...	1876	...	...	...	374
United States ...	1875	26,382	11,915	1,790	1,510
Wurtemberg ...	1876	47	331	244	189

530. 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 the Cape Colony and 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 yield of crops in Foreign countries.

GROSS PRODUCE OF CERTAIN CROPS IN THE CAPE COLONY AND FOREIGN COUNTRIES (000'S OMITTED).

Country.	Year.	Number of Bushels* raised of—			
		Wheat.	Oats.	Barley.	Potatoes.
Cape of Good Hope ...	1875	1,688	918	448	371
Austria ...	1876	33,966	90,974	49,869	251,029
Baden* ...	1876	719	1,062	1,317	12,214
Belgium ...	1866	14,203	23,364	3,666	47,417
Denmark ...	1876	3,894	24,267	17,998	10,357
France ...	1875	279,649†	189,830	50,686	411,818
Holland ...	1874	6,190	12,648	5,415	54,481
Hungary ...	1875	47,392	21,516	20,913	39,707
Italy ...	1874	142,423	19,370	18,417	19,387
Norway ...	1875	254	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 ...	1876	2,716	35,638	11,820	46,041
United States* ...	1875	292,136	354,317	36,909	166,877
Wurtemberg ...	1876	836	9,300	5,673	22,419

* 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 $\cdot 969,447$ of an Imperial bushel.

† Including spelt (*Triticum spelta*).

Average
yield of
crops in
Foreign
countries.

531. 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 THE CAPE COLONY AND FOREIGN COUNTRIES.

Country.	Year.	Bushels* per Acre of—			
		Wheat.	Oats.	Barley.	Potatoes.
Cape of Good Hope ...	1875	9·0	8·1	15·4	41·2
Austria ...	1876	14·0	20·6	18·1	104·1
Belgium ...	1866	20·3	41·2	33·9	112·1
Denmark ...	1876	27·8	28·1	25·7	108·0
France ...	1875	16·2†	24·1	19·7	139·4
Holland ...	1874	26·2	45·4	44·3	166·6
Italy... ...	1874	12·3	19·6	16·0	114·7
Norway ...	1875	21·2	40·2	35·4	244·1
Prussia ...	1876	20·7	33·4	26·7	...
Russia in Europe ...	1872	5·5	16·5	8·0	117·0
Sweden ...	1876	...	...	...	123·1
United States* ...	1875	11·1	29·7	20·6	110·5
Wurtemberg ...	1876	17·8	28·1	23·2	118·8

Breadstuffs
available
for con-
sumption.

532. Only in five 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, as also was 1878, the transactions in the latter having resulted in a net export of 1,005,968 bushels, which is by far 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 1878 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 CONSUMPTION, 1840-1878.

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

* Imperial bushels, except in the case of the United States, which is given in Winchester bushels, each equal to $\frac{32}{33}$ nearly, or, more accurately, to $\cdot 969,447$ of an Imperial bushel.

† Including spelt.

‡ 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, 1840-1878—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.		
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
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
1878	869,040	7,018,257	-1,005,968	6,012,289	1,383,244	4,629,045	5.33

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

533. 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 Consumption of breadstuffs per head.

* 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.

14 bushels in 1852, and between 10 and 11 bushels in 1841 and 1853, to $4\frac{1}{3}$ bushels in 1843, and about $4\frac{1}{2}$ bushels in 1868, 1871, and 1877. The quantity in the last-named year was less than that in any other year since 1843, but that in 1878 was about equal to what it was in each of the five years from 1872 to 1876.

Average consumption of breadstuffs.

534. The quantity of breadstuffs available for annual food-consumption per head has averaged $6\frac{1}{7}$ bushels over the whole period of thirty-nine years. It has averaged $5\frac{1}{2}$ bushels during the last ten years, and $5\frac{1}{9}$ 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 $5\frac{1}{2}$ 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 1878.

535. The imports and exports of breadstuffs during the forty-two years, 1837 to 1878, 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 $11\frac{1}{3}$ millions sterling paid by the colony for breadstuffs imported :—

IMPORTS AND EXPORTS OF BREADSTUFFS,* 1837 TO 1878.

Wheat, Flour, Bread, and Biscuit.	Quantity.	Value.
	bushels.	£
Imported, 1837 to 1878	32,018,849	13,702,249
Exported, ,, ,,	7,030,166	2,336,123
Imports in excess of exports ...	24,988,683	11,366,126

Net imports of agricultural products.

536. 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 four years ended with 1878. 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 and oatmeal are absent from the list for the past two years, and jams and preserves for 1878, the exports of those articles having exceeded the imports ; a decided decrease, moreover, since 1875 is perceptible in the net imports of oats, pearl barley, malt, beans and peas, fruit, nuts and almonds, chicory, pickles, and grass seeds.

* 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*.

**NET IMPORTS* OF CERTAIN ARTICLES OF AGRICULTURAL
PRODUCE, 1875 TO 1878.**

Articles.	Balance of Imports over Exports in—			
	1875.	1876.	1877.	1878.
	£	£	£	£
Wheat	65,913	87,247	...	...
Oats	170,957	112,430	95,071	80,140
Oatmeal	511	261	...	...
Barley	24,569	35,318	25,481	48,328
Pearl barley	4,623	2,825	1,368	1,584
Malt	93,009	68,401	76,867	37,162
Maize	114,609	117,951	123,357	164,578
Maizena	1,624	4,988	7,365	2,359
Beans, peas, and split peas	5,528	2,266	2,456	2,057
Fruit—green, bottled, dried, currants and raisins	104,916	116,202	153,414	88,171
Jams, jellies, and preserves	4,799	6,450	350	...
Nuts, almonds, walnuts	6,255	7,774	6,064	4,565
Hops	42,960	64,600	43,782	41,461
Chicory	2,413	1,798	3,300	1,906
Pickles	9,160	12,892	4,284	1,843
Tobacco, cigars, and snuff	36,485	78,192	148,688	45,372
Vegetables (preserved)	930	1,397	...	1,409
Canary seed	2,117	4,970	1,857	1,228
Grass and clover seed	17,786	10,985	19,618	12,616
Total	709,164	736,947	713,322	534,779

537. 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, in 1877 by £13,550, and in 1878 by £11,597. Net imports
of eggs.

538. Of every thousand acres cultivated during the past season, 430 acres were placed under wheat; 84 under oats; 14 under barley; 23 under potatoes; 107 under hay; 249 under green forage; and 93 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, 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 six years. Proportion of
land under
each crop.

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

PROPORTION OF LAND UNDER EACH CROP TO TOTAL UNDER CULTIVATION, 1874 TO 1879.

Land under—	Proportion to Total Land under Tillage.					
	1873-4.	1874-5.	1875-6.	1876-7.	1877-8.	1878-9.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Wheat	36·27	32·90	28·52	32·61	39·74	42·98
Oats	11·50	11·36	11·01	9·36	7·41	8·35
Barley	2·63	2·92	2·80	2·03	1·35	1·42
Potatoes	3·97	3·48	3·27	3·29	2·61	2·27
Hay	11·99	11·76	13·78	11·97	12·46	10·74
Green forage	22·08	25·14	27·37	29·45	27·48	24·94
Other tillage	11·56	12·44	13·25	11·29	8·95	9·30
Total... ..	100·00	100·00	100·00	100·00	100·00	100·00

Minor crops. 539. 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 five years. The quantities returned fluctuate from year to year, but the acreage under onions, pumpkins and melons, raspberries, and rye and bere, was greater in the last than in any other year shown. Arrowroot appears in the list for the first time since 1869, when 2 acres were returned :—

MINOR CROPS,* 1875 TO 1879.

Nature of Crop.		1874-5.	1875-6.	1876-7.	1877-8.	1878-9.
Arrowroot ...	{ acres ...	...	...	...	...	4
	{ cwt. ...	...	...	...	...	67
Beet, carrots, parsnips, & cabbage	{ acres ...	721	807	571	470	402
	{ tons ...	3,887	4,268	3,430	2,272	1,272
Broom millet ...	{ acres ...	56	96	8	7	6
	{ fibre, cwt. ...	264	338	8	...	...
	{ seed, bush. ...	1,000	2,095	...	...	...
Buckwheat ...	{ acres ...	5	2	...	2	...
	{ bushels ...	20	40	...	11	...

* Exclusive of those grown in gardens.

MINOR CROPS,* 1875 TO 1879—continued.

Nature of Crop.		1874-5.	1875-6.	1876-7.	1877-8.	1878-9.
Canary	{ acres	...	50	30	82	4
	{ bushels	...	300	183	825	150
Chicory	{ acres	109	174	225	256	155
	{ tons	531	652	980	1,333	653
„ for seed	{ acres	...	3	...	...	...
	{ lbs.	...	168	...	...	...
Clover for seed	{ acres	...	45	...	...	...
	{ bushels	...	614	...	...	...
Cucumbers	{ acres	...	...	1	...	...
	{ tons	...	...	12	...	...
Flax	{ acres	7	17	3	33	4
	{ fibre, cwt.	48	93	2½	40	...
	{ linseed, bush.	63	80	52	125	...
Garden seeds— Carrot	{ acres	1	...	...	...	...
	{ lbs.	560	...	...	...	...
Mixed	{ acres	...	...	50	16	...
Radish	{ acres	...	...	1	...	4
	{ lbs.	...	...	560	...	672
Grass seeds	{ acres	3,082	2,189	1,993†	1,846	2,824
	{ bushels	35,998	33,580	29,229	28,840	34,432
Green peas	{ acres	...	...	11	...	37
	{ tons	...	...	18	...	50
Hops	{ acres	126	145	225	274	203
	{ lbs.	99,624	113,344	129,136	218,848	130,816
Kohl-rabi	{ acres	...	1	...	...	...
	{ cwt.	...	300	...	...	...
Lucerne for seed	{ acres	...	6	...	...	3
	{ bushels	...	42	...	...	16
Maize	{ acres	1,523	2,346	1,609	1,215	1,939
	{ bushels	24,263	37,177	25,909	22,050	40,754
Mangel-wurzel	{ acres	1,281	1,223	1,285	1,320	888
	{ tons	17,899	16,795	15,386	15,465	8,275
Medicinal herbs	{ acres	...	...	1	...	...
	{ tons	...	...	5	...	...
Mulberry trees	{ acres	1	23	11½	21	18
	{ number	6,500	30,650	11,010	14,310	12,460
Mustard	{ acres	31	40	74	58	39
	{ cwt.	100	166	185	167	121
Olives	{ acres	...	10	10	10	20
Onions	{ acres	347	552	720	816	1,069
	{ tons	2,794	4,780	3,579	3,055	3,600
Opium poppies	{ acres	10	4	4	3	3
	{ lbs. of opium	168	100	60	...	...
Osiers	{ heads	...	...	...	...	60,000
	{ acres	4	3	5	...	...
Peas and beans	{ acres	16,170	18,854	21,235	17,286	15,153
	{ bushels	317,382	450,948	373,857	241,007	248,436
Pumpkins, melons, &c.	{ acres	46	55	19	46	205
	{ tons	250	67	77	159	1,190
Rape for seed	{ acres	7	34	10	...	2
	{ bushels	30	...	20	...	25
Raspberries	{ acres	...	3	10	17	45
	{ cwt.	...	60	51	224	476

* Exclusive of those grown in gardens.

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

‡ A large plantation of mulberry trees is reported to have been abandoned in 1876-7, the locality having been found to be unsuitable.

MINOR CROPS,* 1875 TO 1879—continued.

Nature of Crop.			1874-5.	1875-6.	1876-7.	1877-8.	1878-9.
Rhubarb	...	acres	...	...	...	3	3
		tons	...	...	...	10	10
Rye and bere	...	acres	1,096	1,292	1,153	1,075	1,779
		bushels	15,620	19,356	15,277	9,852	20,816
Sheep's parsley	...	acres	...	...	2	...	3
		lbs.	...	...	1,500	...	1,000
Strawberries	...	acres	21	24	21	19	24
		cwt.	210	215	273	208	323
Teazles...	...	acres	1	11	3	...	...
		number	121,000	1,079,000	19,000	...	...
Tobacco	...	acres	733	782	1,479	2,327	1,936
		cwt.	6,839	501†	14,413	15,827	15,662
Tomatoes	...	acres	...	...	...	5	3
		cwt.	...	...	...	721	220
Turnips	...	acres	241	284	224	315	310
		tons	1,901	2,668	1,769	2,346	1,349
Vegetable marrows	...	acres	...	...	2	...	...
		tons	...	...	55	...	...
Vetches and tares for seed	...	acres	3	26	8	...	...
		bushels	28	492	47	...	...
Vines ...	...	acres	4,937	5,081	4,765	4,419	4,434
		wine, galls....	577,493	755,000	481,588	457,535	410,333
		brandy, galls.	148	256	3,725	840	1,561

Vines.

540. Although the acreage under vines in 1878-9 was slightly greater than in the previous year, the wine produced was less by over 47,000 gallons.‡ The great falling-off of late years, not only in the acreage under vines, but also in the quantity of wine produced, is very noticeable; thus in 1875-6, when there were 5,000 acres under vines, the wine produced amounted to 755,000 gallons, whilst in the three succeeding years, with areas varying from 4,400 to 4,800 acres, the wine produced annually amounted to only between 400,000 and 500,000 gallons. This result is due mainly to the effects of the oïdium, phylloxera, and other diseases to which the vine is subject, but there is also no doubt that, in consequence of the importation and subsequent multiplication of frugivorous birds, 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

* Exclusive of those grown in gardens.

† 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*.

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.

541. Twenty acres under olives and 18 acres under mulberry trees were also returned in the year under review. The mulberry trees numbered 12,460, 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 in 1876-7 and 3 acres the year before, no returns of osiers were made in the last two years.

Mulberry and olive grounds, &c.

542. The following table shows the land under gardens and orchards in 1878 and 1879. No return is made of the nature of the crops grown or the quantity of produce raised. There was a decrease during the year in the area under gardens, but an increase in that under orchards, resulting in a net increase of 830 acres:—

Gardens and orchards.

LAND UNDER GARDENS AND ORCHARDS, 1878 AND 1879.

Year ended 31st March.				Gardens.	Orchards.	Total.
				acres.	acres.	acres.
1878	...	...	...	12,396	7,174	19,570
1879	...	...	...	12,131	8,269	20,400
	Increase	...	...	...	1,095	830
	Decrease	...	...	265	...	...

543. Land in fallow is included in the area under tillage. The number of acres in this condition in 1879 was 97,669, or 21,994 more than in the previous year.

Land in fallow.

544. 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.

* See also paragraphs 516 and 517 ante.

CLASSIFICATION OF HOLDINGS AS TO SIZE, 1878-9.

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	...	...	1,678	4,870	2,400
5 acres	14	"	...	...	3,648	32,023	13,507
15	"	29	"	...	3,893	80,149	24,649
30	"	49	"	...	3,203	122,955	32,371
50	"	99	"	...	5,784	416,539	89,939
100	"	199	"	...	8,507	1,206,807	216,853
200	"	320	"	...	13,785	3,934,861	574,621
321	"	400	"	...	1,446	522,820	84,231
401	"	500	"	...	1,215	547,418	93,112
501	"	600	"	...	792	437,608	57,766
601	"	700	"	...	861	555,102	72,302
701	"	800	"	...	327	245,390	29,751
801	"	900	"	...	229	194,694	21,107
901	"	1,000	"	...	286	272,560	31,911
1,001	"	1,500	"	...	525	649,485	58,941
1,501	"	2,000	"	...	211	365,548	23,297
2,001	"	3,000	"	...	168	410,151	26,669
3,001	"	4,000	"	...	86	298,744	13,212
4,001	"	5,000	"	...	63	284,002	12,638
5,001	"	7,500	"	...	85	527,426	21,927
7,501	"	10,000	"	...	53	464,631	16,746
10,001	"	15,000	"	...	72	887,858	22,043
15,001	"	20,000	"	...	53	908,957	18,982
20,001	"	30,000	"	...	50	1,247,231	34,740
30,001	"	40,000	"	...	17	591,728	10,127
40,001	"	and upwards	...	...	13	691,846	4,976
Crown Lands cultivated					...	...	460
Total					47,050	15,901,403	1,609,278

Estates
under and
over 320
acres.

545. 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—

- (a.) Out of every 100 holders, 14, on the average, occupied lots exceeding, and 86 not exceeding, 320 acres in extent.
- (b.) Out of every 100 acres in occupation, 64, on the average, formed portion of lots exceeding, and 36 of lots not exceeding, 320 acres in extent.
- (c.) Out of every 100 acres cultivated, 41, on the average, were on lots exceeding, and 59 on lots not exceeding, 320 acres in extent.

* Embracing about 86 per cent. of the total area sold or selected.

(d.) Whilst holders of upwards of 320 acres cultivated, on the average, only $6\frac{1}{2}$ per cent. of their holdings, holders of 320 acres and under cultivated, on the average, 16 per cent. of theirs.

546. It may further be ascertained from the same table that 47 Holdings of from 100 to 320 acres. per cent. of the holdings, 32 per cent. of the occupied land, and 49 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, very nearly 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 $6\frac{1}{2}$ per cent. of their holdings.*

547. The following is the average size of holdings in the year under review, and at the beginning of the two previous quinquennial periods. Average size of holdings. A steady increase will be observed :—

AVERAGE SIZE OF HOLDINGS.†

1868-9	...	...	...	...	304 acres
1873-4	...	...	...	...	314 „
1878-9	...	...	...	...	338 „

548. 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 :— Area occupied per head of population.

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

1868-9	...	...	...	...	12.9 acres
1873-4	...	...	...	...	14.5 „
1878-9	...	...	...	...	18.0 „

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

AVERAGE AREA CULTIVATED BY EACH HOLDER.

1868-9	...	...	...	...	24.4 acres
1873-4	...	...	...	...	26.4 „
1878-9	...	...	...	...	34.2 „

550. The area in cultivation was about one acre per head of the population at the first period, but nearly two acres per head at the third period. The exact amounts were as follow :— Area cultivated per head of population.

AVERAGE AREA CULTIVATED TO EACH PERSON IN THE COLONY.

1868-9	...	...	...	...	1.03 acres
1873-4	...	...	...	...	1.22 „
1878-9	...	...	...	...	1.82 „

* 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.

Occupied
land culti-
vated.

551. It will be noticed that a much larger proportion of the occupied land was in cultivation at the last than at either of the other periods:—

PROPORTION OF OCCUPIED* LAND CULTIVATED.

1868-9	...	...	...	8.02 per cent.
1873-4	...	...	...	8.40 "
1878-9	...	...	...	10.12 "

Leases and
rental of
farms.

552. 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 15s.; the extreme figures being 3s. and 30s. The average rental of pastoral land was said to be from 2s. 6d. to 7s.; the extreme figures being 1s. 6d. and 10s.

Prices of
agricultural
produce.

553. 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,† 1869 TO 1879.

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.
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
1879	...	...	4	2	3	6	4	1	92	4	75	0

Years of
highest and
lowest
prices.

554. It will be observed that the price of wheat was highest in 1877 and lowest in 1879; 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. It will also be noticed that the price of every item given, except potatoes, was comparatively low in the year under review.

Value of
agricultural
produce.

555. Subjoined is an estimate of the value of the crops raised during the year ended 31st March 1879. It will be seen the total amount was not far short of five millions sterling.

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

† See also table of prices published in Part VIII., Interchange, *post*.

VALUE OF AGRICULTURAL PRODUCE, 1878-9.

Name of Crop.	Gross Produce and Price.				Estimated Value.			
			£	s.	d.	£	s.	d.
Wheat	6,060,737 bushels	@	0	4	2	1,262,653	10	10
Oats	2,366,026 "	@	0	3	6	414,054	11	0
Barley	417,157 "	@	0	4	1	85,169	11	1
Other cereals	310,006 "	@	0	4	6	69,751	4	0
Potatoes	98,958 tons	@	4	12	4	456,856	2	0
Other green crops	14,496 "	@	5	0	0	72,480	0	0
Hay	209,028 "	@	3	15	0	783,855	0	0
Green forage	401,427 acres	@	3	0	0	1,204,281	0	0
Tobacco	15,662 cwt.	@	2	16	0	43,853	12	0
Grapes, not made into wine	10,818 "	@	1	0	0	10,818	0	0
Wine	410,333 gallons	@	0	4	0	82,066	12	0
Brandy	1,561 "	@	0	10	0	780	10	0
Other crops	3,625 acres	@	5	0	0	18,125	0	0
Garden and orchard produce	20,400 "	@	20	0	0	408,000	0	0
	Total					4,912,744	12	11

556. 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 64 lbs.; oats, from 36 lbs. to 45 lbs.; barley, from 45 lbs. to 54 lbs.; and maize, from 50 lbs. to 62 lbs. The average weight per bushel of these crops in all the districts during the past two years was as follows:—

SPECIFIC WEIGHT OF CROPS, 1878 AND 1879.

Average Weight per Bushel of—				1877-8.	1878-9.
				lbs.	lbs.
Wheat	...	...	...	60	60
Oats	...	...	...	40	40
Barley	...	...	...	49	50
Maize	...	...	...	55	56

557. A decrease took place in the number of males employed on agricultural and pastoral holdings in 1879 as compared with the number returned in the previous year, but this was more than counterbalanced by the increase in the number of females. The following are the figures for the past two years:—

HANDS EMPLOYED ON FARMS AND STATIONS,* 1878 AND 1879.

Year ended 31st March.				Males.	Females.	Total.
1878	...	...	...	72,400	30,464	102,864
1879	...	...	...	71,954	31,566	103,520
	Increase	...	...	...	1,102	656
	Decrease	...	...	446	...	...

* 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.

Rates of
labor on
farms.

558. A return of the average rates of labor on farms in the last two years is given below. It will be observed that the rates were less in the year under review under all the heads except two, under which they were identical in both years. Rations are allowed in all cases in addition to the wages quoted :—

RATES OF LABOR ON FARMS,* 1878 AND 1879.

Description of Labor.	1877-8.		1878-9.	
	s.	d.	s.	d.
Ploughmen, per week	21	9	20	10
Farm laborers, „	17	11	17	6
Married couples, „	26	6	25	10
Females, „	10	9	10	3
Mowers, „	29	0	28	6
„ per acre	5	5	5	5
Reapers, per week	31	4	29	4
„ per acre	11	6	10	4
Threshers, per bushel	0	6	0	6

Rates of
labor on
stations.

559. 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 according to the figures there was a decrease in 1878-9 as compared with the previous year in the rates for several descriptions of male labor, and in the wages paid to females :—

RATES OF LABOR ON STATIONS,† 1878 AND 1879.

Description of Labor.	1877-8.			1878-9.		
	£	s.	d.	£	s.	d.
Stockmen, per annum	47	6	6	47	5	0
Boundary riders, „	43	12	6	40	9	0
Shepherds, „	36	13	6	34	1	0
Hutkeepers, „	27	14	0	28	3	0
Married couples, „	61	0	0	61	2	0
Females, „	29	7	0	27	16	0
Station laborers, per week	0	17	6	0	17	8
Sheepwashers, „	1	1	0	1	1	2
Shearers, per 100 sheep shorn	0	13	6	0	14	1

* See also table of wages published in Part VIII., Interchange, *post*. For definition of the term "farm," see last footnote.

† See also table of wages published in Part VIII., Interchange, *post*. For definition of the term "station," see footnote to table following paragraph 557 *ante*.

560. The live stock on farms and squatting stations were returned as follow for the last two years. An increase will be observed in the number of horses and milch cows, but a falling-off in the number of sheep and pigs, and in the number of cattle used for other than dairying purposes. The live stock both on farms and stations is now 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. 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 :—

LIVE STOCK ON FARMS AND ON STATIONS, 1878 AND 1879.

Year ended 31st March.	Horses.	Cattle.			Sheep.	Pigs.
		Milch Cows.	Exclusive of Milch Cows.	Total.		
1878	203,150	268,110	901,466	1,169,576	10,118,867	183,391
1879	210,105	290,407	894,436	1,184,843	9,379,276	177,373
Increase ...	6,955	22,297	...	15,267	...	...
Decrease ...	...	...	7,030	...	739,591	6,018

561. The returns of horses and cattle generally show increased numbers from year to year, and those for 1879 were greater than those for any previous year ; but this has not been the case of late years as regards sheep ; and the number of pigs fluctuates considerably. The largest number of sheep ever returned was in 1876 ; since then, however, there has been a falling-off, and the number in the year under review was smaller than in any year since 1867.

562. The following table contains a statement of the number of horses, cattle, sheep, and pigs in the United Kingdom and some of the principal Foreign countries. The information has been derived entirely from official documents.

Live stock in 1879 and previous years.

Live stock in British and Foreign countries.

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

Country.	Year.	Number of—			
		Horses.	Cattle.	Sheep.	Pigs.
Great Britain* ...	1878	1,422	5,777	28,477	2,499
Ireland ...	1878	505	3,984	4,094	1,269
Total United Kingdom...	...	1,927†	9,761	32,571	3,768
Austria and Hungary ...	1869	3,543	12,628	20,103	6,995
Belgium ...	1866	283	1,242	586	632
Denmark ...	1876	352	1,348	1,719	504
France ...	1875	2,755	11,314	23,674	5,676
Holland ...	1875	260	1,466	941	339
Italy ...	1874	657‡	3,489	6,977	1,575
Norway ...	1875	152	1,016	1,687	101
Russia ...	1870	16,160	22,770	48,132	9,800
Sweden ...	1876	461	2,189	1,588	432
United States ...	1876	9,735	27,871	35,935	25,727

Live stock
slaughtered.

563. The live stock slaughtered in Victoria during 1878, 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. A falling-off took place in the number of sheep slaughtered, but an increase in the number of cattle and pigs, in 1878 as compared with the numbers returned in the previous year. The decrease appears principally in the numbers slaughtered for preserving and salting, and for boiling down purposes. It will be observed by reference to a return of the exports of Victorian produce for a series of years given in another part of this work§ that the export trade of Victorian meats and tallow has been declining for several years past:—

LIVE STOCK SLAUGHTERED, 1878.

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 ...	1,722,034	113,772	37,938	1,873,744
Cattle and calves ...	184,047	983	...	185,030
Pigs ...	67,115	31,967	...	99,082
Total ...	1,973,196	146,722	37,938	2,157,856

Value of
pastoral
produce.

564. The following is an estimate of the gross value of pastoral produce raised on holdings of all descriptions in 1878-9.

* Including Isle of Man and Channel Islands.

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

‡ In the year 1876.

§ See Part VIII., Interchange, post.

GROSS VALUE OF PASTORAL PRODUCE, 1878-9.

Nature of Produce.	Value.
	£
Milk, butter, and cheese, from average number of milch cows kept viz., 290,407, @ £8 10s.	2,468,460
Estimated net numbers of stock slaughtered in 1878 :—	
Cattle, 174,429, @ £8	1,395,432
Sheep, 1,204,306, @ 10s.	602,153
Pigs, 93,188, @ £2 10s.	232,970
Estimated value of produce of horse stock, 10,505, @ £8	84,040
Excess of exports over imports of wool, Customs value	3,447,451
Estimated value of wool used in the colony for manufacturing purposes, 1,730,118 lbs., @ 1s. 6d.	129,759
Total	8,360,265

NOTE.—The gross numbers of live stock slaughtered in the year may be estimated as follow :— Cattle 190,000, sheep 2,000,000, 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 1878-9 as compared with those of 1877-8, viz., cattle 15,267; also those showing the live stock exported in 1878, viz., cattle 6,735, sheep 454,719, pigs 82, and deducting from the sum of these numbers the figures showing the decrease of stock appearing in the returns of 1878-9 as compared with those of 1877-8, viz., sheep 739,591; also the figures showing the stock imported in 1878, viz., cattle 37,573, sheep 510,822, pigs 876. 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.

565. The returns show a large increase in the year under review, as compared with the previous one, in the use of steam machinery on farms and stations; also an increase in the value of improvements made, but a slight diminution in the value of machines and implements. 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. The following are the figures :—

Machinery and improvements on farms and stations.

STEAM ENGINES, AND VALUE OF IMPLEMENTS AND MACHINES AND OF IMPROVEMENTS, ON FARMS AND STATIONS, 1878 AND 1879.

Year ended 31st March.	Steam Engines.		Value of Implements and Machines.	Value of Improvements.
	Number.	Horse-power.		
1878	326	2,484	£ 2,031,514	£ 16,809,417
1879	385	2,994	2,025,916	16,845,527
Increase	59	510	...	36,110
Decrease... ..	...	...	5,598	...

566. 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, 1878 AND 1879.

Average Rates Paid for—	1877-8.	1878-9.
	£ s. d.	£ s. d.
Machine reaping, per acre	0 5 10	0 4 10
„ mowing, „	0 5 1	0 4 8
„ threshing, per 100 bushels... ..	1 4 0	1 4 4

Flour mills.

567. The flour mills employing steam-power were greater by 3, but those employing water-power were less by 4, in 1879 than in the previous year. An increase took place in the quantity of grain operated upon and flour made, notwithstanding there was a falling-off in the horse-power and stones used and the number of hands employed. The figures show a decrease in the value of plant, lands, and buildings :—

FLOUR MILLS, 1878 AND 1879.

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.			
1878 ...	150	141	9	2,871	487	721
1879 ...	149	144	5	2,789	454	708
Increase	...	3	...	...	...	...
Decrease	1	...	4	82	33	13

Year ended 31st March.	Bushels of Grain operated upon.		Tons of Flour made.	Approximate Total Value of—		
	Wheat.	Other.		Machinery and Plant.	Lands.*	Buildings.
1878 ...	5,629,436	169,777	119,953	£ 225,500	£ 62,777	£ 208,040
1879 ...	5,665,791	267,603	124,815	207,630	55,680	176,760
Increase	36,355	97,826	4,862	...	...	...
Decrease	...	...	...	17,870	7,097	31,280

Breweries.

568. A decrease of 7 took place in the number of breweries and in most of the items relating thereto ; but the quantity of beer made and the value of lands and buildings were greater in the year under notice than in the previous one. The following are the results for the two years :—

BREWERIES, 1878 AND 1879.

Year ended 31st March.	Number of Breweries.	Materials used.			Number of Hands employed.	Number of Horses employed.
		Sugar.	Malt.	Hops.		
1878 ...	109	lbs. 11,157,151	bushels. 852,836	lbs. 1,220,598	939	647
1879 ...	102	10,810,050	624,867	1,110,481	897	621
Decrease	7	347,101	227,969	110,117	42	26

Year ended 31st March.	Number of Drays and Waggons employed.	Gallons of Beer made.	Approximate Total Value of—		
			Machinery and Plant.	Lands.†	Buildings.
1878 ...	367	15,231,835	£ 163,216	£ 75,776	£ 219,012
1879 ...	362	15,370,745	160,941	78,880	223,927
Increase	...	138,910	...	3,104	4,915
Decrease	5	...	2,275	...	...

* Four mills in 1878, and 3 in 1879, were upon Crown lands. In these cases no estimate of the value of the land is given.

† Four of the breweries in 1878 and 1879 were upon Crown lands. In these cases no estimate of the value of the land is given.

569. The beer made in Victoria during 1877 amounted to nearly 15¼ million gallons, or an average of 17¼ gallons to each inhabitant. That made in 1878 amounted to over 15½ million gallons, or an average of 17½ gallons to each inhabitant. Gallons of beer per head.

570. A general falling-off occurred in the returns of brickyards and potteries in 1879 as compared with 1878; the number of establishments was less by 26, and the bricks made were fewer by 11¼ millions. The value of articles manufactured amounted to £140,543 in 1879 as against £173,088 in 1878. The following are the returns for the two years :— Brickyards and potteries.

BRICKYARDS AND POTTERIES, 1878 AND 1879.

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.		
1878 ...	224	173	99	18	101	105	277	1,104
1879 ...	198	144	70	12	95	91	243	922
Increase	...	...	...	...	...	...	...	...
Decrease	26	29	29	6	6	14	34	182

Year ended 31st March.	Number of Bricks made.	Approximate Total Value of—				
		Bricks made.	Pottery made.	Machinery and Plant.	Lands.*	Buildings.
1878 ...	69,950,400	£ 145,766	£ 27,322	£ 56,326	£ 62,521	£ 54,221
1879 ...	58,662,000	115,133	25,410	59,486	56,342	47,575
Increase	...	...	...	3,160	...	...
Decrease	11,288,400	30,633	1,912	...	6,179	6,646

571. An increase of 2 took place between 1878 and 1879 in the number of tanneries and fellmongeries, but a falling-off in the number of hides and skins operated on of over 800,000, and in the value of articles produced to the extent of £50,728. The value of machinery and plant also shows a falling-off of £2,295, but the value of lands and buildings was set down as being higher by £10,943 in the year under review than the previous one. The results of the two years are thus summarised. Tanneries and fell-mongeries.

* Forty-three of the brickyards in 1878, and 30 in 1879, were upon Crown lands. In these cases no estimate of the value of the land is given

TANNERIES AND FELLMONGERIES, 1878 AND 1879.

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.			
1878 ...	116	37	32	47	384	1,570	3,101
1879 ...	118	41	27	50	402	1,531	2,930
Increase ...	2	4	...	3	18	...	...
Decrease...	...	...	5	...	...	39	171

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.
1878 ...	3,309,162	£ 639,874	£ 646,968	£ 81,040	£ 36,365	£ 126,534
1879 ...	2,481,749	515,296	720,818	78,745	35,382	138,460
Increase ...	...	...	73,850	...	...	11,926
Decrease...	827,413	124,578	...	2,295	983	...

Woollen
mills.

572. One woollen mill more was returned in 1879 than in 1878, and a satisfactory increase appears in the various items. In 1879 the quantity of wool used was greater by 200,000 lbs. and the value of goods manufactured was greater by £13,000 than in the previous year. Felt appears in the returns for 1879 for the first time. The following are the figures for the two years :—

WOOLLEN MILLS, 1878 AND 1879.

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.	Felt.	Blan- kets.	Shawls.
1878 ...	8	8	530	lbs. 1,511,514	yards. 957,265	yards. ...	number. 2,984	number. 2,496
1879 ...	9	9	690	1,730,118	1,070,789	21,600	3,094	378
Increase	1	1	160	218,604	113,524	...	110	...
Decrease	...	...	...	...	...	...	...	2,118

Year ended 31st March.	Hands employed.		Approximate Total Value of—			
	Males.	Females.	Goods Manufactured	Machinery and Plant.	Lands.	Buildings.
1878 ...	457	279	£ 175,139	£ 130,871	£ 5,004	£ 60,738
1879 ...	521	296	188,502	139,912	5,904	64,868
Increase ...	64	17	13,363	9,041	900	4,130

* Nine of the establishments in 1878, and 11 in 1879, were upon Crown lands. In these cases no estimate of the value of the land is given.

573. The manufactories and works, exclusive of those of which mention has already been made—viz., flour mills, breweries, brickyards, potteries, tanneries, fellmongeries, and woollen mills—increased but slightly in number, namely, from 1,763 in 1878 to 1,767 in the year under review. The amount of horse-power, however, increased by 300 ; the hands employed by nearly 900 ; and the value of machinery, plant, and buildings by £225,000 ; but the value of lands shows a decrease of £55,000, notwithstanding the number on Crown lands, of which no value is given,* was 22 less in 1879 than in the previous year. Most of the establishments are of an extensive character, and about 40 per cent. of them, both in 1878 and 1879, used steam-power. The following is a comparison of the results of the two years :—

MANUFACTORIES, WORKS, ETC., 1878 AND 1879.

(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.	Gas.	Wind.	Horse-power.	Manual Labor.	
1878 ...	1,763	693	8	32	1	72	957	8,636
1879 ...	1,767	702	5	24	...	31	1,005	8,940
Increase	4	9	...	...	...	...	48	304
Decrease	...	...	3	8	1	41	...	...

Year ended 31st March.	Number of Hands employed.		Approximate Total Value of—		
	Males.	Females.	Machinery and Plant.	Lands.*	Buildings.
1878 ...	22,275	5,343	£ 2,157,052	£ 1,145,414	£ 1,795,133
1879 ...	22,948	5,455	2,255,618	1,090,379	1,922,147
Increase ...	673	212	98,566	...	127,014
Decrease ...	...	...	...	55,035	...

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 following paragraph 577 post.

574. By summarising the returns of manufactories and works of all descriptions, including not only such as are embraced in the foregoing table, but those excluded therefrom—viz., flour mills, breweries, potteries, tanneries, fellmongeries, and woollen mills—it is found that the total number of establishments was less by 27 in 1879 than in the previous year, but a slight increase appears in the other items. The number of establishments using steam increased by 11, and the amount of horse-power by 366, the hands employed by 590, and the capital invested in lands, buildings, machinery, and plant by £133,096. The following are the figures relating to the two years.

* Two hundred and six of the manufactories in 1878, and 184 in 1879, were upon Crown lands. In these cases no estimate of the value of the land is given.

MANUFACTORIES, WORKS, ETC., 1878 AND 1879.

(Including Flour Mills, Breweries, Brickyards, Potteries, Tanneries, Fellmongeries, and Woollen Mills, as well as other Manufactories, Works, &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.†
1878 ...	2,370	897	12,698	32,688	£ 6,665,540
1879 ...	2,343	908	13,064	33,278	6,798,636
Increase ...	...	11	366	590	133,096
Decrease...	27	...	...	...	...

Names of manufactories.

575. 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, gas, 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 266 in 1878, and 232 in 1879.

‡ 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:—

	1877.	1878.	1879.		1877.	1878.	1879.
Printing establishments	6	5	..	Boot manufactories	11	14	16
Pianoforte manufactory .. ..	..	..	1	Clothing factories	5	2	7
Wax model manufactory	1	..	..	Hat, cap—manufactories..	12	6	6
Wax flower manufactory	1	..	..	Umbrella manufactories..	..	1	3
Picture-frame manufactories ..	2	1	1	Wig manufactories	3	..	..
Turnery and carving works ..	2	..	4	Rope works	1	..	..
Philosophical instrument manu-	1	..	..	Cheese factories .. ..	..	..	2
factory				Meat-curing establishment	..	..	1
Medical galvanic apparatus	1	..	..	Biscuit manufactories ..	8	7	4
manufactory				Confectionery works ..	1	..	..
Surgical instrument manufac-	1	..	..	Gingerbeer manufactories	..	1	2
tory				Sauce manufactory .. ..	..	..	1
Agricultural implement manu-	4	1	..	Vinegar works .. ..	..	..	1
factories				Coffee works.. ..	..	1	..
Bellows manufactory	1	..	..	Fancy leather manufactory	1	..	..
Cutlery works	1	..	1	Glue manufactory	1	..	..
Engine, machine—manufactories	1	1	5	Soap works.. ..	..	..	2
Machine—merchants' establish-	..	2	..	Tallow-rendering works ..	1	..	..
ments				Wool-washing establishment	1	..	..
Saddle, harness—manufactories	20	13	27	Basket-making works ..	1	5	3
Wheelwrights' establishments ..	13	1	19	Blind (window) manufactory	1	..	1
Boat builders .. ..	..	1	3	Chaff-cutting works .. ..	..	..	4
Joinery works	6	3	..	Cooperage works	7	4	8
Window-frame works	1	2	..	Tent manufactories	2	2	1
Lime works .. ..	..	..	1	Marble works .. ..	..	..	1
Bedding and upholstery manu-	4	4	7	Goldsmiths', jewellers', and	8	..	13
factories				watchmakers' establishments			
Cabinet works	4	1	11	Electro-plating works ..	..	2	..
Dye works .. ..	..	..	2	Iron and tin works.. ..	4	18	29
Electric bell manufactory ..	1	..	..	Wire-working establishments	2	..	1
Life-preserving apparatus manu-	1	..	..		
factory							
Patent medicine manufactory ..	1	..	..	Total	144	98	188

MANUFACTORIES, WORKS, ETC., 1869, 1874, AND 1879.

Description of Manufactory, Work, &c.	Number of Establishments.			1878-9.	
	1868-9.	1873-4.	1878-9.	Number of Hands Employed.	Approximate Value of Lands, Buildings, Machinery, and Plant.
BOOKS AND STATIONERY.					
Account-book manufactories, manufacturing stationers	8	12	6	545	61,117
Printing establishments	18	28	55	1,778	269,877
MUSICAL INSTRUMENTS.					
Organ-building establishments	2	2	1	...	...
Pianoforte manufactories	7	8	8	32	7,400
PRINTS, PICTURES, ETC.					
Picture-frame makers, carvers, and gilders ...	...	...	11	66	25,160
CARVING, FIGURES, ETC.					
Indiarubber stamp manufactories ... ..	...	...	3	8	2,870
Modelling (architectural and figure), &c.—works	...	...	5	16	9,360
Turnery works ... ..	...	...	12	35	8,150
Wood-carving and ornamental works ... ..	...	...	3	8	1,115
Wooden pipe manufactories	3	2	...	...	...
DESIGNS, MEDALS, AND DIES.					
Diesinkers, engravers, medalists, trade-mark makers	...	...	6	40	6,173
PHILOSOPHICAL INSTRUMENTS, ETC.					
Philosophical instrument manufactories ...	...	...	6	15	3,579
Spectacles manufactory ... ..	...	...	1	...	...
SURGICAL INSTRUMENTS.					
Surgical instrument, truss—manufactories ...	...	...	6	24	3,968
ARMS, AMMUNITION, ETC.					
Blasting powder, dynamite, &c.—manufactories	...	2	5	57	10,450
Fuse manufactories	1	1	1	...	...
Gunmakers ... ..	...	...	8	29	8,175
MACHINES, TOOLS, AND IMPLEMENTS.					
Agricultural implement manufactories ...	19	40	44	939	95,206
Bellows manufactories ... ..	...	2	2	13	1,270
Cutlery, machine-tool—manufactories ...	2	3	10	29	7,145
Engine, machine—manufactories	24	24	46	1,595	355,223
CARRIAGES AND HARNESS.					
Coach, waggon, &c.—manufactories	1	5	139*	1,580	191,476
Saddle, harness—manufactories ... ..	...	...	40	379	54,885
Saddlers' ironmongery and coach-spring manufactories	...	...	5	23	3,430
Whip manufactories	1	3	4	29	2,475

* Including all extensive manufactories, whether employing steam or not. For 1869 and 1874 those only which used steam were returned.

MANUFACTORIES, WORKS, ETC.—*continued.*

Description of Manufactory, Work, &c.	Number of Establishments.			1878-9.	
	1868-9.	1873-4.	1878-9.	Number of Hands Employed.	Approximate Value of Lands, Buildings, Machinery, and Plant.
SHIPS AND BOATS.					
Ship, boat—builders	13	11	17	90	7,210
Ships' wheels, blocks, &c.—manufactories ...	...	...	3	10	2,775
Floating-docks	}	8	5	104	421,668
Graving-docks					
Patent slips					
HOUSES, BUILDINGS, ETC.					
Lime works	29	27	23	145	10,276
Cement works ... ..	...	1	...	...	...
Patent ceiling ventilator manufactory ...	...	...	1	...	...
Roof-covering composition manufactory ...	...	...	1	...	...
FURNITURE.					
Bedding and upholstery manufactories ...	2	9	17	119	21,189
Cabinet works, including billiard-table makers	3	6	42*	628	66,929
Earth-closet manufactories	3	2	2	16	4,390
Iron safe manufactories	3	...	2	7	710
Looking-glass manufactories	2	3	3	33	5,042
CHEMICALS.					
Chemical works	3	8	5	70	38,950
Dye works	9	14	13	80	14,570
Essential oil manufactories	2	2	2	4	1,070
Ink, blacking, blue, washing-powder, &c.—manufactories	1	8	8	129	14,420
Match (vesta) manufactory ... ..	...	1	...	...	...
Paint, varnish—manufactories	1	2	1	...	...
Salt works	2	5	5	66	4,320
Tar-distilling, asphalte—works	2	1	4	34	5,060
TEXTILE FABRICS.					
Woollen mills	1	4	9	817	210,684
DRESS.					
Boot manufactories	16	21	71	2,615	104,145
Clothing factories	36	34	63	3,988	180,939
Fur manufactories ... ..	...	1	4	33	3,360
Hat, cap—manufactories	9	10	19	275	29,410
Oilskin, waterproof-clothing—manufactories	...	1	4	33	3,100
Umbrella and parasol manufactories ...	...	...	6	28	5,370
FIBROUS MATERIALS.					
Bag and sack manufactory	1	...	...	...	...
Jute factory ... ..	...	...	1	...	...
Oilcloth—manufactories ... ..	...	2	...	...	...
Rope, twine—works	5	12	15	319	61,919

* Including all extensive manufactories, whether employing steam or not. For 1869 and 1874 those only which used steam were returned.

MANUFACTORIES, WORKS, ETC.—continued.

Description of Manufactory, Work, &c.	Number of Establishments.			1878-9.	
	1868-9.	1873-4.	1878-9.	Number of Hands Employed.	Approximate Value of Lands, Buildings, Machinery, and Plant.
ANIMAL FOOD.					
Cheese factories ... ..	...	...	23	66	15,534
Meat-curing establishments	10	25	15	297	52,455
VEGETABLE FOOD.					
Biscuit manufactories	7	8	13	365	41,350
Confectionery works	4	6	9	167	29,485
Flour mills	136	157	149	708	440,070
Jam manufactories	5	5	10	244	25,437
Macaroni works ... ..	...	1	2	5	525
Maizena, oatmeal, starch—manufactories	2	3	2	3	2,000
Rice mill ... ..	...	1	...	...	...
DRINKS AND STIMULANTS.					
Aërated waters, gingerbeer, liqueur, &c.—works	76	119	104	584	112,338
Breweries	107	106	102	897	463,748
Coffee, chocolate, spice—works	8	11	11	144	57,650
Chicory mills ... ..	...	2	1	...	...
Distilleries	5	4	6	41	43,550
Malthouses	10	17	13	66	59,670
Sauce, pickle—manufactories ... ..	...	4	5	43	6,550
Sugar (beet-root)—manufactory ... ..	...	1	...	...	...
Sugar refineries	1	2	1	...	...
Tobacco, cigars, snuff—manufactories	8	13	16	927	94,905
Vinegar works ... ..	...	1	3	18	5,520
ANIMAL MATTERS.					
Boiling-down establishments	17	19	19	73	12,785
Bone-cutting mill ... ..	...	...	1	...	...
Bone manure manufactories	12	14	13	83	25,592
Brush manufactories	1	3	6	134	14,630
Catgut manufactories ... ..	...	2	...	...	...
Curled hair manufactories ... ..	...	...	2	9	1,450
Wool-washing establishments	35*	44*	11	152	19,845
Flock manufactories	2	2	3	20	6,070
Glue, oil—manufactories	1	8	7	34	8,530
Morocco, fancy leather—manufactories ... ..	...	3	2	10	1,120
Portmanteau, trunk—manufactories ... ..	...	...	9	46	12,415
Soap, candle, tallow—works	27	39	31	461	120,002
Tanneries and fellmongeries	58†	78†	118	1,531	252,587
VEGETABLE MATTERS.					
Bark mills ... ..	...	...	7	67	9,675
Basket-making works ... ..	...	...	11	46	6,945
Blind (window) manufactories ... ..	...	...	10	74	8,175
Broom manufactories ... ..	...	3	1	...	...
Chaff-cutting, corn-crushing—works†	110	186	174	644	159,858

* These figures include fellmongeries.

† Exclusive of fellmongeries.

‡ 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 13,838 in 1878-9.

MANUFACTORIES, WORKS, ETC.—*continued.*

Description of Manufactory, Work, &c.	Number of Establishments.			1878-9.	
	1868-9.	1873-4.	1878-9.	Number of Hands Employed.	Approximate Value of Lands, Buildings, Machinery, and Plant.
VEGETABLE MATTERS—<i>continued.</i>					
Cooperage works ...	2	10	15	105	14,325
Cork manufactories ...	...	...	3	17	4,045
Fancy-box manufactories ...	1	4	3	36	3,025
Hat-box manufactories ...	...	...	2	8	1,700
Ladders and steps joinery ...	...	...	1	...	...
Moulding, framing, turning, and saw mills ...	117	161	145	2,538	312,599
Packing-case manufactories ...	2	...	...	...	...
Paper manufactories ...	1	1	2	177	56,106
Paper-bag manufactories ...	...	4	5	139	16,585
Tent, tarpaulin—manufactories ...	...	...	10	58	7,692
COAL.					
Gasworks ...	11	13	17	315	915,374
STONE, CLAY, EARTHENWARE, AND GLASS.					
Brickyards and potteries ...	222	290	198	922	163,403
Filter manufactories ...	1	...	2	6	1,060
Glass manufactories, works ...	2	2	3	134	15,846
Glass works ...	2	2	7	41	6,020
Marble and monumental works ...	...	12	26	254	32,212
Stone-breaking works ...	} 2	5	{ 5	115	9,130
Stone sawing, polishing—works ...				{ 3	54	12,960
WATER.*					
Ice manufactories ...	1	1	2	22	9,300
GOLD, SILVER, AND PRECIOUS STONES.					
Electro-plating and gilding works ...	...	2	5	19	3,905
Goldsmiths, jewellers, and watchmakers (manufacturing) ...	...	...	27	346	44,665
Lapidary ...	...	...	1	...	...
Nickel-plating works ...	...	...	1	...	...
METALS OTHER THAN GOLD AND SILVER.					
Antimony-smelting works ...	...	3	2	35	10,350
Bell foundry ...	...	...	1	...	...
Iron and tin works ...	8	16	70	834	139,810
Iron, brass, and copper foundries ...	59	62	91	1,752	289,453
Lead works ...	2	1	2	20	18,950
Tin-smelting works ...	...	2	1	...	...
Type foundries ...	1	...	1	...	...
Wire-working establishments ...	...	...	9	53	8,980
Total where only one return was received for each of certain descriptions †	...	...	...	436	244,665
Total ...	1,314	1,803	2,343	33,278	6,798,636

* Works for the storage and supply of water are not included in the manufacturing tables. A table of waterworks follows paragraph 577 *post*.

† The particulars of these have been combined in accordance with a promise made that the contents of individual schedules would not be published.

576. 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. The number of manufactories increased by 37 per cent. between the first and second periods, and by 30 per cent. between the second and third periods; the hands employed increased by 47 per cent. and 36 per cent. respectively; and the value of lands, buildings, machinery, and plant increased respectively by 35 per cent. and 51 per cent. :—

Summary of
manufac-
tories.

SUMMARY OF MANUFACTORIES, WORKS,* ETC., 1869, 1874, AND 1879.

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.
					£
1869	1,314	554	8,062	16,612	3,329,605
1874	1,803	771	11,036	24,411	4,498,209
1879	2,343	908	13,064	33,278	6,798,636

577. 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 nearly three and a half millions sterling.

Waterworks.

* 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.

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	1,524,000
	Morang (pipe head)	2,800,000	
	Preston	15,000,000	
Coliban Scheme, includ- ing Reservoirs at	Malmsbury	2,841,000,000	871,700
	Expedition Pass	128,000,000	
	Barker's Creek, Harcourt	611,500,000	
	Spring Gully	149,000,000	
	Crusoe Gully	320,000,000	
	Big Hill	68,000,000	
	Taradale (tank)	65,000	
	Crocodile Gully	5,407,462	
Geelong and suburbs, including Reservoirs at	Spring Gully	7,000,000	324,773
	Stony Creek (Old)	166,000,000	
	Stony Creek (New)	143,000,000	
	Lovely Banks	6,000,000	
	Anakie (pipe head)	900,000	
Creswick	Newtown	500,000	14,075
	Bullarook	45,000,000	
Tarnagulla	Ashwell's Gully	8,500,000	232
	Tarnagulla	5,000,000	1,168
Inglewood { (Old) (New)	Inglewood	5,670,000	1,112
	Inglewood	13,000,000	4,116
Maryborough	Maryborough	8,100,000	1,185
Maldon	Maldon	17,500,000	3,577
Beechworth	Lake Kerferd	60,000,000	35,640
Chiltern	Barrambogie Springs	3,084,319	5,500
	Railway Tank	6,000	320
Wangaratta	Tank at Railway Station	40,000	4,592
Rutherglen	Rutherglen	27,000,000	3,500
Ararat	Oliver's Gully	19,615,554	1,731
	Langi-Giran	14,600,000	37,250
	Opossum Gully	24,621,547	1,831
Beaufort	Beaufort	85,881,110	1,991
	Service Reservoir, Camp Hill	1,200,000	7,160
Ballarat	Four and One Weir Basin in Bungaree	632,960,000	300,000
Clunes	Newlyn	265,000,000	81,500
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)	58,860,375	5,755
	Grassy Flat (2)	26,769,369	
Kilmore	Kilmore	14,466,000	845
Myers Creek	Myers Creek	13,000,000	844
Echuca	Echuca (tank)	68,000	7,314
Dunolly	Dunolly	17,200,000	1,912
St. Arnaud	St. Arnaud	40,600,000	9,491
Redbank	Redbank	27,100,000	2,785
Laplough	Laplough	9,261,946	1,232
Talbot	Amherst	13,813,284	10,650
Wedderburn	Wedderburn	3,100,000	1,013

WATERWORKS IN VICTORIA—continued.

Name of Town or District to be supplied.	Reservoir.		Actual or Estimated Cost.
	Where situated.	Storage Capacity.	
		gallons.	£
Chewton ...	Commissioner's Gully ...	7,000,000	1,203
Daylesford ...	Wombat Creek ...	31,284,413	2,527
Moyston ...	Campbell's Reef ...	5,400,000	1,054
Orville ...	'Possum Gully ...	2,000,000	110
Stawell ...	Quartz Reefs ...	9,725,627	1,080
	Pleasant Creek ...	7,905,750	775
	Four Posts ...	3,100,000	802
	Fyan's Creek ...	... *	93,484
Woodend ...	Newham ...	... *	4,613
Great Western ...	Great Western Dam ...	1,211,662	298
Elaine ...	Lal Lal ...	90,000,000	... †
Sebastopol ...	White Horse Ranges ...	4,830,904	1,188
Shire of Grenville	Linton ...	8,000,000	2,150
	Haddon ...	3,100,000	900
	Happy Valley ...	2,350,995	600
	Piggoreet ...	600,000	127
	Kangaroo (Berringa) ...	1,000,000	296
	Cape Clear ...	400,000	100
Shire of Leigh ...	Rokewood ...	5,000,000	372
	Break-of-Day ...	4,500,000	424
	Teesdale ...	4,000,000	211
Total ...		12,663,204,601	3,386,517

578. 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 :—

Capital invested in manufactories and waterworks.

Value of lands, buildings, machinery, &c., used in connection with manufactories, 1879	£
...	6,798,636
Actual or estimated cost of waterworks	3,386,517
	<u>£10,185,153</u>

579. Though the number of stone quarries at work in 1879 was less by 8 than that in 1878, the quantity of stone raised was greater ; a decrease, however, took place in the value of stone raised, and in the value of lands and plant. The following are the figures.

Stone quarries.

* No reservoir (pipe-head tank).

† Cost cannot at present be given.

STONE QUARRIES, 1878 AND 1879.

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.
1878	140	212,644	1,202	7,173	900	400	7	58
1879	132	217,998	1,358	8,775	1,630	1,000	7	62
Increase	...	5,354	156	1,602	730	600	...	4
Decrease	8	...	...	...	...	...	...	...

Year ended 31st March.	Number of Hands employed.	Approximate Total Value of—			
		Stone raised.	Machinery and Plant.	Lands.*	Buildings.
1878	516	£ 48,015	£ 13,130	£ 16,817	£ 1,369
1879	480	£ 46,988	£ 11,369	£ 8,490	£ 1,649
Increase	...	...	...	...	280
Decrease	36	1,027	1,761	8,327	...

580. The quantity of gold raised in Victoria during any given year may be estimated in several ways; the following are the results for 1878 of four different methods of making the calculation:—

ESTIMATES OF GOLD YIELD, 1878.

	Estimated Quantity.		
	oz.	dwt.	gr.
1. Exported gold entered as the produce of Victoria, added to Victorian gold received at Melbourne Mint	768,853	14	0
2. Gross exports of gold, less gross imports, added to gross quantity of gold received at Melbourne Mint	775,272	0	0
3. Gold raised, according to estimates made by the mining registrars throughout the country	758,040	15	19
4. Gold purchased, according to returns made by managers of banks and others	772,302	15	20

581. The estimate in the second line is that which is adopted on the present occasion as probably the most reliable. It will be observed that it gives a somewhat higher result than that obtained by any of the other methods. 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 1877:—

QUANTITY AND VALUE OF GOLD RAISED IN 1877 AND 1878.

Year.	Gold raised in Victoria.	
	Estimated Quantity.	Estimated Value, at £4 per oz.
1877	oz. 809,653	£ 3,238,612
1878	775,272	3,101,088
Decrease	34,381	137,524

* Forty-nine of the stone quarries in 1878, and 42 in 1879, were upon Crown lands. In these cases no estimate of the value of the land has been given.

Gold raised,
1878.

Gold raised,
1877 and
1878.

582. 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 1878.

			oz.				oz.
1870	...	...	1,222,798	1875	...	...	1,095,787
1871	...	...	1,355,477	1876	...	...	963,760
1872	...	...	1,282,521	1877	...	...	809,653
1873	...	...	1,241,205	1878	...	...	775,272
1874	...	...	1,155,972				

Gold raised, 1870 to 1878.

583. Carrying on to the end of 1878 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. These figures give an average per annum during the whole period of about 1,716,000 oz., which is more than twice the quantity raised in 1878 :—

Gold raised, 1851 to 1878.

ESTIMATED TOTAL QUANTITY AND VALUE OF GOLD RAISED IN VICTORIA, 1851 TO 1878.*

Gold raised in Victoria.	Estimated Quantity.	Estimated Value, at £4 per oz.
	oz.	£
Prior to 1878	47,283,377	189,133,508
During 1878	775,272	3,101,088
Total	48,058,649	192,234,596

584. The estimated value of gold raised in proportion to the number of miners at work † was slightly greater in 1878 than in 1877, but much less 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 nine years :—

Value of gold per miner.

VALUE OF GOLD PER MINER, ‡ 1870 TO 1878.

			£	s.	d.				£	s.	d.
1870	...	...	81	0	6.46	1875	...	...	104	4	4.02
1871	...	...	93	6	0.62	1876	...	...	89	19	6.84
1872	...	...	93	17	1.47	1877	...	...	82	6	1.69
1873	...	...	93	16	2.62	1878	...	...	82	12	11.38
1874	...	...	99	8	3.07						

585. The mining surveyors and registrars estimate that in 1878 500,637 oz., or 65 per cent. of the gold exported and minted, was obtained from quartz reefs, and 268,232 oz., or 35 per cent., was obtained from alluvial deposits. In the previous year the same officers estimated that 64 per cent. of the gold was raised from quartz, and 36 per cent. from alluvial mines.

Gold derived from alluvial and quartz workings.

* For a statement of the estimated quantity and value of gold raised in each year, see Statistical Summary of Victoria (first folding sheet ante).

† For the number of gold miners at work at the end of each year, see paragraph 60 ante.

‡ 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.

586. 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 six years. It will be noticed that a slight falling-off has taken place from year to year:—

STEAM ENGINES USED IN GOLD MINING, 1873 TO 1878.

	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	|	1878	... 1,036	... 22,711

587. The number of mining machines of all descriptions fell from 4,540 in 1877 to 4,428 in 1878; and the value of such machines, as estimated by the Department of Mines, decreased from £2,029,962 in 1877 to £1,903,494 in 1878.

588. The number of quartz reefs proved to be auriferous was returned by the mining surveyors and registrars as 3,328 in 1877 and 3,402 in 1878. 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.

589. The area of auriferous ground worked upon was stated to be approximately 1,185½ square miles in 1877 and 1,290 in 1878. The figures are derived from estimates, not from actual surveys, and they vary from year to year. As the shallow alluviums of the older gold-fields 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.

590. 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 965,574 tons in 1877 and 874,717 tons in 1878. The average yield per ton of these crushings was 9 dwt. 9·38 gr. in the former, and 9 dwt. 12·99 gr. in the latter year. From similar estimates, extending over a series of years, and embodying information respecting the crushing of more than 15,000,000 tons of quartz, an average is furnished of 11 dwt. 1·08 gr. of gold to the ton of quartz crushed.

591. In 1878, for the first time, some of the shafts sunk in Victoria in search of auriferous quartz have attained depths exceeding 2,000 feet from the surface. Two at Stawell are 2,032 feet and 2,014 feet

Steam engines used in mining.

Mining machinery.

Auriferous reefs.

Extent of auriferous ground.

Average yield of quartz.

Deep quartz mining.

respectively ; the deepest shaft at Sandhurst appears to be 1,458 feet ; and the deepest at Ballarat 1,114 feet. The yield of gold from 16,734 tons of quartz obtained at Stawell at depths varying from 500 to 1,180 feet averaged from 17 dwt. 8 gr. to 2 oz. 10 dwt. per ton.*

592. Since the first issue of gold-mining leases, the total number granted has been 10,648, giving the right to mine over an area amounting in the aggregate to 193,902 acres. Of these leases, 227, for 4,261 acres, were granted in 1878, and 1,176, for 16,840 acres, were in force at the end of that year. Gold-mining leases.

593. The number of gold-mining companies registered in 1878 was 81, the number of shares was 1,035,968, and the nominal capital £791,960. In the previous quinquenniad 789 mining companies were registered, with 12,659,436 shares, and a nominal capital amounting in the aggregate to £9,903,763. Gold-mining companies.

594. At the end of 1878 the following leases of Crown lands, conferring the privilege of working for minerals and metals other than gold, were in force. The leases were more numerous by 36 than in the previous year, but, notwithstanding this, the area comprised therein was less by 940 acres than in 1877. The improvement as regards the number of leases is due to the impetus which appears to have been given to copper mining during the year under review, for whereas only 2 leases therefor were in force at the end of 1877, as many as 41 were in force at the end of 1878 :— Leases for other minerals

LEASES FOR MINERALS AND METALS OTHER THAN GOLD, 1878.

Metals and Minerals.	Leases in force at end of 1878.	
	Number.	Area.
		acres.
Antimony	22	434
Argentiferous galena	1	154
Coal	7	4,368
Copper and the ores of copper	41	1,991
Gypsum	1	18
Lignite	1	476
Silver	1	168
Slate	2	68
Slate and flagging	1	14
Ironstone	1	320
Red ochre clay	1	2
Tin and the ores of tin	5	1,029
Total	84	9,042

595. According to the estimate of the Mining Department, the following are the values of metals and minerals other than gold raised in Minerals other than gold raised.

* See "Mineral Statistics of Victoria for the Year 1878;" Parliamentary Paper No. 5, Session 1879.

fluctuates from year to year. In 1878 these prices were below the average.* 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 1878.

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
1878 ...	4,912,745	8,360,265	3,211,990	16,485,000

600. The patents for inventions applied for in 1878 numbered 147, Patents. as against 145 in the previous year. Since 1854 the total number of patents applied for has been 2,628.

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

COPYRIGHTS, 1870 TO 1878.

Subject of Copyright.	Copyrights Registered.		
	Prior to 1878.	During 1878.	Total.
DESIGNS.			
Articles of manufacture, chiefly of—			
Metals	119	8	127
Wood, stone, cement, or plaster	34	1	35
Glass	3	1	4
Earthenware	1	1	2
Ivory, bone, papier-maché, &c.	8	4	12
Woven fabrics	10	...	10
Miscellaneous	12	...	12
LITERARY PRODUCTIONS.			
Literary works	622	59	681
Dramatic „	29	10	39
Musical „	63	1	64
WORKS OF ART.			
Paintings	2	1	3
Drawings	11	...	11
Engravings	569	21	590
Photographs	661	98	759
Total	2,144	205	2,349

* For prices of agricultural produce in different years, see table following paragraph 553 ante.

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