except three; the mean atmospheric pressure, the amount of rainfall, and the mean relative humidity were either about, or only slightly above, the average; the number of days on which rain fell was exceeded in all the other years except six; in only one previous year was the mean amount of cloud higher than in 1884.

Mean temperature in Melbourne and elsewhere.

731. The mean temperature of Melbourne over a series of years (57·2°) corresponds with that of Bathurst, a town in the interior of New South Wales, situated 2,150 feet above the sea-level, and is about equal to that of Washington (56·9°), Bordeaux (57·0°), Madrid (57·2°), and Marseilles (58·3°). It is lower by $5\frac{1}{3}$ degrees than that of Sydney (62·5°), and lower by $7\frac{1}{3}$ degrees than that of Adelaide (64·6°).*

Mean rainfall in Melbourne and elsewhere.

732. The mean rainfall in Melbourne (25·46in.) corresponds approximately with that of Ventnor in England (25·5in.), Bathurst in New South Wales (25·0in.), and Toulouse in France (24·9in.). It is above that in London (24·0in.), Nottingham (23·7in.), or Paris (22·9in.), is 5 inches above that in Adelaide (20·5in.), but is only about half as much as that in Sydney (50·1in.).*

Fall of snow in Melbourne, 1882.

733. It may be remarked that a fall of snow took place in Melbourne on the 26th July, 1882, on which day the lowest temperature in the shade was 37° and the highest 44°. This is a most unusual occurrence, no other such instance being remembered since the 29th and 30th August, 1849, when snow fell heavily.

Meteorology elsewhere treated on.

734. An extended account of the meteorology and climate of Victoria will be found in the *Victorian Year-Book*, 1874, paragraphs 54 to 95.

PART V.—PRODUCTION.

Alienation of Crown lands.

735. The mode of disposing of Crown lands in Victoria has undergone numerous changes.† At first it was necessary that all lands should be offered at auction before passing into the hands of private individuals, an upset price, according to its value, being placed upon it by the

* The observations, except those for Melbourne and Adelaide, have been taken from a work entitled *Physical Geography and Climate of New South Wales*, by H. C. Russell, F.R.A.S., Government Astronomer of that colony.

† Mr. N. Wimble, of the Department of Lands and Survey, has been kind enough to verify the facts in this and the next fourteen paragraphs.

Government. Until 1840 the minimum upset price was 12s. per acre, it was then raised to 20s. Land which had passed the auctioneer's hammer without being bid for was open to be bought by any one at the upset price. Large blocks of land, called special surveys, and a block of a square mile in extent upon each squatting run, were, under certain Orders in Council, exempted from auction, and were permitted to be purchased at £1 per acre.

Special surveys.

736. In 1860 the system was changed, and a law was passed permitting surveyed country lands to be selected at a uniform upset price of £1 per acre, the only exception being where two or more selectors applied simultaneously for one block, in which case a limited auction, confined only to such applicants, was to take place. The successful selector had the option of either paying for the whole of his block in cash or only for half; in the latter case, renting the other half at 1s. per acre per annum, with the right to purchase at the same rate per acre as he paid for the first moiety.

Land Act 1860 (24 Vict. No. 117).

737. Another change was made in 1862. Large agricultural areas were proclaimed open for selection, within which land could be selected, at a uniform price of £1 per acre, lot being substituted for limited auction in the event of there being more than one applicant for an allotment. For one-half of the allotment it was necessary to pay at once; but for the remainder the purchase-money was allowed to be paid by instalments of 2s. 6d. each, extending over eight years. No more than 640 acres could be selected by one person in twelve months. Three conditions, to be complied with within twelve months of the date of selection, were imposed upon selectors under this Act:—The first being that the selections be enclosed with a substantial fence; the second, that a habitable dwelling be erected on the land; and the third, that one acre out of every 10 acres selected be cultivated.

Land Act 1862 (25 Vict. No. 145).

738. The next change was made in 1865, when an Act was passed providing that agricultural land could be acquired by payment of 2s. per acre per annum during three years, and by effecting improvements to the extent of 20s. per acre within two years of the commencement of the lease. These conditions having been complied with, the lessee might, at the expiration of three years, if he resided upon the land, purchase his holding at £1 per acre; or, if not, he could require his leasehold to be offered at auction at the uniform price of 20s. per acre, with the value of improvements added in his favour. There was also

Amending Land Act 1865 (28 Vict. No. 237).

a clause* whereby land adjacent to gold-fields could be occupied in blocks of 20 acres each without having been previously surveyed. This clause was originally framed to meet the demand for the occupation of land adjacent to gold-fields, but its operation was gradually extended by regulation to a circuit of thirty miles around gold-fields, and the same individual was allowed to hold several 20-acre licences for the occupation of adjacent land to the total extent of 160 acres. The licensee, in all cases, was bound either to reside on his holding or to fence and cultivate a certain portion.

Land Act 1869 (33 Vict. No. 360).

739. The operation of the last-mentioned clause was so successful in leading to the occupation of the land that free selection before survey was the main principle of the next Land Act, which was passed in 1869, and came into operation on the 1st February, 1870. Under it, the area allowed to be selected by one person was limited to 320 acres; and it was further provided that the selection should be held under licence during the first three years, within which period the licensee was obliged to reside on his selection at least two and a half years, to enclose it, to cultivate 1 acre out of every 10, and generally to effect substantial improvements to the value of 20s. per acre. The rent payable during this period was 2s. per acre per annum, which was credited to the selector as part payment of the principal. At the expiration of the three years' licence, the selector, if he obtained a certificate from the Board of Land and Works that he had complied with these conditions, could either purchase his holding at once, by paying up the balance of 14s. per acre, or might convert his licence into a lease extending over seven years, at an annual rental of 2s. per acre, which was also credited to the selector as part payment of the fee-simple. On the expiry of such lease, and due payment of the rent, the land became the freehold of the selector. The Statute also contained 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 extent to be sold in any one year not to exceed 200,000 acres.

Amending Land Act 1878 (42 Vict. No. 634).

740. The Land Act of 1869, just described, was amended by the Land Act 1878, which came into operation at the beginning of 1879. The principal alterations made by this amending Act, as regards selection for agricultural purposes, was to increase the period during which the land was held under licence from three years to six years, and the time

* The 42nd clause.

of compulsory residence from two and a half years to five years, and to reduce the annual rental per acre for a licence or lease from 2s. to 1s., which thereby allowed the payments to extend over a period of twenty years instead of ten years as formerly. It also contained provision for selection by persons who did not desire to reside on their selections. In such cases, however, the rent was 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, had to be made during the six years' licence, of which at least half were to be made before the expiration of the third year. Such licences are not to be issued in any one year for an aggregate area of more than 200,000 acres. Both these Acts expired by effluxion of time on the 31st December, 1884.

Pastoral occupation under Land Act 1869.

741. According to the Land Act 1869, the unalienated and unselected Crown lands* were occupied for pastoral purposes either as "runs" under licence or lease, or as "grazing rights." Runs were of two kinds: those in existence at the time of the passing of the Land Act 1869 (viz., on 29th December, 1869), and not since forfeited—described in the Act as "Existing runs"; and those created since that date—described in the Act as "New runs." The former kind, which were by far the more numerous and extensive, were held under pastoral licence renewable annually, and were unlimited as to size. The latter, which were but few in number, were held under lease for any term not exceeding 14 years—the right to the lease having, in the first instance, been purchased at auction—and were not permitted to be of larger extent than sufficient to carry 4,000 sheep or 1,000 head of cattle. An important privilege enjoyed by lessees of "new runs" was that they were entitled to the pre-emption of 320 acres on which their improvements are situated at the rate of £1 per acre.† The annual rent payable for both descriptions of runs was assessed in accordance with the grazing capability of the land licensed or leased, on the basis of 1s. for every sheep and 5s. for every head of cattle the run was capable of carrying. As the right of pre-emption to 320 acres at £1 per acre, without conditions as to residence, cultivation, &c., was considered too great a sacrifice of the public estate, the occupation of "new runs" was discouraged by the Government; but, in order to allow of the waste lands

Runs.

Grazing rights.

* Since the 1st December, 1883, the Crown lands situated in the Mallee country have been dealt with under a special Act.—See next paragraph.

† Under an Order of Her Majesty's Council, the lessees of the old or "existing" runs had been allowed a "pre-emptive right" to 640 acres.

of the Crown being used for pastoral purposes, advantage was taken of a provision embodied in sub-section 7 of the 47th section of the Act, whereby the Governor in Council was empowered to grant a licence—known as a "grazing right"—to depasture live stock upon any park lands, reserves, or other Crown lands not forming part of any run or common. Under this provision the unoccupied pastoral lands had been divided up into blocks and offered for tender under annual licence.

Mallee Pastoral Leases Act 1883.

742. An Act dealing with the unalienated lands situated in the north-western portion of the colony, comprising about one-fifth of its extent, or some 11½ million acres wholly or partially covered with the various species of stunted trees of which the "Mallee scrub" is composed, was passed in 1883. This Act, entitled the Mallee Pastoral Leases Act 1883 (47 Vict. No. 766), came into force on the 1st December, 1883. It divides the country just described into two main divisions—the larger division containing about ten million acres, being known as the "Mallee country"; and the other containing about one and a half million acres, and situated along the southern and eastern borders of the Mallee country, being called the "Mallee border."

Mallee blocks.

743. The Act directs that the "Mallee country" be divided into blocks of various sizes, each block to be subdivided into two divisions. For either of these, at the option of the applicant, a lease may be granted under certain conditions, the lessee being also bound to occupy the other division. The principal conditions are that the lessee destroy all vermin (native dogs, rabbits, &c.) upon the whole block within the first three years, surrender to the Crown the unleased portion at the end of five years, and keep in good condition and repair all improvements made upon the land. A lease for a Mallee block may be granted for any term of years not longer than 20 from the commencement of the Act, at the end of which term (viz., on the 1st December, 1903) the land, with all improvements, reverts to the Crown. Every person who had occupied under pastoral or grazing licence any portion of the Mallee country for two years prior to the 1st December, 1883, was entitled to take up one Mallee block comprising the whole or any portion of the area occupied by him; but, in the event of his not applying for this privilege within one month of the passing of the Act, the right of lease was to be sold by auction to the highest bidder. The annual rent to be charged for the leased portion of the block is 2d. for each sheep or 1s. for every head of cattle depastured during the first

five years, 4d. for each sheep or 2s. for each head of cattle during the second five years, and 6d. for each sheep and 3s. for each head of cattle during the remainder of the term; and for the unleased portion of the block 2d. for each sheep or 1s. for each head of cattle; but in no case is the annual rent for the whole block to be less than 2s. 6d. per square mile. No lands in the Mallee country can be alienated in fee-simple. It may be mentioned that nearly the whole of it has now been taken up under the provisions of the Mallee Pastoral Leases Act.

744. The "Mallee border" is to be subdivided into "Mallee allotments," varying in size, but not in any case exceeding 20,000 acres. These are to be leased on the same terms and conditions as in the case of the leased portions of a Mallee block; but the annual rent is to be fixed by regulations issued by the Governor in Council. No person is permitted to take a lease of more than one Mallee allotment, nor can the holder of a Mallee block lease obtain the lease of a Mallee allotment. Mallee allotments.

745. A measure entitled "The Land Act 1884," replacing the Land Act 1869 and subsequent Land Acts, except the Mallee Pastoral Leases Act 1883, just referred to, came into operation on the 29th December, 1884. Its main features are to restrict the further alienation of the public estate by limiting the extent which may be sold by auction, and by substituting for the previously existing method of selecting agricultural land a system of leasing such lands in certain defined areas, at the same time conserving to the lessee the privilege of acquiring from his leasehold the fee-simple of 320 acres under deferred payments. The Act classifies the whole of the unalienated Crown lands—exclusive of the "Mallee country," dealt with under the Mallee Pastoral Leases Act 1883 (47 Vict. No. 766)—as follows:—Pastoral lands, grazing and agricultural lands, auriferous lands, lands which may be sold by auction, swamp lands, State forest reserves, timber reserves, and water reserves. The area of land comprised within each of the above classes respectively is delineated by projections bearing a distinguishing colour or shading on maps of the several counties in which such land is situated. These maps are deposited with the Clerk of Parliaments. The Governor in Council may, however, by proclamation increase or diminish the area comprised in any of the above-mentioned classes, except those relating to lands which may be sold by auction. Land Act 1884 (48 Vict. No. 812).

746. Under the Land Act 1884, the pastoral lands are to be leased in "pastoral allotments," capable of carrying from 1,000 to 4,000 sheep, or from 150 to 500 head of cattle, for any term not exceeding 14 years,* Pastoral occupation.

* No lease is to be granted for a longer term than 14 years from the commencement of the Act.

at the end of which the land, together with all improvements thereon—taken at a valuation as below mentioned—reverts to the Crown, the right to the lease to be granted to the first person who applies for the land after it has been first publicly notified as available, but if there should be two or more applicants, the lease is to be offered at auction. The annual rent payable for pastoral allotments is to be computed according to the grazing capability of the land, at the rate of 1s. per head of sheep and 5s. per head of cattle, upon a basis of not more than 10 acres to a sheep, and the equivalent number of acres for cattle. The principal conditions of the lease are that all "vermin" (rabbits, native dogs, &c.) upon the land shall be destroyed within the first three years, and that all buildings and improvements shall be kept in good condition and repair. Upon the expiration of the lease, the lessee is to be paid by any in-coming tenant the value of all improvements effected and calculated to increase the carrying capability of the land, at a price not exceeding the sum expended thereon, but in no case to exceed 2s. 6d. per acre. Alienation of pastoral lands is not permitted, except in the case of a lessee of a pastoral allotment, who has the right to purchase, at any time during the currency of his lease, 320 acres as a homestead.

Agricultural and grazing lands.

747. The agricultural and grazing lands are also to be leased in "grazing areas," varying in size, but not exceeding 1,000 acres, for any term not exceeding 14 years,* at the end of which term the land, together with all improvements—to be allowed for at a valuation limited to 10s. per acre—reverts to the Crown. The annual rent of a grazing area is to be appraised by valuers, but is in no case to be less than 2d. or more than 4d. per acre, any improvements that may happen to be on the land at the commencement of the lease to be charged for in addition at the rate of 5 per cent. per annum on the capital value thereof. The only important conditions imposed on the lessee of a grazing area are that he shall, within the first three years, fence the land and destroy all "vermin" thereon. Any person over the age of 18 years is entitled to take up a grazing area; selectors under former Acts, however, being limited to an area, which, together with the land previously selected, must not exceed 1,000 acres. Residence is not required of the holder of a grazing lease, unless he should select portion of his holding under the terms and conditions specified in the next paragraph.

Selection of agricultural allotments.

748. Any lessee of a grazing area is at liberty, after the issue of his lease, to select out of the area leased a block or "agricultural allotment" not exceeding 320 acres in extent; but should he have

* See footnote on last page.

selected under a previous Act or Acts an area of less than 320 acres in extent, he is only entitled to increase his selection to such an extent as not to exceed 320 acres in all. A licence is then issued to occupy the agricultural allotment (which is thereafter no longer considered portion of the grazing area), under the same terms and conditions as are allowed to selectors under the Land Acts of 1869 and 1878, as detailed in a previous paragraph.* Persons desirous of selecting an agricultural allotment cannot do so without first taking up a grazing area. Provision is also made for grazing area lessees to take up agricultural allotments as non-residence licensees under similar conditions as under the Land Act 1878.* The area for which licences may be issued during any year for non-resident selections is limited to 50,000 acres. Other important features of the Act are that every selector—subject to certain conditions and restrictions—is entitled to a Crown grant of portion of his allotment not exceeding 20 acres, if planted as a vineyard or an orchard, upon payment of the balance of the purchase-money due in respect of such portion†; that the licensee of an agricultural allotment may, after the expiration of two years, obtain an advance of money (by giving a "licence lien") secured up to one-half of the improvements effected†; that married women are permitted to take up land as pastoral or grazing lessees, but are not allowed to select an agricultural allotment out of the grazing area leased to them; and that facilities are given to allow of a non-resident selector becoming a resident selector, and *vice versâ*.†

Non-residence selections.

749. Swamp lands are to be first drained, and may then be leased in areas not exceeding 160 acres for a term of 21 years.

Swamp lands.

750. The laws and regulations under which land for agricultural purposes passes from the Crown into the hands of private individuals differ in the various Australasian colonies.‡ In almost all, however, provision is made for any person, not under 18 years of age, or a married woman,§ desirous of settling on the land to select a certain limited area, and to pay the purchase-money by instalments, the compliance with certain conditions of residence and improvement being also required before the selector becomes entitled to a Crown grant. The principal features of this portion of each system, corrected to date, is detailed under nine heads in the following table :—

Systems of land selection in Australasian colonies.

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* See paragraph 740 *ante*.

† These privileges, although not previously enacted, are also to be allowed to selectors under previous Acts.

‡ A complete account of the land system of each colony is published in an Appendix at the end of the present work.

§ In Tasmania and in Victoria (under the Land Act 1884) married women may select land.

Conditions of Land Selection in Australasian Colonies, 1885.

Conditions of Selection.	Victoria.*	New South Wales.†	Queensland.‡		South Australia.§	Western Australia.‖	Tasmania.¶	New Zealand.**
			Homesteads.	Other Selections.				
1. Maximum area allowed Acres	320	640 and 2,560	160	640 to 1,280	1000	No limit	320	320
2. Price per acre	£1	£1	2s. 6d.	£1 upwards	£1	10s.	£1	£1 to £3
3. Time over which purchase may extend ... Years	20	33	5	...	20	10	14	10
4. Minimum time in which fee-simple may be acquired ... Years	6	5	5	10	10	any time	any time	3
5. Annual payment per acre...	1s.	1s.	6d.	...	1s.	1s.	2s.	2s. to 6s.
6. Value of necessary improvements per acre... ...	20s.	Fencing only	7s. 6d. to 10s.	Fencing 7s. 6d. to 10s.	10s.	...	...	20s.
7. Time allowed for making improvements ... Years	6	2	5	5	4	10	...	6
8. Acres in every 100 to be cultivated	10	...	...	...	20	25	...	20
9. Period of residence necessary †† ... Years	5	5	5	...	20	2½	14	6

* In Victoria, under the present Land Act, the land is to be taken up, in the first instance, in blocks not exceeding 1,000 acres, under leases for a term not exceeding 14 years, at a rental of from 2d. to 4d. per acre, out of which leasehold a "selection," not exceeding 320 acres, may be taken up under the conditions here named. See also paragraph 748 *ante*.

† In New South Wales, a territorial division of the colony is made into three zones, viz., the eastern, the central, and the western division. The maximum area allowed in the eastern division is 640, and in the central 2,560 acres. In addition to the selection, a leasehold of an additional area, limited to three times that of the selection (the area of the selection and lease together not to exceed 1,280 acres in the eastern, or 2,560 acres in the central, division), may be granted to the selector at an annual rental of not less than 2d. per acre, with the right of conditional purchase after 5 years' tenure. The price per acre does not include interest, for which 4 per cent. per annum is charged and collected out of the annual instalments paid. The first payment is 2s. per acre in advance, with an interval of 3 years before the next instalment of 1s. is payable.

‡ In Queensland, within the limits named, the maximum area allowed to be selected may be varied in any district by the Government. In that colony the system of leasing seems to have supplanted that of alienating the fee-simple of the land by means of deferred payments. The selector first occupies the land under licence for 5 years, at an annual rental of not less than 3d. per acre, and may at the end of that time, if the condition as to fencing (or improvements of equal value) has been complied with, obtain a lease for 50 years; the annual rental for the first 10 years being not less than 3d. per acre, but for every succeeding period of 5 years to be fixed by the Land Board. The selector has the right to purchase at not less than 20s. per acre, within 12 years from the date of the granting of the lease, during the currency of which residence is compulsory.

§ In South Australia, 10 per cent. of the purchase-money is paid as deposit, 10 per cent. at the beginning of the fourth year, and 5 per cent. at the beginning of the fifth and each subsequent year.

‖ In Western Australia, the necessary improvements are not assessed according to value. The condition is that the selected land shall be fenced and one-fourth cultivated. The time allowed for making improvements may be extended, if the selector continues to pay the annual licence fee.

¶ In Tasmania, 33⅓ per cent. is added to the price, as interest, for the period of fourteen years.

** In New Zealand, the price per acre varies with the quality of the land. There is besides a system of "perpetual leasing" in that colony, under which as much as 640 acres may be leased at an annual rental equal to 5 per cent. of the value of the land. The first lease is for 30 years, with the option of renewal for succeeding periods of 21 years, the rent being assessed afresh at each renewal. Between the sixth and eleventh years the lessee may acquire the freehold if the land is not within a proclaimed gold-field. The conditions as regards residence and improvement are the same as under the deferred payment system. The "Homestead system" is also in force in the land districts of Auckland and Westland. Under this system no payment is made for the land. After five years' residence and the cultivation of one-third of the selection if open land, and one-fifth if bush land, the selector can claim his Crown grant. No family or household can hold more than 200 acres of first-class land or 300 acres of second-class land under this system.

†† In all the colonies, as soon as the purchase-money is paid in full, the residence clause is no longer enforced. In Queensland (except in the case of homestead selections), South Australia, Western Australia, and New Zealand in the case of bush land, personal residence is not necessary.

751. The total extent of Crown land sold in Victoria up to the end of 1884 was 13,989,311 acres, and the extent granted without purchase was 9,207 acres. The whole area alienated in fee-simple was thus 13,998,518 acres, of which 7,472,803 acres, or considerably more than half, was acquired by selection under the system of deferred payments. Crown lands alienated to end of 1884.

752. The selected lands of which the purchase had not been completed up to the end of the year amounted to 11,267,946 acres. Of this extent it is estimated that 3,528,524 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 7,739,422 acres. Crown lands selected.

753. According to the latest computation, the total area of the colony is 56,245,760 acres; and if from this be deducted the sum of the lands granted, sold, and selected, amounting, less the extent forfeited, to 21,737,940 acres, it will follow that the residue, representing the Crown lands neither alienated nor in process of alienation, amounted at the end of 1884 to 34,507,820 acres. Crown lands unalienated.

754. 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, water, pastoral, and timber reserves, and land which is at present unfit for agricultural purposes, owing to its being covered with Mallee scrub. Deducting these lands, amounting in the aggregate to 15,706,964 acres, from the extent unalienated and unselected, already stated to have been 34,507,820 acres, it will be found that the area open for selection is narrowed to 18,800,856 acres. This will be at once seen by the following table, which shows the position of the public estate at the end of 1884:— Public estate, 1884.

PUBLIC ESTATE OF VICTORIA ON 31ST DECEMBER, 1884.

Condition of Land.	Approximate Number of Acres.
Land alienated in fee-simple	13,998,518
Land in process of alienation under deferred payments ...	7,739,422
Roads in connexion with the above	1,263,323
Unsold land included in cities, towns, &c.	1,484,436
Water reserves	128,173
Timber reserves	446,134
Other reserves	195,188
State forests	654,210
Mallee country*	11,535,500
Area available for occupation at end of 1884	18,800,856
Total area of Victoria	56,245,760

* Available for occupation for pastoral purposes under the Mallee Pastoral Leases Act 1883 for any term not exceeding 20 years.

Crown lands available for selection.

755. The area of the colony, exclusive of the Mallee country, is 44,710,260 acres, of which, at the end of 1884, 21,737,940 acres, or 49 per cent., were already alienated or in process of alienation; 4,171,464 acres, or 9 per cent., were occupied by reserves, &c.; and 18,800,856 acres, or 42 per cent., were available for occupation.

Classification of available land.

756. Following the classification provided for under the existing Land Act, the area of Crown lands, exclusive of the Mallee country, available for occupation at the end of 1884 may be divided as follows :—

CLASSIFICATION OF LAND AVAILABLE AT END OF 1884.

	Acres.
Pastoral lands	8,149,090
Agricultural and grazing lands	8,877,100
Auriferous lands	1,470,153
Swamp lands	87,309
May be sold by auction	217,204
Total	18,800,856

Crown lands alienated, 1884.

757. The land alienated from the Crown in fee-simple during 1884 amounted to 469,482 acres, of which 469,408 acres were sold, and 74 acres were granted without purchase. The total extent was less by 3,055 acres than that in 1883, but was in excess of the extent alienated in any other year since 1876.

Crown lands sold by auction.

758. Of the area sold, 35,446 acres, or nearly 8 per cent., were disposed of by auction. Nearly the whole of the remainder was in the first instance selected under the system of deferred payments. The extent sold by auction in 1884 exceeded that in 1883 by 15,000 acres; it was also greater than that in any other year since 1879.

Amount realized on Crown land sales, 1884.

759. The amount realized for Crown lands sold in 1884 was £585,099, or at the rate of £1 5s. per acre. Of this sum, only £203,845 was received during the year, the remainder having been paid in former years as rents and licence fees. The proportion sold by auction realized £143,648, or an average of £4 1s. 1d. per acre; and the proportion sold otherwise than at auction realized £441,451, or an average of £1 0s. 4d. per acre.

Amount realized, 1836 to 1884.

760. From the period of the first settlement of the colony to the end of 1884, the amount realized by the sale of Crown lands was £21,930,461, or at the rate of £1 11s. 4d. per acre.

Selectors and area selected, 1870 to 1884.

761. The total area selected, with right of purchase, in 1884, amounted to 717,526 acres, or 107,951 acres less than in 1883. Of this extent, 705,326 acres were taken up under the residence clauses of the Land Acts of 1869 and 1878, and 12,200 acres under the non-residence clause of the latter. The average area to each resident selector,

whether resident or non-resident, was 180 acres. The area selected exceeded that in 1881, but was less than in any other previous year since 1871, as will be observed by the following figures, which show the number of approved applications (approximating closely to the number of selectors) and the number of acres selected in each of the 15 years ended with 1884 :—

SELECTORS AND LAND SELECTED,* 1870 TO 1884.

Year.	Number of Approved Applications (Selectors).	Number of Acres Selected.
1870	3,017	320,719
1871	4,575	477,685
1872	7,771	780,819
1873	6,689	1,041,779
1874	9,578	1,809,668
1875	6,320	1,171,849
1876	5,785	1,029,141
1877	6,240	1,113,266
1878	7,524	1,389,955
1879	5,801	1,018,454
1880	4,103	736,210
1881	3,152	570,428
1882	4,434	837,205
1883	4,511	825,477
1884	3,989	717,526

762. Of land which had been selected with right of purchase in former years, as much as 107,646 acres was abandoned or forfeited to the Crown for non-fulfilment of conditions during the year 1884, resulting in a gain to the Treasury of £5,887. Selected land forfeited, 1884.

763. The following table shows the number of runs and grazing rights, also the extent of land included therein and amount of rent paid, in existence in 1884, under the Land Act 1869† :— Runs and grazing rights, 1884.

SQUATTING RUNS AND GRAZING RIGHTS, 1884.

Description of Tenure.	Number of Licences.	Extent of Crown Lands.	Amount of Rent received
		Acres.	£
Squatting runs	422	8,081,648	30,682
Grazing rights	836	6,939,932	14,499
Total	1,258	15,021,580	45,181

* Not including selectors of residence sites under section 49 of Land Act 1869 and section 10 of Land Act 1878, the number of whom in 1884 was 1,013, and the area selected 16,566 acres.

† See paragraph 741 *ante*.

Average area of runs and grazing rights.

764. By these figures it may be ascertained that the average extent of land embraced in a squatting run was 19,150 acres, and in a grazing right 8,301 acres. These areas are exclusive of those of any purchased land attached thereto.

Rent of runs and grazing rights.

765. According to the amounts received, the average rent per acre of runs was ·914d., and of grazing rights—the land subject to which is generally of an inferior character to that embraced in runs—·501d.

Mallee pastoral leases.

766. The number of lessees of Mallee blocks and allotments under the Mallee Pastoral Leases Act 1883,* the area of such divisions, and the annual rental payable therefor, are shown in the following table :—

MALLEE PASTORAL LEASES ON 30TH JUNE, 1885.

Description of Leasehold.	Number of Lessees.	Area.	Annual Rental.
		Square miles.	£
Mallee blocks	64	13,285	1,599
„ allotments	526	2,433	3,101
Total	590	15,718	4,700

Average rental of Mallee country.

767. According to these figures, the average rental per square mile payable for the Mallee country is 6s., or 2s. 5d. for the Mallee blocks and £1 5s. 6d. for the Mallee allotments.

Land revenue.

768. 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 realized 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 licences, 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, licences, &c. In 1884, as compared with 1883, there was a decrease in the receipts from temporary occupation, but an increase under the other heads. The net increase amounted to £70,225, as will be seen by the following figures :—

LAND REVENUE, 1883 AND 1884.

Heads of Land Revenue.	Amounts Received.		Increase.	Decrease.
	1883.	1884.		
	£	£	£	£
Alienation in fee-simple and progressive	558,227	629,262	71,035	..
Temporary occupation	75,784	70,900	...	4,884
Penalties, fees, interest, &c. ...	30,315	34,389	4,074	...
Total	664,326	734,551	70,225†	...

* See paragraphs 742 to 744 *ante*.

† Net figures.

769. The agricultural statistics of Victoria are collected by the municipal bodies, which, under the Local Government Act 1874 (38 Vict. No. 506), and the Local Government Act Amendment Act 1883 (47 Vict. No. 786), are required each year to furnish to the Government Statist, on or before the 1st March, 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 £10. Collectors divulging or making extracts from the information they receive, except under the special direction or authority of the Government Statist, also render themselves liable to a penalty of £10. Agricultural statistics.

770. In assigning the duty of collecting statistics to the local bodies, the law did not provide that they should receive any payment therefor; and thus, although under that provision of the Act whereby the Governor in Council had power to prescribe the manner as well as the form of the statistics, elaborate instructions for the guidance of the persons employed had each year been supplied them, the Government had practically but little control over the work, and hence many of the returns were not sent in until long after the appointed time, and some were generally furnished in anything but a satisfactory condition. This being the case, it was decided by the Government—for the first time in 1883–4—to offer bonuses, ranging, according to the nature of the country, from £6 to £3 per 100 schedules collected, to such municipalities as should furnish authentic and complete returns punctually at the appointed time —the amount to be reduced one-half if the returns were delayed for a week, three-quarters if they were delayed for a fortnight, and forfeited altogether if a fortnight should be exceeded. These bonuses have now been given for two years with excellent effect, as the measures taken have resulted in the statistics being sent in at such a date that it has become possible to publish nearly complete returns about the 12th March, or fully two months earlier than such a result had been achieved in previous years. Bonuses for collecting statistics.

771. The agricultural statistics to which reference will now be made are those for the year ended 1st March, 1885.* Tables embodying the general results of these statistics will be found in the *Government Gazette* of the 2nd April last, and these, with additional tables, form portion of the *Statistical Register of Victoria.* Agricultural statistics, 1883–4.

* 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).

Number of cultivators.

772. The total number of farm holdings visited was 38,139, of which 36,787 were in shires, 1,094 in cities, towns, or boroughs, and 258 in places outside of local jurisdiction. In the previous year the number of farms visited was 37,146, the increase being thus 993.

Land under tillage.

773. The extent of land returned as under cultivation amounted to 2,323,493 acres, as against 2,215,923 acres in 1883–4. The increase shown by the figures was, therefore, 107,570 acres.

Area cultivated per head of population.

774. The average area in cultivation to each person in the colony was nearly 2½ acres in the year under review as against 2 acres five years previously, and 1¼ acre 10 years previously. The exact amounts at the three periods were as follow :—

AVERAGE AREA CULTIVATED TO EACH PERSON IN THE COLONY.

	Acres.
1874–5	1·29
1879–80	2·01
1884–5	2·42

Area cultivated per head in Australasian colonies.

775. The following table shows the area per head cultivated in each Australasian colony during the nine seasons ended with that of 1883–4, also the mean of those seasons, the colonies being placed in order according to the average extent of land per head that each cultivates :—

CULTIVATION PER HEAD IN AUSTRALASIAN COLONIES, 1876 TO 1884.*

Colony.	Acres under Tillage per Head of Population.									
	1875–6	1876–7	1877–8	1878–9	1879–80.	1880–81.	1881–2	1882–3	1883–4	Mean.
1. S. Australia ...	6·86	6·71	7·72	8·09	8·75	9·62	8·91	8·08	9·05	8·20
2. Tasmania ...	3·21	3·15	3·26	3·23	3·26	3·25	3·15	3·08	3·12	3·18
3. New Zealand	1·62	1·97	2·30	2·62	2·67	2·12	2·63	2·68	2·61	2·36
4. W. Australia	1·78	1·68	1·82	1·81	2·28	2·20	1·78	1·84	1·94	1·91
5. Victoria ...	1·42	1·54	1·74	1·95	2·01	2·32	2·06	2·25	2·38	1·96
6. N. S. Wales ...	·74	·82	·83	·88	·90	·96	·83	·90	·91	·86
7. Queensland ...	·43	·46	·52	·56	·49	·53	·56	·64	·58	·52

Results in different colonies compared.

776. 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; also that in only three of the colonies,

For the population and number of acres under tillage in each Australasian colony during the eleven years ended with 1884, see Summary of Australasian Statistics (third folding sheet) *ante;* also Appendix A *post.*

viz., Victoria, New Zealand, and Queensland, were the figures for the last year named in the table higher than those for any previous one.

Land under principal crops.

777. The principal crops grown in Victoria are wheat, oats, barley, potatoes, hay, and green forage. In 1884–5, as compared with 1883–4, a smaller area was placed under wheat, oats, and potatoes. The extent under wheat and oats, however, was larger than in any year except 1883–4. The extent under potatoes was exceeded in seven years besides 1883–4, viz., 1880–81, 1879–80, 1878–9, 1876–7, 1871–2, 1870–71, and 1869–70. The extent under hay was much larger than in any previous year. The extent under barley was exceeded in 1880–81, but in no other year; and the extent under green forage was exceeded only in the three years, 1878–9, 1877–8, and 1876–7. During the past nine years wheat was much more extensively cultivated than formerly. Prior to 1877, the extent under that crop never reached 400,000 acres, whereas in the last two years the area so cultivated has exceeded one million acres. The following table shows the extent of land under each of these crops in the last two seasons :—

LAND UNDER PRINCIPAL CROPS, 1884 AND 1885.

Year ended March.	Wheat.	Oats.	Barley.	Potatoes.	Hay.	Green Forage.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1884 ...	1,104,392	188,161	46,832	40,195	302,957	286,866
1885 ...	1,096,354	187,710	62,273	38,763	339,725	332,859
Increase ...	...	...	15,441	...	36,768	45,993
Decrease...	8,038	451	...	1,432	...	...

Produce of principal crops.

778. The gross yield of wheat was less than that in 1883–4 by over 5 million bushels, or nearly a third. Next to the quantity raised in 1883–4, however, it was by far the largest quantity ever produced in Victoria in one year. The yield of oats was below that in 1883–4 by 325,000 bushels, but that of barley exceeded the yield in that year by 13,000 bushels, and was the largest crop of its kind ever raised in Victoria. Notwithstanding the smaller acreage under potatoes, the yield of that crop was slightly above that in 1883–4, and was exceeded in only one previous year, viz., 1879–80. The hay crop was less by 62,000 tons than that in 1883–4, but after that was the largest ever raised. The following is a statement of the gross produce of each of the principal crops in 1883–4 and 1884–5 :—

GROSS PRODUCE OF PRINCIPAL CROPS, 1884 AND 1885.

Year ended March.	Wheat.	Oats.	Barley.	Potatoes.	Hay.
	Bushels.	Bushels.	Bushels.	Tons.	Tons.
1884 ...	15,570,245	4,717,624	1,069,803	161,088	433,143
1885 ...	10,433,146	4,392,695	1,082,430	161,119	371,046
Increase ...	...	...	12,627	31	...
Decrease ...	5,137,099	324,929	...	...	62,097

Wheat-producing counties.

779. The following table shows, for each of the last six years, the produce of wheat in twelve counties which, for the most part, lie between the 36th and 37th parallels of latitude, and which are above all others the wheat-producing counties of Victoria :—

WHEAT RAISED IN TWELVE COUNTIES, 1880 TO 1885.

Counties.	Number of Bushels Produced.					
	1879–80.	1880–81.	1881–2.	1882–3.	1883–4.	1884–5
Bendigo ...	871,278	1,007,979	517,342	622,451	1,217,037	656,454
Bogong ...	305,951	268,210	294,470	434,907	392,357	334,198
Borung ...	1,509,759	1,542,000	1,503,604	1,291,678	3,334,101	2,230,323
Dalhousie ...	204,299	134,554	206,000	197,968	160,381	35,746
Delatite ...	265,478	176,934	236,936	277,824	224,562	208,371
Gladstone ...	700,925	723,419	385,181	556,931	1,074,658	752,311
Gunbower ..	321,230	697,569	230,952	215,129	852,930	272,280
Kara Kara	681,868	950,096	678,846	576,667	1,599,720	1,026,417
Lowan ...	284,407	406,090	540,539	613,278	1,189,488	1,388,431
Moira ...	1,671,507	1,655,322	1,865,846	1,805,153	2,797,046	2,063,628
Rodney ...	1,088,854	1,068,673	1,007,787	852,358	1,170,861	692,133
Talbot ...	397,621	302,987	377,893	368,480	333,154	172,514
Total	8,303,177	8,933,833	7,845,396	7,812,824	14,346,295	9,832,806

Yield of wheat in twelve counties.

780. In 1884–5, about sixteen-seventeenths of the wheat raised in Victoria was grown in these twelve counties, as against a proportion of about twelve-thirteenths in 1883–4, and about eight-ninths in the previous four years. In all the counties except Lowan the gross yield was considerably smaller in 1884–5 than in the previous year.

Yield of wheat in each county.

781. The average produce of wheat per acre in the various counties and in the whole colony in 1884–5 is compared in the following table with that in each of the five previous years. The counties are arranged according to the average yield in the past season, and the twelve counties just referred to are marked with asterisks :—

Average Produce of Wheat in each County, 1880 to 1885.

County.	Bushels of Wheat per Acre.†					
	1879–80.	1880–81.	1881–2.	1882–3.	1883–4.	1884–5.
Polwarth ...	25·07	3·27	18·02	23·30	21·53	25·45
Mornington ...	27·79	8·16	21·30	23·61	19·48	25·02
Villiers ...	26·20	11·73	26·15	27·30	22·45	23·71
Tambo ...	30·39	12·52	24·51	21·39	29·60	22·14
Heytesbury ...	24·14	13·16	21·97	24·80	19·35	20·97
Benambra ...	21·27	12·73	20·92	22·11	20·21	20·38
Buln Buln ...	20·87	9·23	22·34	25·33	20·78	20·27
Croajingolong ...	10·57	10·41	21·51	15·15	16·79	19·77
Tanjil ...	22·11	7·71	20·50	22·41	13·89	18·96
Grant ...	24·57	12·78	22·56	24·55	20·29	17·92
Bourke ...	23·74	12·05	20·65	20·86	18·35	17·48
Dargo ...	22·27	10·27	18·59	20·35	16·16	17·03
Normanby ...	19·37	8·14	16·81	18·09	14·90	16·07
Evelyn ...	21·86	8·26	20·16	19·96	17·27	15·80
*Dalhousie ...	20·89	9·75	21·58	23·22	17·01	15·58
*Talbot ...	15·95	10·07	16·53	18·35	16·81	15·45
Ripon ...	17·35	12·14	15·67	17·53	15·80	14·89
Follett ...	18·44	8·43	12·61	16·86	16·36	14·64
*Delatite ...	14·53	8·29	13·90	16·10	11·74	14·33
Hampden ...	18·54	9·31	21·02	21·37	16·99	13·91
*Bogong ...	13·63	9·92	13·49	16·47	13·72	13·82
Dundas ...	19·61	10·11	20·01	19·20	16·88	13·78
Grenville ...	18·52	8·40	16·71	19·61	16·36	13·43
Anglesey ...	19·97	9·49	17·99	19·42	12·55	12·96
Wonnangatta ...	16·85	4·69	18·80	19·99	11·98	11·23
*Lowan ...	13·75	10·01	10·65	9·00	11·76	11·09
*Moira ...	16·98	12·71	12·91	12·17	15·57	10·53
*Gladstone ...	12·55	9·68	5·56	8·29	14·47	9·97
*Bendigo ...	11·58	10·87	6·48	7·81	14·94	9·37
*Kara Kara ...	9·97	9·45	7·39	6·24	14·31	8·92
*Borung ...	10·98	7·92	7·00	5·66	13·75	8·75
*Rodney ...	15·09	12·34	12·68	10·51	13·09	8·75
Karkarooc ...	...	...	...	...	15·44	6·29
*Gunbower ...	7·67	9·29	4·16	3·24	12·74	4·19
Tatchera ...	10·76	5·85	2·37	3·08	12·28	4·01
Total ...	13·29	9·95	9·40	9·03	14·10	9·52

782. It will be noticed that, taking the colony as a whole, the acreable yield of wheat fell from 14 bushels in 1883–4 to 9½ bushels in 1884–5; it differed but slightly from the average of the previous three years, but was lower than that of 1879–80 by 3¾ bushels per acre. In Polwarth, Mornington, Villiers, Heytesbury, Benambra, Croajingolong, Tanjil, Dargo, Normanby, Delatite, Bogong, and Anglesey, the produce per acre was higher in the past than in the previous season, but in the other 23 counties it was lower. Acreable yield of wheat, 1884 and 1885.

* The principal wheat-producing counties are marked with asterisks.

† In the three years, 1880–81 to 1882–3, the crops were much affected by drought.

Average yields in twelve counties.

783. It will also be noticed that if Karkarooc and Tatchera, in which the extent of land suitable for wheat cultivation is but small, be omitted, eight of the "wheat-producing counties" were in 1884–5 at the bottom of the list in point of average yield, and were the counties in which—whilst, in consequence of the large area placed under wheat, the gross yield was greatest—the yield per acre was least. Talbot and Dalhousie, which stood much higher than the other "wheat-producing counties" in point of average yield, are situated to the south of the others, and thus partially escaped the influences which affected the crops all over the northern portion of the colony. These influences appear also to have been escaped by Delatite and Bogong, which lie to the eastward of the other "wheat-producing counties."

Small gross yield of wheat in some counties.

784. It should be mentioned that in several of the counties in which the average yield of wheat is high a very small quantity is grown, which is probably raised on a patch of choice land, and does not afford an indication of the general productiveness of the county. Thus, in 1884–5, less than 1,000 bushels of wheat were grown in Polwarth, which was at the head of the list with 25½ bushels to the acre; only about 1,200 bushels in Mornington, which stood second; only 2,000 bushels in Tambo, which stood fourth; only 1,200 bushels in Croajingolong; and only 800 bushels in Evelyn. All these counties occupied prominent positions on the list.

Yield of other principal crops in each county.

785. The average produce per acre of oats, barley, potatoes, and hay in each county during the last two seasons is given in the following table:—

AVERAGE PRODUCE OF OATS, BARLEY, POTATOES, AND HAY IN EACH COUNTY, 1883–4 AND 1884–5.

Counties.	Average Produce to the Acre of—							
	Oats. (Bushels.)		Barley. (Bushels.)		Potatoes. (Tons.)		Hay. (Tons.)	
	1883–4.	1884–5.	1883–4.	1884–5.	1883–4.	1884–5.	1883–4.	1884–5.
Anglesey ...	22·80	28·07	12·34	19·47	3·11	3·18	1·54	1·44
Benambra ...	28·71	29·57	31·30	24·39	3·80	3·60	1·58	1·56
Bendigo ...	23·09	14·79	17·08	13·29	2·21	2·16	1·25	·69
Bogong ...	25·67	25·18	19·47	20·12	2·77	3·39	1·28	1·13
Borung ...	17·00	16·42	17·34	15·31	2·32	1·86	1·14	·65
Bourke ...	30·01	31·20	29·77	30·33	4·33	4·05	1·70	1·37
Buln Buln ...	29·16	30·88	26·89	31·80	4·47	5·00	2·03	2·16
Croajingolong	23·37	25·32	41·25	21·67	3·82	3·93	1·43	1·44
Dalhousie ...	26·30	29·66	25·49	23·69	2·78	2·64	1·59	1·69
Dargo ...	23·72	21·89	24·43	22·70	4·75	4·28	2·20	1·63
Delatite ...	20·19	25·93	17·94	22·94	2·21	2·61	1·31	1·31
Dundas ...	23·57	23·49	27·36	18·58	2·14	2·27	1·51	1·64
Evelyn ...	25·80	27·32	19·61	26·05	3·33	3·55	1·83	1·75

AVERAGE PRODUCE OF OATS, BARLEY, POTATOES, AND HAY IN EACH COUNTY, 1883–4 AND 1884–5—*continued.*

Counties.	Average Produce to the Acre of—							
	Oats. (Bushels.)		Barley. (Bushels.)		Potatoes. (Tons.)		Hay. (Tons.)	
	1883–4.	1884–5.	1883–4.	1884–5.	1883–4.	1884–5.	1883–4.	1884–5.
Follett ...	21·99	22·54	16·93	18·30	2·47	2·29	1·40	1·38
Gladstone ...	21·14	17·00	16·90	9·56	1·86	·69	1·15	·75
Grant ...	31·28	34·14	32·47	30·27	4·47	4·36	1·55	1·27
Grenville ...	24·43	25·39	20·19	24·69	3·23	3·03	1·65	1·49
Gunbower ...	22·92	5·44	15·80	5·08	...	1·00	1·07	·33
Hampden ...	31·40	24·76	31·96	25·41	4·59	6·05	1·89	1·84
Heytesbury ...	26·33	27·18	30·72	26·70	3·64	3·85	1·97	2·10
Kara Kara ...	21·54	16·49	20·55	12·89	2·29	1·99	1·17	·74
Karkarooc ...	20·00	7·31	32·00	21·20	...	...	1·24	·46
Lowan ...	16·86	17·25	14·40	14·92	2·27	2·31	1·02	·89
Moira ...	22·94	14·93	20·38	14·32	1·06	1·54	1·27	·68
Mornington ...	28·27	27·95	25·20	28·69	3·75	4·54	1·62	2·00
Normanby ...	22·32	21·71	19·63	20·84	3·08	3·75	1·63	1·68
Polwarth ...	27·62	32·73	29·06	41·28	3·95	4·91	2·06	2·30
Ripon ...	25·42	26·22	26·41	28·36	2·43	2·43	2·07	1·77
Rodney ...	19·72	10·64	17·45	13·31	4·67	3·46	1·03	·52
Talbot ...	29·62	30·13	29·78	24·50	3·39	3·09	1·70	1·64
Tambo ...	27·16	30·87	30·00	21·43	4·54	4·04	2·12	2·10
Tanjil ...	28·25	25·50	27·16	30·02	3·63	3·03	1·89	1·57
Tatchera ...	18·06	17·28	14·02	6·30	...	...	1·04	·26
Villiers ...	26·91	25·20	41·92	24·74	4·71	5·43	2·20	2·41
Wonnangatta	20·22	24·19	30·00	12·00	3·74	3·50	1·38	1·48
Total ...	25·07	23·40	22·84	17·38	4·01	4·16	1·43	1·09

Yield of oats, barley, potatoes, and hay, 1884–5.

786. It will be noticed that in the year ended 1st March, 1885, the highest acreable yield of oats, omitting Tambo, where only a small quantity was grown, was in Grant, Polwarth, Bourke, and Talbot, in the order named; that the average yield of barley was highest in Polwarth (where, however, only 103 acres were grown), then in Buln Buln, Bourke, and Grant; that potatoes yielded the largest crop per acre in Hampden, in which county it was 6 tons; next in Villiers, the principal potato-growing county, where it was $5\frac{1}{2}$ tons; and next in Buln Buln, where it was 5 tons; also that 4 tons per acre was exceeded in Polwarth, Mornington, Grant, Dargo, Bourke, and Tambo; that the highest yields of hay were in Villiers, Polwarth, Buln Buln, Heytesbury, Tambo, and Mornington—those being the only counties in which this crop averaged as much as 2 tons to the acre.

Yield of principal crops in past two seasons

787. Comparing the averages of 1884–5 with those of the previous season, an increase is observed in the yield per acre of all the crops in Polwarth and Buln Buln; of oats, barley, and potatoes in Anglesey, Delatite, Evelyn, and Lowan; of barley, potatoes, and hay in Normanby

and Mornington; of oats and barley in Bourke, Follett, Grenville, and Ripon; of barley and potatoes in Bogong; of potatoes and hay in Croajingolong, Dundas, Heytesbury, and Villiers; of oats and hay in Dalhousie, Wonnangatta, and Villiers; of oats in Benambra, Grant, Talbot, and Tambo; of barley in Tanjil; and of potatoes in Hampden and Moira. In all other cases the average yields were below those in 1883–4, especially in the counties of Bendigo, Borung, Gladstone, Gunbower, Kara Kara, Karkarooc, Rodney, and Tatchera, where all the crops show a diminished yield.

Yield of principal crops, 1872 to 1885.

788. In the past season, over the colony as a whole, the acreable yield of wheat, barley, and hay was below, and that of oats and potatoes above, the average; thus the yield per acre of wheat was lower than in any of the previous thirteen years except 1878–9, 1881–2, and 1882–3; that of barley was lower than in any except 1880–81 and 1882–3; and that of hay was lower than in any except 1882–3. On the other hand, the yield per acre of oats was higher than in any of the years except 1879–80, 1881–2, 1882–3, and 1883–4; and that of potatoes was the highest in the fourteen years. This will be seen by the following table, which shows the yield per acre of those five crops during each of those years, also the average during the whole period:—

AVERAGE PRODUCE OF PRINCIPAL CROPS, 1872 TO 1885.

Year ended March.	Average Produce per Acre of—				
	Wheat.	Oats.	Barley.	Potatoes.	Hay.
	Bushels.	Bushels.	Bushels.	Tons.	Tons.
1872	13·45	18·76	20·00	3·22	1·40
1873	16·51	19·55	20·86	3·45	1·32
1874	13·58	15·69	19·84	2·86	1·27
1875	14·57	18·46	21·01	3·53	1·32
1876	15·49	21·92	22·20	3·37	1·33
1877	13·15	19·91	21·18	3·31	1·22
1878	12·41	19·39	19·81	3·11	1·17
1879	8·76	17·60	18·24	2·71	1·21
1880	13·29	24·00	24·67	4·04	1·45
1881	9·95	17·62	15·57	2·81	1·20
1882	9·40	24·57	19·07	3·43	1·13
1883	9·03	26·17	17·35	3·78	1·06
1884	14·10	25·07	22·84	4·01	1·43
1885	9·52	23·40	17·38	4·16	1·09
Mean	12·37	20·86	20·00	3·41	1·26

Malting and other barley.

789. In 1884–5, for the first time, the statistics of malting barley were distinguished from those of other descriptions of the same cereal. The following is the result of this division:—

Malting and other Barley, 1884-5.

Description of Barley.	Area under Crop.	Gross Produce.	Average per acre.
	Acres.	Bushels.	Bushels.
Malting	52,293	855,489	16·36
Other	9,980	226,941	22·74
Total ...	62,273	1,082,430	17·38

790. Of the total area under barley, 84 per cent. was under malting barley, and of the produce of barley, 79 per cent. was of malting barley. It will be noticed that this description of barley is by far the less prolific of the two kinds, the average being only 16⅓ bushels to the acre, as against 22¾ bushels of the other barley.

Yield of malting smaller than of other barley.

791. In the following table the average yield of wheat, oats, barley, 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 twelve years ended with 1884 :—

Average produce in Australasian colonies.

Average Produce per Acre of the Principal Crops in Australasian Colonies, 1873 to 1884.

Year ended March.	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	New Zealand.
Wheat.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1873 ...	16·51	16·32	...	11·50	6·02	18·62	24·19
1874 ...	13·58	13·43	...	7·87	13·44	16·17	25·61
1875 ...	14·57	12·87	...	11·75	12·00	18·51	28·15
1876 ...	15·49	14·66	...	11·95	11·00	16·38	31·54
1877 ...	13·15	16·43	...	5·40	12·00	19·30	28·63
1878 ...	12·41	13·84	10·63	7·76	11·00	18·12	26·03
1879 ...	8·76	14·74	13·56	7·15	9·97	16·10	22·94
1880 ...	13·29	15·48	8·11	9·78	14·94	23·22	28·16
1881 ...	9·95	14·69	20·40	4·96	14·94	14·99	25·07
1882 ...	9·40	15·35	8·41	4·57	7·00	18·88	22·69
1883 ...	9·03	16·35	13·89	4·21	11·00	20·27	26·28
1884 ...	14·10	15·00	4·34	7·94	13·00	17·74	26·02
Mean ...	12·52	14·93	11·33	7·90	11·36	18·19	26·28
Oats.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1873 ...	19·55	19·94	...	16·39	13·24	25·85	27·00
1874 ...	15·69	18·71	...	10·61	19·22	20·98	29·81
1875 ...	18·46	16·31	...	14·61	16·00	26·82	35·22
1876 ...	21·92	18·72	...	16·69	15·00	25·40	37·79
1877 ...	19·91	21·16	...	10·65	15·00	24·21	31·24
1878 ...	19·39	19·31	10·11	11·96	14·00	22·32	31·68
1879 ...	17·60	20·24	9·65	12·01	18·02	24·82	30·11
1880 ...	24·00	21·64	24·74	15·02	19·00	28·61	36·53
1881 ...	17·62	19·87	17·94	11·50	19·00	22·13	32·05
1882 ...	24·57	21·81	12·74	10·66	10·00	28·44	28·45
1883 ...	26·17	24·88	16·58	11·13	15·00	27·34	32·89
1884 ...	25·07	21·15	8·90	14·65	17·00	27·39	35·11
Mean ...	20·83	20·31	14·38	12·99	15·87	25·36	32·32

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

Average Produce per Acre of the Principal Crops in Australasian Colonies, 1873 to 1884—*continued.*

Year ended March.	Victoria.	New South Wales.	Queensland.	South Australia.	Western Australia.	Tasmania.	New Zealand.
Barley.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1873 ...	20·86	18·96	...	14·31	14·00	22·44	21·25
1874 ...	19·84	18·61	...	10·69	17·22	19·33	27·41
1875 ...	21·01	17·33	...	15·18	16·00	24·46	29·39
1876 ...	22·20	20·46	...	14·12	14·00	27·84	35·91
1877 ...	21·18	23·69	...	10·64	15·00	23·58	28·95
1878 ...	19·81	19·68	16·86	11·97	13·00	20·28	25·40
1879 ...	18·24	21·47	15·87	11·82	12·23	24·22	24·77
1880 ...	24·67	21·46	24·68	13·38	18·00	27·91	30·47
1881 ...	15·57	20·35	20·97	11·62	18·00	20·39	26·05
1882 ...	19·07	21·04	12·53	11·47	10·00	22·29	22·28
1883 ...	17·35	20·55	17·82	11·03	14·00	27·79	26·19
1884 ...	22·84	20·96	13·24	14·01	16·00	25·57	29·31
Mean ...	20·22	20·38	17·42	12·52	14·79	23·84	27·28
Potatoes.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1873 ...	3·45	2·98	...	3·28	2·34	3·92	4·92
1874 ...	2·86	2·98	...	3·41	2·67	3·16	4·46
1875 ...	3·53	2·83	...	3·72	3·00	3·75	5·24
1876 ...	3·37	2·98	...	4·52	3·00	3·54	4·89
1877 ...	3·31	3·03	...	2·84	3·00	3·43	5·36
1878 ...	3·11	2·52	1·91	2·51	2·00	3·25	5·38
1879 ...	2·71	3·20	2·33	2·67	2·49	3·37	4·98
1880 ...	4·04	3·23	3·03	3·80	3·50	3·18	5·62
1881 ...	2·81	2·73	2·65	2·89	3·50	3·12	4·94
1882 ...	3·43	2·78	2·36	2·96	2·00	3·47	5·41
1883 ...	3·78	3·00	2·90	3·05	2·50	3·88	5·10
1884 ...	4·01	2·47	2·60	4·22	3·00	3·59	5·36
Mean ...	3·37	2·89	2·54	3·32	2·75	3·47	5·14
Hay.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1873 ...	1·32	1·61	...	1·21	1·51	1·39	1·25
1874 ...	1·27	1·54	...	1·02	2·00	1·08	1·43
1875 ...	1·32	1·37	...	1·26	1·50	1·35	·84
1876 ...	1·33	1·15	...	1·21	1·00	1·42	1·46
1877 ...	1·22	1·43	...	1·95	1·00	1·21	1·31
1878 ...	1·17	1·22	1·30	1·13	1·00	1·13	1·30
1879 ...	1·21	1·66	1·33	·97	1·00	1·19	1·22
1880 ...	1·45	1·45	1·96	1·12	1·25	1·52	1·51
1881 ...	1·20	1·33	1·95	·96	1·25	1·13	1·27
1882 ...	1·13	1·35	1·16	·72	·75	1·29	1·30
1883 ...	1·06	1·35	1·67	·75	1·00	1·30	1·24
1884 ...	1·43	1·28	1·39	1·06	1·00	1·29	1·39
Mean ...	1·26	1·39	1·54	1·11	1·19	1·27	1·29

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 twelve years ended with 1884–5, see Summary of Australasian Statistics (third folding sheet) *ante*.

Colonies with highest and lowest average yields.

792. It will be observed that, according to the mean of the whole period, the average produce of wheat, oats, barley, and potatoes is much the highest in New Zealand, and that of hay is highest in

Queensland. The lowest yield of wheat, oats, barley, and hay is in South Australia; and the yield of potatoes is lowest in Queensland. Victoria stands third in regard to the average per acre of oats, and fourth in regard to barley and wheat.

793. It will further be noticed that in the latest year respecting which the table affords information the average produce of all the crops in Victoria was above the mean of the eleven years to which reference is made; which was also the case in respect to all the crops except hay in South Australia and Western Australia, as well as all the crops except wheat in Tasmania and New Zealand, and all the crops except potatoes and hay in New South Wales; but in Queensland the average produce of all the crops except potatoes was below the mean of the last seven years.

Average produce 1883-4 and previous years compared.

794. The next table shows the acreage under wheat, oats, barley, rye, and potatoes in the United Kingdom, the Cape of Good Hope, in the principal countries on the continent of Europe, and in the United States of America. All the information has been taken from official documents:—

Land under crop in British and Foreign countries.

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.	Rye.	Potatoes.
The United Kingdom...	1884	2,751,	4,277,	2,346,	54,	1,374,
Cape of Good Hope ...	1875	188,	115,	29,	...	9,
Austria	1883	2,611,	4,429,	2,543,	4,703,	2,578,
Belgium	1866	700,	567,	108,	714,	423,
Denmark	1881	127,	911,	718,	607,	101,
France	1883	16,805,*	9,211,	2,632,	4,248,	3,432,
Germany	1882	4,499,	9,248,	4,032,	14,640,	6,831,
Holland	„	229,	287,	114,	500,	347,
Hungary	1883	6,435,	2,452,	2,401,	2,714,	973,
Italy	1876–80	11,700,	939,	1,180,	...	169,
Norway	1875	11,	224,	138,	37,	86,
Russia in Europe ...	1881	26,401,	31,339,	10,789,	58,232,	3,173,
Sweden	1882	...	2,491,†	...	1,100,‡	383,
United States ...	1883	36,455,	20,325,	2,379,	2,215,	2,172,

795. The official returns of the various countries contain statements of produce, and these 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 British and Foreign countries.

* Including spelt (*Triticum spelta*). † Including barley and mixed corn. ‡ Including wheat.

GROSS PRODUCE OF CERTAIN CROPS IN THE UNITED KINGDOM, THE CAPE COLONY, AND FOREIGN COUNTRIES (000's OMITTED).

Country.	Year.	Number of Bushels * raised of—				
		Wheat.	Oats.	Barley.	Rye.	Potatoes.
The United Kingdom †	1884	82,530	160,473,	79,764,	...	277,850,
Cape of Good Hope ...	1875	1,688,	918,	448,	...	372,
Austria	1883	36,978,	92,601,	44,973,	65,802,	280,551,
Belgium	1866	14,203,	23,364,	3,666,	17,562,	67,737,
Denmark	1882	4,384,	33,223,	22,923,	16,133,	7,871,
France	1883	285,322,	256,753,	56,998,	68,317,	398,113,
Germany	1882	93,804,	248,410,	99,467,	251,526,	711,208,
Holland	,,	5,272,	12,743,	4,526,	10,861,	45,132,
Hungary	1883	87,749,	49,580,	38,084,	38,874,	170,048,
Italy	1876–81	139,971,	18,455,	17,709,	...	27,722,
Norway	1875	276,	8,896,	4,285,	1,016,	19,591,
Russia in Europe ...	1883	101,102,	257,367,	59,607,	247,354,	117,133,
Sweden	,,	2,988,	52,348,	14,729,	18,324,	51,123,
United States ...	,,	408,220,	553,846,	48,604,	27,200,	165,748,

Average yield of wheat in United Kingdom.

796. No official return is made of the produce of crops in the United Kingdom, and until 1884 no such return was made for England and Wales.† Estimates more or less reliable have frequently been made by private persons, especially of the wheat yield. The London *Statist's* Annual Supplement of the 31st January, 1885, gives a statement originally taken from *The Times*, and evidently prepared with great care, of the assumed yield per acre of this crop in the nineteen years ended with 1884, with the following result:—

AVERAGE PRODUCE PER ACRE OF WHEAT IN THE UNITED KINGDOM, 1866 TO 1884.

	Bushels per acre.		Bushels per acre.
1866	27	1876	27
1867	25	1877	22
1868	34	1878	30
1869	27	1879	18
1870	32	1880	26
1871	27	1881	27
1872	23	1882	28
1873	25	1883	26
1874	31	1884	30
1875	23		

* The produce was originally given in Imperial bushels, except in the case of the United States, in which it was quoted in Winchester bushels. These have been converted into Imperial bushels upon the assumption that a Winchester bushel is equivalent to ·969,447 of an Imperial bushel. For the standard weight of cereals per Imperial bushel see paragraph 833 *post*. An Imperial bushel of potatoes weighs about 56 lbs.

† The produce of crops in England and Wales is given in the Imperial returns, but not in the United Kingdom as a whole. The figures in this line have therefore been obtained by means of a calculation based upon the assumption that the average per acre of the respective crops in the United Kingdom would be identical with that in England and Wales.

797. The average produce in the 19 years was 26⅓ bushels per acre, which is much above the yield in any of the Australasian colonies except New Zealand. The yield in 1884 (30 bushels to the acre) was, it will be observed, exceeded in only three previous seasons. Wheat yield in United Kingdom and colonies compared.

798. The average produce per acre in the countries named in a previous table has been calculated in the office of the Government Statist, Melbourne, and is given in the following table :— Average yield of crops in British and Foreign countries.

AVERAGE PRODUCE PER ACRE OF CERTAIN CROPS IN ENGLAND, THE CAPE COLONY, AND FOREIGN COUNTRIES.

Country.	Year.	Bushels* per Acre of—				
		Wheat.	Oats.	Barley.	Rye.	Potatoes.
England and Wales ...	1884	29·8	40·9	34·1	...	274·8
Cape of Good Hope ...	1875	9·0	8·1	15·4	...	41·2
Austria	1883	14·2	20·9	17·7	14·0	108·8
Belgium	1882	25·4	42·4	37·3	25·2	115·0
Denmark	1881	34·5	36·5	31·9	26·6	77·9
France	1883	17·0	27·9	21·7	16·1	116·0
Germany	1882	20·8	26·9	24·7	17·2	104·1
Holland	„	23·0	44·4	39·7	21·7	130·0
Hungary	1883	13·6	20·2	15·8	14·3	174·7
Italy	1876–81	11·9	18·6	15·0	...	164·0
Norway	1875	25·1	39·7	31·0	27·5	227·8
Russia in Europe ...	1883	3·8	8·2	5·5	4·2	36·9
United States ...	„	11·2	27·2	20·4	12·3	76·3

799. It will be observed that the acreable yield of wheat in the year named was 34 bushels in Denmark, 30 bushels in England and Wales, 25 bushels in Norway and Belgium, about 21 bushels in Germany, 17 bushels in France, and 14 bushels in Austria and Hungary, all of which were above the average of Victoria; but the wheat yields of Italy, the United States, the Cape of Good Hope, and European Russia were below the average of this colony.† Yield of wheat in Foreign countries and Victoria.

800. According to the figures, the average yield of oats in Victoria† is about the same as in Austria and Hungary, is higher than in the Cape of Good Hope, Italy, or European Russia, but lower than in any other of the countries named; the yield of barley is about the same as in the United States, higher than in the Cape of Good Hope, Austria, Hungary, Italy, or European Russia, but below that in the other countries. Assuming a bushel of potatoes to weigh 56 lbs., the yield in Victoria would appear to be above that in any of the countries named except England and Wales, Hungary, Italy, and Norway. Yield of oats, barley, and potatoes in Foreign countries and Victoria.

* See footnote (=) to table following paragraph 795 *ante*.

† See table following paragraph 788 *ante*.

Grain crops of the world.

801. The following information respecting the grain crops of the world has been taken from *Mulhall's Dictionary of Statistics*.* The year to which the figures relate is not stated :—

GRAIN CROPS OF THE WORLD.

Nature of Crop.	000,000's omitted.			Produce per Acre.
	Land under Crop.	Produce Raised.		
		Quantity.	Value.	
	acres.	bushels.	£	bushels.
Wheat	154,	2,076,	540,	13
Oats	86,	1,794,	205,	21
Barley	47,	819,	133,	17
Rye	115,	1,408,	232,	12
Maize, &c.	103,	2,300,	236,	22
Total ...	505,	8,397,	1,346,	17

Government Experimental Farm.

802. In order to carry out experiments, devised for the purpose of ascertaining the suitability of the Victorian climate and soil for various kinds of useful products, and of obtaining data respecting the rotation of crops, as well as for the instruction of students in agriculture, a block of 4,806 acres, subsequently increased by 40 acres, was reserved in 1874 at Dookie, situated in Moira, a county in the North-eastern district of Victoria, on which to found a Government Experimental Farm ; but it was not until April, 1877, that the fencing-in of the land was commenced, after which, in May, 1878, a tender for grubbing, burning-off, and ploughing was accepted. The existence of the farm, however, really dates from November, 1878, when a manager was appointed, and live stock was placed on the land, and in the following April the first crop of wheat was sown on about 40 acres, which was harvested in due course in the December and January following—producing an average of 40 bushels per acre. Besides this, 20 acres were laid out with experimental crops, and a further area was placed under green stuff. By April, 1881, 430 acres had been grubbed and cleared, of which 250 acres had been broken up under the plough, and about 30 acres had been planted with vines, olives, oranges, citrons, limes, figs, and other fruit trees ; whilst the experimental grounds already alluded to had been divided into plots of one-tenth of an acre each, on which a series of experiments in rotation cropping, various systems of manuring, &c., had been commenced. The following account of the present state of

* See page 223 of that work; London, Routledge and Sons, 1884.

the farm has been furnished for this work by Mr. D. Martin, Secretary for Agriculture;—

"During the financial year 1884-5, the receipts from the sale of produce, &c., were £1,695 16s. 5d., and the expenditure, exclusive of manager's salary (£250), was £927 9s. 7d., leaving a balance in favour of receipts of £768 6s. 10d.

"The revenue has been made up as follows:—

Sales of stock	£747	9	2
„ wool	238	9	5
„ grain and sundries	436	6	4
„ wine and grapes	65	7	6
Maintenance of boys	208	4	0
	£1,695	16	5

"The live stock at present comprises:—

22 horses ... ... estimated value	£670	10	0
30 short-horned cattle ... ... „	729	0	0
12 Hereford „ ... ... „	55	0	0
93 breeding cattle and milch cows „	373	10	0
2,786 sheep ... ... „	1,086	15	0
11 pigs ... ... „	42	10	0
	£2,957	5	0

"Additional improvements effected during the year:—

410 acres cleared of dead timber	£302	10	0
Wine cellar	80	0	0
	£382	10	0

"New implements purchased:—

One grist mill	£12	10	0
Two subsoilers	10	0	0
Two wine-vats	13	0	0
	£35	10	0

"The grain crops consisted of wheat, barley, oats, also hay, as follows:—

			Average per acre.
Wheat ...	137½ acres ...	563 bags ...	17 bushels.
Barley ...	20 „ ...	125 „ ...	25 „
Oats ...	23½ „ ...	329 bushels ...	14 „
Hay ...	19 „ ...	38 tons ...	2 tons.

"In the crops on the old and new ground a great difference existed, owing to the dry season. On the new ground the returns were as high as 33 bushels per acre, and as low as 10 bushels on the old ground, thus showing that crops on new ground will mature with less rain than on old ground and yield three times greater quantity of grain.

"Experiments have been made in the cultivation of twenty-eight varieties of wheat, with the result that the best returns (43 bushels per acre) were obtained from what is known as Port McDonnell wheat. Further experiments in wheat cultivation are now being carried on.

"Several varieties of sorghum have been tried, the result showing that the rainfall was insufficient.

"Several varieties of grass were sown, but the only one which has proved suitable for the locality is the Johnson grass (*sorghum halapense*), obtained by Mr. Dow, M.P., in America. It kept perfectly green when all other grasses perished from heat.

"Three acres of sugar beet have been cultivated, with moderate success. Better results from similar seed have been obtained in moister districts.

"Arrowroot has been tried, with fair results.

"The grape crop for the past season was a light one. The wine made, when racked, will not exceed 100 gallons.

"The crushing of olive berries for oil is not yet completed. It is estimated that 20 gallons of oil of good quality will be obtained.

"Originally students were received at the Farm, but these left after a trial of two years; and it was then decided to educate to farming pursuits boys to be selected from the inmates of the Industrial Schools, who, it was judged, would, in consequence of this training, be enabled to obtain situations in the country the more readily. The suggestion being adopted, sixteen boys were chosen and regularly employed on the Farm. Up to the present time, eighteen boys have received a training extending from twelve to eighteen months, and been hired out at wages, as a rule, commencing at seven shillings per week, with rations and quarters. One-half of their wages is allowed for clothing, &c., and the remainder is placed to their credit in the Post Office Savings Bank, so that when they are thrown on their own resources they may have a small capital to start with.

"During the year the boys have done a quantity of useful work on the Farm, such as clearing and burning dead timber. The Farm manager has estimated their labour in this respect, in improving the property, at £302 10s.

"The Agricultural Colleges Act 1884 provides for the Farm being vested in trustees to be appointed by the Governor in Council, and for all moneys received from the sale of stock or produce to be paid into the Agricultural College Fund."

Breadstuffs available for consumption.

803. The following table shows, for 1840 and each subsequent year, the quantity of wheat grown in Victoria, and the quantity of wheat, flour, bread, and biscuit imported after deducting exports, or exported after deducting imports, also the residue of breadstuffs left for consumption during each of those years :—

BREADSTUFFS AVAILABLE FOR CONSUMPTION, 1840 TO 1884.

Year.	Wheat grown in Victoria.	Wheat, Flour, Bread, and Biscuit.*		
		Imported after deducting Exports.	Exported after deducting Imports.	Available for Consumption.
	bushels.	bushels.	bushels.	bushels.
1840	12,600	57,771	...	70,371
1841	50,420	116,350	...	166,770
1842	47,840	119,004	...	166,844
1843	55,360	58,616	...	113,976
1844	104,040	98,581	...	202,621
1845	138,436	74,699	...	213;135
1846	234,734	43,928	...	278,662
1847	345,946	36,871	...	382,817
1848	349,730	64,726	...	414,456
1849	410,220	76,092	...	486,312
1850	525,190	55,564	...	580,754
1851	556,167	216,811	...	772,978
1852	733,321	1,208,006	...	1,941,327
1853	498,704	1,499,994	...	1,998,698
1854	154,202	1,385,465	...	1,539,667
1855	250,091	1,985,496	...	2,235,587
1856	1,148,011	2,236,406	...	3,384,417
1857	1,858,756	1,958,905	...	3,817,661

* 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.

BREADSTUFFS AVAILABLE FOR CONSUMPTION, 1840 TO 1884—*continued.*

Year.	Wheat grown in Victoria.	Wheat, Flour, Bread, and Biscuit.*		
		Imported after deducting Exports.	Exported after deducting Imports.	Available for Consumption.
	bushels.	bushels.	bushels.	bushels.
1858	1,808,439	1,504,760	...	3,313,199
1859	1,563,113	1,957,610	...	3,520,723
1860	2,296,157	1,565,423	...	3,861,580
1861	3,459,914	1,522,517	...	4,982,431
1862	3,607,727	183,106	...	3,790,833
1863	3,008,487	191,107	...	3,199,594
1864	1,338,762	1,868,990	...	3,207,752
1865	1,899,378	1,800,932	...	3,700,310
1866	3,514,227	1,754,699	...	5,268,926
1867	4,641,205	15,190	...	4,656,395
1868	3,411,663	162,038	...	3,573,701
1869	4,229,228	719,589	...	4,948,817
1870	5,697,056	...	95,654	5,601,402
1871	2,870,409	1,179,583	...	4,049,992
1872	4,500,795	389,963	...	4,890,758
1873	5,391,104	...	138,088	5,253,016
1874	4,752,289	...	40,714	4,711,575
1875	4,850,165	200,369	...	5,050,534
1876	4,978,914	258,931	...	5,237,845
1877	5,279,730	...	384,118	4,895,612
1878	7,018,257	...	1,005,968	6,012,289
1879	6,060,737	...	957,384	5,103,353
1880	9,398,858	...	3,578,733	5,820,125
1881	9,727,369	...	3,892,974	5,834,395
1882	8,714,377	...	3,321,532	5,392,845
1883	8,751,454	...	2,376,530	6,374,924
1884	15,570,245	...	8,232,605	7,337,640

Population and breadstuffs.

804. It will be observed that only in the last eight years and three previous ones, viz., 1870, 1873, and 1874, has the colony raised enough breadstuffs for the consumption of its own inhabitants. In each of these eleven years there was a surplus of Victorian-grown wheat remaining for export, the quantity in 1884, however, being larger than that in any two of the previous years. The following table shows, for each year, the mean population of Victoria, the quantity of breadstuffs available for consumption, and the probable manner of consumption, distinguishing the estimated quantity of wheat used for seed, or for the feeding of live stock, poultry, &c., from the wheat, flour, bread, and biscuit used for food, the total quantity of the latter being shown as well as the quantity per head:—

* See footnote to preceding page.

Population and Breadstuffs, 1840–1884.

Year.	Mean Population.	Wheat, Flour, Bread, and Biscuit.*			
		Quantity Available for Consumption.	Probable Manner of Consumption.		
			For Seed, &c.	For Food.	
				Total.	Per Head.
		bushels.	bushels.	bushels.	bushels.
1840 ...	8,056	70,371	3,880	66,491	8·25
1841 ...	15,353	166,770	3,404	163,366	10·64
1842 ...	22,107	166,844	4,864	161,980	7·33
1843 ...	23,951	113,976	9,348	104,628	4·37
1844 ...	25,418	202,621	13,839	188,782	7·43
1845 ...	29,007	213,135	22,933	190,202	6·56
1846 ...	34,807	278,662	31,604	247,058	7·10
1847 ...	40,635	382,817	35,359	347,458	8·55
1848 ...	47,163	414,456	38,775	375,681	7·97
1849 ...	58,805	486,312	48,494	437,818	7·45
1850 ...	71,191	580,754	57,020	523,734	7·36
1851 ...	86,825	772,978	59,247	713,731	8·22
1852 ...	132,905	1,941,327	33,646	1,907,681	14·35
1853 ...	195,378	1,998,698	15,107	1,983,591	10·15
1854 ...	267,371	1,539,667	25,654	1,514,013	5·66
1855 ...	338,315	2,235,587	85,372	2,150,215	6·36
1856 ...	380,942	3,384,417	160,310	3,224,107	8·46
1857 ...	430,347	3,817,661	174,460	3,643,201	8·47
1858 ...	483,827	3,313,199	156,468	3,156,731	6·52
1859 ...	517,390	3,520,723	214,185	3,306,538	6·39
1860 ...	534,055	3,861,580	322,503	3,539,077	6·62
1861 ...	539,824	4,982,431	393,844	4,588,587	8·50
1862 ...	548,080	3,790,833	324,018	3,466,815	6·33
1863 ...	562,960	3,199,594	298,784	2,900,810	5·15
1864 ...	586,450	3,207,752	250,080	2,957,672	5·04
1865 ...	611,218	3,700,310	357,256	3,343,054	5·47
1866 ...	629,038	5,268,926	417,176	4,851,750	7·71
1867 ...	644,276	4,656,395	433,978	4,222,417	6·55
1868 ...	663,092	3,573,701	519,608	3,054,093	4·61
1869 ...	687,202	4,948,817	577,028	4,371,789	6·36
1870 ...	713,195	5,601,402	568,334	5,033,068	7·06
1871 ...	737,005	4,049,992	669,218	3,380,774	4·59
1872 ...	753,198	4,890,758	653,128	4,237,630	5·63
1873 ...	765,511	5,253,016	699,952	4,553,064	5·95
1874 ...	777,656	4,711,575	665,872	4,045,703	5·20
1875 ...	787,337	5,050,534	642,802	4,407,732	5·60
1876 ...	796,558	5,237,845	802,834	4,435,011	5·57
1877 ...	808,605	4,895,612	1,129,128	3,766,484	4·66
1878 ...	821,466	6,012,289	1,383,244	4,629,045	5·64
1879 ...	834,030	5,103,353	1,414,376	3,688,977	4·42
1880 ...	850,343	5,820,125	1,954,570	3,865,555	4·55
1881 ...	868,942	5,834,395	1,853,458	3,980,937	4·58
1882 ...	890,470	5,392,845	1,938,724	3,454,121	3·88
1883 ...	917,310	6,374,924	2,208,784	4,166,140	4·54
1884 ...	946,100	7,337,640	2,192,708	5,144,932	5·44

* See footnote to page 346 *ante*.

805. The figures in the last column but two (For Seed, &c.) are intended to represent the whole quantity of wheat used otherwise than for the food of human beings. This is estimated arbitrarily 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. It is known that the proportion actually sown is generally much less than this; but as a certain quantity of wheat is used for feeding swine, poultry, &c., and some is wasted or becomes spoilt, the allowance made has been thought not too high. If $1\frac{1}{2}$ bushel per acre be considered a sufficient allowance for seed, the quantity in 1884 left for consumption, waste, &c., would be 5,693,109 bushels, equal to 6 bushels per head; or, if only 1 bushel per acre be allowed for seed, the residue would amount to 6,241,286 bushels, or about $6\frac{2}{3}$ bushels per head. Allowance for seed, waste, &c.

806. The estimated average quantity of breadstuffs available for food to each individual of the population is shown in the last column of the table. This will be found to vary in different years, ranging from over 14 bushels in 1852, and between 10 and 11 bushels in 1841 and 1853, to between 4 and 5 bushels in 1843, 1868, 1871, 1877, and in most recent years, to nearly $5\frac{1}{2}$ bushels in 1884; but in only one year, viz., 1882, to less than 4 bushels per head. Consumption of breadstuffs per head.

807. The quantity of breadstuffs available for annual food-consumption per head has averaged 5·79 bushels over the whole period of forty-five years, but during the five years prior to 1884, which was an exceptional year, it averaged only 4·39 bushels. In the present state of the Victorian population, it may be fair to assume that from $4\frac{1}{4}$ bushels to $4\frac{1}{2}$ bushels per head, irrespective of the quantity required for seed, is amply sufficient to supply the wants of any given year. Average consumption of breadstuffs.

808. In the United Kingdom, animal food, in consequence of its high price, is used much more sparingly than it is in this country, especially by the working classes, and therefore, as a natural consequence, the consumption of breadstuffs in proportion to the numbers of the population is somewhat higher than it is here. The following table shows the estimated mean population of the United Kingdom during each of the nineteen harvest years (or periods extending from the 1st September to the 31st August) ended with 1884–5; also the total number of bushels and number of bushels per head of grown and imported wheat available for consumption, after deducting seed, in each of the same years:— Breadstuffs available for consumption in United Kingdom.

Breadstuffs Available for Consumption in the United Kingdom, 1867 to 1885.

Year ended 31st August.	Mean Population.	Bushels of Wheat* available for Food.	
		Total Number (000's omitted).	Number per Head.
1867	30,248,936	152,320,	5·03
1868	30,523,478	155,200,	5·08
1869	30,814,914	189,360,	6·14
1870	31,108,133	176,560,	5·68
1871	31,410,776	176,400,	5·61
1872	31,728,316	170,320,	5·37
1873	32,028,317	174,640,	5·45
1874	32,325,778	174,240,	5·39
1875	32,641,568	202,720,	6·21
1876	32,978,682	184,512,	5·59
1877	33,329,099	174,568,	5·24
1878	33,681,904	191,480,	5·68
1879	34,036,546	209,936,	6·17
1880	34,364,077	179,120,	5·21
1881	34,775,970	201,992,	5·81
1882	35,410,040	210,592,	5·95
1883	35,517,510	241,568,	6·80
1884	35,838,516	191,520,	5·37
1885 †	36,179,000	208,000,	5·75

Average consumption of wheat in United Kingdom.

809. As a result of calculations derived from the figures in the table, it appears that in the nineteen years named the average quantity of wheat available for consumption in the United Kingdom was 5·66 bushels per head, or upwards of a bushel per head more than is apparently found sufficient for the requirements of the Victorian population.

Consumption of breadstuffs per head in United States.

810. From somewhat similar calculations taken from the official returns of the United States, the estimated consumption of wheat per head of the population of that country ranged, during the fourteen years ended with 1880, from 4·08 Winchester bushels‡ in 1867 to 6·09 in 1878, the mean during the period being 5·30 Winchester bushels, or about 5·13 imperial bushels. This result, it will be observed, is somewhat higher than that shown by the Victorian returns for recent years. It should be pointed out, however, that, in the United States returns, no deduction has been made for the wheat required for seed, so that the quantity available for food consumption is considerably less than that shown by the figures.

Imports and exports of breadstuffs, 1837 to 1884.

811. The Victorian imports and exports of breadstuffs during the forty-eight years, 1837 to 1884, are set down in the following table. It

* The total number of bushels of wheat available for consumption has been taken from an article entitled, "The Harvest of 1883," in the Supplement to the *Statist*, London Journal, of the 26th January, 1884. The calculations have been made in the office of the Government Statist, Melbourne.

† Estimated in advance.

‡ The Winchester bushel is smaller than the imperial bushel by one thirty-second ($\frac{1}{32}$) part.

will be observed that, after deducting the value of the quantities sent away, there remains a balance amounting to over 6 millions sterling paid by the colony for breadstuffs imported :—

IMPORTS AND EXPORTS OF BREADSTUFFS,* 1837 TO 1884.

Wheat, Flour, Bread, and Biscuit.	Quantity.	Value.
	bushels.	£
Imported, 1837 to 1884	32,775,043	13,866,750
Exported, „ „	30,146,119	7,813,921
Imports in excess of exports ...	2,628,924	6,052,829

812. 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 six years ended with 1884. All the articles named are capable of being produced, and all, or nearly all, are to a certain extent now produced in the colony :— Net imports of agricultural products.

NET IMPORTS† OF CERTAIN ARTICLES OF AGRICULTURAL PRODUCE, 1879 TO 1884.

Articles.	Balance of Imports over Exports in—					
	1879.	1880.	1881.	1882.	1883.	1884.
	£	£	£	£	£	£
Oats	92,176	12,938	74,924	29,621	51,739	36,249
Barley	87,982	21,000	...	3,033	27,356	...
Pearl barley ...	2,907	248	...	...	...	...
Malt	54,716	18,661	...	...	...	...
Maize	154,717	105,849	105,739	32,379	59,620	7,232
Maizena	3,668	4,171	7,654	5,098	4,899	8,599
Beans, pease, and split pease	2,191	...	...	...	...	...
Fruit—green, bottled, dried, currants and raisins	107,319	111,603	154,637	166,059	144,350	113,587
Jams, jellies, and preserves	...	...	...	2,787	...	...
Nuts, almonds, walnuts	5,497	3,208	7,349	6,722	6,725	4,582
Hops	20,596	24,637	28,442	31,639	43,639	...
Chicory	257	...	...	171	...	...
Pickles	6,457	295	5,508	7,371	2,554	4,688
Olive and salad oil ...	16,351	15,562	12,014	17,569	12,285	11,427
Tobacco, cigars, and snuff	24,921	...	31,270	96,206	66,222	101,836
Vegetables (preserved)	498	717	...	...	653	...
Canary seed ...	1,008	1,260	1,248	1,063	549	1,449
Grass and clover seed	13,704	5,226	2,990	9,560	4,769	7,063
Total ...	594,965	325,375	431,775	409,278	425,360	296,712

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

† The total imports and total exports of these articles during 1884 will be found in the table of Imports and Exports in Part Interchange *ante*, chiefly under Order 22.

Decreased imports of agricultural products.

813. It will be observed that beans and pease are absent from the list for the last five years, pearl barley and malt for the last four years, jams and chicory for the last two years; and barley, hops, and preserved vegetables for the last year.

Net import of eggs.

814. 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 1884 to the value of £9,965, and exported to the value of only £6,007, the difference in favour of the former being £3,958. The value of the imports of eggs in 1883 exceeded that of the exports by £4,871, in 1882 by £7,959, in 1881 by £6,926, in 1880 by £6,693, in 1879 by £9,479, and in 1878 by £11,597.

Proportion of land under each crop.

815. Of every thousand acres cultivated during the past season 472 acres were placed under wheat; 81 under oats; 27 under barley; 17 under potatoes; 146 under hay; 143 under green forage; and 114 under other kinds of crops. Relatively to the whole area under tillage, the tendency of late years has been to crop a larger extent of land 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 nine years :—

PROPORTION OF LAND UNDER EACH CROP TO TOTAL UNDER CULTIVATION, 1877 TO 1885.

Land under—	Proportion to Total Land under Tillage.								
	1876–7.	1877–8.	1878–9.	1879–80.	1880–81.	1881–2.	1882–3.	1883–4.	1884–5.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Wheat ...	32·61	39·74	42·98	41·89	48·97	50·87	47·50	49·84	47·19
Oats ...	9·36	7·41	8·35	9·93	6·72	8·07	8·32	8·49	8·08
Barley ...	2·03	1·35	1·42	2·56	3·43	2·67	2·14	2·11	2·68
Potatoes ...	3·29	2·61	2·27	2·46	2·25	2·15	1·68	1·81	1·66
Hay	11·97	12·46	10·74	11·93	12·51	11·65	15·16	13·67	14·62
Green forage ...	29·45	27·48	24·94	18·11	13·21	13·28	14·23	12·95	14·33
Other tillage ...	11·29	8·95	9·30	13·12	12·91	11·31	10·97	11·13	11·44
Total ...	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00

Minor crops.

816. 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 one acre in extent or even less, which are not taken account of. 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 six years :—

Minor Crops,* 1880 to 1885.

Nature of Crop.		1879-80.	1880-81.	1881-2.	1882-3.	1883-4.	1884-5.
Arrowroot ...	acres ...	3	9	5	7	17	6
	tons (root)	17	37	8	32	53	127
	cwt., manfd.	10	8	...	30	...	...
Artichokes ...	acres ...	...	3	...	2	2	2
	tons ...	...	45	...	16	20	20
Beet, carrots, parsnips, and cabbage	acres ...	374	348	286	433	424	455
	tons ...	2,504	2,403	2,737	3,281	3,874	3,872
Broom millet...	acres ...	1	2	5	9	2	5
	fibre, cwt.	...	...	..,	10	...	29
	seed, bush.	...	...	100	220	40	48
Buckwheat ...	acres ...	1	...	...	3	2	2
	bushels ...	12	...	...	65	62	58
Canary seed ...	acres ...	1	57	127	41	...	63
	bushels ...	2	341	1,241	192	...	724
Cauliflowers and cabbages	acres ...	...	...	...	...	7	7
	dozens ...	...	...	...	...	2,500	4,300
Chicory ...	acres ...	392	230	207	283	283	219
	tons ...	1,764	960	781	1,209	1,626	1,309
Coriander seed	acres ...	...	...	2	3	...	...
	lbs. ...	...	...	1,008	810	...	...
Currants ...	acres ...	...	1	...	...	...	...
	bushels ...	...	8	...	...	...	...
Fenugreek† ...	acres ...	...	...	...	1	...	...
	lbs. ...	...	...	...	300	...	...
Flax ...	acres ...	5	13	21	7	21	11
	fibre, cwt.	12	31	21	31	38	7
	linseed, bsh.	30	67	91	43	152	73
Garden seeds...	acres ...	117	29	21	14	24	45
	cwt. ...	485	812	119	43	62	74
Gooseberries ...	acres ...	...	...	...	1	...	...
	cwt. ...	...	...	...	16	...	...
Grass and clover seeds ...	acres ...	2,237	2,817	2,061	2,290	2,686	2,329
	bushels ...	32,031	26,320	32,085	28,740	41,964	35,559
Green pease ...	acres ...	...	...	21	10	...	108
	tons ...	...	...	26	25	...	36
Hops ...	acres ...	267	428	564	1,034	1,758	1,737
	lbs. ...	284,480	307,328	453,040	1,035,216	1,760,304	1,573,936
Kohl-rabi ...	acres ...	...	...	...	1	...	...
	cwt. ...	...	...	...	260	...	...
Lucerne for seed ...	acres ...	7	...	...	...	...	...
	bushels ...	50	...	...	...	...	...
Maize ...	acres ...	2,447	1,769	1,783	2,702	2,570	3,854
	bushels ...	61,887	49,299	81,007	131,620	117,294	176,388
Mangel-wurzel	acres ...	1,027	1,284	1,044	1,087	1,056	1,413
	tons ...	14,897	12,640	14,989	16,656	18,906	21,935

* Exclusive of those grown in gardens.

† *Fœnum græcum*, the *Trigonella* of Linnæus.

Minor Crops,* 1880 to 1885—*continued.*

Nature of Crop.		1879-80.	1880-81.	1881-2.	1882-3.	1883-4.	1884-5.
Medicinal herbs	acres ...	...	2	...	...	1	...
Mulberry trees	acres ...	4	14	4	3	1	...
	number ...	...	...	...	...	1,000	...
Mustard ...	acres ...	92	233	97	81	71	61
	cwt. ...	447	771	444	379	368	287
Olives ...	acres ...	10	17	† 10	2	15	13
	fruit, cwt.	...	17	...	35	...	...
	oil, gallons	...	15	...	...	...	...
Onions ...	acres ...	1,040	1,056	1,134	1,341	1,235	1,750
	tons ...	7,347	4,979	10,190	8,280	6,977	11,816
Opium poppies	acres ...	5	15	4	9	6	10
	lbs. of opium	80	171	80	225	120	190
	heads ...	...	...	...	...	...	...
Oranges ...	acres ...	2	20	5	...	4	2
	cases ...	30	6	...	...	...	...
Osiers ...	acres ...	...	31	4	4	...	3
	tons ...	...	1	9	2	...	3
Pease and beans	acres ...	21,462	23,378	25,937	26,832	30,443	35,288
	bushels ...	574,954	403,321	621,768	689,507	791,093	846,859
Prickly comfrey ...	acres ...	...	1	8	...	...	...
	tons ...	...	100	160	...	...	...
Pumpkins, melons, cucumbers, &c.	acres ...	99	64	81	35	44	119
	tons ...	484	416	842	370	355	837
Rape for seed	acres ...	41	14	...	30	14	47
	bushels ...	...	128	...	468	261	...
Raspberries ...	acres ...	94	132	155	203	235	261
	cwt. ...	1,299	1,591	3,067	4,822	4,595	6,307
Rhubarb ...	acres ...	...	18	1	9	8	8
	tons ...	...	81	1	40	43	18
Rye	acres ...	1,236	1,569	972	1,137	1,260	939
	bushels ...	18,407	13,978	12,653	23,244	16,727	15,505
Strawberries	acres ...	19	107	26	16	61	76
	cwt. ...	209	1,421	165	154	766	1,468
Sunflowers for seed ...	acres ...	2	7	6	6	1	2
	bushels ...	40	142	77	62	40	...
Teazles ...	acres ...	1	2	...	...	2	2
	number ...	8,000	27,000	...	...	...	4,000
Tobacco ...	acres ...	531	1,990	1,461	1,313	1,325	1,402
	cwt. ...	‡ 1,297	17,333	12,876	5,673	9,124	7,893
Tomatoes ...	acres ...	...	5	10	15	17	21
	cwt. ...	...	454	1,549	2,265	1,600	1,278
Turnips ...	acres ...	192	460	151	125	148	209
	tons ...	2,054	1,932	1,713	901	1,402	1,600
Vetches and tares for seed	acres ...	3	23	5	5	10	26
	bushels ...	62	201	71	83	194	700
Vines § ...	acres ...	4,284	4,980	4,923	5,732	7,326	9,042
	wine, galls.	574,143	484,028	539,191	516,763	723,560	760,752
	brandy, „	3,284	3,038	1,453	3,377	2,646	3,623

* Exclusive of those grown in gardens.

† Reported to have failed.

‡ The tobacco crop of 1879–80 failed in most of the districts.

§ The quantity of wine and brandy is for the season prior to that for which the area under vines is returned.

817. The table shows the cultivation of the following crops, also their produce, to have considerably increased of late years :—Beet, carrots, parsnips, and cabbage, hops, maize, mangel-wurzel, onions, raspberries, vines, and pease and beans. Certain crops of which cultivation increased.

818. Hops but little inferior to Kentish are grown in Victoria, and the comparative failure for several successive seasons of this crop in the United Kingdom has given a considerable stimulus to that industry. The extent of land under hops increased from 267 acres in 1879–80 to over 1,700 acres in the last two years ; and the quantity produced rose in the same period from 285,000 lbs. to 1,600,000 lbs. Hops.

819. Raspberries as a field crop are extensively grown in the more elevated parts of the colony, especially about the ranges in which the River Yarra and its tributaries have their source. The quantity returned as raised in 1884–5 was 6,300 cwt. Since the establishment of jam factories, the fruit is in great demand, and much more would be purchased were it forthcoming. Raspberries.

820. In 1884–5 the area under vines exceeded that in 1883–4 by 1,700 acres, and was much larger than in any previous year. The quantity of wine returned exceeded that in 1883–4 by 37,000 gallons, and was also above that returned in any previous year. The quantity (761,000 gallons) was nearly approached in 1875–6 (viz., 755,000 gallons) ; but a falling-off took place after that year in consequence of the presence of the phylloxera, the existence of which was first discovered in the year 1877. It is right to point out that this part of the statistics is not quite so reliable as the other portions, since, as grapes come to maturity later than the other crops of which returns are made, only the acreage under vines can be returned for the year to which the remainder of the statistics relate, and the grape crop is necessarily that of the previous season. This partial dealing with the returns of two years may sometimes cause confusion in the minds of the vine-growers, who may also not always remember the exact particulars of their previous year's crop. Vines.

821. An account of the visitation of the phylloxera, and of the measures taken for its suppression, has been contributed by Mr. D. Martin, the Secretary for Agriculture :— Phylloxera vastatrix.

"The vine disease caused by the insect known as phylloxera vastatrix was discovered in the vineyards at Fyansford, three miles from Geelong, in the year 1877. It is now ascertained to have been present in this district for years before it was recognised as the dreaded phylloxera—probably for about ten years—and its origin was doubtless the importation of diseased plants.

"In order to prevent, if possible, the disease from spreading, an Act was passed providing for the appointment of inspectors of vineyards, with power to enter any lands whereon vines were growing, for the purpose of ascertaining whether the

vines were infected, in which case the fact was to be reported to the Chief Secretary, who might authorize steps to be taken to eradicate the disease, either by destroying the vines or otherwise, no compensation being granted to the owner of the vines for any loss he might sustain in consequence of such measures. In 1878, thirteen vineyards, containing an area of 75 acres, were uprooted and the vines burnt; and in 1879, six vineyards, containing an area of 35 acres, were similarly treated.

"In November, 1880, a Select Committee of the Legislative Assembly was appointed to inquire into the state of the disease, and the best means of eradicating or mitigating it. The committee reported that there was no evidence to show that the insect settled on any vegetation other than vines; that so far as experiments had been tried no remedy or cure for the disease was known; that the time most to be dreaded for the spread of the disease was about the end of December; and that there was no other cure than the entire eradication of the vines. It was recommended that a cordon, having a radius of 20 miles, should be drawn round Geelong, and that no part of the vines within that cordon, whether cuttings, leaves, fruit, or roots should be removed outside of it; that all vines within that cordon should be inspected, and all reported as diseased, or growing within a three-mile radius of any reported as diseased, should be uprooted and burnt, the owners being awarded a moderate compensation, based, not upon the value of the vines, but upon the estimated value of the crops for the ensuing three years. Consequently upon this report another Act was passed, repealing all former Acts relating to vines and vineyards, and providing for the proclamation of infected localities as "Vine Disease Districts," to which inspectors should be appointed, on the receipt of whose reports the Minister might order any diseased vines to be uprooted, as well as all other vines, whether diseased or not, within a radius of three miles thereof, compensation being given to the owners of diseased vines up to the value of one year's crop, and to owners of vines not diseased up to the value of three years' crops. Persons were prohibited, under a penalty not exceeding £100 or imprisonment for any term not exceeding six months, from removing from a "Vine Disease District" any vine or part of a vine. The Governor in Council was also granted power to restrict the importation of vines, vine cuttings, or grapes, and to make regulations for the purpose of carrying the Act into effect. The question, moreover, formed one of the subjects of discussion at the Intercolonial Conference, held in Melbourne, in December, 1880, when it was agreed by the colonies of New South Wales, South Australia, and Victoria, to contribute jointly to the expense of eradicating the disease.

"The *Phylloxera Vine Disease Act* 1880 was amended towards the close of 1881 by the *Geelong District Vine Disease Act* 1881, 45 Vict. No. 718 (24th December, 1881), which gave power to the Minister to order the destruction of all vines growing within the boundaries of the Geelong Vine Disease District, as described in the *Government Gazette* of the 12th January, 1881. Under the powers given by this statute all vines within the proclaimed district have been destroyed, except those in the parishes of Birregurra and Warrion. These parishes are situated at from 24 to 45 miles from where any diseased vines were growing, and consequently are not likely to be reached by the insect.

"Under the several statutes above-mentioned the vines have been destroyed on about 2,000 separate properties; about half of that number being cottage properties in Geelong and suburbs; and compensation has been awarded in amounts varying from £1,042 to 1s. The disease from first to last was found in 34 properties only, comprising an estimated area of 281 acres. These diseased properties are situated in a district extending from the Leigh Road to Germantown, in the valleys of the Moorabool and Barwon Rivers, a distance of about 16 miles. The last of the diseased vineyards was destroyed in 1882. The phylloxera is, however, not yet extinct. Recent examinations show that the insects are alive in several of the infected properties upon the still succulent rootlets which have been left in the ground. In some properties the roots are decayed all over, and consequently the phylloxera are dead; in the others the roots are decayed over portions of the properties only; the area of succulent roots is yearly becoming less. The proclaimed district is still retained in quarantine, special attention being given to the destruction of any vine shoots or re-growths from imperfect eradication."

Gardens and orchards.

822. No return is made of the nature of the crops grown or the quantity of produce raised in gardens and orchards. The following table shows the extent of land returned under this description of culture in the last two years :—

LAND UNDER GARDENS AND ORCHARDS, 1884 AND 1885.

Year ended March.	Gardens.	Orchards.	Total.
	acres.	acres.	acres.
1884	9,389	11,365	20,754
1885	9,835	13,180	23,015
Increase	446	1,815	2,261

Land in fallow.

823. Land in fallow is included in the area under tillage. The number of acres in this condition in 1885 was 183,197, or 8,590 more than in the previous year.

Irrigation.

824. According to the returns of the past season, irrigation was being practised on a more or less extensive scale in 16 shires, viz. :—Alberton, Bacchus Marsh, Bairnsdale, Ballan, Beechworth, Bright, Echuca, Eltham, Glenelg, Keilor, Korong, Marong, Oxley, St. Arnaud, Strathfieldsaye, and Swan Hill. The whole number of farms in these shires was 7,830, upon 158 of which irrigation was carried on. Certain crops in these shires covered 608,197 acres, of which 7,046 acres, or rather more than 1 per cent., were subjected to irrigation. The extent irrigated in the previous year was 6,935 acres. The following table shows the extent of land under these crops, and their gross and average produce; the tillage and produce on unirrigated and on irrigated land being distinguished :—

IRRIGATION IN CERTAIN SHIRES.

Crops.	In Shires practising Irrigation.					
	Extent under Crop on Land—		Gross Produce on Land—		Produce per Acre on Land—	
	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.
GRAIN CROPS.	acres.	acres.	bushels.	bushels.	bushels.	bushels.
Wheat	334,163	3,322	2,470,109	35,349	7·39	10·64
Oats	12,717	187	169,798	4,634	13·35	24·78
Barley	2,025	41	21,870	900	10·80	21·95
Maize	1,473	19	74,417	980	50·52	51·58
Pease and Beans	374	3	8,836	24	23·63	8·00
ROOT CROPS.	acres.	acres.	tons.	tons.	tons.	tons.
Potatoes	323	29	985	162	3·05	5·59
Mangel-wurzel ...	19	11	166	365	8·74	33·18
Beet, Carrots, &c.	5	18	37	106	7·40	5·89
Chicory	...	30	...	290	5·39*	9·67
HAY, GRASS, &C.	acres.	acres.	tons.	tons.	tons.	tons.
Hay	36,221	1,924	12,538	2,280	0·35	1·18
Green Forage ...	397	33	...	...	...	...
Artificial Grasses	8,104	1,003	...	...	...	...
OTHER TILLAGE.	acres.	acres.	cwt.	cwt.	cwt.	cwt.
Hops	721	357	7,310	3,817	10·14	10·70
Tomatoes ...	1	1	200	240	200·00	240·00
Vines	120	20	...	...	...	...
Gardens and Orchards	801	48	...	...	...	...

* There being no chicory grown on unirrigated land in the shires in which irrigation was practised, these figures relate to other parts of the colony.

Yield of irrigated and unirrigated land.

825. The scale on which irrigation has been practised in Victoria up to the present time is too small to admit of comparisons between the results obtained from land which has and which has not been irrigated from being of much value. So far as the figures go, the effect of irrigation upon pease and beans, and upon beet, carrots, &c., appears to have been a failure; but in all other cases the irrigated land shows better returns than the land which has not been irrigated.

Statute for promoting irrigation.

826. Towards the close of 1883, a measure* was passed with the view of promoting national irrigation on a large scale. To accomplish this object, it was provided that certain areas might, at the request of the residents, be proclaimed "Irrigation Areas," to which trusts might be appointed to carry out the irrigation scheme proposed for the district. The commissioners of these trusts are to have power, under certain restrictions, to borrow money for the purpose of constructing the works included in the scheme, for the repayment of which a sinking fund is to be provided; also to levy rates upon all lands capable of irrigation within the area under their jurisdiction, in order to provide the annual interest on the loan and the necessary payment to the sinking fund; also to defray the current expenses attendant upon the operations of the trust. Up to the time of going to press, only one trust, the Leaghur and Meering Irrigation Trust, had been actually formed under this statute. Three trusts, however, were in process of formation—embracing portions of the shires of East Loddon, Swan Hill, and Echuca. Other applications had been received by the Minister of Water Supply, and were under consideration.

Agricultural colleges.

827. An Act for the establishment of Agricultural Colleges† was passed towards the close of 1884. This Act provides for the permanent reservation from sale of 150,000 acres of Crown lands by way of endowment of State Agricultural Colleges and Experimental Farms, which, together with other lands reserved as sites for such institutions prior to the passing of the Act, are to be vested in three trustees to be appointed by the Governor in Council. The Act also provides for the appointment of a Council of Agricultural Education, consisting of eleven members, three of whom are to be the trustees just mentioned, one to be the Secretary for Agriculture (who is to be the treasurer of the council) five to be elected annually by the governing bodies of Agricultural Societies in Victoria, and two to be appointed by the Governor in Council. The trustees, subject to regulations made by the Council of Agricultural Education, may lease lands for building purposes for periods not exceeding 33 years, and for other purposes for periods not exceeding 14 years, and upon a requisition of the same council may dedicate, as

* *Victorian Water Conservation Act* 1883 (47 Vict. No. 778).
† The Agricultural Colleges Act 1884 (48 Vict. No. 825).

sites for Agricultural Colleges and Experimental Farms, any lands purchased by them or described in the Act. All moneys received by the council from the sale of stock or farm produce, or as fees from students at Agricultural Colleges and Experimental Farms, together with all other moneys coming to the council, are to form a fund to be called the Agricultural College Fund, which is to be expended in providing instruction for students, or in purchasing stock, seed, agricultural implements, and all other necessaries for the education of the students and the proper working of the experimental farms, &c. The council, subject to Ministerial approval, have the appointment of professors, teachers, officers, and servants for the Colleges and Experimental Farms. Most of the procedings of the trustees and of the council have to be approved by the Governor in Council before coming into effect.

Leases and rental of farms.

828. The average duration of leases of farms from private persons was returned in 1884–5 as averaging from 2 to 7 years; the extreme figures being 1 year and 14 years. The average rental of agricultural land per acre was stated to be from 6s. 10d. to 16s. 6d.; the extreme being figures 2s. and 40s. The average rental of pastoral land was said to be from 2s. 7d. to 5s. 7d.; the extreme figures being 1s. and 11s.

Prices of agricultural produce.

829. Each collector is required to furnish a statement of the price of the principal articles of agricultural produce in his district at the time he makes his rounds. The prices, being those prevailing in the place where the crops are grown, are generally much lower than those obtaining in Melbourne, which are quoted in Part Interchange of this work. The following is an average deduced from the returns of all the districts during each of the last sixteen years:—

PRICES OF AGRICULTURAL PRODUCE, 1870 TO 1885.

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.
1870	4 3	3 7	4 0	75 0	77
1871	5 4	3 9	4 11	70 0	76
1872	4 8	2 11½	3 6¼	65 6	64
1873	4 9	3 5	4 1	67 4	81
1874	5 9	5 6	5 3	118 3	88
1875	4 5	4 3	4 6	89 0	89
1876	4 7	3 3	3 10	87 0	82
1877	5 10	3 7	3 10	114 0	93
1878	5 1	4 6	4 4	115 0	87
1879	4 2	3 6	4 1	92 4	75
1880	4 0½	2 3½	4 8	69 11	63
1881	4 1¾	2 3	4 11¼	46 3	60
1882	5 0	3 3	3 6	70 0	76
1883	4 9	3 1	4 1	75 4	81
1884	3 8	2 8	3 6	74 8	67
1885	3 4	3 0	3 6	80 0	74

Prices of turnips and mangolds.

830. Besides the above, the average price per ton in 1884 of turnips was quoted as £2, and of mangel-wurzel as £1 14s.

Prices of agricultural produce, 1884-5 and previous years.

831. The prices of all articles of agricultural produce, except potatoes, were remarkably low in 1885. Wheat was lower than in any previous year named; that of oats was lower than in any, except 1884, 1881, 1880, and 1872; barley was at the same price in two years, viz., 1884 and 1882, but was not lower in any previous year; hay was lower than in any year except 1884, 1881, 1880, and 1872.

Years of highest and lowest prices.

832. It will be observed that the price of wheat and hay was highest in 1877, and that of oats, barley, and potatoes in 1874; also that the price of wheat was lowest in 1885, that of barley in that year and in 1884 and 1882; and that of oats, potatoes, and hay in 1881.

Price of wheat in London.

833. The following statement of the average *Gazette* price of wheat per imperial quarter* during the seven years ended with 1883 has been taken from an official source,† and that of the average price in 1884 has been taken from the London *Statist*:—

AVERAGE "GAZETTE" PRICE PER QUARTER OF WHEAT IN LONDON.

Month.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.
	s. *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
January ...	51 7	51 11	39 3	45 11	42 5	45 7	40 2	38 0
February ...	51 7	51 4	38 0	43 5	41 9	46 0	40 11	36 11
March ...	51 1	49 7	39 7	45 7	42 7	44 7	42 3	38 1
April ...	53 4	51 3	41 0	48 1	44 6	45 11	41 11	37 2
May ...	65 10	51 11	41 0	45 2	44 5	47 3	43 2	38 0
June ...	64 6	48 0	41 9	45 1	44 6	47 5	42 10	37 0
July ...	62 9	44 11	44 6	43 9	46 5	48 5	42 2	37 1
August ...	64 11	44 9	49 1	43 11	48 6	50 0	43 6	36 4
September ...	59 1	43 8	47 6	41 2	52 3	43 11	41 10	33 0
October ...	53 7	39 7	48 10	41 9	47 1	39 7	40 5	32 4
November ...	52 3	40 4	48 9	43 9	45 11	40 10	40 3	31 1
December ...	51 6	40 3	46 7	44 1	44 7	41 2	39 6	31 5
The Year...	56 9	46 5	43 11	44 4	45 4	45 1	41 7	35 6

Value of agricultural produce.

834. The value of agricultural produce in the year ended 1st March, 1885, may be estimated at 6½ millions sterling. The following table shows the means whereby such an estimate is arrived at :—

* The imperial quarter is equal to 8 bushels.

† Giffen's Statistical Abstract for the United Kingdom, 1869 to 1883.

VALUE OF AGRICULTURAL PRODUCE,* 1884–5.

Name of Crop.	Gross Produce and Price.				Estimated Value.
		£	s.	d.	£
Wheat	10,433,146 bushels @	0	3	4	1,738,858
Oats	4,392,695 „ @	0	3	0	658,904
Barley	1,082,430 „ @	0	3	6	189,425
Other cereals	1,038,752 „ @	0	3	6	181,781
Potatoes	161,119 tons @	4	0	0	644,476
Other root crops	39,223 „ @	5	0	0	196,115
Hay	371,046 „ @	3	14	0	1,372,870
Green forage	332,859 acres @	2	10	0	832,147
Tobacco	7,893 cwt. @	2	16	0	22,100
Grapes, not made into wine ...	19,758 „ @	1	0	0	19,758
Wine	760,752 gallons @	0	4	0	152,150
Brandy	3,623 „ @	0	10	0	1,811
Hops	14,053 cwt. @	5	10	0	77,292
Other crops	3,508 acres @	5	0	0	17,540
Garden and orchard produce...	23,015 „ @	20	0	0	460,300
	Total				6,565,527

835. The standard weight of crops in Victoria is reckoned to be 60 lbs. to the bushel for wheat, 40 lbs. for oats, 50 lbs. for barley, and 56 lbs. for maize. The actual weight, however, differs in different districts. Thus wheat, during 1884–5, ranged from 56 lbs. to 65 lbs.; oats, from 35 lbs. to 52 lbs.; barley, from 40 lbs. to 56 lbs.; and maize, 50 lbs. to 63 lbs. In the same year, taking the districts as a whole, the average weight per bushel of wheat was 62 lbs.; of oats, 41 lbs.; of barley, 51 lbs.; and of maize, 56 lbs. Specific weight of crops.

836. The following figures will show some fluctuations in the average rates paid to agricultural labourers in the last two years; the reduced rates paid for mowing and reaping, especially when not done by contract, are probably in consequence of the competition resulting from the increased employment of machinery. Rations are allowed in all cases in addition to the wages quoted:— Rates of agricultural labour.

RATES OF AGRICULTURAL LABOUR,† 1884 AND 1885.

Description of Labour.	1883–4.		1884–5.	
	s.	d.	s.	d.
Ploughmen, per week	22	3	21	7
Farm labourers, „	20	1	18	3
Married couples, „	25	5	26	8
Females, „	10	6	10	10
Mowers, „	34	0	30	6
„ per acre	5	5	5	4
Reapers, per week	34	9	32	0
„ per acre	10	7	12	6
Threshers, per bushel	0	6	0	7

* For a summary of the value of agricultural produce during a series of years, see table following paragraph 908 *post*.

† See also table of Wages at the end of Part Interchange *ante*.

Plant and improvements on farms.

837. The number and power of steam engines used on farms, and the value of farming plant and improvements, were returned as follow for the year under review and the previous one :—

STEAM ENGINES, IMPLEMENTS, AND IMPROVEMENTS ON FARMS, 1884 AND 1885.

	1883–4.	1884–5.
Steam engines, number	466	520
„ horse-power	3,571	4,164
Value of farming implements and machines...	£2,572,895	£2,638,933
„ improvements on farms ...	£15,318,489	£15,394,846

Machine labour.

838. 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 labour in the last two years :—

MACHINE LABOUR, 1884 AND 1885.

Average Rates Paid for—	1883-4.	1884–5.
	£ s. d.	£ s. d.
Machine reaping, per acre*	0 4 1	0 4 8
„ mowing, „	0 4 7	0 4 3
„ threshing, per 100 bushels † ...	1 3 7	0 18 8

Live stock, 1881 and 1885.

839. Information as to the numbers of live stock kept was obtained at the census of 1881, and since that time the figures have been brought on by estimates furnished by the municipal authorities. The following are the census numbers, and the numbers in March, 1885, as derived from the municipal estimates alluded to :—

LIVE STOCK, 1881 AND 1885.

Period.	Horses.	Cattle.			Sheep.	Pigs.
		Milch Cows.	Exclusive of Milch Cows.	Total.		
3rd April, 1881 (enumerated)	275,516	329,198	957,069	1,286,267	10,360,285	241,936
March, 1885 (estimated)	293,846	329,099	958,846	1,287,945	10,637,412	234,347
Increase ...	18,330	...	1,777	1,678	277,127	...
Decrease ...	...	99	...	...	...	7,589

* Without binding; the average price, with binding, was 8s. 3d. in 1884–5.

† Including winnowing; without winnowing, the average price in 1884–5 was 13s. 7d.

840. Besides the live stock returned at the census, as shown in the table, 68,426 goats, 135 asses, and 78 mules were then enumerated. No attempt has been made to bring these numbers on to any later period. Goats, asses, and mules.

841. The estimates for 1885, as compared with the numbers returned at the census, show an increase in horses, cattle, and sheep, but a falling-off in pigs. Too much reliance, however, must not be placed on any statement of the numbers of live stock, except such as is derived from the returns of a general census. Increase or contrary, 1885.

842. Speaking roughly, there are now in Victoria, 3 horses, 15 head of cattle, 121 sheep, and 3 pigs, or, taking the different kinds together, 142 head of stock of these descriptions, large and small, to the square mile. Stock per square mile.

843. Information respecting the numbers of poultry kept is not obtained except at the taking of a census. The following is a statement of numbers of the different kinds, according to the returns of the censuses of 1871 and 1881:— Poultry.

POULTRY, 1871 AND 1881.

Year of Census.	Number of Owners of Poultry.	Geese.	Ducks.	Fowls.	Turkeys.	Pea Fowls.	Guinea Fowls.	Pheasants.	Ostriches.
1871 ...	81,347	83,025	137,355	1,636,782	69,756	970	3,542	199	16
1881 ..	97,152	92,654	181,698	2,328,521	153,078	1,701	2,307	40	..
Increase	15,805	9,629	44,343	691,739	83,322	731	..	..	..
Decrease	..	..	..	..	..	..	1,235	159	16

844. It is seen that in ten years an increase of nearly 16,000 took place in the number of keepers of poultry, also a fair increase in all the different kinds of poultry except guinea fowls. Pheasants and ostriches, although not strictly speaking poultry, were returned in 1871, but no ostriches at the latter period; moreover, pheasants fell off in number from 199 in 1871 to 40 in 1881. Increase or decrease of poultry.

845. 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 British and Foreign countries.

Live Stock* in the United Kingdom and Foreign Countries (000's omitted).

Country.	Year.	Number of—			
		Horses.	Cattle.	Sheep.	Pigs.
United Kingdom ...	1884	1,904,	10,423,	29,377,	3,906,
Austria	1880	1,463,	8,584,	3,841,	2,721,
Belgium	1880	272,	1,383,	365,	646,
Denmark	1881	348,	1,470,	1,549,	527,
France	1880	2,849,	11,446,	22,516,	5,566,
Germany	1883	3,522,	15,785,	19,185,	9,206,
Holland	1882	270,	1,428,	745,	404,
Italy	1881	...	4,783,	8,596,	1,164,
Hungary	1880	1,819,	4,597,	9,252,	...
Norway	1875	152,	1,017,	1,686,	101,
Russia	1877	17,589,	27,323,	51,822,	10,839,
Sweden	1882	470,	2,257,	1,388,	431,
United States	1883	11,170,	42,547,	50,627,	44,201,

Live stock slaughtered.

846. The numbers of live stock slaughtered in Victoria are furnished by the local bodies, but it is probable 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. The following were the numbers returned for 1883 and 1884, those for the latter year being smaller than those for the former in the case of cattle and sheep but larger in the case of pigs :—

Live Stock Slaughtered, 1883 and 1884.

Year.	Cattle and Calves.	Sheep and Lambs.	Pigs.
1883	245,522	1,926,559	99,513
1884	234,757	1,904,423	114,568
Increase ...	...	...	15,055
Decrease ...	10,765	22,136	...

Purposes for which stock was slaughtered.

847. The purposes to which the carcasses of the slaughtered animals were appropriated in 1884 were returned as follow :—

Purposes for which Live Stock was Slaughtered, 1884.

Description of Live Stock.	Numbers Slaughtered for—			
	The Butcher and Private use.	Preserving or Salting.	Boiling down for Tallow.	Total.
Cattle and Calves ...	234,340	337	80	234,757
Sheep and Lambs ...	1,799,617	64,822	39,984	1,904,423
Pigs	50,973	63,595	...	114,568
Total	2,084,930	128,754	40,064	2,253,748

* For live stock in each Australasian colony, see third folding sheet *ante*, also Appendix A *post*.

848. The quantity of wool produced in Victoria during the year 1884 may be set down as 61,369,000 lbs.,* valued at £3,829,619. These figures represent the excess of exports over imports during the year, to which is added the quantity and value of wool used in woollen mills. In the previous year, the quantity produced, similarly estimated, was 65,930,000 lbs., valued at £4,148,500. Wool produced, 1883 and 1884.

849. The following is a statement of the quantity and value of wool produced in the various Australasian colonies in 1883. The estimate for each of the other colonies has been made upon the same principle as that for Victoria, viz., by substituting the difference between the imports and the exports for the entry as to the origin of the wool made at the Customs :— Wool produced in Australasian colonies, 1883.

WOOL PRODUCED IN THE AUSTRALASIAN COLONIES, 1883.

(Excess of Exports over Imports.†)

Colony.	Quantity.	Value.
	lbs.	£
Victoria	65,930,000	4,148,500
New South Wales ...	182,873,449	9,470,595
Queensland	43,231,606	2,277,878
South Australia	42,254,621	1,745,591
Western Australia ...	3,861,927	225,279
Tasmania	8,257,765	450,367
New Zealand	68,123,194	3,012,171
Total	414,532,562	21,330,381

850. It appears by the figures that Victoria, in 1883, did not produce much more than a third as much wool as New South Wales, and did not produce so much as New Zealand by 2 million pounds. She, however, produced more than half as much again as South Australia or Queensland; Western Australia, notwithstanding the immense extent of her territory, did not produce half as much as the island of Tasmania. Wool produced in each colony

851. The following is an estimate of the gross value of pastoral produce raised on holdings of all descriptions in 1884–5 :— Value of pastoral produce.

* The quantity of *Victorian* wool exported in 1884, according to the Customs returns, was 106,503,441 lbs., or considerably more than the total quantity given above as produced in Victoria.—(See footnote to *Wool*, Order 24, in Table of Imports and Exports, Part *Interchange*, *post*.) There is no doubt, however, that, in order to obtain the higher price generally realized in England and elsewhere for Victorian wool, much wool produced outside the colony is entered at the Customs as Victorian.

† In the case of Victoria, the wool manufactured in the colony has been also taken into account.

Value of Pastoral Produce, 1884–5.

Nature of Produce.	Value.
	£
Milk, butter, and cheese, from 329,099 milch cows kept, @ £8 10s. ...	2,797,341
Estimated value of stock produced in 1884 :—	
Cattle, 329,099, viz., 219,399, @ £8, and 109,700 (calves), @ 30s.	1,919,742
Sheep, 2,659,353, @ 7s. 6d.	997,257
Pigs, 70,300, @ £2 10s.	175,750
Horses, 11,754, @ £8	94,032
Excess of exports over imports of wool, Customs value	3,766,972
Estimated value of wool used in the colony for manufacturing purposes, 1,501,960 lbs., @ 1s. 6d.	62,647
Total...	9,813,741

Note.—The principle on which the numbers of "stock produced" have been estimated is as follows:—It has been assumed that the increase of cattle amounted to one to every milch cow, and that one-third of the calves born were slaughtered for veal, the remainder taking the place of the older cattle slaughtered. The increase of sheep has been reckoned at 25 per cent. on the total number of both sexes over six months old in the colony, that being the proportionate increase ascertained by Mr. A. J. Skene, Surveyor-General of Victoria, to have taken place during a series of years on nearly $3\frac{3}{4}$ millions of sheep on 34 stations situated in various parts of the colony. The increase of pigs and horses has been arbitrarily estimated at 30 and 5 per cent. respectively upon the total numbers of such stock. The value per head set down for the different kinds of stock is intended to represent the average value per head of all the stock of each kind in the colony, young and old; for although the stock born in the year would be only six months old, on the average, when the year terminated, and would, consequently, not be of so high a value as the figures indicate, yet all the growing or fattening stock may be considered to have become more valuable during the year, and the increase of bulk, and consequently of value, of such stock may fairly be set down as part of the year's produce as much as the stock actually born therein, the numbers of the latter being taken as a basis whereto such values may be applied. 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 produced.

Flour mills.

852. In 1885, as compared with 1884, a decrease of 1 occurred in the number of mills; the wheat operated upon fell off by 219,000 bushels, but the other grain operated upon increased by nearly 300,000 bushels. An increase of £32,000 took place in the estimated value of machinery, lands, and buildings, and an increase of 76 in the number of hands employed :—

Flour Mills, 1884 and 1885.

Year ended March.	Number of Mills.	Mills employing—		Amount of Horse-power of Steam Engines.	Number of Pairs of Stones.	Number of sets of Rollers.
		Steam-power.	Water-power.			
1884 ...	140	133	7	2,960	456	...
1885 ...	139	132	7	3,093	454	70
Increase	...	...	...	133	...	...
Decrease	1	1	...	...	2	...

FLOUR MILLS, 1884 AND 1885—*continued.*

Year ended March.	Number of Hands employed.	Grain operated upon.		Approximate Total Value of—		
		Wheat.	Other.	Machinery and Plant.	Lands.*	Buildings.
		bushels.	bushels.	£	£	£
1884 ...	793	7,850,506	337,830	225,520	66,537	177,700
1885 ...	869	7,631,963	637,448	251,420	73,013	177,300
Increase	76	...	299,618	25,900	6,476	...
Decrease	...	218,543	...	...	...	400

853. In 1881 the statistics were collected by the census sub-enumerators, and consequently it was possible to obtain more complete information than is supplied in ordinary years by the collectors employed by the local bodies, especially in regard to the values of materials operated upon and articles produced, which, in the case of the flour mills, were as follow :— Value of materials used and produced.

FLOUR MILLS, 1880–81.

Value of materials operated upon	...	£1,412,099
Value of articles produced ...	...	1,651,351
Increased value	...	£239,252, or 17 per cent.

854. The breweries returned in the year under review exceeded by 4 those in the former one. The hands employed in breweries increased by 95, and considerable increases took place in the sugar and hops used but only a small increase in the malt. The beer brewed in the year under review exceeded by 671,000 gallons that in the previous year, and a higher value by £86,695 was set down for the machinery, plant, lands, and buildings :— Breweries.

BREWERIES, 1884 AND 1885.

Year ended March.	Number of Breweries.	Breweries employing—				Amount of Horse-power of Steam Engines.	Number of Hands employed.	Materials used.		
		Steam-power.	Water-power.	Gas-power.	Manual Labour only.			Sugar.	Malt.	Hops.
								lbs.	bushels.	lbs.
1884 ...	70	46	1	1	22	425	860	12,780,880	596,809	659,322
1885 ...	74	50	1	1	22	444	955	13,413,456	604,752	752,754
Increase	4	4	...	...	...	19	95	632,576	7,943	93,432

* The figures in this column apply to purchased lands only. Three of the mills in 1884 and one in 1885 were upon Crown lands; in these cases no valuation of the land has been given.

BREWERIES, 1884 AND 1885—*continued.*

Year ended March.	Beer made.	Approximate Total Value of—		
		Machinery and Plant.	Lands.*	Buildings.
	gallons.	£	£	£
1884	13,729,371	125,420	98,950	179,890
1885	14,400,749	138,660	134,595	217,700
Increase ...	671,378	13,240	35,645	37,810

Value of materials used and produced.

855. The value of the sugar, malt, and hops used, and of the beer made, were returned for the census year, but not since. The following are the figures given :—

BREWERIES, 1880–81.

	£
Value of materials used	442,885
„ of beer made	780,501
Increased value	337,616, or 76 per cent.

Consumption of beer per head.

856. The beer made in Victoria during 1884–5 amounted to 14,400,749 gallons, and the quantity imported, after deducting exports, was 931,379 gallons. These numbers give a total consumption of 15,332,128 gallons, or an average of 16 gallons per head. In the previous year, the beer brewed and imported amounted to 14,491,000 gallons, or an average of 15½ gallons per head.

Brickyards and potteries.

857. The large amount of building carried on, especially in Melbourne and suburbs, and the great demand for bricks resulting therefrom, led to the opening of 20 new brick-making works in 1884–5, and increases occurred in the power of steam engines used, in the number of hands employed, and in the out-put of bricks, but a falling-off of £4,000 in the value of pottery manufactured. Moreover, the valuation placed upon plant, lands, and buildings was higher by over £50,000 than in the previous year. The following are the comparative figures of the last two years :—

* The figures in this column apply to purchased lands only. Two of the breweries in both years were on Crown lands.

BRICKYARDS AND POTTERIES, 1884 AND 1885.

Year ended March.	Number of Brick-yards and Potteries.	Number of Machines in use.		Brickyards employing—			Amount of Horse-power of Steam Engines.	Number of Hands employed.
		For tempering or crushing Clay.	For making Bricks or Pottery.	Machines Worked by—		Manual Labour.		
				Steam.	Horses.			
1884 ...	198	166	73	25	87	86	466	1,582
1885 ...	218	221	76	41	88	89	743	1,937
Increase	20	55	3	16	1	3	277	355

Year ended March.	Number of Bricks made.	Approximate Total Value of—				
		Bricks made.	Pottery made.	Machinery and Plant.	Lands.*	Buildings.
		£	£	£	£	£
1884	96,097,000	192,194	45,540	94,924	86,249	94,478
1885	129,933,000	259,866	41,532	109,539	127,466	88,672
Increase ...	33,836,000	66,672	...	14,615	41,217	...
Decrease ...	...	...	4,008	...	...	5,806

858. Fourteen fresh establishments for tanning and wool-washing were opened in 1884–5, and the returns show an increase of 109 in the hands employed, and of £35,819 in the value of plant, lands, and buildings connected with that industry. The work done was greater than in the previous year; the hides and skins tanned being larger in number by 43,000, the skins stripped by over 897,000, and the wool washed by over 2,000,000 lbs. The following are the particulars for the two years:— Tanneries, fellmongeries, &c.

TANNERIES, FELLMONGERIES, AND WOOL-WASHING ESTABLISHMENTS, 1884 AND 1885.

Year ended March.	Number of Establishments.	Establishments employing—					Amount of Horse-power of Steam Engines.	Number of Hands employed.	Number of Tan Pits.
		Steam-power.	Wind-power.	Water-power.	Horse-power.	Manual Labour only.			
1884	156	54	1	1	18	82	644	1,754	3,614
1885	170	67	1	1	18	83	801	1,863	4,018
Increase ...	14	13	...	...	...	1	157	109	404

* The figures in this column apply to purchased lands only. Twenty-four of the brickyards in 1884 and thirty-two in 1885 were on Crown lands. In these cases no estimate of the value of the land is given.

TANNERIES, FELLMONGERIES, AND WOOL-WASHING ESTABLISHMENTS, 1884 AND 1885—*continued.*

Year ended March.	Number of Hides and Skins Tanned.	Number of Skins Stripped of Wool.	Other Wool Washed.	Approximate Total Value of—		
				Machinery and Plant.	Lands.*	Buildings.
			lbs.	£	£	£
1884	1,817,429	1,913,055	7,191,664	106,605	58,720	130,180
1885	1,860,341	2,810,477	9,378,479	110,077	72,772	149,475
Increase ...	42,912	897,422	2,186,815	3,472	14,052	18,295

Value of materials used and produced.

859. An estimate of the value of the materials used and articles produced in tanneries, fellmongeries, and wool-washing establishments was obtained at the census of 1881, but no later information exists respecting these values. The following are the figures :—

TANNERIES, FELLMONGERIES, AND WOOL-WASHING ESTABLISHMENTS, 1880–81.

Value of materials used	£1,008,531
„ articles produced	1,406,274
Increased value	£397,743, or 39 per cent.

Woollen mills.

860. The number of woollen mills in 1884–5 was 2 more than in the previous year, and an increase is noticeable in the cloth manufactured, hands employed, and value of plant, lands, and buildings. A decrease of nearly 332,000 lbs. occurred in the quantity of wool used, of 1,100 in the pairs of blankets made, and no shawls appear to have been made against 259 in the previous year; but an increase of 247,000 yards took place in the out-put of tweed, cloth, flannel, &c., of 120 in the number of hands employed; and the value of the machinery, lands, and buildings was increased by £40,000 :—

WOOLLEN MILLS, 1884 AND 1885.

Year ended March.	Total Number of Woollen Mills.	Horse-power of Steam Engines.	Quantity of Wool used.	Goods Manufactured: Quantity of—		
				Tweed, Cloth, Flannel, &c.	Blankets.	Shawls.
			lbs.	yards.	pairs.	number.
1884 ...	7	745	1,833,650	830,604	2,531	259
1885 ...	9	880	1,501,960	1,077,800	1,430	...
Increase ...	2	135	...	247,196	...	...
Decrease ...	...	...	331,690	...	1,101	259

* The figures in this column apply to purchased lands only. Six of the establishments in 1884 and eight in 1885 were on Crown lands. In these cases no valuation of the land has been given.

WOOLLEN MILLS, 1884 AND 1885—*continued.*

Year ended March.	Hands employed.		Approximate Total Value of—		
	Males.	Females.	Machinery and Plant.	Lands.	Buildings.
			£	£	£
1884	398	296	144,594	4,032	60,874
1885	453	361	175,299	6,382	67,900
Increase ...	55	65	30,705	2,350	7,026

861. The value of the raw material used in woollen mills, and of the articles produced, was returned for the census year, but not since, the difference in favour of the manufactured articles being £79,298. The following are the figures :— Value of articles used and produced.

WOOLLEN MILLS, 1880–81.

Value of materials used	£89,412
„ articles produced	168,710
Increased value	£79,298, or 89 per cent.

862. The soap and candle works returned in 1885 were more numerous by 3 than those in 1884, and the hands employed were more numerous by 21. . The weight of soap made was less by 27,000 cwt. than that in 1884, but the candles manufactured exceeded the quantity in that year by 18,000 cwt.; a higher valuation by £13,400 was placed upon the machinery, lands, buildings :— Soap and candle works.

SOAP AND CANDLE WORKS, 1884 AND 1885.

Year ended March.	Number of Establishments.	Establishments employing—		Amount of Horse-power of Steam Engines.	Number of Hands employed.	Soap made.	Candles made.	Approximate Total Value of—		
		Steam-power.	Manual Labour only.					Machinery and Plant.	Lands.*	Buildings.
						cwt.	cwt.	£	£	£
1884 ...	29	24	5	411	417	140,235	38,530	98,534	24,522	35,490
1885 ...	32	21	11	367	438	113,190	56,612	104,525	23,105	44,305
Increase ...	3	...	6	...	21	...	18,082	5,991	...	8,815
Decrease ...	...	3	...	44	...	27,045	...	....	1,417	...

863. The value of the raw material used, and of the articles produced, in soap and candle factories was returned for the twelve months preceding Value of articles used and produced.

* The figures in this column apply to purchased land only. Three of the establishments in 1884 and four in 1885 were on Crown lands. In these cases no valuation of the land is given.

the census, with the following result. No later information exists on these points:—

SOAP AND CANDLE WORKS, 1880–81.

Value of raw materials used	...	...	£288,340
„ articles produced	...	...	450,924
Increased value	...	...	£162,584, or 56 per cent.

Tobacco manufactories.

864. In 1885 the number of tobacco manufactories returned was one less than in the previous year, and the hands employed were fewer by 61; there was a considerable falling-off in the quantity of tobacco manufactured, but an increase in the quantity of snuff and in the number of cigars made. The value of lands and buildings fell off by £9,350, but the value of plant in use increased by £450:—

TOBACCO MANUFACTORIES, 1884 AND 1885.

Year ended March.	Number of Establishments.	Establishments employing— Steam-power.	Water-power.	Manual Labour.	Amount of Horse-power of Steam Engines.	Number of Hands employed. Males.	Females.	Quantity of— Tobacco Manufactured.	Snuff Manufactured.	Number of Cigars Manufactured.	Approximate Total Value of— Machinery and Plant.	Lands.	Buildings.
								lbs.	lbs.		£	£	£
1884 ..	13	4	1	8	56	538	229	1,279,671	1,323	7,196,200	34,345	51,800	35,465
1885 ..	12	4	1	7	54	504	202	1,254,052	2,213	8,044,270	34,795	45,400	32,515
Increase ..	..	..	..	..	..	..	..	..	890	848,070	450	..	..
Decrease ..	1	..	..	1	2	34	27	25,619	..	..	..	6,400	2,950

Value of raw and manufactured materials.

865. According to the census returns, the value of the articles produced in tobacco manufactories in 1880–81 showed an excess over that of the raw materials used of £72,870, which is equivalent to an increase of value by the process of manufacture amounting to 58 per cent. The following are the figures:—

TOBACCO MANUFACTORIES, 1880–81.

Value of materials used	...	...	£126,450
„ articles produced	...	...	199,320
Increased value	...	...	£72,870, or 58 per cent.

Distilleries.

866. Seven distilleries were returned in 1884, but only six in 1885; and there was a slight falling-off in the horse-power of engines employed. The hands employed, however, increased by 1, and the quantity of spirits made increased by nearly 29,000 gallons. An increase of £6,400 occurred in the valuation placed on lands, which was partly counterbalanced by a falling-off of £5,300 in that placed on machinery, plant, and buildings. The following are the figures for the two years:—

DISTILLERIES, 1884 AND 1885.

Years ended March.	Number of Distilleries.*	Amount of Horse-power of Steam Engines.	Number of Hands employed.	Spirits made.	Approximate Value of— Machinery and Plant.	Land.	Buildings and Improvements.
				gallons.	£	£	£
1884 ...	7	96	64	208,450	30,500	24,100	24,300
1885 ...	6	85	65	237,104	28,500	30,500	21,000
Increase ...	...	...	1	28,654	...	6,400	...
Decrease ...	1	11	...	...	2,000	...	3,300

867. The manufactories and works, exclusive of those of which mention has already been made—viz., flour mills, breweries, distilleries, brickyards, potteries, tanneries, fellmongeries, wool-washing establishments, woollen mills, soap works, candle manufactories, and tobacco manufactories—were more numerous by 39 than those returned in 1884. It will be observed that increases took place in all the items respecting which the following table affords information, except the factories employing water, wind, or horse-power, which fell off by 3, 1, and 1 respectively. The hands employed were more numerous by 1,820; and the value of machinery, plant, lands, and buildings was greater by £534,000 than in that year. The returns are subjoined:— Other manufactories, works, &c.

MANUFACTORIES, WORKS, ETC., 1884 AND 1885.

(Exclusive of Flour Mills, Breweries, Distilleries, Brickyards, Potteries, Tanneries, Fellmongeries, Wool-washing Establishments, Woollen Mills, and Soap, Candle, and Tobacco Manufactories.)

Year ended March.	Number of Manufactories, Works, &c.	Manufactories, &c., employing— Steam.	Water.	Gas.	Wind	Horse-power.	Manual Labour only	Amount of Horse-power employed.
1884 ...	2,157	840	19	131	1	22	1,144	11,799
1885 ...	2,196	870	16	139	...	21	1,150	12,482
Increase	39	30	...	8	...	...	6	683
Decrease	...	...	3	...	1	1	...	...

Year ended March.	Number of Hands employed. Males.	Females.	Approximate Total Value of— Machinery and Plant.	Lands.	Buildings.
			£	£	£
1884 ...	32,291	7,632	3,137,321	1,961,329	2,302,148
1885 ...	34,078	7,668	3,396,887	2,203,875	2,334,241
Increase ...	1,784	36	259,566	242,546	32,093

* All these establishments employ machinery worked by steam-power.

Manufactories of all descriptions.

868. By summarizing the returns of manufactories and works of all descriptions, including not only such as are embraced in the foregoing table, but also those excluded therefrom—viz., flour mills, breweries, distilleries, brickyards, potteries, tanneries, fellmongeries, wool-washing establishments, woollen mills, soap works, candle manufactories, and tobacco manufactories—it is found that during 1884–5 the number of establishments increased by 79, those using steam or gas by 68, the amount of horse-power by 1,347, the hands employed by 2,536, and the value of machinery, lands, and buildings by over £785,000. The returns of the two years are contained in the following table :—

MANUFACTORIES, WORKS, ETC., 1884 AND 1885.

Including Flour Mills, Breweries, Distilleries, Brickyards, Potteries, Tanneries, Fellmongeries, Wool-washing Establishments, Woollen Mills, Soap, Candle, and Tobacco Manufactories, as well as all other Manufactories, Works, &c.)

Year ended March.	Total Number of Establishments.	Number of Establishments using Steam or Gas Engines.	Horse-power of Engines.	Number of Hands employed.	Approximate Value of Lands,* Buildings, Machinery, and Plant.
					£
1884 ...	2,777	1,272	17,602	46,857	9,414,527
1885 ...	2,856	1,340	18,949	49,393	10,199,918
Increase ...	79	68	1,347	2,536	785,391

Names of manufactories.

869. The manufacturing establishments of all kinds respecting which returns are obtained are named in the following table, and their numbers are given for 1880–81 and 1884–5. For the former, which was the census year, are also given the approximate values of the materials used and articles produced, and for the latter the number of hands employed and the approximate value of lands, buildings, machinery, and plant. 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 believed that a different system prevails in some of the neighbouring colonies, and that particulars of many establishments which in Victoria would not be considered worthy of notice find place in their returns :—

* 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 235 in 1884, and 211 in 1885.

MANUFACTORIES, WORKS, ETC., 1881 AND 1885.

Description of Manufactory, Works, &c.	1880-81.			1884-5.		
	Number of Establishments.	Approximate Value of— Materials used.	Articles produced.	Number of Establishments.	Hands Employed.	Approximate Value of Machinery, Plant, Lands, and Buildings.
		£	£			£
BOOKS AND STATIONERY.						
Account-book manufactories, manufacturing stationers	7	62,386	100,057	7	722	207,702
Printing establishments*	89	202,475	569,797	131	3,501	701,780
MUSICAL INSTRUMENTS.						
Organ-building establishments ...	2	3,500	8,050	5	35	8,250
Pianoforte manufactories	5	1,700	4,150	4	19	3,650
CARVING FIGURES, ETC.						
Statuary works	...	...	...	2	5	4,970
DESIGNS, MEDALS, AND DIES.						
Diesinkers, engravers, medalists, trade-mark makers	6	3,350	9,200	4	49	17,600
Indiarubber stamp manufactories† ...	2	350	1,700	...	...	...
Type foundry	1	...	...	1	...	...
PHILOSOPHICAL INSTRUMENTS, ETC.						
Electric-lighting apparatus manufactory	...	...	...	1	...	...
Philosophical instrument manufactories	1	...	...	4	14	8,920
SURGICAL INSTRUMENTS.						
Surgical instrument, truss—manufactories	6	2,400	5,600	3	20	6,150
ARMS, AMMUNITION, ETC.						
Blasting powder, dynamite, &c.—manufactories	3	9,964	16,737	5	68	31,430
Fuze manufactory	1	...	...	1	...	...
Shot manufactories	...	...	...	2	5	6,650
MACHINES, TOOLS, AND IMPLEMENTS.						
Agricultural implement manufactories	54	91,659	202,535	54	1,152	114,419
Cutlery, tool—manufactories ...	3	800	2,400	6	26	9,855
Domestic implement‡ manufactories	2	...	...	11	76	11,255
Iron foundries and engineering establishments§	147	329,395	723,919†	145	5,312	837,117
Pattern-makers	...	...	...	5	19	3,760
Sheet-iron and tin works	61	143,000	247,299	50	832	106,515
CARRIAGES AND HARNESS.						
Carriage lamp manufactories ...	3	900	2,950	2	24	6,020
Coach, waggon, &c.—manufactories	132	99,415	212,615	168	2,204	247,361
Perambulator manufactories ...	3	1,750	5,000	4	27	2,770
Saddle, harness—manufactories ...	47	35,792	81,130	63	636	87,131
Saddle-tree, &c., manufactories ...	4	2,400	6,860	3	17	3,125
Whip manufactories	3	940	2,950	3	23	2,150

* Including paper-bag manufactories.
† Indiarubber stamps are now generally made by manufacturing stationers. See Books and Stationery above.
‡ Including bellows, churn, washing machine, &c., makers.
§ Including brassfounders and pattern-makers.

MANUFACTORIES, WORKS, ETC.—*continued.*

Description of Manufactory, Works, &c.	1880–81.			1884–5.		
	Number of Establishments.	Approximate Value of—		Number of Establishments.	Hands Employed.	Approximate Value of Machinery, Plant, Lands, and Buildings.
		Materials used.	Articles produced.			
		£	£			£
SHIPS AND BOATS.						
Ship, boat—builders	10	3,570	14,614	8	42	8,115
Ships' wheels, blocks, &c.—manufactories	3	505	1,100	1	...	...
Floating-dock	1	...	...	7	158	436,598
Graving-docks	3	...	...			
Patent slips	2	...	...			
HOUSES, BUILDINGS, ETC.						
Architectural modelling works ...	11	3,584	8,900	4	17	6,960
Lime works	21	6,560	17,216	28	281	12,320
Patent ceiling ventilator manufactories	2	250	1,600	7	36	7,700
Roof-covering composition manufactories	2	944	2,180	...	...	...
Venetian blind manufactories ...	12	5,500	11,750	10	105	15,975
FURNITURE.						
Bedding, flock, and upholstery manufactories	15	13,350	26,880	23	208	33,530
Cabinet works, including billiard-table makers	63	131,000	258,188	78	1,500	212,407
Earth-closet manufactories ...	1	...	...	2	30	4,900
Iron-safe manufactories	2	670	970	3	14	3,150
Looking-glass manufactories ...	2	400	1,300	2	23	4,850
Picture-frame makers, &c. ...	13	5,627	11,550	11	46	35,995
Wood-carving and turnery works ...	10	4,965	10,800	23	106	21,410
CHEMICALS.						
Chemical works	6	25,160	43,600	11	154	81,705
Dye works	6	1,130	7,150	15	80	22,945
Essential oil manufactories ...	4	1,825	3,900	5	36	6,165
Ink, blacking, blue, washing-powder, &c.—manufactories	12	37,280	58,560	9	174	39,510
Japanner	...	...	...	1	...	...
Paint, varnish—manufactories ...	1	...	...	2	9	4,830
Salt works	8	4,882	10,810	6	31	6,025
TEXTILE FABRICS.						
Woollen mills	10	89,412	168,710	9	814	249,581
DRESS.						
Boot manufactories	105	355,418	686,922	94	4,165	203,357
Clothing factories	63	370,181	761,401	86	5,317	280,341
Fur manufactories	3	4,300	6,900	6	58	7,575
Hat, cap—manufactories	22	34,753	66,264	26	611	83,958
Hosiery manufactories	...	...	...	2	22	3,440
Oilskin, waterproof-clothing—manufactories	5	900	5,700	7	72	6,575
Umbrella and parasol manufactories	9	13,180	24,825	10	130	39,037
Wig manufactory	1	...	...	...	...	...
FIBROUS MATERIALS.						
Rope, twine, mat, bag, sack—manufactories	18	66,975	102,280	14	449	90,796
Tent, tarpaulin—manufactories ...	12	28,860	47,250	18	103	28,253

MANUFACTORIES, WORKS, ETC.—*continued.*

Description of Manufactory, Works, &c.	1880–81.			1884–5.		
	Number of Establishments.	Approximate Value of— Materials used.	Articles produced.	Number of Establishments.	Hands Employed.	Approximate Value of Machinery, Plant, Lands, and Buildings.
		£	£			£
ANIMAL FOOD.						
Cheese factories	28	17,733	31,586	27	96	24,625
Meat-curing establishments ...	16	192,150	258,790	20	376	77,880
VEGETABLE FOOD.						
Arrowroot, maizena, oatmeal, starch —manufactories	5	5,620	8,000	3	69	12,975
Biscuit manufactories	13	106,110	181,840	7	619	49,390
Confectionery works	8	61,600	88,800	12	359	56,050
Flour mills	144	1,397,099	1,637,351	139	869	501,733
Jam, sauce, pickle—manufactories ...	20	75,930	117,570	25	466	85,598
Macaroni works	2	125	230	1	...	...
DRINKS AND STIMULANTS.*						
Aërated waters, gingerbeer, liqueur, &c.—works	114	91,849	196,810	138	851	219,689
Breweries	81	442,885	780,501	74	955	490,955
Coffee, chicory, cocoa, mustard, spice —works	12	235,355	322,786	16	310	149,040
Distilleries	6	26,368	44,500	6	65	80,000
Malthouses	14	67,635	98,000	15	97	78,800
Sugar, treacle—refineries	1	...	...	2	200	204,000
Tobacco, cigars, snuff—manufactories	16	126,450	199,320	12	706	112,710
Vinegar works	5	8,500	14,600	5	25	6,930
ANIMAL MATTERS.						
Boiling-down, tallow-rendering—establishments	15	28,303	77,000	24	139	27,453
Bone mills and bone manure manufactories	15	50,225	70,845	14	98	30,919
Brush manufactories	8	15,700	27,800	8	155	16,850
Comb manufactory	1	...	...	...	...	...
Catgut manufactories	2	800	2,000	...	...	...
Curled hair manufactories ...	3	1,700	2,565	2	16	1,810
Glue, oil—manufactories	7	8,200	12,700	6	32	12,180
Leather belting (machinery) manufactory	...	...	...	1	...	...
Morocco, fancy leather—manufactories	3	2,480	4,400	2	15	1,200
Portmanteau, trunk—manufactories	7	5,680	9,520	12	126	18,590
Soap, candle—works	38	288,340	450,924	32	438	171,935
Tanneries, fellmongeries, and wool-washing establishments	151	1,008,531	1,406,274	170	1,863	332,324
Ostrich feather factory	...	...	...	1	...	...
VEGETABLE MATTERS.						
Bark mills	8	17,000	25,650	6	23	4,610
Basket-making works	9	1,670	4,560	11	58	8,560
Broom manufactories †	2	6,200	13,000	2	43	3,950
Chaff-cutting, corn-crushing—works‡	165	357,232	516,623	196	876	196,611

* Places where wine is made are not included. The number of wine presses returned in 1883–4 was 427.

† See also Brush factories under "Animal Matters" *supra.*

‡ 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, which numbered 16,964 in 1883–4.

MANUFACTORIES, WORKS, ETC.—*continued.*

Description of Manufactory, Works, &c.	1880-81.			1884-5.		
	Number of Establishments.	Approximate Value of—		Number of Establishments.	Hands Employed.	Approximate Value of Machinery, Plant, Lands, and Buildings.
		Materials used.	Articles produced.			
VEGETABLE MATTERS—*continued.*		£	£			£
Cooperage works	24	17,829	35,243	29	189	35,875
Cork manufactories	2	2,100	3,100	2	10	2,200
Fancy-box, hat-box—manufactories	5	3,080	6,745	4	89	10,700
Paper manufactories	3	24,300	47,370	2	180	90,350
Saw mills, moulding, joinery, &c.—works	174	552,463	973,127	244	4,333	520,854
COAL AND LIGHTING.						
Gasworks	19	97,392	226,116	21	598	1,304,382
Electric-light works	...	...	...	1	...	...
STONE, CLAY, EARTHENWARE, AND GLASS.						
Artificial stone manufactory ...	...	...	...	1	...	...
Asbestos works	...	...	...	1	...	...
Brickyards and potteries	165	...	137,834	218	1,937	325,677
Filter manufactories	1	...	...	2	7	4,980
Glass manufactories, works ...	9	12,705	41,150	4	120	16,600
Stone-breaking, asphalte, tar-pavement—works	9	10,640	27,783	15	327	33,275
Stone and marble sawing, polishing—works	43	50,583	104,614	45	843	114,004
WATER.*						
Ice manufactories	2	2,000	7,000	4	48	40,550
GOLD, SILVER, AND PRECIOUS STONES.						
Goldsmiths, jewellers, and electro-platers (manufacturing)	28	62,020	109,650	25	378	98,970
Royal mint	1	...	...	1	48	70,000
METALS OTHER THAN GOLD AND SILVER.						
Bell foundry	1	...	...	...	...	...
Brass and copper foundries ...	...	...	...	18	288	61,480
Lead, pewter, and zinc works ...	5	17,850	23,800	3	19	19,150
Pyrites works	1	...	...	1	...	...
Smelting works	7	32,396	48,610	5	197	15,810
Wire-working establishments ...	10	3,650	9,800	9	71	14,800
Total where only one return was received for each of certain descriptions †	...	257,910	400,080	...	189	56,311
Total	2,468	7,997,745	13,370,836	2,856	49,393	10,199,918

* Works for the storage and supply of water are not included in the manufacturing tables. A table of water-works follows paragraph 872 *post*.

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

870. The difference between the value of materials used and articles produced in 1880–81, as shown by the table, indicates an increase in the value of the former by the process of manufacture of over 5⅓ millions sterling, or 67 per cent. The following are the exact figures:— Value of materials used and produced.

VALUE OF RAW AND MANUFACTURED MATERIALS, 1880–81.

	£
Value of materials operated upon ...	7,997,745
„ articles produced	13,370,836
Increased value	5,373,091, or 67 per cent.

871. By comparing the particulars respecting these manufactories, as returned in 1885 and in the first year of each of the two previous quinquennia, large increases at each successive period will be found in all the columns. The number of establishments increased by 6 per cent. between 1875 and 1880, and by 28 per cent. between 1880 and 1885; the hands employed increased by 19 per cent. and 49 per cent. in those intervals respectively; and the value of machinery, plant, lands, and buildings increased by 26 per cent. in the first, and by 52 per cent. in the second, interval. The following is the comparison referred to:— Summary of manufactories at three periods.

SUMMARY OF MANUFACTORIES, WORKS, ETC., 1875, 1880, AND 1885.

Year ended March.	Total Number of Establishments.	Number of Establishments using Steam or Gas.	Horse-power of Engines.	Number of Hands employed.	Approximate Value of Lands, Buildings, Machinery, and Plant.
					£
1875 ...	2,104	843	11,668	27,959	5,313,010
1880 ...	2,239	877	12,677	33,247	6,711,745
1885 ...	2,856	1,340	18,949	49,393	10,199,918

872. Extensive works for the storage and supply of water for domestic, mining, and irrigation purposes have been constructed by the Government in various parts of the colony. The most important of these is the Yan Yean reservoir, together with the subsidiary reservoirs at Jack's Creek, Morang, Preston, Essendon, and Caulfield, by means of which Melbourne is provided with a supply of fresh water at a high pressure. The Yan Yean is an artificial lake situated 22 miles from the city, and 595 feet above its level, which covers an area of 1,360 acres, or rather more than two square miles. To meet the increased demand for water consequent upon the growth of the city and suburbs, a new channel has been formed for the purpose of turning into the reservoir other considerable streams of pure water, by which means all fear of the supply becoming exhausted in seasons of drought will be at an end. The following table contains a list of these works, also a statement of the estimated capacity of each work, and its actual or Waterworks.

estimated cost. Some of these works have been completed, and others are in course of construction. It will be observed that the storage capacity of the whole is nearly thirteen thousand four hundred million gallons, and the cost over four millions sterling:—

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	2,003,373
	Jack's Creek	60,000,000	
	Morang (pipe head) ...	2,800,000	
	Preston (storage) ...	15,000,000	
	Essendon (storage 1) ...	6,000,000	
	„ („ 2) ...	1,000,000	
	Caulfield („) ...	10,000,000	
Coliban Scheme, including Reservoirs at—	Malmsbury	2,841,000,000	917,681
	Expedition Pass ...	128,000,000	
	Old Post Office Hill ...	2,000,000	
	Barker's Creek, Harcourt	611,500,000	
	Red Hill	1,250,000	
	Spring Gully	149,000,000	
	Crusoe Gully	320,000,000	
	Big Hill	68,000,000	
	Taradale (tank) ...	65,000	
	Crocodile Gully ...	5,407,462	
	Spring Gully	7,000,000	
	Solomon's Gully ...	1,250,000	
	Big Hill, Pipe Head Reservoir	300,000	
	Sparrow Hawk, Pipe Head Reservoir	1,500,000	
Geelong and suburbs, including Reservoirs at—	Stony Creek (Old) ...	354,000,000	329,550
	„ (New) ...	143,000,000	
	Lovely Banks	6,000,000	
	Anakie (pipe head) ...	900,000	
	Newtown	500,000	
Creswick ...	Bullarook	45,000,000	15,449
	Ashwell's Gully ...	8,000,000	
	Adekate Creek ...	18,000,000	
Tarnagulla	Tarnagulla	8,000,000	1,401
Inglewood (Old) ...	Inglewood	5,670,000	1,112
Inglewood (New) ...	„	13,792,000	4,562
Maryborough	Maryborough	21,000,000	1,839
Maldon	Maldon	17,500,000	4,037
Beechworth	Lake Kerferd	191,360,000	44,567
Chiltern ...	Barrambogie Springs ...	4,753,869	7,490
	Railway Tank ...	6,000	345
Wangaratta	Tank at Railway Station	40,000	4,669
Rutherglen	Rutherglen	30,000,000	3,647
Ararat ...	Oliver's Gully ...	19,615,554	5,000
	Langi-Ghiran	15,200,000	40,152
	Mount Cole extension ...	*	10,011
	Opossum Gully ...	24,621,547	2,481
Beaufort ...	Beaufort	85,881,110	1,991
	Service Reservoir, Camp Hill	1,200,000	7,463
Ballarat	Four and One Weir Basin in Bungaree	638,960,000	362,000

* No reservoir (running stream).

WATERWORKS IN VICTORIA—*continued.*

Name of Town or District to be supplied.	Reservoir.		Actual or Estimated Cost.
	Where situated.	Storage Capacity.	
		gallons.	£
Carngham	Snake Valley	18,100,000	719
Clunes	Newlyn	265,000,000	81,860
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	5,821
	„ (2) ...	26,769,369	
Kilmore	Kilmore	14,466,000	2,986
Myers Creek	Myers Creek	13,000,000	844
Echuca ...	Echuca (tank No. 1) ...	68,000	19,200
	„ (tank No. 2) ...	70,000	
Dunolly ...	Dunolly, Old Lead ...	17,200,000	1,912
	„ Township ...	7,500,000	3,000
St. Arnaud	St. Arnaud	50,000,000	14,677
Redbank	Redbank	27,100,000	2,785
Lamplough	Lamplough	9,261,946	1,232
Talbot ...	Amherst	13,813,284	11,193
	Evansford	182,978,781	15,290
Wedderburn	Wedderburn	3,100,000	2,372
Chewton	Commissioner's Gully ...	7,000,000	1,203
Daylesford	Wombat Creek ...	31,284,413	2,527
Moyston	Campbell's Reef ...	5,400,000	1,143
Orville	'Possum Hill	2,000,000	250
Stawell ...	Quartz Reefs ...	9,725,627	1,229
	Pleasant Creek ...	7,905,750	805
	Four Posts	3,100,000	802
	Fyan's Creek	...	115,466
	Service Reservoir ...	2,250,000	
Woodend	Newham	...*	5,163
Great Western	Great Western Dam ...	1,211,662	489
Elaine	Lal Lal	90,000,000	...†
Sebastopol	White Horse Ranges ...	4,830,904	2,862
Shire of Grenville	Linton	8,000,000	2,124
	Haddon	3,100,000	1,091
	Happy Valley... ...	2,350,995	623
	Piggoreet	600,000	79
	Kangaroo (Berringa) ...	1,000,000	171
	Cape Clear	400,000	68
	Staffordshire Reef ...	375,000	232
	Illabarook	3,069,000	408
	Rokewood Junction ...	480,000	198
	Lucky Woman's ...	125,000	43
Shire of Leigh ...	Rokewood	5,000,000	417
	Break-of-Day... ...	4,500,000	570
	Teesdale	4,000,000	530
Shire of Tullaroop ...	Chinaman's Flat ...	2,500,000	2,336
Rushworth	Rushworth	7,000 000	1,800
Homebush	Homebush	5,000,000	328
Hamilton	Hamilton	30,000,000	13,616
Melton	Melton	2,290,000	800
Barry's Reef	Barry's Reef	120,000	358
	Total	13,382,583,932	4,095,851

* No reservoir (pipe-head tank). † Cost cannot at present be given.

Stone quarries.

873. The stone quarries returned in 1885 were more numerous by 16 than in 1884, but the out-put of stone fell off by 108,000 cubic yards, and the hands employed by 142. The following are the figures for the two years :—

STONE QUARRIES, 1884 AND 1885.

Year ended March.	Number of Quarries.	Cubic Yards of Stone raised.					Steam Engines in use.	
		Bluestone.	Slate and Flagging.	Sandstone and Freestone.	Granite.	Other.	Number.	Horse-power.
1884	131	419,890	1,585	29,900	1,200	10,600	10	118
1885	147	326,153	1,307	12,120	1,632	13,900	7	107
Increase	16	...	...	...	432	3,300	...	...
Decrease	...	93,737	278	17,780	...	...	3	11

Year ended March.	Number of Hands employed.	Approximate Total Value of—			
		Stone raised.	Machinery and Plant.	Lands.*	Buildings.
		£	£	£	£
1884	872	94,730	20,477	18,228	9,761
1885	730	92,305	19,917	13,838	5,783
Decrease	142	2,425	560	4,390	3,978

Gold raised, 1883 and 1884.

874. According to the estimate of the Mining Department, the gold raised in Victoria in 1884 was 778,618 oz., which is less than the quantity obtained in 1883 by 31,429 oz., representing, at £4 per oz., a diminished value of £125,716. The following are the figures for the two years :—

QUANTITY AND VALUE OF GOLD RAISED IN 1883 AND 1884.

Year.	Gold raised in Victoria.	
	Estimated Quantity.	Value, at £4 per oz.
	oz.	£
1883	810,047	3,240,188
1884	778,618	3,114,472
Decrease ...	31,429	125,716

* The figures in this column apply to purchased land only. Twenty-four of the stone quarries in 1884 and fifty-two in 1885 were on Crown lands, and in these cases no valuation of the land has been given.

875. From 1871 to 1879 the quantity of gold raised from year to year had been steadily diminishing, but in the next three years an improvement took place, which, however, was not sustained in 1883 and 1884, the yield in the latter year being less than in any other year since 1851, except 1878 and 1879. The following figures give an estimate of the quantity of gold raised in 1871 and each subsequent year:— Gold raised, 1871 to 1884.

ESTIMATED QUANTITY OF GOLD RAISED, 1871 TO 1884.

	oz.		oz.
1871	1,355,477	1878	775,272
1872	1,282,521	1879	758,947
1873	1,241,205	1880	829,121
1874	1,155,972	1881	858,850
1875	1,095,787	1882	898,536
1876	963,760	1883	810,047
1877	809,653	1884	778,618

876. Carrying on to the end of 1884 the calculations given in previous years, 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. The figures give an average per annum during the whole period of about 1,558,000 oz., which is more than twice the quantity raised in 1884:— Gold raised, 1851 to 1884.

ESTIMATED TOTAL QUANTITY AND VALUE OF GOLD RAISED IN VICTORIA, 1851 TO 1884.*

Gold raised in Victoria.	Estimated Quantity.	Value, at £4 per oz.
	oz.	£
Prior to 1884 ...	52,214,150	208,856,600
During 1884 ...	778,618	3,114,472
Total ...	52,992,768	211,971,072

877. The quantity of gold raised in all the Australasian colonies, from the period that deposits of that metal were first discovered in 1851 to the end of 1883, is estimated to have amounted to 76½ million ounces, valued at over 300 million pounds sterling. The following table, which has been compiled in the office of the Government Statist, Melbourne, contains particulars of the quantity and value of the gold produced in each colony during that period. Western Australia is absent from the list, since little, if any, gold has yet been discovered there :— Gold raised in Australasian colonies.

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

Produce of Gold in Australasian Colonies.*

Colony.	Gold produced.					
	Prior to 1883.		During 1883.		Total.	
	Estimated Quantity.	Value.	Estimated Quantity.	Value.	Estimated Quantity.	Value.
	oz.	£	oz.	£	oz.	£
Victoria ...	51,404,103	205,616,412	810,047	3,240,188	52,214,150	208,856,600
New South Wales	9,310,502	34,518,708	122,257	452,611	9,432,759	34,971,319
Queensland ...	3,876,260	14,241,166	193,994	698,138	4,070,254	14,939,304
South Australia	117,243	466,844	15,938	62,927	133,181	529,771
Total of Australia	64,708,108	254,843,130	1,142,236	4,453,864	65,850,344	259,296,994
Tasmania ...	289,151	1,115,384	46,577	176,442	335,728	1,291,826
New Zealand ...	10,053,648	39,383,087	222,899	892,445	10,276,547	40,275,532
Total of Australasia	75,050,907	295,341,601	1,411,712	5,522,751	76,462,619	300,864,352

Gold and silver raised in the United States.

878. The director of the U.S. Mint, Mr. Burchard, in his report for the year ended 30th June, 1884, sets down the yield of gold in the United States during 1883 as $29,060,000, or rather more than 6 millions sterling,† which exceeds the yield of the whole of Australasia in that year, as shown by the table. Mr. Burchard estimates the yield of silver in the United States during the same year to have been $48,000,000, or 10 millions sterling.

Gold produce of the world.

879. According to Mr. Mulhall,‡ the value of the gold produced in the different countries of the world during the 50 years ended with 1880 was as follows:—

Gold Produce of the World, 1830 to 1880.

Countries.	Value of Gold raised. (000,000's omitted.)	Percentage.
	£	
Spanish America	310,	21·5
United States	286,	19·7
Australia	258,§	17·8
Russia	173,	12·0
Brazil	145,	10·0
Africa	104,	7·1
Austria	65,	4·4
Other countries	107,	7·5
Total	1,448,	100·0

* The figures for Victoria and New South Wales express the quantity and value of all the gold raised in those colonies since its discovery in 1851; those for Queensland represent the exports of Queensland gold seaward since 1859, when that colony was separated from New South Wales; those for South Australia express the quantity and value of gold from that colony received at the Melbourne and Sydney Mints; those for New Zealand express the total exports of gold from that colony; and those for Tasmania express the quantity raised since 1866, there being no record of the quantity of gold raised prior to that period.

† A dollar has been assumed to be equal to $4\frac{1}{6}$ shillings. ‡ *Dictionary of Statistics*, page 220.

§ According to an estimate made in the office of the Government Statist, Melbourne, the value of gold raised in Australia during the period named amounted to £282,980,000, or about 25 millions sterling in excess of this estimate.

880. This would give an average of nearly £29,000,000 per annum, which is higher than the following estimate of the world's produce of gold between the years 1851 and 1882, taken from *L'Almanach de Gotha**:—

GOLD PRODUCE OF THE WORLD, 1851 TO 1882.

		Oz.		£
1851 to 1860	Annual average	6,485,838	or	25,943,352
1861 to 1870	„	6,059,153	„	24,236,612
1871 to 1880	„	5,512,353	„	22,049,412
1881	Year	5,204,176	„	20,816,704
1882	„	4,988,438	„	19,953,752

Gold derived from alluvial and quartz workings.

881. Of the gold which was raised in Victoria during 1884, 471,085 oz. was obtained from quartz reefs, and 307,533 oz. from alluvial deposits. These figures, as compared with those for the previous year, show a decrease of 21,738 oz. in the yield of quartz reefs, and of 8,174 oz. in that of alluvial workings. The respective proportions of quartz and alluvial gold raised were 60 and 40 per cent. in both years.

Value of gold per miner.

882. The value of gold raised in proportion to the number of miners at work† fell to its lowest point in 1879, when it only amounted to £76 1s. 2d. per head; but since then it has been increasing, and in 1884 reached to £106 14s. 6d. per head, which is the highest average in 25 years. The following figures, which have been taken from the reports of the Secretary for Mines, express this proportion for the last fourteen years:—

VALUE OF GOLD PER MINER,‡ 1871 TO 1884.

	£	s.	d.
1871	93	6	1½
1872	93	17	1½
1873	93	16	2½
1874	99	8	3
1875	104	4	4
1876	89	19	6¾
1877	82	6	1¾
1878	82	12	11½
1879	76	1	2¼
1880	81	18	11¾
1881	95	11	9½
1882	95	19	7¾
1883	95	6	3½
1884	106	14	6¼

* Page 1078, where only the quantities have been given, in kilogrammes, which have been converted into ounces on the assumption that a kilogramme is equal to 2·6785 lbs. troy. The values have been calculated at a uniform rate of £4 per oz.

† For the number of gold miners at work in 1883, see paragraph 129 *ante*.

‡ These amounts are sometimes incorrectly spoken of as the "average earnings" of the miners. It has been 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.

Value of gold per alluvial and quartz miner.

883. The same reports show that, in proportion to the number of miners engaged in alluvial and quartz mining, the yield of gold from the latter has frequently been more than twice as large as that from the former. The following are the figures for the last eight years :—

VALUE OF GOLD PER ALLUVIAL AND QUARTZ MINER, 1877 TO 1884.

	Alluvial Miners.			Quartz Miners.		
	£	s.	d.	£	s.	d.
1877	47	8	0¼	139	12	0¼
1878	47	3	6¾	138	7	7¼
1879	48	10	1½	118	8	7
1880	49	14	2	129	11	7¾
1881	62	0	9¾	141	19	2½
1882	68	14	1½	131	19	5½
1883	66	4	4	132	13	2
1884	80	16	9	148	14	4

Diamond drills.

884. Up to the end of June, 1884, £69,686 had been expended by the Government on the purchase and working of diamond drills, viz., £76 in 1877–8; £8,724 in 1878–9; £3,448 in 1879–80; £6,858 in 1880–81; £20,000 in 1881–2; £18,040 in 1882–3; and £12,540 in 1883–4. Since the drills were first used, the number of bores put down in search of gold has been 181, of an aggregate depth of 61,201 feet, or about 11¾ miles; and the number of bores in search of coal has been 16, of an aggregate depth of 13,165 feet, or about 2½ miles. The Government employ one drill in prospecting in each mining district solely at the expense of the State; they also allow the use of the drills and appliances free of all rent charges, and subsidize companies or individuals employing them for gold mining to the extent of one-half, and for coal mining to the extent of two-thirds, of the necessary expenses incurred in renewals, repairs, and working the machinery; provided such companies or individuals are engaged in prospecting operations and are not working their mines profitably. But the cost of all necessary tubing is borne entirely by the company employing the drill, and the drills must be kept in repair and returned to the Government in good order when boring operations are completed.

Diamonds for drilling.

885. Diamonds are supplied by the Government to the parties using the drills at current rates. Those which experience has found to be the most useful for underground drills are Brazilian boarts, as nearly globular in shape as possible, and Brazilian carbons, as nearly cubical

in shape and as smooth and free from sharp angles as they can be obtained. Cape boarts, which are much cheaper than the Brazilian stones, have been tried, but have been found to be quite unfit for piercing dense basalts and hard broken schistose rocks. The present price of Brazilian boarts is 84s. and of carbons 60s. per carat. The best stones are not always obtainable even at these rates.

Results of boring operations.

886. In consequence of the reticence of mining companies, it is not easy to obtain accurate information respecting the results of boring operations, but it is known that the use of the drills has led to the discovery of gold both in alluvial and quartz, notably in the mines of the G.G. Consolidated, the Madame Berry, and the Magdala companies; and there is every reason to hope that important discoveries will be made through some of the drills now employed in searching for coal. On the whole, there can be no doubt that, under efficient management, these machines are a valuable aid to mining.

Steam engines used in mining.

887. Of the steam engines employed in connexion with gold mining, about a fifth are used on alluvial and four-fifths on quartz workings. The following is the number of engines in use and their horse-power in each of the last eleven years :—

STEAM ENGINES USED IN GOLD MINING, 1874 TO 1884.

	Number.	Horse-power.
1874	1,141 ...	24,866
1875	1,101 ...	24,224
1876	1,081 ...	23,947
1877	1,067 ...	23,416
1878	1,036 ...	22,711
1879	1,024 ...	22,509
1880	1,030 ...	22,499
1881	1,034 ...	23,379
1882	1,074 ...	24,692
1883	1,087 ...	25,933
1884	1,104 ...	26,228

Mining machinery.

888. The number of mining machines of all descriptions decreased from 3,768 in 1883 to 3,735 in 1884; and the value of such machines, as estimated by the Department of Mines, decreased from £1,897,129 in 1883 to £1,888,214 in 1884.

Auriferous reefs.

889. The number of quartz reefs proved to be auriferous, as returned by the mining surveyors and registrars, is 3,779 in 1883, and

3,768 in 1884. 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.

Extent of auriferous ground.

890. The approximate area of auriferous ground worked upon during the last quarter of 1884 was stated to be 310 square miles. The figures are derived from estimates, not from actual surveys, and they vary from year to year. As the different gold-workings are abandoned by the miners, they are excluded from the returns, which only take into account the ground on which gold mining operations are actually being carried on.

Average yield of quartz.

891. 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 924,431 tons in 1883, and 876,691 tons in 1884. The average yield per ton of these crushings was 9 dwt. 12·82 gr. in the former, and 9 dwt. 21·07 gr. in the latter, year. From similar estimates, extending over a series of years, and embodying information respecting the crushing of more than 20,000,000 tons of quartz, an average is obtained of about 10½ dwt. of gold to the ton of quartz crushed.

Deep quartz mining.

892. At least 17 of the shafts sunk in Victoria in search of auriferous quartz have attained depths exceeding 1,000 feet. The deepest shaft in the colony is the Magdala at Stawell, which is 2,409 feet, or nearly half a mile, deep, and other shafts in the same locality are 1,940, 1,830, 1,815, 1,770, 1,676, and 1,326 feet from the surface; at Sandhurst, the shaft of Lansell's 180 mine is 2,041 feet deep, and that of the Victory and Pandora company is 2,000 feet deep. There are also shafts 1,778, 1,563, 1,490, 1,483, and 1,450 feet deep respectively; at Maldon, there is one 1,220 feet deep; and at Clunes, there is one shaft 1,210 and another 1,193 feet deep.

Deep shafts of the world.

893. According to Mr. C. W. Langtree, Secretary for Mines,* the four deepest shafts in the world are the shaft at Spesenberg, near Berlin, 4,175 feet (rock salt); that at Viviers, in Belgium, 3,542 feet

* See Reports of the Mining Registrars for the Quarter ended 30th June, 1885.

(coal); that at Adalbert, in Bohemia, 3,288 feet (coal); and that at Ashton Moss, in England, 2,850 feet (coal). These are the deepest shafts, but a bore for artesian water has been put down at Potsdam, in the state of Missouri, U.S.A., to a depth of 5,500 feet, or 1 mile and 220 feet. This is believed to be the greatest depth to which the crust of the earth has yet been pierced.

Yield from deep mines.

894. The yield of gold from 2,306 tons of quartz obtained at Stawell from a depth of 1,200 feet averaged 8 dwt. per ton; 8,273 tons at Ballarat, at depths varying from 590 to 1,205 feet, averaged from 5 dwt. to 8 dwt. 19 gr. per ton; 87,347 tons at Sandhurst, at various depths between 500 and 1,306 feet, averaged from 7 dwt. 1 gr. to 2 oz. 6 dwt. 14 gr. per ton; 20,521 tons at Castlemaine, at depths varying from 300 to 745 feet, gave a yield of from 6 dwt. 11 gr. to 6 oz. 18 dwt. 1 gr. per ton; 31,987 tons at Maryborough, at depths varying from 300 to 820 feet, gave a yield of from 5 dwt. to 3 oz. per ton; 22,727 tons at Stringer's Creek, in Gippsland, at depths varying from 300 to 723 feet, yielded from 17 dwt. 23 gr. to 1 oz. 17 dwt. 7 gr. per ton; and 5,224 tons at Beechworth, at depths varying from 300 to 600 feet, yielded from 4 dwt. 17 gr. to 17 dwt. 2 gr. per ton.*

Gold-mining companies.

895. The number of gold-mining companies registered in 1884 was 201, the nominal capital of which was £1,762,910, and the number of shares 4,298,024. These figures, as compared with those for 1883, show an increase of 30 in the number of companies registered, and of nearly 400,000 in the number of shares, but a decrease of nearly £500,000 in the nominal capital. In the eight years prior to 1884 there were, altogether, 1,665 mining companies registered, with a nominal capital amounting in the aggregate to £19,518,651, distributed amongst 31 million shares.

Gold-mining leases.

896. Since the first issue of gold-mining leases, the total number granted has been 14,206, giving the right to mine over an area amounting in the aggregate to 265,145 acres. Of these leases, 566, for 12,459 acres, were granted in 1884, and 1,551, for 29,264 acres, were in force at the end of that year.

Leases for other minerals.

897. At the end of 1884, the following leases of Crown lands, conferring the privilege of working for minerals and metals other than gold, were in force:—

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* See Report of the Acting Secretary for Mines on *Mineral Statistics*, 1883; Parliamentary Paper, No. 37, Session 1884.

Leases for Minerals and Metals other than Gold, 1884.

Metals and Minerals.	Leases in force at end of 1884.	
	Number.	Area.
		acres.
Aluminium	1	57
Antimony	16	240
Coal	19	10,363
Copper	10	1,272
Gypsum	1	18
Ironstone	1	321
Kaolin	1	26
Lead	2	241
Lignite	1	471
Red ochreous clay	1	2
Slate	6	269
Slate and flagging	1	14
Tin and the ores of tin	14	1,609
Total	74	14,903

Leases for other minerals, 1883 and 1884.

898. The leases in force at the end of 1884, as shown in the table, were fewer by 34, and the area comprised therein was smaller by 2,348 acres, than at the end of 1883. The leases for tin mining fell off by 35, but those for coal mining were more numerous by 3 than in the previous year.

Minerals other than gold raised.

899. According to the estimate of the Mining Department, the following are the values of metals and minerals other than gold raised in Victoria from 1851 to the end of 1884:—

Value of Metals and Minerals other than Gold, 1851 to 1884.

Name.	Estimated Value.		
	1851 to 1883.	Year 1884.	Total.
	£	£	£
Silver	59,484	6,767*	66,251
Tin	361,074	1,900	362,974
Copper	105,559	...	105,559
Antimony	167,495	1,800	169,295
Lead	4,922	...	4,922
Iron	11,636	4,000	15,636
Coal	14,119	3,280	17,399
Lignite	2,895	289†	3,184
Kaolin	7,444	...	7,444
Flagging	59,761	3,075	62,836
Slates	940	850	1,790
Gypsum	7	...	7
Magnesite	12	...	12
Ores, mineral earthy clays, &c. ...	10,901	...	10,901
Diamonds	108	...	108
Sapphires, &c.	630	...	630
Total	806,987	21,961	828,948

* Extracted from gold at the Mint, quantity 27,070 oz.
† Quantity 577½ tons, estimated at 10s. per ton.

900. The following, according to the estimate of the Mining Department, is the number of men engaged in mining for various kinds of minerals or metals other than gold* at the end of 1884. The total shows a falling-off of 60 as compared with 1883 :— Miners for minerals other than gold.

MINERS FOR MINERALS OTHER THAN GOLD.

	Number of Miners.
Silver	2
Antimony	20
Ironstone	150
Kaolin	6
Lead	2
Coal	6
Slate and clay	68
Lignite	28
Total	282

901. The revenue derived from the gold-fields amounted to £21,644 in 1882–3, and £21,045 in 1883–4. The amount in the latter year was made up of the following items :— Revenue from gold-fields.

REVENUE FROM GOLD-FIELDS, 1883–4.

	£
Miners' rights	5,164
Business licences	445
Rents for leases of auriferous mineral lands... ...	14,735
Water-right and searching licences...	701
Total	21,045

902. A statement is subjoined of the amounts advanced from the revenue on loan to companies and individuals in order to assist in the development of the mining industry in the years named; also, of the amount repaid to the end of June, 1884 :— State aid to mining companies, &c.

	£
Amount advanced, 1875–6	1,500
„ „ 1877–8	250
„ „ 1878–9	18,800
„ „ 1879–80	500
Total	21,050
Amount repaid, 1880–81 ... ... £737	
„ „ 1881–2 ... ... 240 ...	977
Balance outstanding	20,073

* For number of gold miners, see paragraph 129 *ante*.

State aid to prospectors.

903. In addition to the above, a sum of £8,621 was expended in 1883–4 in granting assistance to miners engaged in prospecting operations, but it does not appear there is any proposition that this amount should be refunded.

Wages of miners, &c.

904. The weekly rates of wages paid for different descriptions of mining labour in the year 1884 are thus quoted by the Mining Department :—

RATES OF MINING LABOUR,* 1884.

	Per Week, without Rations.
General manager	£2 to £11
Legal manager	10s. to £5
Mining manager	£2 5s. to £8
Engineer	£2 10s. to £6 10s.
Engine-driver	£2 to £3 10s.
Pitman	£2 to £4
Blacksmith	£1 10s. to £3 12s.
Carpenter	... £2 5s. to £3 12s.
Foreman of shift	£2 to £3 10s.
Miner	£1 16s. to £2 11s.
Surface man (labourer)	18s. to £2 10s.
Boy	15s. to £2
Chinese	12s. 6d. to £2

Value of mining produce.

905. The estimated value of the produce raised from Victorian mines and quarries in 1884 is summarized as follows :—

VALUE OF MINING PRODUCE, 1884.

	£
Gold	3,114,472
Other metals and minerals	21,961
Stone from quarries	92,305
Total	£3,228,738

Agricultural, pastoral, and mining produce.

906. The estimated value of the agricultural, pastoral, and mining produce raised in Victoria during each of the last eleven years is given in the following table. It should be borne in mind that the prices of agricultural and pastoral produce, on which the value mainly depends, fluctuate from year to year.† In several of the years the value of the

* See also table of Wages near the end of Part *Interchange post.*

† For prices of agricultural produce in different years, see table following paragraph 829 *ante.*

pastoral produce was greater than that of the other two industries combined :—

VALUE OF AGRICULTURAL, PASTORAL, AND MINING PRODUCE, 1874 TO 1884.

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
1879 ...	5,875,313	6,375,965	3,136,527	15,387,805
1880 ...	5,395,021	9,855,800	3,397,661	18,648,482
1881 ...	5,893,874	8,684,218	3,533,658	18,111,750
1882 ...	6,439,972	9,297,812	3,681,245	19,419,029
1883 ...	7,372,143	10,213,914	3,357,252	20,943,309
1884 ...	6,565,527	9,813,741	3,228,738	19,608,006

Agricultural, pastoral, mining, and manufacturing produce.

907. The census taken on the 3rd April, 1881, enabled an approximate return to be made of the value of articles manufactured in the twelve months prior to that date, and the net result has already been stated to be £5,373,091.‡ If, on the assumption that the value of manufacturing produce was about the same in 1884 as in the census year, this amount be added to the figures in the lowest line of the last column in the above table, a total of the gross value of agricultural, pastoral, mining, and manufacturing produce will be obtained for the year 1884, amounting in the aggregate to £24,981,100.

Patents.

908. The patents for inventions applied for in 1884 numbered 295, as against 249 in the previous year. Since 1854 the total number of patents applied for has been 3,945.

Copyrights.

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

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

† Including the value of stone raised from quarries.

‡ See paragraph 870 *ante*.

COPYRIGHTS, 1870 TO 1884.

Subject of Copyright.	Copyrights Registered.		
	Prior to 1884.	During 1884.	Total.
DESIGNS.			
Articles of manufacture, chiefly of—			
Metals	209	15	224
Wood, stone, cement, or plaster ...	44	3	47
Glass	8	1	9
Earthenware	3	...	3
Ivory, bone, papier-maché, &c. ...	29	6	35
Woven fabrics	13	2	15
Miscellaneous	15	1	16
LITERARY PRODUCTIONS.			
Literary works	1,476	400	1,876
Dramatic „	67	4	71
Musical „	82	...	82
WORKS OF ART.			
Paintings	4	...	4
Drawings	20	1	21
Engravings	834	76	910
Photographs	927	23	950
Sculpture	2	1	3
Total	3,733	533	4,266

Trade-marks.

910. Provision for the registration of trade-marks was established under the Trade-marks Registration Act 1876 (40 Vict. No. 539), which came into operation on the 22nd September of that year. The registration of a person as the proprietor of a trade-mark is *primâ facie* evidence of his right to its exclusive use, subject to the provisions of the Act as to its connexion with the good-will of a business. From the period of the commencement of the Act to the end of 1884, 995 trade-marks were submitted for registration, and 741 were registered. During the year 1884, the number submitted was 209, and the number registered 145.