PART V.—PRODUCTION.

Alienation of Crown lands.

1038. 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 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.

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

1039. 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 1862 (25 Vict. No. 145).

1040. 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 alternative conditions, to be complied with within twelve months of the date of selection, were imposed upon selectors under this Act:—Either that the selections be enclosed with a substantial fence; or that a habitable dwelling be erected on the land; or that one acre out of every 10 acres selected be cultivated.

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

1041. 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 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).

1042. 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, viz., 20s. per acre without interest.† 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

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* The 42nd clause.

† See paragraph 1067 *post*.

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).

1043. 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 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.

Runs.

1044. 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

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* See paragraph 1067 *post.*

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

improvements were 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, however, 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 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 were divided up into blocks and offered for tender under annual licence.

Grazing rights.

Mallee Pastoral Leases Act 1883.

1045. 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.

1046. The Act directs that the "Mallee country" be divided into blocks of various sizes, each block to be subdivided into two parts. 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

* 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.

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 was fixed at 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.

Mallee allotments.

1047. 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 also the lease of a Mallee *allotment.*

Land Act 1884 (48 Vict. No. 812).

1048. 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.

Pastoral occupation

1049. 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,* 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.

1050. 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

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

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.

1051. The 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 selected under a previous Act or Acts, 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 previous paragraphs*; but 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‡;

Non-residence selections.

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* See paragraphs 1042 and 1043 *ante*.

† See paragraph 1043 *ante*.

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

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*.*

Only one selection may be made.

1052. Under this Act, only one grazing area can be taken up by one person, and consequently, if the area so taken up should be less than 1,000 acres in extent, the lessee is not allowed by any further selection to make up this quantity. In like manner, if the agricultural allotment he selects from his grazing area is less than 320 acres, he cannot by any further selection add to it or make it up to 320 acres. This provision does not, however, apply to selectors under former Acts, who, if they have not selected as much as 320 acres, may, out of a new leasehold, convert into an agricultural allotment and eventually into a freehold as much as will, with their old selection, make up 320 acres.

Auriferous lands.

1053. Auriferous lands, not required for mining purposes, and not situated within a city, town, or borough, may be occupied under annual licence for purposes of residence or cultivation in areas not exceeding 20 acres; and, for purely pastoral purposes, under licences renewable annually for periods not exceeding 5 years, in blocks not exceeding 1,000 acres. No auriferous land is permitted to be alienated in fee-simple.

Swamp lands.

1054. Swamp lands are to be first drained, and may then be leased in areas not exceeding 160 acres for a term of 21 years.

Systems of land selection in Australasian colonies.

1055. 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 :—

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* 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 was published in an Appendix to the *Victorian Year-Book* 1884–5.

‡ In Tasmania married women may select land.

Conditions of Land Selection in Australasian Colonies, 1887–8.

Conditions of Selections.	Victoria.*	New South Wales.†	Queenslaud.		South Australia.§	Western Australia.‖	Tasmania.¶	New Zealand.**
			Home-steads.	Other Selections.‡				
1. Maximum area allowed .. Acres	320	640 and 2,560	160	320 to 1,280	1,000	1,000	320	640
2. Price per acre	£1	£1	2s. 6d.	£1 upwards	£1	10s.	£1	10s. to £2
3. Time over which purchase may extend .. .. Years	20	33	5	‡	20	20	14	14
4. Minimum time in which fee-simple may be acquired .. Years	6	5	5	10	10	5	any time	6
5. Annual payment per acre ..	1s.	1s.	6d.	‡	1s.	6d.	2s.	6d. to 4s.
6. Value of necessary improvements per acre	20s.	10s.	7s. 6d. to 10s.	Fencing or 7s. 6d. to 10s.	10s.	10s. and Fencing	..	20s.
7. Time allowed for making improvements .. .. Years	6	5	5	5	4	20	..	6
8. Acres in every 100 to be cultivated	10	..	..	..	20 ††	..	..	20
9. Period of residence necessary ‡‡ Years	5	5	5	‡	20	5	14	6

* In Victoria the land is taken up, in the first instance, in blocks not exceeding 1,000 acres, under lease 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 paragraphs 1050 and 1051 *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 has partly supplanted that of alienating the fee-simple of the land by means of deferred payments. The selector first occupies the land under licence, at an annual rental of not less than 3d. per acre, and subsequently, if the condition as to fencing (or improvements of equal value) has been complied with, may 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 personal residence is compulsory. The foregoing remarks relate to agricultural farms; in the case of grazing farms, leases are granted for 30 years at a minimum rental of ¾d. per acre per annum for the first 10 years, but liable to be increased every subsequent 5 years.

§ 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 particulars given relate to the South Western (or Home) District only. In the five other land divisions of the colony, land may be taken up in specially declared areas only by non-resident selectors in areas of from 100 to 5,000 acres at not less than 10s. per acre payable in 10 yearly instalments, the conditions required being fencing and the expenditure of an amount equal to purchase money on improvements. Besides selections under the system of deferred payments in the south-west division, there is also a method of selecting land by *direct payment* under certain conditions, the extent of a selection being limited to 1,000 acres in a declared area, and to 5,000 acres outside such area, at a price of not less than 10s. per acre; the conditions being fencing within 3 years, and an expenditure of 5s. per acre on improvements within 7 years from date of survey. Moreover, pastoral lessees have the privilege of selecting a certain proportion of their leasehold adjoining the Homestead prior to the 1st March, 1892, under similar conditions, except in regard to residence, as in the case of other selectors in the respective districts; thus, in the south-western division, the proportion allowed to be selected is 5 per cent. with a maximum of 3,000 acres, and in the other divisions 1 per cent. with a maximum of 5,000 acres; provided also, in the latter case, the runs are stocked with 10 sheep or 1 head of large stock to every 1,000 acres leased.

¶ In Tasmania, 33⅓ per cent. is added to the price, as interest, for the period of fourteen years. It is stated that a new Land Bill, which will (if passed) materially change the land system of this colony, is now (August 1887) under consideration.

** 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 a fresh at each renewal. The lessee may acquire the freehold, at any time after the required improvements are effected, 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 throughout the colony to a limit of 30,000 acres in any one year. 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.

†† One acre under fruit trees or shrubs, potatoes, onions, &c., counts as 6 acres of ordinary cultivation.

‡‡ In all the colonies, as soon as the purchase-money is paid in full, the residence clause is no longer enforced. In South Australia and New Zealand in the case of bush land, personal residence is not necessary.

Ambiguity of the term "alienation," as applied to Crown lands.

1056. In dealing with the figures relating to the alienation of the public estate, it is customary in Victoria to consider Crown lands as sold or alienated only when the right to the title in fee-simple has been acquired. Consequently a large proportion of the land set down as alienated in any year, having been originally selected with right of purchase under certain conditions, the purchase-money being payable by annual instalments, without interest, may have been virtually parted with many years previously. The land set down as alienated in any year, therefore, consists of the area sold by auction, that granted without purchase, and that selected or conditionally purchased—of which the purchase had been completed during the year. Some of the neighbouring colonies, however, adopt a different principle, for, in their statements of land alienated, that sold conditionally—which, of course, is liable to revert to the Crown should the conditions of sale not be complied with—is included with that of which the fee-simple has been obtained. Both methods are useful in their way, the Victorian plan giving the more accurate account of the condition of the public estate, and the other giving the better indication of the progress of settlement. In the following paragraphs it may perhaps be sometimes necessary to use the term "alienated" in connexion with land which is only conditionally purchased, but when this occurs such explanation will be given as will prevent a mistake.

Crown lands alienated to end of 1887.

1057. The total extent of Crown land sold and finally parted with in Victoria up to the end of 1887 was 15,130,677 acres, and the extent granted without purchase was 13,912 acres. The whole area alienated in fee-simple was thus 15,144,589 acres, of which 8,548,423 acres, or considerably more than half, was originally acquired by selection under the system of deferred payments.

Crown lands selected.

1058. The selected lands of which the purchase had not been completed up to the end of the year amounted to 11,136,344 acres. Of this extent it is estimated that 3,802,493 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 7,333,851 acres.

Crown lands unalienated.

1059. 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 22,478,544 acres, it will follow that the residue, representing the Crown lands neither alienated nor in process of alienation, amounted at the end of 1887 to 33,767,320 acres.

1060. The whole of this residue, however, is not available for settlement, for it embraces lands occupied by roads, the unsold portions of the sites of towns, and beds of rivers and lakes; the State forests; water, timber, and other reserves. Deducting these lands—amounting in the aggregate to 4,933,416 acres, also that portion of the colony known as the Mallee country, containing 11,572,000 acres, leased for pastoral purposes under a special Act, and 3,476,483 acres occupied under lease or licence for various terms of years—from the extent unalienated and unselected, already stated to have been 33,767,250 acres, it will be found that the available area is narrowed to 13,785,351 acres. This will be at once seen by the following table, which shows the position of the public estate at the end of 1887:— Public estate, 1887.

PUBLIC ESTATE OF VICTORIA ON 31ST DECEMBER, 1887.

Condition of Land.	Approximate Number of Acres.
Land alienated in fee-simple	15,144,589
Land in process of alienation under deferred payments ...	7,333,851
Roads in connexion with the above	1,313,300*
Water reserves	162,650
Reserves for agricultural colleges and experimental farms	136,295†
Timber reserves and State forests	1,329,420
Other reserves	205,360
Unsold land in towns, beds of rivers, &c., &c.	1,786,461
Mallee country‡	11,572,000
Land in occupation under—	
Pastoral leases	1,350,770
Grazing area leases	1,908,000
Grazing licences for auriferous lands	217,713
Available for settlement at end of 1887	13,785,351§
Total area of Victoria	56,245,760

1061. The area of the colony, exclusive of the Mallee country, is 44,673,760 acres, of which, at the end of 1887, 22,478,440 acres, or 50 per cent., were already alienated or in process of alienation; 4,933,486 acres, or 11 per cent., were occupied by reserves, &c.; 3,476,483 acres, or 8 per cent., were occupied under lease‖ for pastoral purposes; and 13,785,351 acres, or 31 per cent., were available for settlement. Crown lands available for settlement.

* Calculated at 5 per cent. of the gross extent sold and selected up to the end of 1887.

† Only 13,393 of this area is for the sites of colleges and experimental farms, the balance being intended as an endowment in aid. Of this balance, 119,800 acres were leased for agricultural and grazing purposes, and return an annual revenue of £5,188.

‡ Occupied for pastoral purposes, under the Mallee Pastoral Leases Act 1883, for terms not exceeding 20 years.

§ A large proportion of this area is temporarily held under grazing licences, renewable annually; only 124,554 acres of it may be sold by auction.

‖ Including a small proportion under licence for periods of five years.

Classification of available land.

1062. Following the classification provided for under the existing Land Act, the estimated area of Crown lands, exclusive of the Mallee country, available, under the Land Act 1884, at the end of 1887 may be divided as follows * :—

CLASSIFICATION OF LAND AVAILABLE AT END OF 1887.

	Acres.
Pastoral lands	5,418,030 *
Agricultural and grazing lands	6,903,020 *
Auriferous lands	1,252,437
Swamp lands	87,310
May be sold by auction	124,554
Total	13,785,351

Crown lands alienated, 1887.

1063. The land finally alienated from the Crown in fee-simple during 1887 amounted to 364,393 acres, of which 363,906 acres were sold, and 487 acres were granted without purchase. The total extent was greater by 9,896 acres than that in 1886, but, with that exception was much less than the extent alienated in any year since 1879.

Crown lands sold by auction.

1064. Of the area sold, 19,565 acres, or 5½ per cent., were disposed of by auction. Nearly the whole of the remainder had been in the first instance selected in previous years under the system of deferred payments. The extent sold by auction in 1887 exceeded that in 1886 by 284 acres; it was, however, far smaller than in any of the seventeen years ended with 1885, during which period the annual average extent so sold was 63,700 acres.

Amount realized on Crown land alienated in 1887.

1065. The amount realized for Crown lands finally alienated in 1887 was £442,095, or at the rate of £1 4s. 3d.† per acre. Of this sum, only part was received during the year, nearly all the remainder having been paid in former years as rents and licence fees. The proportion sold by auction realized £89,161, or an average of £4 11s. 2d. per acre; and the proportion sold otherwise than at auction realized £352,934, or an average of £1 0s. 6d. per acre.

Deferred payments on lands sold by auction.

1066. The principle of deferred payments in connexion with sales of Crown lands by auction was introduced for the first time in the Land Act 1884,‡ it being necessary to pay one-fourth of the price bid at the time of sale, the remaining three-fourths being, at the option of the purchaser, spread over three years, payable quarterly, in instalments

* During 1886, the lands classed as Pastoral have been reduced, and those classed as Agricultural and Grazing have been increased, by 309,300 acres; it is, moreover, probable that about 500,000 acres in addition will be similarly transferred before the end of 1888. For particulars of Crown land in occupation at end of 1887 see paragraph 1076 *post*.

† In view of the fact that payment for the greater portion extended over a term of years without interest, the actual average price was much less than this. See paragraph 1067 *post*.

‡ 48 Vict., No. 812, Section 71.

of equal amounts, bearing interest at the rate of 6 per cent. per annum. The majority of purchasers do not avail themselves of this concession, as only £68,019, out of a total of £305,511 during the last three years was left unpaid, the amount received being £237,492, as well as £5,153 for interest.

Amount realized, 1836 to 1887.

1067. From the period of the first settlement of the colony to the end of 1887, the amount nominally realized by the sale of Crown lands was £23,337,419, or at the rate of £1 10s. 10d. per acre. It must, however, be remembered that payment of a considerable portion of this amount extended over a series of years without interest, allowance for which, at the current rate would, it is evident, materially reduce the amount the State actually obtained for the land. It may be calculated that, with interest at 5 per cent., if the payment of the £1 per acre by equal annual instalments be extended over 10 years without interest, the amount of purchase-money is really equivalent to only 15s. 6d. per acre, and if it be extended over 20 years, it is reduced to 12s. 6d. per acre.

Selection of public lands, 1887

1068. During the year 1887, only 201 applications were granted for the selection of 23,092 acres under the deferred payment system.* Of this extent, 22,339 acres, or over 97 per cent., were taken up in blocks limited to 320 acres, nominally for agricultural purposes; 708 acres were taken up in allotments limited to 20 acres, for purposes of residence or cultivation, on or near gold-fields; and 45 acres in parcels, averaging 3 acres each, for purposes of residence. These transactions were only partly under the Land Act 1884; the balance being under the Land Acts 1869 and 1878, the applications having been duly lodged before the end of 1884, when those Acts were repealed. The following is a summary of the selectors, the number of acres selected, and the amount of purchase-money payable under each authority during the year 1887:—

SELECTORS AND EXTENT SELECTED, 1887.

Selections of Crown Lands, 1887, for purpose of—	Legalization.	Number of Selectors.	Area Selected.	Purchase-money payable. (Approximate.)
			Acres.	£
Agriculture, with residence	Land Act 1869, sec. 19	64	11,029	11,029
	Land Act 1884, sec. 42	83	11,310	11,310
,, without residence	Land Act 1878, sec. 11	...	...	...
	Land Act 1884, sec. 49	...	...	...
Residence or cultivation, near gold-fields	Land Act 1869, sec. 49	39	708	885
Residence	Land Act 1878, sec. 10	15	45	135
Total	... ...	201	23,092	23,359

* See paragraphs 1042 and 1043 *ante*.

Number of selectors, 1870 to 1887.

1069. The number of selectors approximates closely to the number of approved applications. The following are the numbers in each of the years named in the last table, those under the different sections of the Land Acts 1869, 1878, and 1884 being distinguished :—

APPROVED APPLICATIONS (SELECTORS) 1870 TO 1887.

Year.	Number of Selectors of Land.				Total.
	For Purposes of Cultivation.		For Residence and Cultivation near Gold-fields. (Section 49, Act No. 360.)	For Residence. (Section 10, Act No. 634.)	
	With Residence. (Sec. 19, Act No. 360; and Sec. 49, Act No. 812.)	Without Residence. (Section 11, Act No. 634.)			
1870	3,017	...	131	...	3,148
1871	4,575	...	673	...	5,248
1872	7,771	...	1,408	...	9,179
1873	6,689	...	1,455	...	8,144
1874	9,578	...	1,493	...	11,071
1875	6,320	...	771	...	7,091
1876	5,785	...	697	...	6,482
1877	6,240	...	777	...	7,017
1878	7,524	...	1,534	...	9,058
1879	5,726	75	887	...	6,688
1880	4,036	67	1,054	56	5,213
1881	3,110	42	1,151	106	4,409
1882	4,383	51	837	47	5,318
1883	4,453	58	1,070	22	5,603
1884	3,918	71	1,002	11	5,002
1885	3,930	68	714	83	4,795*
1886	943	25	173	49	1,190*
1887	147	...	39	15	201
Total ...	88,145	457	15,866	389	104,857

Progress of settlement on public lands, 1870 to 1887.

1070. The extent of Crown lands absolutely or conditionally alienated during each year since the passing of the Land Act 1869 is shown in the following table, which distinguishes the extent sold by auction and

* The great majority of the applications approved in the years 1885 to 1886 were lodged in 1884, under the provisions of the Land Act 1869.

that granted without purchase from that conditionally alienated or selected:—

CROWN LANDS ABSOLUTELY AND CONDITIONALLY ALIENATED, 1870 TO 1887.

Year.	Area, Granted, Sold, and Selected.			Total.
	Granted without Purchase.	Sold by Auction.	Conditionally alienated.* (Selected).	
	Acres.	Acres.	Acres.	Acres.
1870	21	148,685	322,592	471,298
1871	118	118,440	487,436	605,994
1872	320	146,611	797,176	944,107
1873	1,575	19,929	1,063,066	1,084,570
1874	44	49,655	1,831,698	1,881,397
1875	...	83,395	1,183,520	1,266,915
1876	546	150,628	1,040,356	1,191,530
1877	260	76,006	1,126,498	1,202,764
1878	57	47,376	1,415,129	1,462,562
1879	503	56,430	1,032,214	1,089,147
1880	461	27,272	752,639	780,372
1881	3,237	24,753	588,922	616,912
1882	666	31,386	851,402	883,454
1883	159	20,085	843,971	864,215
1884	74	35,446	734,092	769,612
1885	3,099	26,900	723,523	753,522
1886	1,120	19,281	188,196	208,597
1887	487	19,565	23,092	43,144
Total	12,747	1,101,843	15,005,522*	16,120,112

1071. Dividing the total number of acres selected by the total number of selectors, as shown in the last two tables, it is found that throughout the whole period of eighteen years the average number of acres taken up by each selector has been 153. Average size of selections.

1072. Of the land which had been selected in former years, 53,499 acres during 1887 were abandoned or forfeited to the Crown in consequence of non-fulfilment of conditions, resulting in a gain to the Treasury of £2,358. Selected land forfeited, 1887.

1073. The present Land Act prescribes that any one wishing to select for agricultural purposes must first acquire the lease of a grazing area.† The number of applications for such leases received in 1887 was Leases of grazing areas, 188

* A large proportion of the land referred to in this column may revert, and, as a matter of fact, has reverted, to the Crown in consequence of non-fulfilment of conditions, &c., and may subsequently be included in re-adjustments of selections, re-licensed, sold by auction, or retained by the Crown. "Gold-fields" selections are included in this column. See paragraph 1058 *ante*.

† See paragraphs 1050 to 1052 *ante*.

6,502; but the number approved during that year was only 3,621, the extent for which approval was granted being 1,328,169 acres, at an annual rental of £12,270.

Selections under the Land Act 1884.

1074. The number of lessees of "grazing areas" who made application during the year 1887 for the issue of licences of agricultural allotments (or selections) was 259, for an area of 45,140 acres. The number of approved applications, however, was only 83, and the area licensed only 11,310 acres. The annual fees payable on these selections amount in the aggregate to £565 10s. The year under review was the first in which such licences were granted under the Land Act 1884.

Licenceliens.

1075. Licensees of agricultural allotments (or selectors) under the Land Acts 1869 and 1884 are empowered to register licence liens for advances of money up to half the value of improvements effected. The number of such licence liens registered, the extent of land on which such liens were granted, and the amount secured were as follow in the last two years :—

LICENCE LIENS 1886 AND 1887.

Year.	Liens Registered.		
	Number.	Area on which Liens were Granted.	Amount Secured.
		Acres.	£
1886	326	79,099	38,924
1887	305	68,968	34,634

Pastoral occupation, 1887.

1076. Under the present Land Act it was intended that the purely pastoral lands of the colony, the whole of which have been marked off as "pastoral allotments," should be occupied under lease for periods not exceeding fourteen years from the commencement of the Act. But it is provided, in case all the allotments should not be applied for, that temporary grazing licences, renewable annually, may be granted for the occupation of such lands and of unoccupied agricultural lands, so long as they may not be required for leasing under the principal sections of the Act. Moreover, auriferous lands, in blocks not exceeding 1,000 acres, may be licensed for grazing purposes for periods of five years. The following table shows the area of Crown lands held under lease or licence for pastoral or grazing purposes at the end of 1887, also the number of leases and licences, and the annual rental payable:—

Pastoral Occupation, 1887.

(Under Land Act 1884.)

Description of Tenure.	Number of Licences or Leases.	Extent of Crown Lands.	Annual Rental.
		Acres.	£
Pastoral leases (sec. 32)... ...	79	1,350,770	5,152
Grazing licences (secs. 3 and 119)	2,180	6,000,339	17,434
„ „ (auriferous lands, secs. 65 and 67)*	678	217,713	
Total	2,937	7,568,822	22,586

1077. By these figures it may be ascertained that the average extent of land embraced in a pastoral lease was 17,098 acres, and in a grazing licence (secs. 3 and 119) 2,752 acres. These areas are exclusive of those of any purchased land attached thereto. Average area of runs and grazing rights.

1078. According to the table, the average rent per acre of pastoral allotments was something less than a penny (·92d.), and of land held under grazing licence—generally of an inferior character to that embraced in pastoral allotments—about two-thirds of a penny (·67d.) Rent of runs and grazing rights.

1079. The rental of pastoral lands (exclusive of the Mallee pastoral lands) available at the end of 1885, viz., 7,078,100 acres, was assessed in 1886 at £24,717 per annum. Since 1885, however, the area has been reduced by 309,300 acres, and it is contemplated to still further reduce it by about 500,000 acres.† These deductions will naturally reduce the assessment referred to. Assessment of pastoral lands.

1080. The Mallee country is, as already stated, subject to the provisions of a special Act.‡ It is divided into blocks and allotments. The number of leases and of lessees of these, together with their approximate area, and the annual rental payable therefor, are shown in the following table:— Mallee pastoral leases.

Mallee Pastoral Leases on 31st December, 1887.

Description of Leaseholds.	Number of Leases.	Number of Lessees.	Area.	Annual Rental.§
			Acres.	£
Mallee blocks	61	46	7,463,581	1,550
„ allotments	669	654	2,333,730	3,100
Total	730	700	9,797,311	4,650

* Including licences for residence or cultivation limited to 20 acres each. At the end of 1887, the number of these was 246, but the area only 4,679 acres.

† See footnote to paragraph 1062 *ante*.

‡ See paragraphs 1045 to 1047 *ante*.

§ Approximate only. The amount actually received in 1887 was £5,993, viz., £2,552 for blocks, and £3,441 for allotments; but arrears are included in these figures.

Mallee areas still unoccupied, 1887.

1081. At the end of 1887, the following areas were still available for occupation in the Mallee country:—Mallee blocks, 1,520,640 acres; Mallee allotments, 254,049 acres.

Past and present occupation of Mallee country.

1082. In 1883, prior to the passing of the Mallee Pastoral Leases Act, the Mallee country was held under pastoral licences or grazing rights. The number of such licences and rights was 147, held by 58 individual occupiers; the area over which the right of occupation was given was 7,727,360 acres, and the annual rental payable was £8,076. From a comparison of these figures with those in the above table, it appears that since 1883, whilst the occupiers of the Mallee country have increased elevenfold, and the extent occupied by more than one-third, the annual rental has fallen off by £3,500, or by 44 per cent. As a set-off against this reduced rental, however, it should be pointed out that the present lessees have to comply with certain conditions* to which the licensees under the former Act were not subject.

Average rental of Mallee country.

1083. According to the figures in the last table, the average rental per 100 acres payable for the Mallee country is 10½d., or 5d. for the Mallee blocks and 2s. 8d. for the Mallee allotments. In 1883, prior to the passing of the present Act, the average rental in the Mallee conntry was 2s. 1d. per 100 acres.

Land revenue.

1084. 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 pastoral leases 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. The gross receipts have been almost identical in the last two years, there having been an increase of rather over £11,000 in the receipts from alienation and an almost similar falling-off in the receipts from temporary occupation, penalties, &c., as will be seen by the following figures :—

LAND REVENUE, 1886 AND 1887.

Heads of Land Revenue.	Amounts Received.		Increase (+), or Decrease (−).
	1886.	1887.	
	£	£	£
Alienation in fee-simple and progressive ...	488,662	499,898	+11,236
Temporary occupation	67,886	61,127	−6,759
Penalties, fees, interest, &c.	39,113	33,946	−5,167
Total	595,661	594,971	−690

* See paragraph 1046 *ante*.

Agricultural statistics.

1085. 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.

Bonuses for collecting statistics.

1086. 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 five days, three-quarters if they were delayed for ten days, and forfeited altogether if ten days should be exceeded. These bonuses have now been given for four 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.

Agricultural statistics, 1887–8.

1087. The agricultural statistics to which reference will now be made are those for the year ended 1st March, 1888.* Tables embodying the general results of these statistics will be found in the *Government Gazette* of the 13th April last,† and these, with additional tables, form portion of the *Statistical Register of Victoria.*

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* A summary of the agricultural statistics of each year since the first settlement of the colony is published at the commencement of the last volume of this work (second folding sheet).

† Tables containing a statement of the extent of land under crop, and yield of wheat, oats, potatoes, and hay, were published in the Melbourne daily journals of the 14th March.

Number of cultivators.

1088. The total number of farm holdings visited in the year under notice was 37,615, of which 36,471 were in shires, 1,079 in cities, towns, or boroughs, and 65 in places outside of local jurisdiction. In the previous year the number of farms visited was 38,216, the falling-off being thus 601. This falling-off is accounted for by the fact that on the present occasion the collectors were told not to visit holdings on which there was no other cultivation than artificial grass.

Land under tillage.

1089. The extent of land returned as under cultivation amounted to 2,576,405 acres, as against 2,417,582 acres in 1886–7. The increase shown by the figures was, therefore, 158,823 acres.

Area cultivated per head of population.

1090. The average area in cultivation to each person in the colony was about $2\frac{1}{2}$ acres in the year under review as against $2\frac{1}{4}$ acres five years previously, and $1\frac{3}{4}$ acre 10 years previously. The exact proportions at the three periods were as follow :—

AVERAGE AREA CULTIVATED TO EACH PERSON IN THE COLONY.

	Acres.
1877–8	1·74
1882–3	2·25
1887–8	2·49

Area cultivated per head in Australasian colonies.

1091. The following table shows the area per head cultivated in each Australasian colony during the nine seasons ended with that of 1886–7, 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, 1878 TO 1887.*

Colony.	Acres under Tillage per Head of Population.									
	1878–9.	1879–80.	1880–81.	1881–2.	1882–3.	1883–4.	1884–5.	1885–6.	1886–7.	Mean.
1. S. Australia ...	8·09	8·75	9·62	8·91	8·08	9·05	8·91	...	...	8·77†
2. Tasmania ...	3·23	3·26	3·25	3·15	3·08	3·12	3·26	3·12	3·25	3·19
3. New Zealand	2·62	2·67	2·12	2·63	2·68	2·61	2·39	2·20	2·33	2·47
4. Victoria ...	1·95	2·01	2·32	2·06	2·25	2·38	2·42	2·42	2·41	2·25
5. W. Australia	1·81	2·28	2·20	1·78	1·84	1·94	2·42	2·19	2·18	2·07
6. N. S. Wales ...	·88	·90	·96	·83	·90	·91	·92	·90	1·02	·91
7. Queensland ...	·56	·49	·53	·56	·64	·58	·64	·66	·65	·59

* For the population and number of acres under tillage in each Australasian colony during the fifteen years ended with 1887, see Summary of Australasian Statistics (third folding sheet; also Appendix A published in the last volume of this work.

† The colony of South Australia did not collect agricultural statistics in 1885–6 or 1886–7; the mean is, therefore, for seven years.

1092. 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 over a series of years Victoria has in this respect occupied a middle place, being below South Australia, Tasmania, and New Zealand, but above the other three colonies, viz., Western Australia, New South Wales, and Queensland. In the last three years, however, and in one previous one, Victoria, in proportion to population, has had more land in cultivation than New Zealand. Results in different colonies compared.

1093. The principal crops grown in Victoria are wheat, oats, barley, potatoes, hay, and green forage. In 1887–8, the area under wheat exceeded by 180,000 acres that in 1886–7, and was also larger than in any previous year; the area under oats exceeded by 13,000 acres that in 1886–7, but was exceeded in 1885–6 by 17,000 acres, it was however larger than in any other year; the area under potatoes and hay was exceeded by that in 1886–7, but was larger than in any other year; the area under barley was larger by 4,000 acres than that in 1886–7, but was exceeded in each of the seven years ended with 1885–6; the area returned under green forage was less than that returned in many previous years, but this is accounted for by the fact already mentioned, viz., that the collectors were instructed not to visit holdings on which there was no other cultivated land than that laid down under permanent artificial grass, which crop is included under the head of green forage. The following table shows the extent of land under each of these crops in the last two seasons :— Land under principal crops.

LAND UNDER PRINCIPAL CROPS, 1887 AND 1888.

Year ended March.	Wheat.	Oats.	Barley.	Potatoes.	Hay.	Green Forage.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
1887 ...	1,052,685	185,765	37,031	49,974	445,150	284,186
1888 ...	1,232,943	199,036	40,983	48,263	441,812	164,457
Increase ...	180,258	13,271	3,952	...	...	...
Decrease...	...	...	...	1,711	3,338	119,729

1094. The gross yield of wheat exceeded that in 1886–7 by nearly $1\frac{1}{4}$ million bushels, or something more than a tenth, and was only exceeded in one previous year, viz., 1883–4; the yield of oats was greater than in any previous year except 1885–6 and 1883–4; the yield of barley was larger than in 1886–7, but was exceeded in five previous years; the yield of potatoes and that of hay were much greater than in Produce of principal crops.

any previous year. The following is a statement of the gross produce of each of the principal crops in 1886–7 and 1887–8:—

GROSS PRODUCE OF PRINCIPAL CROPS, 1887 AND 1888.

Year ended March.	Wheat.	Oats.	Barley.	Potatoes.	Hay.
	Bushels.	Bushels.	Bushels.	Tons.	Tons.
1887 ...	12,100,036	4,256,079	827,852	170,661	483,049
1888 ...	13,328,765	4,562,530	956,476	198,225	624,122
Increase ...	1,228,729	306,451	128,624	27,564	141,073

Wheat-producing counties.

1095. The following table shows, for each of the last six years, the produce of wheat in ten 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 TEN COUNTIES, 1883 TO 1888.

Counties.	Number of Bushels Produced.					
	1882–3.	1883–4.	1884–5.	1885–6.	1886–7.	1887–8.
Bendigo ...	622,451	1,217,037	656,454	732,245	662,769	857,446
Bogong ...	434,907	392,357	334,198	324,526	387,133	217,181
Borung ...	1,291,678	3,334,101	2,230,323	921,131	2,343,612	2,904,069
Gladstone...	556,931	1,074,658	752,311	505,682	696,479	952,891
Gunbower..	215,129	852,930	272,280	588,073	524,323	484,256
Kara Kara	576,667	1,599,720	1,026,417	520,249	608,558	1,298,878
Lowan ...	613,278	1,189,488	1,388,431	1,142,784	1,621,371	1,871,930
Moira ...	1,805,153	2,797,046	2,063,628	2,661,218	3,063,416	2,613,016
Rodney ...	852,358	1,170,861	692,133	945,734	934,475	950,982
Tatchera ...	122,761	407,542	132,804	150,726	270,820	375,640
Total ...	7,091,313	14,035,740	9,548,979	8,492,368	11,112,956	12,526,279

Yield of wheat in ten counties.

1096. In the last five seasons the proportion of wheat raised in these ten counties, has ranged from 90 per cent. of the whole in 1883–4 to 94 per cent. of the whole in 1887–8; whilst in 1882–3 the proportion was 80 per cent. of the whole. In all the counties named except Bogong, Gunbower, and Moira the gross yield was greater in 1887–8 than in the previous year.

Yield of wheat in each county.

1097. The average produce of wheat per acre in the various counties, and in the whole colony in 1887–8, 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 ten counties just referred to are marked with asterisks :—

AVERAGE PRODUCE OF WHEAT IN EACH COUNTY, 1882 TO 1888.

County.	Bushels of Wheat per Acre.					
	1882-3.	1883-4.	1884-5.	1885-6.	1886-7.	1887-8.
Polwarth ...	23·30	21·53	25·45	18·56	26·60	23·01
Dargo ...	20·35	16·16	17·03	15·82	35·88	22·77
Heytesbury ...	24·80	19·35	20·97	18·99	25·27	21·83
Villiers ...	27·30	22·45	23·71	19·83	29·05	21·13
Bourke ...	20·86	18·35	17·48	18·31	15·82	18·17
Ripon ...	17·53	15·80	14·89	14·83	16·63	17·63
Mornington ...	23·61	19·48	25·02	15·00	14·14	17·35
Hampden ...	21·37	16·99	13·91	13·25	19·07	17·26
Grenville ...	19·61	16·36	13·43	17·38	15·93	16·83
Dundas ...	19·20	16·88	13·78	13·04	20·55	16·64
Grant ...	24·55	20·29	17·92	20·40	20·10	16·29
Talbot ...	18·35	16·81	15·45	14·91	18·21	15·44
Normanby ...	18·09	14·90	16·07	13·40	21·45	15·33
Follett ...	16·86	16·36	14·64	11·63	13·26	14·89
Buln Buln ...	25·33	20·78	20·27	19·67	22·90	14·35
Benambra ...	22·11	20·21	20·38	15·14	23·65	13·57
*Bendigo ...	7·81	14·94	9·37	11·26	11·97	12·84
Dalhousie ...	23·22	17·01	15·58	15·35	20·36	12·38
*Gladstone ...	8·29	14·47	9·97	7·80	10·82	12·37
*Rodney ...	10·51	13·09	8·75	12·88	13·49	12·17
Anglesey ...	19·42	12·55	12·96	13·55	15·61	11·88
*Kara Kara ...	6·24	14·31	8·92	5·56	6·26	10·94
*Moira ...	12·17	15·57	10·53	13·09	14·79	10·91
*Borung ...	5·66	13·75	8·75	4·22	9·60	10·72
Tanjil ...	22·41	13·89	18·96	21·81	29·77	10·41
*Lowan ...	9·00	11·76	11·09	8·63	11·09	10·39
Tambo ...	21·39	29·60	22·14	10·91	27·65	9·70
*Tatchera ...	3·08	12·28	4·01	5·06	7·86	9·02
Karkarooc ...	...	15·44	6·29	2·99	7·94	7·88
Croajingolong ...	15·15	16·79	19·77	10·98	5·95	7·64
*Bogong ...	16·47	13·72	13·82	12·55	15·82	7·60
*Gunbower ...	3·24	12·74	4·19	9·29	9·60	7·14
Delatite ...	16·10	11·74	14·33	12·32	13·87	6·85
Evelyn ...	19·96	17·27	15·80	17·81	17·10	6·83
Wonnangatta ...	19·99	11·98	11·23	14·25	24·03	5·74
Total ...	9·03	14·10	9·52	8·99	11·49	10·81

1098. It will be noticed that, taking the colony as a whole, the acreable yield of wheat was lower in 1887-8 than in the previous year by about two-thirds of a bushel, also that in neither of those years was it nearly so high as in 1883–4. It was, however, in both those years, higher than in 1885–6, 1884–5, or 1882–3. In Bourke, Ripon,

Acreable yield of wheat, 1887 and 1888.

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

Mornington, Grenville, Follett, Bendigo, Gladstone, Kara Kara, Borung, Tatchera, and Croajingolong the produce per acre was higher in the past than in the previous season, but in the other 24 counties it was lower.

Small gross yield of wheat in some counties.

1099. 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 1887–8 only 14 acres were placed under wheat in Mornington, 224 in Polwarth, 283 in Heytesbury, 370 in Hampden, and 678 in Dargo. In all these counties the yield per acre was much above the average of the colony.

Yield of other principal crops in each county.

1100. 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, 1886–7 AND 1887–8.

Counties.	Average Produce per Acre of—							
	Oats. (Bushels.)		Barley. (Bushels.)		Potatoes. (Tons.)		Hay. (Tons.)	
	1886–7.	1887–8.	1886–7.	1887–8.	1886–7.	1887–8.	1886–7.	1887–8.
Anglesey ...	26·32	18·40	16·38	24·00	2·90	3·46	1·46	1·61
Benambra ...	32·60	26·61	25·66	25·43	3·72	3·68	1·72	1·34
Bendigo ...	16·28	23·89	17·39	19·84	1·88	3·21	·79	1·32
Bogong ...	27·90	18·06	23·74	11·36	2·91	3·41	1·25	·98
Borung ...	14·99	20·43	12·93	14·01	1·41	2·00	·64	·93
Bourke ...	29·75	27·40	26·08	29·54	3·69	4·45	1·08	1·80
Buln Buln ...	25·44	21·73	25·10	19·70	4·88	5·23	2·03	1·78
Croajingolong	19·72	18·79	...	25·50	2·93	4·59	1·61	1·59
Dalhousie ...	27·34	23·57	19·49	22·17	2·76	3·07	1·58	1·52
Dargo ...	23·57	28·31	24·27	25·49	5·24	5·10	1·93	1·67
Delatite ...	24·26	18·08	22·24	9·30	2·89	3·28	1·32	1·13
Dundas ...	26·28	20·01	31·18	21·03	1·74	2·22	1·98	1·58
Evelyn ...	28·69	22·19	16·90	19·00	3·00	3·65	1·52	1·45
Follett ...	22·96	21·50	20·98	17·21	2·02	2·23	1·44	1·37
Gladstone ...	15·59	21·81	15·10	17·10	2·20	1·67	·80	1·21
Grant ...	29·99	29·16	27·72	30·42	3·52	4·24	1·49	1·86
Grenville ...	24·42	27·10	40·64	33·16	2·08	3·03	1·46	1·68
Gunbower ...	17·68	22·16	17·11	10·79	...	1·00	·67	1·04
Hampden ...	31·22	25·17	35·80	29·21	3·89	5·87	1·92	2·01
Heytesbury ...	21·19	23·27	29·89	34·76	3·17	3·88	1·88	1·88
Kara Kara ...	8·31	19·39	11·15	12·25	1·59	2·38	·51	1·03
Karkarooc ...	10·58	19·24	24·57	22·67	...	...	·73	1·14

AVERAGE PRODUCE OF OATS, BARLEY, POTATOES, AND HAY IN EACH COUNTY, 1886–7 AND 1887–8—*continued.*

Counties.	Average Produce per Acre of—							
	Oats. (Bushels.)		Barley. (Bushels.)		Potatoes. (Tons.)		Hay. (Tons.)	
	1886–7.	1887–8.	1886–7.	1887–8.	1886–7.	1887–8.	1886–7.	1887–8.
Lowan ...	15·61	18·47	15·41	17·33	1·50	4·17	·85	·90
Moira ...	19·10	19·74	18·36	18·50	1·14	2·68	1·05	1·20
Mornington ...	25·33	22·00	19·52	24·30	4·28	5·06	1·55	1·45
Normanby ...	21·59	18·69	28·47	21·47	2·88	3·16	1·44	1·53
Polwarth ...	30·62	26·45	45·34	37·55	5·26	4·76	2·42	2·06
Ripon ...	22·92	26·00	33·39	24·67	1·49	2·87	1·71	2·06
Rodney ...	15·67	19·03	18·16	21·04	2·40	·60	·85	1·23
Talbot ...	25·98	28·20	25·98	28·02	3·18	3·52	1·61	2·02
Tambo ...	33·73	30·47	25·36	24·67	4·50	4·83	2·16	1·55
Tanjil ...	21·98	14·28	33·83	29·32	4·55	4·52	2·05	1·52
Tatchera ...	14·34	22·07	6·85	22·08	1·25	·65	·63	·97
Villiers ...	24·36	24·21	45·61	40·43	3·40	4·55	2·32	2·03
Wonnangatta	24·26	17·26	...	...	3·29	4·58	1·80	1·55
Total ...	22·91	22·92	22·36	23·34	3·41	4·11	1·09	1·41

Yield of oats, barley, potatoes, and hay, 1886–7.

1101. It will be noticed that in the year ended 1st March, 1887, the highest acreable yield of oats was in Tambo, Grant, Dargo, Talbot, Bourke, and Grenville, in the order named; that the average yield of barley was highest in Villiers, Polwarth, Heytesbury, Grenville, and Grant; that potatoes yielded the largest crop per acre in Hampden, Buln Buln, Dargo, and Mornington, where the average was over 5 tons; also that 4 tons per acre was exceeded in Tambo, Polwarth, Croajingolong, Wonnangatta, Villiers, Tanjil, Bourke, Grant, and Lowan; that the highest yields of hay were in Ripon, Polwarth, Villiers, Talbot, and Hampden, in which this crop averaged over 2 tons to the acre; and in Anglesey, Bourke, Buln Buln, Croajingolong, Dalhousie, Dargo, Dundas, Grant, Grenville, Heytesbury, Normanby, Tambo, Tanjil, and Wonnangatta, in which it exceeded 1½ tons to the acre.

Yield of other principal crops in past two seasons.

1102. Comparing the averages of 1887–8 with those of the previous season, a decrease is observed in the yield per acre of oats in all the counties except Bendigo, Borung, Dargo, Gladstone, Grenville, Gunbower, Heytesbury, Kara Kara, Karkarooc, Lowan, Moira, Ripon,

Rodney, Talbot, and Tatchera; and of barley in all except Anglesey, Bendigo, Borung, Bourke, Croajingolong (none in 1887–8), Dalhousie, Dargo, Evelyn, Gladstone, Grant, Heytesbury, Kara Kara, Lowan, Moira, Mornington, Rodney, Talbot, and Tatchera; but an increase in the yield per acre of potatoes in all the counties except Benambra, Dargo, Gladstone, Polwarth, Rodney, Tanjil, and Tatchera; and an increase in the yield per acre of hay in all except Benambra, Bogong, Buln Buln, Croajingolong, Dalhousie, Dargo, Delatite, Dundas, Evelyn, Follett, Mornington, Polwarth, Tambo, Tanjil, and Villiers.

Yield of principal crops, 1872 to 1888.

1103. In the past season, over the colony as a whole, the acreable yield of wheat, was below, whilst that of oats, barley, potatoes, and hay above, the average; the yield per acre of wheat was lower than in any of the sixteen other years named in the following table, except 1886 and 1885, the three years ended with 1883 and the year 1879; but that of oats was higher than in any of the years except 1880, and the four years ended with 1885; that of barley was higher than in any except 1880; that of potatoes than in any except 1885; and that of hay than in any except 1884 and 1880 :—

AVERAGE PRODUCE OF PRINCIPAL CROPS, 1872 TO 1888.

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
1886	8·99	21·72	17·58	3·83	1·05
1887	11·49	22·91	22·36	3·41	1·09
1888	10·81	22·92	23·34	4·11	1·41
Mean	12·02	21·16	20·19	3·48	1·24

1104. In the last four years the statistics of malting barley were distinguished from those of other descriptions of the same cereal. The following is the result of this division for the year under review :— Malting and other barley.

MALTING AND OTHER BARLEY, 1887–8.

Description of Barley.	Area under Crop.	Gross Produce.	Average per Acre.
	Acres.	Bushels.	Bushels.
Malting	28,737	601,465	20·93
Other	12,246	355,011	29·00
Total ...	40,983	956,476	23·34

1105. Of the total area under barley, 70 per cent. was under malting barley; and of the produce of barley, 60 per cent. was of malting barley. In the previous year these proportions were respectively 73 per cent. and 65 per cent. It will be noticed that this description of barley is by far the less prolific of the two kinds, the average in 1887–8 being not quite 21 bushels to the acre, as against nearly 29 bushels of the other barley. Yield of malting smaller than of other barley.

1106. 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 fifteen years ended with 1887 :— Average produce in Australasian colonies.

AVERAGE PRODUCE PER ACRE OF THE PRINCIPAL CROPS IN AUSTRALASIAN COLONIES, 1873 TO 1887.

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
1885 ...	9·52	15·27	16·17	7·53	13·00	19·20	25·43
1886 ...	8·99	10·32	5·11	...	11·50	17·32	24·40
1887 ...	11·49	17·38	3·13	...	12·00	17·91	24·89
Mean ...	12·02	14·81	10·38	7·87	11·52	18·18	26·00

* The produce of crops in Queensland was not given prior to 1878, and no agricultural statistics were collected in South Australia for the years 1886 and 1887.

Average Produce per Acre of the Principal Crops in Australasian Colonies, 1873 to 1887—*continued.*

Year ended March.	Victoria.	New South Wales.	Queensland.*	South Australia.*	Western Australia.	Tasmania.	New Zealand.
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
1885 ...	23·40	21·87	15·17	12·20	18·00	28·65	34·84
1886 ...	21·72	19·77	4·84	...	14·50	26·82	26·11
1887 ...	22·91	25·09	10·42	...	16·14	25·95	30·92
Mean ...	21·20	20·70	13·11	12·93	15·94	25·72	31·98
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
1885 ...	17·38	21·16	24·73	13·48	16·50	29·58	30·37
1886 ...	17·58	16·16	24·20	...	14·50	25·83	25·92
1887 ...	22·36	21·87	24·07	...	15·97	22·40	25·94
Mean ...	20·00	20·25	19·50	12·59	14·96	24·26	27·31
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
1885 ...	4·16	2·52	2·92	4·10	3·00	4·37	5·78
1886 ...	3·83	2·55	2·82	...	2·50	4·83	4·58
1887 ...	3·41	2·64	3·74	...	3·01	4·71	4·88
Mean ...	3·46	2·83	2·73	3·38	2·77	3·70	5·13

* See footnote on previous page.

AVERAGE PRODUCE PER ACRE OF THE PRINCIPAL CROPS IN AUSTRALASIAN COLONIES, 1873 TO 1887.—*continued.*

Year ended March.	Victoria.	New South Wales.	Queensland.*	South Australia.*	Western Australia.	Tasmania.	New Zealand.
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
1885 ...	1·09	1·24	1·40	·93	1·00	1·24	1·41
1886 ...	1·05	·88	1·06	...	1·00	1·24	1·14
1887 ...	1·09	1·57	1·92	...	1·00	1·06	1·36
Mean ...	1·22	1·36	1·51	1·10	1·15	1·26	1·30

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 sixteen years ended with 1887–8, see Summary of Australasian Statistics (third folding sheet) in the last volume; and for average yields per acre in 1887–8, see Table XVI. of Appendix A also in the last volume.

Colonies with highest and lowest average yields.

1107. 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 average 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 potatoes, and fourth in regard to the remaining crops.

Average produce 1886-7 and previous years compared.

1108. It will further be noticed that in 1886–7 the average produce of oats and barley in Victoria was above the mean of the fifteen years to which reference is made; which was also the case in respect to wheat, oats, barley, and hay in New South Wales; barley, potatoes, and hay in Queensland; barley and potatoes in South Australia; wheat, oats, barley, and potatoes in Western Australia; oats and potatoes in Tasmania; and hay in New Zealand.

Land under crop in British and Foreign countries.

1109. The next table shows the acreage under various crops in the United Kingdom, Australasia, British North America, the Cape of Good Hope, the principal countries on the continent of Europe and the United States of America. All the information has been taken from official documents:—

* See footnote on last page but one.

Land under certain Crops in some British and Foreign Countries (000's omitted).

Country.	Year.	Number of Acres under—				
		Wheat.	Oats.	Barley.	Rye.	Potatoes.
The United Kingdom...	1887	2,385,	4,403,	2,248,	66,	1,357,
Australasia	1886–7	3,652,	628,	89,	...	124,
Canada—						
Ontario	1886	1,464,	1,622,	736,	...	140,
Quebec, Nova Scotia, and New Brunswick	1881	311,	...	...	...	235,
Manitoba	1886	384,	161,	70,	...	9,
Prince Edward Island, British Columbia, and the Territories	1881	56,	...	...	...	43,
Cape of Good Hope ...	1875	188,	115,	29,	...	9,
Austria	1885	2,949,	4,518,	2,881,	4,926,	2,712,
Belgium	1883	811,	616,	99,	686,	492,
Denmark	1881	138,	991,	781,	660,	110,
France	1885	17,183,*	9,113,	2,360,	4,132,	3,550,
Germany	1886	4,734,	9,402,	4,277,	14,422,	7,202,
Holland	1884	220,	278,	120,	498,	357,
Hungary	1886	6,827,	2,602,	2,579,	2,777,	1,051,
Italy	1883	11,700,	939,	1,250,†	...	173,
Norway	1875	11,	224,	138,	37,	86,
Russia in Europe ...	1881	28,947,	30,890,	12,454,	64,609,	3,713,
Sweden	1885	1,073,†	2,604,‡	...	...	373,
United States ...	1885–6	36,806	23,658,	2,729,	2,129,	2,266,

Gross yield of crops in British and Foreign countries.

1110. 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 Produce of certain Crops in some British and Foreign Countries (000's omitted).

Country.	Year.	Number of Bushels § of—				
		Wheat.	Oats.	Barley.	Rye.	Potatoes.
The United Kingdom	1887	76,225,	150,789,	69,948,	...	285,371,
Australasia	1886–7	39,831,	17,509,	1,893,	...	19,137,
Canada—						
Ontario	1886	27,590,	58,666,	19,512,	...	16,012,
Quebec, Nova Scotia, and New Brunswick	1881	3,070,	25,161,	2,064,	...	29,213,
Manitoba	1886	5,720,	3,473,	964,	...	1,322,
Prince Edward Island, British Columbia, and The Territories	1881	840,	3,852,	247,	...	6,605,
Cape of Good Hope ...	1886	3,554,	1,359,	1,041,	...	372,‖

* Including spelt (*Triticum spelta*). † Including also rye.

‡ Including also barley and mixed corn.

§ The produce was originally given in Imperial bushels, except in the case of Germany, where it was stated in cwts., and the United States in Winchester bushels. Besides, the potato crop of Belgium was stated in cwts., and that of Australasia in tons. All these have been converted into Imperial bushels upon the assumption that 60 lbs. of wheat, 40 lbs. of oats, 50 lbs. of barley or rye, and 56 lbs. of potatoes are in each case equal to an Imperial bushel; also that a Winchester bushel is equivalent to ·969,447 of an Imperial bushel. ‖ Return for 1875.

GROSS PRODUCE OF CERTAIN CROPS IN SOME BRITISH AND FOREIGN COUNTRIES (000's OMITTED).—*continued.*

Country.	Year.	Number of Bushels* of—				
		Wheat.	Oats.	Barley.	Rye.	Potatoes.
Austria	1885	46,793,	91,821,	50,448,	76,680,	356,777,
Belgium	1885	16,641,	24,952,	5,547,	17,202,	119,238,
Denmark	1886	5,007,	32,762,	23,293,	15,490,	14,164,
France	1885	302,120,†	235,208,	47,892,	66,204,	410,600,
Germany	1886	97,947,	267,560,	103,024,	223,811,	989,558,
Holland	1884	5,710,	10,931,	4,736,	10,273,	72,309,
Hungary	1886	99,675,	53,293,	36,696,	36,272,	90,307,
Italy	1885–6	125,421,	15,255,	12,394,‡	...	...
Norway	1875	276,	8,896,	4,285,	1,016,	19,591,
Russia in Europe ...	1885	172,378,	376,486,	91,170,	679,809,	235,275,
Sweden	1886	3,656,	52,929,	15,445,	19,499,	48,716,
United States ...	1885–6	443,222,	605,028,	56,573,	21,090,	169,671,

Average yield of wheat in United Kingdom.

1111. Until 1884 no official return was made of the produce of crops in the United Kingdom. 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 eighteen years ended with 1883, and this has been supplemented by the official figures for the four years ended with 1887, published by the Agricultural Department of the Privy Council Office §:—

AVERAGE PRODUCE PER ACRE OF WHEAT IN THE UNITED KINGDOM, 1866 TO 1887.

	Bushels per acre.		Bushels per acre.
1866	27	1877	22
1867	25	1878	30
1868	34	1879	18
1869	27	1880	26
1870	32	1881	27
1871	27	1882	28
1872	23	1883	26
1873	25	1884	29·9
1874	31	1885	31·2
1875	23	1886	26·9
1876	27	1887	32·0

Wheat yield in United Kingdom and colonies compared.

1112. The average produce in the 22 years was within a fraction of 27 bushels per acre, which is much above the yield in any of the

* See footnote (§) to preceding page.
† Including also spelt (*Triticum spelta*).
‡ Including also rye.
§ *Agricultural Produce Statistics*, 1886. Eyre and Spottiswoode, London.

Australasian colonies. The yield in 1887 (32 bushels to the acre) was, it will be observed, exceeded in only one previous season.

Average yield of crops in British and Foreign countries.

1113. The acreable produce during several years 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 PRODUCE PER ACRE OF SOME BRITISH AND FOREIGN COUNTRIES.

Country.	Bushels* per Acre of—				
	Wheat.	Oats.	Barley.	Rye.	Potatoes.
The United Kingdom ...	32·0	34·2	31·1	...	210·3
Australasia	10·9	27·9	21·3	...	154·3
Canada—					
Ontario	18·8	36·2	26·5	...	114·4
Quebec, Nova Scotia, and New Brunswick ...	9·9	...	...	...	124·3
Manitoba	14·9	21·6	13·8	...	147·0
Prince Edward Island, British Columbia, and the Territories ...	15·0	...	...	...	153·6
Cape of Good Hope † ...	9·0	8·1	15·4	...	41·2
Austria	15·9	20·3	17·5	15·6	131·6
Belgium	20·5	40·5	56·0	25·1	242·4
Denmark	36·3	33·1	29·8	23·5	128·8
France	17·6	25·8	20·3	16·0	115·7
Germany	20·7	28·5	24·1	15·5	137·4
Holland	26·0	39·3	39·5	20·6	202·6
Hungary	14·6	20·5	14·2	13·1	85·9
Italy	10·7	16·2	9·9	...	...
Norway	25·1	39·7	31·0	27·5	227·8
Russia in Europe	5·9	12·2	7·3	10·5	63·4
United States	12·1	25·6	20·7	9·9	74·9

Yield of wheat in Foreign countries and Australasia.

1114. It will be observed that the average yield of wheat is 36 bushels in Denmark, 32 bushels in the United Kingdom, 26 bushels in Holland, 25 bushels in Norway, 21 bushels in Germany, 20 bushels in Belgium, 19 bushels in Ontario, 18 bushels in France, 16 bushels in Austria, 15 bushels in Hungary, Manitoba, and British Columbia, and 12 bushels in the United States, all of which were above the average of Australasia; but the wheat yields of Quebec, the Cape of Good Hope, Italy, and European Russia were below the average of that group of colonies.

Yield of oats, barley, and potatoes in Foreign countries and Australasia.

1115. According to the figures, the average yield of oats and barley in Australasia is higher than in Manitoba, the Cape of Good Hope, Austria,

* See footnote (§) to table following paragraph 1110 *ante*.
† The averages in this case relate to the year 1875.

France, Hungary, Italy, European Russia, or the United States, but lower than in any other of the countries named. The yield of potatoes in Australasia is about equal to that of British Columbia, and above that in any of the other countries named except the United Kingdom, Belgium, Holland, and Norway.

1116. The following statement of the actual wheat crop in 1887, and the probable wheat crop in 1888, of the various countries of the world, has been derived from the *Economist* (London Journal), and other sources :— Wheat crop of the world.

WHEAT CROP OF THE WORLD, 1887 AND 1888.

Countries.	Wheat Crop in Quarters, 000's omitted.	
	1887 (actual).	1888 (probable).*
	quarters.	quarters.
Australasia	49,788,	59,485,
Austria-Hungary	23,630,	22,000,
Belgium	2,470,	2,026,
Denmark	625,	594,
France...	37,926,	28,000,
Germany	12,324,	11,000,
Great Britain and Ireland	9,528,	6,500,
Greece...	620,	600,
Holland	631,	574,
Italy	14,552,	12,850,
India	26,500,	32,547,
Portugal	900,	800,
Roumania	3,000,	3,500,
Russia (including Poland)	33,900,	30,500,
Servia	850,	780,
Spain	11,300	12,000,
Switzerland	260,	200,
Turkey in Europe	5,500,	5,000,
United States	57,000,	52,500,
Other Countries (estimated)	24,000,	20,000,
Total	315,304,	301,456,

1117. An Imperial quarter being equal to 492 lbs., the total yield, supposing the above figures to be correct, would be 2,585,493,000 bushels of 60 lbs. each in 1887, and 2,471,939,000 such bushels in 1888 ; and the value at four shillings per bushel would be five hundred and seventeen millions sterling (£517,098,600) in the former, and over Value of world's wheat crop.

* In the case of Australasia the actual crop for 1887-8 is given.

four hundred and ninety-four millions sterling (£494,387,800) in the latter year.

Experimental farm, Dookie.

1118. 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 the farm has been furnished for this work by Mr. D. Martin, Secretary for Agriculture :—

The farm has, under the provisions of the *Agricultural Colleges Act* 1884, been vested in trustees, and all moneys received from the sale of stock and produce since June, 1885, have been paid into the Agricultural College Fund.

The total receipts for the year 1887 were £873 6s. 9d., and the expenditure £1,756 9s. Of the amount expended, £827 5s. 8d. was expended for live stock, and £212 10s. 3d. for implements, ironmongery, building materials, &c.

So far as was possible, the provisions necessary for the students at the Agricultural College and the staff thereof, were obtained from the farm.

Since the erection of the new dairy, and the use of the De Laval Cream Separator there has been no trouble in obtaining a sufficient supply of good butter. The farm is now fairly equipped as regards implements and machinery. During 1887 the following additions were made:—Cultivators, engine (8-horse), chaff cutter, steam-generator, hay-carrier, waggon-loader, drills, harrows, land-leveller, &c.

During 1887 very little land was under crop other than that required for feeding and seed purposes. In the present year (1888), however, 280 acres have been sown with wheat, 40 with barley, 40 with oats, 40 with ensilage crop, 40 with hay, 8 with lucerne, and 8 with root crops.

Experiments were made in 1887 in cultivation of 40 varieties of wheat, and 33 kinds of grasses and clovers ; also, as to the quantity of seed which will give the best return per acre; at what depth, seed covered, will produce the best crop. Specifics for prevention of smut in wheat were also tried.

Flax, hemp, medicinal plants, prickly comfrey, flax lily, arrowroot, chicory, sugar beet, mangolds, maize, sorghum, millet, &c., were grown experimentally. About 4 acres are planted with olives, which yield about 100 gallons of oil per annum.

The vintage of 1887 yielded 1,616 gallons of wine from 5 acres. The area of the vineyard has recently been extended and planted with vines for raisin making.

An area of 20 acres is devoted to fruit, ornamental, and forest trees.

The following is the estimated value of live stock, implements, buildings, and produce on hand :—

Bees	£17	0	0
Shorthorn cattle	580	0	0
Hereford cattle	220	0	0
Ayrshire cattle	73	0	0
Commercial cattle	150	0	0
Milch cattle	177	0	0
Horse stock	720	0	0
Sheep	936	5	0
Pigs	133	0	0
Plant	1,336	17	6
Buildings	2,094	0	0
Wine on hand, &c.	283	4	0
Olive oil, &c.	60	0	0

Agricultural colleges.

1119. An Act for the establishment of Agricultural Colleges* was passed towards the close of 1884. The following particulars respecting this Act and its operations have been supplied by Mr. D. Martin, the Secretary for Agriculture :—

"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 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 money 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 proceedings of the trustees and of the council have to be approved by the Governor in Council before coming into effect. The Act was amended in 1885,† so as to provide for five members being elected by members of Agricultural Societies in lieu of by the governing bodies of such societies; also for the elections to be held once in every three years, instead of being held annually.

"Of the land intended as endowment, 122,903 acres have been reserved and vested in the trustees, and 119,800 acres of the land so vested have been leased for agricultural and grazing purposes. The total of the annual rents payable amount to £5,187 14s. 6d.

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* The Agricultural Colleges Act 1884 (48 Vict. No. 825).

† By the Agricultural Colleges Act 1885 (49 Vict. No. 871).

"The first school was erected on the Dookie Experimental Farm Reserve. The buildings comprise lecture hall, dining hall, class rooms, teachers' quarters, sleeping accommodation for forty pupils, baths, out offices, &c. The school was opened on the 1st October, 1886, with the full number of pupils for which there is accommodation.

"The course of instruction comprises chemistry, botany, entomology, geology, advanced English, arithmetic, mensuration, surveying, bookkeeping, practical work on the farm, instruction in field operations, the use of farm implements and machinery, and the management of live stock.

"No fee is charged for instruction, but a payment of £25 per annum has to be made for each pupil to cover the cost of maintenance.

"A second school is now in course of erection on the Longerenong Experimental Farm Reserve, near Horsham, and will, it is believed, be ready for occupation in January, 1889."

Breadstuffs available for consumption.

1120. The following table shows, for 1840 and each subsequent year, the quantity of wheat grown in Victoria, and the quantity of wheat, flour, 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 1887.

Year.	Wheat grown in Victoria.	Wheat, Flour, 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
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

* The quantities of flour 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 1887—*continued.*

Year.	Wheat grown in Victoria.	Wheat, Flour, and Biscuit.*		
		Imported after deducting Exports.	Exported after deducting Imports.	Available for Consumption.
	bushels.	bushels.	bushels.	bushels.
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
1885	10,433,146	...	3,745,985	6,687,161
1886	9,170,538	...	2,226,907	6,943,631
1887	12,100,036	..	3,897,987	8,202,049

NOTE.—In 1887 the imports of breadstuffs amounted to 159,314 bushels, valued at £31,354, but the exports of breadstuffs amounted to 4,057,301 bushels, valued at £868,030. The balance in favour of exports was, therefore, 3,897,987 bushels, valued at £836,676.

Population and breadstuffs.

1121. It will be observed that only in the last eleven 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 fourteen 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 other 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, and biscuit used for food, the total quantity of the latter being shown as well as the quantity per head:—

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

Population and Breadstuffs, 1840 to 1887.

Year.	Mean Population.	Wheat, Flour, 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	890,220	5,392,845	1,938,724	3,454,121	3·88
1883	910,982	6,374,924	2,208,784	4,166,140	4·57
1884	933,894	7,337,640	2,192,708	5,144,932	5·51
1885	958,595	6,687,161	2,040,164	4,646,997	4·85
1886	987,094	6,943,631	2,105,370	4,838,261	4·90
1887	1,019,700	8,202,049	2,465,886	5,736,163	5·62

* The quantities of flour 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.

Allowance for seed, waste, &c.

1122. 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 1887 left for consumption, waste, &c., would be 6,352,635 bushels, equal to close upon $6\frac{1}{4}$ bushels per head; or, if only 1 bushel per acre be allowed for seed, the residue would amount to 6,969,106 bushels, or about $6\frac{4}{5}$ bushels per head.

Consumption of breadstuffs per head.

1123. 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 six of the nine years since 1878; but in only one year, viz., 1882, to less than 4 bushels per head. The proportion per head reached $5\frac{1}{2}$ bushels in 1884, which was the year of an exceedingly bountiful harvest, and as high as $5\frac{2}{3}$ bushels in 1887, in which year the low price of wheat in England probably acted as a check upon exportations. Both these proportions are above the average of recent years.

Average consumption of breadstuffs.

1124. The quantity of breadstuffs available for annual food-consumption per head has averaged $5\frac{3}{4}$ bushels over the whole period of forty-eight years, but during the last nine years it averaged only $4\frac{3}{4}$ bushels, or one bushel less. In the present state of the Victorian population, it may be fair to assume that from $4\frac{1}{2}$ bushels to 5 bushels per head, irrespective of the quantity required for seed, is amply sufficient to supply the wants of any given year.

Breadstuffs available for consumption in United Kingdom.

1125. 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, on the average, somewhat higher than it is here. The following table shows the estimated mean population of the United Kingdom during each of the twenty-one harvest years (or periods extending from the 1st September to the 31st August) ended with 1886–7; 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 THE UNITED KINGDOM, 1867 TO 1887.

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
1886 †	36,519,700	206,887,	5·67
1887 †	36,900,486	204,000,	5·53

Average consumption of wheat in United Kingdom.

1126. As a result of calculations derived from the figures in the table, it appears that in the twenty-one years named the average quantity of wheat available for consumption in the United Kingdom was 5·65 bushels per head, or about a bushel per head more than is apparently found sufficient for the requirements of the Victorian population.

Consumption of wheat in New South Wales.

1127. According to Mr. Coghlan, the Government Statistician of New South Wales,‡ the consumption of wheat per head is considerably greater in that colony than in Victoria, and even greater than in the United Kingdom, the quantity available per head being in 1886 6·2 and in 1887 7·7 bushels, and the average quantity in the five years ended with 1887 being 6·7 bushels. According to the same authority, New South Wales has never grown nearly enough wheat for her own consumption, the quantity imported in 1887, after deducting the exports, being 2,482,960 bushels, whilst only 5,868,844 bushels were grown in the colony.

* The total number of bushels of wheat available for consumption has been taken from articles in the Supplement to the *Statist*, London Journal. The calculations have been made in the office of the Government Statist, Melbourne.

† Partly estimated.

‡ See *Wealth and Progress of New South Wales*, 1887–8. Potter, Sydney, 1888.

1128. 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 much 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. Consumption of breadstuffs per head in United States.

1129. Baron Kolb, the eminent German statistician, whilst admitting the imperfections of the data on which he worked, gives the following as the probable consumption of breadstuffs per head in various places,† his estimate for England being nearly double that given for the United Kingdom in the last table :— Consumption of breadstuffs in various places.

CONSUMPTION OF BREADSTUFFS PER HEAD IN VARIOUS COUNTRIES AND CITIES.

	Lbs. per Head.		Bushels per Head.
France	495	equal to	11·00
Baden	471	„	10·47
England	450	„	10·00
Paris	365	„	8·11
Prussia	345	„	7·67
Frankfort on Main ...	322·45	„	7·16
Darmstadt	321·4	„	7·14
Bremen	123·7	„	2·75

1130. The quantity and declared value of the Victorian imports and exports of breadstuffs during the fifty-one years, 1837 to 1887, are set down in the following table :— Imports and exports of breadstuff 1837 to 1887.

IMPORTS AND EXPORTS OF BREADSTUFFS,‡ 1837 TO 1887.

Wheat, Flour, and Biscuit.	Quantity.	Value.
	bushels.	£
Imported, 1837 to 1887	33,238,926	13,955,663
Exported, „ „	40,321,567	10,013,820
Imports in excess of exports ...	...	3,941,843
Exports in excess of imports ...	7,082,641	...

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

† *Condition of Nations*, by G. F. Kolb, translated by Mrs. Brewer, with notes by E. W. Streeter, page 961. George Bell and Sons, London, 1880.

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

Excess of quantity exported, of value imported.

1131. It will be observed that the quantity of breadstuffs exported from the colony from the period of its first settlement to the end of 1887 exceeded that imported during the same period by 7 million bushels; but, in consequence of the prices of wheat and flour during the earlier years, in which the imports invariably exceeded the exports, being much higher than in the later years, in which the exports exceeded the imports, the declared value of the breadstuffs received has exceeded that of those sent away by nearly 4 millions sterling.

Net imports of agricultural products.

1132. 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 vegetable productions during each of the six years ended with 1887. 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 CERTAIN ARTICLES OF AGRICULTURAL PRODUCE, 1882 TO 1887.

Articles.	Balance of Imports over Exports in—					
	1882.	1883.	1884.	1885.	1886.	1887.
	£	£	£	£	£	£
Oats	29,621	51,739	36,249	86,474	69,669	126,990
Barley and pearl barley	3,033	27,356	...	16,677	4,949	44,935
Malt	...	...	...	...	9,903	2,056
Maize	32,379	59,620	7,232	13,853	18,956	1,500
Maizena and corn flour	5,098	4,899	8,599	5,289	13,642	7,498
Beans, pease, and split pease	...	...	...	...	1,667	1,843
Arrowroot	1,208	2,784	2,183	2,790	558	1,105
Macaroni and vermicelli	1,391	1,465	1,298	2,441	2,066	686
Starch	4,057	7,199	9,176	8,544	14,517	3,569
Fruit—fresh, bottled, dried, currants and raisins	166,059	144,350	113,587	152,967	146,678	226,888
Jams, jellies, and preserves	2,787	...	...	...	...	3,068
Nuts, almonds, walnuts	6,722	6,725	4,582	9,429	7,033	4,940
Peanuts	612	233	...	474	689	2,129
Ginger	1,050	954	2,347	3,845	3,322	2,286
Opium	66,010	43,168	37,850	28,728	32,713	29,955
Hops	31,639	43,639	...	6,185	13,500	28,579
Chicory	171	...	...	2,269	...	...
Pickles	7,371	2,554	4,688	5,570	9,386	7,620
Mustard	15,039	12,337	8,304	9,789	17 920	13,872
Oil, olive and salad ...	17,569	12,285	11,427	18.496	15,204	8,953
„ linseed	30,286	27,801	31,121	31,484	31,404	31,144

* The total imports and total exports of these articles during 1887 will be found in the table of Imports and Exports in Part Interchange, under Orders 22, 23, 25, and 26, *ante*.

NET IMPORTS* OF CERTAIN ARTICLES OF AGRICULTURAL PRODUCE, 1882 TO 1887—*continued.*

Articles.	Balance of Imports over Exports in—					
	1882.	1883.	1884.	1885.	1886.	1887.
	£	£	£	£	£	£
Oil, castor	4,559	39,669	24,238	10,797	31,700	34,485
Linseed meal ...	104	40	888	446	...	459
Tobacco, cigars, and snuff	96,206	66,222	101,836	116,212	179,955	128,618
Flax (Phormium) ...	10,419	6,257	6,756	8,312	5,215	3,595
Hemp	52,750	41,702	36,208	29,927	17,994	33,098
Jute	16,030	6,057	9,716	3,449	1,126	...
Broom corn and millet	6,351	7,575	6,240	6,959	7,447	4,632
Bark	...	...	6,492	20,905	2,287	2,955
Cork	22,894	21,924	19,193	13,867	19,811	1,403
Vegetables (preserved)	...	653	...	427	897	...
Canary seed ...	1,063	549	1,449	2,008	1,314	1,571
Grass and clover seed	9,560	4,769	7,063	14,667	11,333	13,390
Seeds, undescribed ...	2,140	19	...	...	11,310	15,402
Tares	161	72	114	109	31	81
Total ...	644,339	644,616	498,836	633,389	704,196	789,305

1133. It will be observed that jute and preserved vegetables are absent from the list for the last year, and chicory is absent for the last two years. Decreased imports of agricultural products.

1134. 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 1887 to the number of 8,007,276, and to the value of £31,474; and exported to the number of only 232,392, and the value of only £976; the difference in favour of the former being 7,774,884 in number, and £30,498 in value. The value of the imports of eggs in 1886 exceeded that of the exports by £15,020, in 1885 by £10,200, in 1884 by £3,958, in 1883 by £4,871, and in 1882 by £7,959. Net import of eggs.

1135. Of every thousand acres cultivated during the past season, 479 acres were placed under wheat; 77 under oats; 16 under barley; 19 under potatoes; 171 under hay; 64 under green forage; and 174 under other kinds of 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.

* The total imports and total exports of these articles during 1887 will be found in the table of Imports and Exports in Part Interchange, under Orders 22, 23, 25, and 26, *ante*.

Proportion of Land under each Crop to Total under Cultivation, 1880 to 1888.

Land under—	Proportion to Total Land under Tillage.								
	1879–80.	1880–81.	1881–2.	1882–3.	1883–4.	1884–5.	1885–6.	1886–7.	1887–8.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Wheat ...	41·89	48·97	50·87	47·50	49·84	47·19	42·41	43·49	47·86
Oats ...	9·93	6·72	8·07	8·32	8·49	8·08	8·98	7·67	7·72
Barley ...	2·56	3·43	2·67	2·14	2·11	2·68	3·08	1·53	1·59
Potatoes ...	2·46	2·25	2·15	1·68	1·81	1·66	1·77	2·07	1·87
Hay	11·93	12·51	11·65	15·16	13·67	14·62	17·51	18·39	17·15
Green forage ...	18·11	13·21	13·28	14·23	12·95	14·33	13·90	11·74	6·38
Other tillage ...	13·12	12·91	11·31	10·97	11·13	11·44	12·35	15·11	17·43
Total ...	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00

Minor crops.

1136. 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,* 1883 to 1888.

Nature of Crop.		1882–3.	1883–4.	1884–5.	1885–6.	1886–7.	1887–8.
Amber cane ...	acres ...	...	...	...	...	...	12
	cane, tons	...	...	...	...	...	90
	seed, lbs. ...	...	...	...	...	...	280
Arrowroot ...	acres ...	7	17	6	3	...	...
	tons (root)	32	53	127	41	...	...
	cwt., manfd.	30	...	...	...	...	...
Artichokes ...	acres ...	2	2	2	...	...	3
	tons ...	16	20	20	...	...	55
Beet, carrots, parsnips	acres ...	433	424	455	388	467	485
	tons ...	3,281	3,874	3,872	4,304	4,411	4,672
Broom-millet...	acres ...	9	2	5	3	...	5
	fibre, cwt.	10	...	29	5	...	72
	seed, bush.	220	40	48	20	...	28
Buckwheat ...	acres ...	3	2	2	3	...	...
	bushels ...	65	62	58	30	...	...

* Exclusive of those grown in gardens.

Minor Crops,* 1883 to 1888—*continued.*

Nature of Crop.		1882-3.	1883-4.	1884-5.	1885-6.	1886-7.	1887-8.
Canary seed ...	acres ...	41	...	63	...	9	...
	bushels ...	192	...	724	...	124	...
Cauliflowers and cabbages	acres ...	...	7	7	27	114	164
	dozens ...	...	2,500	4,300	18,500	27,360	68,345
Chicory ...	acres ...	283	283	219	216	204	249
	tons ...	1,209	1,626	1,309	1,239	1,472	1,375
Coriander seed	acres ...	3	...	...	...	...	...
	lbs. ...	810	...	...	...	...	...
Durrah ...	acres ...	...	...	...	...	2	...
Fenugreek† ...	acres ...	1	...	...	...	...	...
	lbs. ...	300	...	...	...	...	...
Flax ...	acres ...	7	21	11	7	...	1
	fibre, cwt.	31	38	7	9	...	5
	linseed, bsh.	43	152	73	18	...	7
French beans...	acres ...	...	...	...	...	...	2
	tons ...	...	...	...	...	...	3
Garden seeds...	acres ...	14	24	45	7	43	73
	cwt. ...	43	62	74	14	215	178
Gooseberries ...	acres ...	1	...	...	3	2	4
	cwt. ...	16	...	...	28	23	140
Grass and clover seeds ...	acres ...	2,290	2,686	2,329	2,953	4,667	4,638
	bushels ...	28,740	41,964	35,559	39,813	61,490	61,177
Green pease ...	acres ...	10	...	108	92	80	152
	tons ...	25	...	36	141	98	234
Hops ...	acres ...	1,034	1,758	1,737	896	730	685
	lbs. ...	1,035,216	1,760,304	1,573,936	616,112	562,576	605,360
Kale ...	acres ...	...	...	...	...	...	10
	seed, bush.	...	...	...	...	...	36
Kohl-rabi ...	acres ...	1	...	...	...	...	...
	cwt. ...	260	...	...	...	...	...
Maize ...	acres ...	2,702	2,570	3,854	4,530	4,901	6,031
	bushels ...	131,620	117,294	176,388	181,240	231,447	318,551
Mangel-wurzel	acres ...	1,087	1,056	1,413	1,346	1,257	1,191
	tons ...	16,656	18,906	21,935	24,129	19,142	20,590
Medicinal herbs	acres ...	...	1	...	...	3	...
Mulberry trees	acres ...	3	1	...	4	1	1
	number ...	...	1,000	...	...	...	...
Mustard ...	acres ...	81	71	61	7	20	16
	cwt. ...	379	368	287	15	100	80
Olives ...	acres ...	2	15	13	14	1	13
	fruit, cwt.	35	...	...	...	...	...
Onions ...	acres ...	1,341	1,235	1,750	1,740	1,996	2,437
	tons ...	8,280	6,977	11,816	10,209	11,625	11,774
Opium poppies	acres ...	9	6	10	16	11	11
	lbs. of opium	225	120	190	200	139	178
Oranges and lemons	acres ...	...	4	2	6	2	34
	cases ...	...	...	...	...	...	...
Osiers ...	acres ...	4	...	3	5	8	...
	tons ...	2	...	3	...	5	...
Pease and beans	acres ...	26,832	30,443	35,288	35,460	28,672	26,692
	bushels ...	689,507	791,093	846,859	761,351	583,269	732,060
Pumpkins, melons, cucumbers, &c.	acres ...	35	44	119	153	69	107
	tons ...	370	355	837	1,447	536	850

* Exclusive of those grown in gardens.

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

MINOR CROPS,* 1883 TO 1888—*continued.*

Nature of Crop.		1882–3.	1883–4.	1884–5.	1885–6.	1886–7.	1887–8.
Rape for seed	acres ...	30	14	47	...	44	70
	bushels ...	468	261	...	...	...	940
Raspberries ...	acres ...	203	235	261	271	239	218
	cwt. ...	4,822	4,595	6,307	6,470	4,499	5,384
Rhubarb ...	acres ...	9	8	8	11	20	10
	tons ...	40	43	18	31	169	85
Rye	acres ...	1,137	1,260	939	654	762	1,069
	bushels ...	23,244	16,727	15,505	8,278	11,286	14,900
Strawberries	acres ...	16	61	76	55	35	68
	cwt. ...	154	766	1,468	941	243	616
Sunflowers for seed ...	acres ...	6	1	2	...	6	8
	bushels ...	62	40	...	...	140	128
Teazles ...	acres ...	...	2	2	...	...	...
	number ...	...	...	4,000	...	...	...
Tobacco ...	acres ...	1,313	1,325	1,402	1,866	2,031	1,966
	cwt. ...	5,673	9,124	7,893	13,734	12,008	11,853
Tomatoes ...	acres ...	15	17	21	34	26	45
	cwt. ...	2,265	1,600	1,278	4,800	2,280	6,914
Turnips ...	acres ...	125	148	209	253	443	303
	tons ...	901	1,402	1,600	2,179	2,767	4,102
Vetches and tares for seed	acres ...	5	10	26	1	...	1
	bushels ...	83	194	700	40	...	20
Vines ...	acres ...	5,732	7,326	9,042	9,775	10,310	11,195
	wine, galls.	516,763	723,560	760,752	1,003,827	986,041	1,167,874
	brandy, „	3,377	2,646	3,623	3,875	3,233	3,352

Certain crops of which cultivation increased.

1137. The table shows the cultivation of the following crops, also their produce, to have considerably increased of late years:—Beet, carrots and parsnips, cauliflowers and cabbages, grass and clover seeds, maize, onions, and vines.

Hops.

1138. 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 gave a considerable stimulus to that industry, commencing about 1882–3. The maximum was reached in the following year, but in 1884–5 there was a slight decline, both in the area under hops and the quantity produced, and a further considerable decline occurred in the three subsequent years.

Raspberries.

1139. 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 1887–8 was 5,384 cwt., or about 1,000 cwt. more than in 1886–7, but about 1,000 cwt. less than in 1884–5 and 1885–6. Since the establishment of jam factories, the fruit is in great demand, and much more would be purchased were it forthcoming.

* Exclusive of those grown in gardens.

Tobacco.

1140. At a very early period of the colony's history it was the custom of the pastoral occupiers of the soil to cultivate tobacco in small quantities for the purpose of making a decoction wherein to dip their sheep for the cure of the disease called "scab." That complaint has ceased to exist amongst the Victorian flocks ; but of late years tobacco has been grown for the purpose of manufacture into an article suitable for the use of man ; 1,966 acres were placed under it in 1887–8, and the yield amounted to 11,853 cwt. The land placed under tobacco was less than in the previous year by 65 acres, and the quantity raised was less than in that year by 155 cwt. It was also less than the quantity raised in 1885–6 by 1,881 cwt.

Tobacco crop in various countries.

1141. In 1885, the tobacco crop of the United States exceeded 44 million cwt., and was the largest ever grown. The following are the exact figures, as well as those expressing the very much smaller quantities grown in several European countries :—

TOBACCO CROP IN VARIOUS COUNTRIES, 1885.

	cwt.		cwt.
United States	44,381,515	France	421,731
Austria Hungary ...	1,277,218	Italy	120,748
Russia (1881)	930,797	Holland (1884)	58,583
Germany	758,373	Turkey	17,553

Consumption of tobacco in Victoria and other countries.

1142. The average consumption of tobacco in Victoria during 1885 and 1886 was nearly 3 (2·93) lbs.* per head of the population, being a larger average than that obtaining in eleven of the following countries, the information respecting which has been partly derived from a paper read by Dr. O. J. Broch before the Statistical Society of Paris, on the 15th June, 1887.† Attention is called to the very high average consumption of tobacco in Holland and the United States of America :—

AVERAGE ANNUAL CONSUMPTION OF TOBACCO PER HEAD IN VARIOUS COUNTRIES.

	lbs.		lbs.
Holland	6·92	Finland...	2·73
United States	4·40	Norway...	2·29
Austria-Hungary ...	3·77	France	2·05
Denmark	3·70	Sweden	1·87
New South Wales ...	3·53	Tasmania	1·85
Queensland	3·49	New Zealand	1·75
Western Australia ...	3·26	Spain	1·70
Switzerland	3·24	United Kingdom	1·41
Belgium	3·15	Italy	1·34
Germany	3·00	South Australia	1·32
Victoria	2·93	Russia	1·23

* In 1887, the proportion was 2·61 lbs. per head.

† See *Journal de la Société de Statistique de Paris*, vingt-huitième année, page 237; Berger-Levrault, Paris, 1887. The consumption is there given in kilogrammes which have been turned into lbs., on the assumption that 1 of the former is equal to 2·204 of the latter.

Beet sugar.

1143. Beet for the manufacture of sugar has been as yet only grown in Victoria experimentally, and upon a small scale ; but ordinary beet, mangolds, and root crops generally, which have for years past been cultivated to a considerable extent, succeed so well that there is every reason to believe sugar beet could be grown to advantage, did not the low price of sugar, consequent upon the heavy subsidies by which the industry is fostered in several European countries, prevent sugar-making from being carried on at a profit. The following statement, however, of the average quantity of beet sugar made annually during the five years 1880 to 1884 in the different countries in which that product is manufactured may be useful and interesting at the present time :—

BEET-ROOT SUGAR PRODUCED ANNUALLY IN VARIOUS COUNTRIES.

	Tons of Beet Sugar made annually.
Germany	656,674
Austria-Hungary	470,318
France	399,471
Russia	279,436
Belgium	73,795
Holland	19,679
Other countries	9,839
Total	1,909,212

World's production of sugar.

1144. The following is a statement of the world's production of sugar in each of the fifteen years ended with 1886–7, cane sugar, whether grown in British possessions or foreign countries, and beet root sugar being shown separately :—

WORLD'S PRODUCTION OF SUGAR (000's omitted).

Year.	Cane Sugar.			Beet Sugar.	Total.
	British Possessions.	Foreign Countries.	Total.		
	tons.	tons.	tons.	tons.	tons.
1872–3	325,	1,466,	1,791,	1,143,	2,934,
1873–4	363,	1,478,	1,841,	1,110,	2,951,
1874–5	331,	1,378,	1,709,	1,054,	2,763,
1875–6	333,	1,413,	1,746,	1,318,	3,064,
1876–7	344,	1,338,	1,682,	1,039,	2,721,
1877–8	407,	1,264,	1,671,	1,101,	2,772,
1878–9	394,	1,305,	1,699,	1,421,	3,120,
1879–80	409,	1,535,	1,944,	1,574,	3,518,
1880–81	371,	1,503,	1,874,	1,404,	3,278,
1881–2	386,	1,474,	1,860,	1,750,	3,610,
1882–3	498,	1,518,	2,016,	1,783,	3,799,
1883–4	495,	1,609,	2,104,	2,147,	4,251,
1884–5	608,	1,939,	2,547,	2,360,	4,907,
1885–6	572,	2,021,	2,593,	2,506,	5,099,
1886–7	542,	2,161,	2,703,	2,137,	4,840,

1145. According to the following figures, Victoria, although not consuming so much sugar per head as three of the other Australasian colonies, would appear to consume much more per head than any European country, the average quantity in 1885 and 1886 being 90¾ lbs., or nearly 22 lbs. more per head than the United Kingdom, which consumes more than twice as much per head as any country on the European Continent. It must, however, be remembered that in Victoria 15 million pounds of sugar annually, or nearly 15 lbs. per head, are used in the manufacture of beer, which is very much more than many countries consume altogether :— Consumption of sugar in Victoria and other countries.

AVERAGE ANNUAL CONSUMPTION OF SUGAR (CANE AND BEET) PER HEAD IN VARIOUS COUNTRIES.*

	lbs.		lbs.
New Zealand ...	118·77	Sweden ...	17·52
South Australia	102·11	Belgium ...	15·74
Western Australia	93·51	Germany ...	15·01
Victoria ...	90·75	Austria-Hungary	13·23
Tasmania ...	90·49	Norway ...	11·37
United Kingdom	68·99	Portugal ...	9·56
Queensland ...	62·93	Roumania ...	7·71
New South Wales	60·95	Russia... ...	7·69
Demark ...	29·69	Spain	5·11
Holland ...	28·37	Servia	4·41
Switzerland ...	22·81	Italy	3·20
France ...	22·61	Finland ...	1·32

1146. In 1887–8 the area under vines exceeded that returned in 1886–7 by 885 acres, and was much larger than in any previous year. The quantity of wine returned was 1,167,874 gallons, or more than that in 1886–7 by over 180,000 gallons, more than that in 1885-6 by 164,000 gallons, and much more than that in any other year. The wine industry received a temporary check some years since, in consequence of an outbreak of the disease called phylloxera vastatrix, but this was found to be confined to one district in the colony (Geelong), where it was promptly stamped out by the eradication of all vines for a distance ranging from 20 to 30 miles from the centre of that district. Vines.

1147. An account of the visitation of the phylloxera, and of the measures taken for its suppression, was originally contributed to this work, and has recently been revised to date 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.

* See Dr. Broch's paper, page 233, there given in kilogrammes, each equal to 2·204 lbs

"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.

"In May, 1885, a Board was appointed to inquire as to the advisability or otherwise of permitting the re-planting of vines in the Geelong district. The Board recommended that the diseased lands be trenched, the vine roots removed and burnt, and the soil disinfected. The Board's recommendations have, so far as was practicable, been carried out."

Phylloxera in New South Wales.

1148. It has for some time been known that phylloxera existed in the Camden district of New South Wales. At first it was believed that only 15 acres were affected, but the disease has since spread and has extended into the district of Seven Hills. At an early period the Government of Victoria urged the Government of New South Wales to take steps to prevent the phylloxera from spreading, and an Act was accordingly passed with that object. This Act having been found to be ineffective, an amending Act has recently been passed, which it is hoped will result in the total suppression of the disease.

Wine crop in various countries.

1149. Mainly in consequence, no doubt, of the ravages of the phylloxera, the wine crop in France has been diminishing for years past. In 1875 it reached as high as 83,836,000 hectolitres, or 1,844,000,000 gallons, but in 1885 it had fallen to 28,536,000 hectolitres, or about 628,000,000 gallons. The following are the exact figures for 1885, as well as those representing the wine crop in four other European countries during the same year :—

WINE PRODUCED IN VARIOUS COUNTRIES, 1885.

(000's omitted.)

	gallons.		gallons.
France	627,792,	Spain (exports) ...	158,070,
Italy	499,378,	Holland	81,994,
Austria-Hungary ...	207,328,	United States ...	17,405,

Wine consumed in various countries.

1150. The wine made in Victoria, added to that imported after deducting that exported, amounts on the average to rather over a gallon annually per head. This shows a larger consumption of wine in this colony than in the United Kingdom, where it is less than half a gallon per head, but smaller than that in Germany, Switzerland, Austria-Hungary, and France, the wine consumption in the last named of which amounts to as much as 16½ gallons per head. The following are the figures for these and some other countries :—

ANNUAL CONSUMPTION OF WINE PER HEAD IN VARIOUS COUNTRIES.

	gallons.		gallons.
France	16·52	Queensland	·69
Austria-Hungary ...	4·84	Holland	·49
Western Australia ...	2·52	United Kingdom ...	·43
Switzerland	2·11	United States	·37
South Australia ...	1·47	New Zealand	·27
Germany	1·32	Tasmania	·24
Victoria	1·01	Sweden	·20
New South Wales ...	·74		

Gardens and orchards.

1151. 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, 1887 AND 1888.

Year ended March.	Gardens.	Orchards.	Total.
	acres.	acres.	acres.
1887	11,604	15,989	27,593
1888	9,997	16,328	26,325
Increase	...	339	...
Decrease	1,607	...	1,268

Land in fallow.

1152. Land in fallow is included in the area under tillage. The number of acres in this condition in 1888 was 364,354, or 86,566 more than in the previous year.

Irrigation.

1153. According to the returns of the past season, irrigation was being practised on a more or less extensive scale in 2 boroughs, viz., Clunes and Tarnagulla, and 11 shires, viz., Bacchus Marsh, Beechworth, Dunmunkle, Echuca, Gordon, Keilor, Korong, Marong, Mount Alexander, Swan Hill, and Wyndham. The whole number of farms in these municipalities was 4,854, upon 133 of which irrigation was carried on. Certain crops in these shires covered 210,465 acres, of which 8,993 acres, or rather more than $4\frac{1}{4}$ per cent., were subjected to irrigation. 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 MUNICIPALITIES, 1887–8.

Crops.	In Municipalities 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	203,259	7,206	2,226,089	61,349	11·16	8·51
Oats	7,946	297	190,283	6,314	23·94	21·26
Pease and Beans	4	1	105	25	26·25	25·00
ROOT CROPS.	acres.	acres.	tons.	tons.	tons.	tons.
Potatoes	94	12	247	51	2·63	4·25
Turnips	...	1	...	2	13·54*	2·00
Mangel-wurzel ...	1	1	5	30	5·00	30·00
Onions	...	1	...	2	4·83*	2·00
Chicory	...	20	...	200	5·52*	10·00

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

IRRIGATION IN CERTAIN MUNICIPALITIES, 1887–8—*continued.*

Crops.	In Municipalities practising Irrigation.					
	Extent under Crop on Land—		Gross Produce on Land—		Produce per Acre on Land—	
	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.	Irrigated.
HAY, GRASS, &C.	acres.	acres.	tons.	tons.	tons.	tons.
Hay	30,961	1,172	31,958	1,807	1·03	1·32
Green Forage ...	712	37	...	...	...	...
Artificial Grasses	3,022	108	...	...	...	...
OTHER TILLAGE.	acres.	acres.	cwt.	cwt.	cwt.	cwt.
Tomatoes ...	1	1	6	3	6·00	3·00
Hops	8	48	...	...	6·87	5·29
Grapes	459	37	9,283	1,080	20·23	29·19
Gardens	43	3	...	...	...	...
Orchards ...	964	48	...	...	...	...

Yield of irrigated and unirrigated land.

1154. 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 being of much value, and as in the year to which the figures relate there was an abundant supply of rain in most of the shires in which irrigation was practised, its beneficial effects were apparent in the case of a few only of the crops. Indeed, in some instances, it appears to have been positively injurious, and it is stated that in the Swan Hill District a number of the irrigated crops were partially destroyed by rain, flood, and rust. The only crops grown on irrigated land which gave better returns than those on land which had not been irrigated, in 1887–8, were potatoes, mangel-wurzel, and grapes.

Irrigation of vines.

1155. Of the grapes gathered from unirrigated vines, 6,629 cwt. were made into wine, producing 42,847 gallons; and of those gathered from irrigated vines, 900 cwt. were made into wine, producing 6,200 gallons, the average being between 6 and 7 gallons to the cwt. in both instances. Thus, while irrigation is shown largely to increase the crop of grapes, the wine made from grapes grown on irrigated land appears to be no greater in quantity than that made from an equal weight of grapes grown on unirrigated land.

Irrigation, 1884 to 1888.

1156. Chiefly, no doubt owing to the abundant rainfall which in many parts of the country rendered irrigation unnecessary, the extent of land subjected to irrigation in the year under review was not half as much as was so subjected in 1886–7, and was less by a third than that so subjected in 1885–6. The following table contains a statement of

the acreage under the various crops returned as under irrigation in each of the last four years :—

IRRIGATION, 1884 TO 1888.

Crops subjected to Irrigation.	Number of Acres subjected to Irrigation.				
	1883–4.	1884–5.	1885–6.	1886–7.	1887–8.
Wheat	4,968	3,322	8,109	14,034	7,206
Oats	94	187	502	1,416	297
Barley	49	41	237	349	...
Maize	...	19	10	1	...
Pease and Beans ...	...	3	11	3	1
Potatoes	30	29	22	93	12
Turnips	...	...	5	7	1
Mangel-wurzel ...	14	11	13	6	1
Beet, Carrots, &c. ...	...	18	15	11	...
Onions	...	...	...	1	1
Chicory	18	30	28	30	20
Hay	781	1,924	3,939	4,633	1,172
Green Forage ...	16	33	89	155	37
Artificial Grasses ...	415	1,003	206	251	108
Hops	398	357	254	60	48
Tobacco	7	...	...	52	...
Pumpkins	...	...	...	4	...
Tomatoes	...	1	2	2	1
Vines	103	20	...	56	37
Gardens and Orchards	42	48	37	178	51
Total ...	6,935	7,046	13,479	21,342	8,993

Statute for promoting irrigation.

1157. 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 were granted 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.

Irrigation Act 1886.

1158. This measure was repealed on the 16th December, 1886, by "an Act to make better provision for the supply of water for irrigation,

* *Victorian Water Conservation Act* 1883 (47 Vict. No. 778).

and also for mining, manufacturing, and other purposes." The principal provisions of this Act, which is entitled *The Irrigation Act 1886*,* have been described as follows by an officer of the Water Supply Department :—

"THE IRRIGATION ACT 1886.

"This measure repeals all previous legislation dealing with the question of irrigation, except as to acts done and irrigation trusts heretofore constituted.

"It also contains the important declaration that the right to use the waters of the rivers, streams, &c., of the colony shall be deemed to be vested in the Crown until the contrary is proven by establishing any other right.

"Provision is likewise made for the construction of 'national works' by the Government.

"National works are declared to be such by the special Act authorizing their being proceeded with. They are defined as works that, in the opinion of the Minister of Water Supply, 'are of such magnitude, affect such sources of water supply, and command such large areas of country, that it is advisable that they should be constructed by and retained under the direct control of the State.'

"Some important enlargements have been made in the powers which may be exercised by trusts under this Act as compared with those given to trusts previously constituted.

"To enable the necessary funds to be raised to carry out schemes of supply, the issue of debentures by trusts is provided for, whilst loans of Government moneys for a like purpose may, with the approval of Parliament, be granted."

1159. Under this Act Trusts have been created, some of which conserve water for the use of towns and some for the use of rural districts. The following is a statement of the waterworks which have been constructed by Trusts for the use of towns, showing also the capacity and cost of each work :— Waterworks under trusts (urban).

WATERWORKS UNDER CONTROL OF TRUSTS.—URBAN DISTRICTS.

Name of Trust.	Name of Town supplied.	Capacity of Water tank or Service Reservoir.	Cost.
		Gallons.	£
Seymour Shire ...	Avenel	50,000	1,800
Bacchus Marsh ...	Bacchus Marsh and Maddingley	120,000	2,700
Bet Bet Shire ...	Bealiba	1,000,000	1,858
Benalla	Benalla	40,000	9,715
Avoca United ...	Charlton	20,000	8,500
Wimmera United	Dimboola	1,075,225	3,000
	Donald	30,000	3,654
Echuca Borough ...	Echuca	70,000 50,000	17,000
Horsham Borough ...	Horsham	30,000	15,855
Swan Hill Shire ...	Kerang	25,000	8,200
Kyneton Shire ...	Kyneton	600,000	24,940
Maryborough ...	Maryborough	1,000,000	55,000
Mooroopna	Mooroopna	20,000	2,000
Wimmera United ...	Murtoa	40,000	1,230
Upper Macedon ...	Upper Macedon	...	948
Nagambie	Nagambie	10,000	1,500

* 50 Victoria No. 898.

WATERWORKS UNDER CONTROL OF TRUSTS.—URBAN DISTRICTS—*continued.*

Name of Trust	Name of Town supplied.	Capacity of Water Tank or Service Reservoir.	Cost.
		Gallons.	£
Lowan Shire	Nhill	40,000	3,850
Shepparton Shire ...	Numurkah	40,000	7,500
Romsey Shire ...	Romsey	250,000	4,700
Shepparton	Shepparton	60,000	9,417
Swan Hill Shire ...	Swan Hill	20,000	5,500
Bet Bet Shire ...	Timor	...	80
Wimmera United ...	Warracknabeal	40,000	460
Woodend	Woodend	...	8,000
Yarrawonga Shire ...	Yarrawonga	50,000	6,100
	Total	4,680,225	203,507

Waterworks under trusts (rural).

1160. The following is a list of the trusts which carry on their operations in rural districts, also a statement of the cost of the works under their control :—

WATERWORKS UNDER CONTROL OF TRUSTS.—RURAL DISTRICTS.

Name of Trust.	Cost.	Name of Trust.	Cost.
	£		£
Avoca United	19,938	St. Arnaud Shire ...	20,801
Bacchus Marsh ...	6,221	Stawell Shire ...	1,915
Bet Bet Shire	5,056	Twelve-Mile ...	2,800
Benjeroop and Murrabit	1,605	Tragowel Plains ...	135,170
Cohuna	3,131	Swan Hill Shire ...	36,036
Echuca and Waranga ...	130,002	Wimmera United ...	167,333
Kara Kara	8,782	Wimmera Shire ...	74,490
Koondrook	1,700	Yarrawonga Shire ...	14,648
Loddon United ...	43,162		
Lowan Shire	18,982		
Shepparton Shire ...	17,815	Total	709,587

NOTE.—In the case of the Trusts operating in rural districts, the capacity for water storage is not given, except in the case of the reservoir of the Wimmera Shire, which is said to be capable of containing 3,067,881,000 gallons. It is also stated that these waterworks have in the aggregate 77 weirs, 7 head sluices, 474 tanks, 64 wells with windmills, 424 mills, 27 chains of main channels, and 9·09 miles 18 chains of branch channels.

Waterworks under Government.

1161. Besides the waterworks constructed or controlled by Trusts extensive works for the storage and supply of water for domestic, mining, and irrigation purposes have been constructed by the Government and by Local Bodies 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, Caulfield, and Kew, 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 such of these works as are under Government control; also a statement of the estimated storage capacity of each work, and its cost.

WATERWORKS UNDER GOVERNMENT CONTROL.

Name of Town or District supplied.	Reservoir or Source of Supply.		Cost.
	Where situated.	Storage Capacity.	
		gallons.	£
Melbourne and suburbs	Yan Yean	6,400,000,000	2,440,000
	Jack's Creek	60,000,000	
	Morang (pipe head) ...	3,000,000	
	Preston (storage) ...	15,000,000	
	Essendon (storage 1) ...	6,000,000	
	„ („ 2) ...	1,000,000	
	Caulfield („) ...	10,000,000	
	Kew	3,000,000	
COLIBAN SCHEME.			
Taradale ...	Malmsbury	3,255,000,000	1,064,050
	Taradale	65,000	
Castlemaine & Chewton	Expedition Pass ...	120,000,000	
	Red Hill	1,250,000	
	Old Post Office Hill ...	2,000,000	
	Barker's Creek ...	629,135,000	
	Specimen Gully ...	2,618,000	
Fryerstown	Crocodile Gully ...	5,407,000	
Maldon	Green Gully	1,500,000	
Sandhurst ...	Big Hill	68,000,000	
	Bill Hill Tank ...	300,000	
	Crusoe Gully	320,000,000	
	New Chum Tank ...	23,000	
	Solomon's Gully ...	1,250,000	
Sandhurst District	Spring Gully	150,000,000	
	Upper Grassy Flat ...	58,860,000	
	Lower Grassy Flat ...	26,800,000	
Eaglehawk	Sparrow Hawk ...	1,500,000	
Raywood ...	Lightning Hill ...	7,000,000	
	Raywood	2,500,000	
Sebastian	Sebastian	239,200	
Lockwood and Marong ...	Green Gully	3,500,000	
Geelong and suburbs	Upper Stony Creek ...	354,000,000	356,965
	Lower Stony Creek ...	143,000,000	
	Anakie (pipe head) ...	900,000	
	Lovely Banks... ...	6,000,000	
	Newtown Tank ...	500,000	
	Total	11,659,347,200	3,861,015

Waterworks under local bodies.

1162. The following is a list of the waterworks under the control of Local Bodies, also a statement of their capacity for water storage and their cost:—

WATERWORKS UNDER CONTROL OF LOCAL BODIES.

Name of Town, District, or Locality.		Storage Capacity.	Cost.
		gallons.	£
Amherst	Talbot	13,813,000	2,100
Ararat	Langi-Ghiran	15,000,000	47,500
	Oliver's Gully	24,000,000	
Ballarat	Beale's	90,289,550	294,300
	Pincott's	34,550,000	
	Kirk's	87,121,000	
	Gong Gong	427,000,000	
Barry's Reef ...	Spring's Blue Mountain ...	200,000	...
Beaufort	Beaufort	85,881,000	1,991
	Camp Hill	1,200,000	3,000
Beechworth ...	Lake Kerferd	191,000,000	25,000
Blackwood	Lerderderg River	64,441,000	1,090
Buninyong	Buninyong	10,462,000	1,047
Chiltern	Barrambogie Springs ...	4,760,000	3,500
Clunes	Newlyn	207,000,000	70,195
Commissioner's Gully	Castlemaine	7,000,000	1,203
Creswick	Bullarook	45,000,000	3,500
	Ashwell's Gully	8,000,000	
	Adekate Creek	18,000,000	
	White Hills Tank	680,000	
Daylesford	Wombat Creek	41,000,000	21,000
Dunolly	New Lead	7,500,000	7,170
Dunolly (Old) ...	Dunolly	17,200,000	1,912
Elmore	Supply obtained from Railway Tank	...	500
Four Posts (No. 9) ...	Stawell	3,100,000	802
Goldsborough ...	Goldsborough	4,000,000	1,000
Hamilton	Hamilton	20,000,000	12,000
Hepburn	Daylesford	31,284,000	2,527
Homebush	Avoca	5,000,000	328
Inglewood	New Inglewood	22,000,000	3,500
Inglewood (Old) ...	Inglewood	5,670,000	1,112
Kilmore	Kilmore	14,466,000	2,986
Korong Vale ...	Korong Vale Railway Tank...	...	600
Lamplough ...	Lamplough	9,262,000	1,288
Maryborough ...	Maryborough	21,000,000	1,839
Melton	Melton	2,290,000	800
Nuggetty Gully ...	Timor	25,000,000	2,384
Opossum Gully ...	Ararat	24,621,000	2,481
Pleasant Creek (No. 3)	Stawell	7,905,000	805
Quartz Reef (No. 1) ...	Stawell	...	...
Redbank	Redbank	27,100,000	2,785
Rutherglen ...	Rutherglen	27,000,000	3,288
St. Arnaud ...	St. Arnaud	40,000,000	12,000
	Railway Tank	6,000,000	
Sandy Creek ...	Yackandandah South ...	70,000,000	2,835
Stawell	Fyan's Creek	...	...
	Service Reservoir	2,250,000	108,506
Talbot	Evansford	200,000,000	15,000

WATERWORKS UNDER CONTROL OF LOCAL BODIES—*continued.*

Name of Town, District, or Locality.			Storage Capacity.	Cost.
			gallons.	£
Tarnagulla...	...	Tarnagulla	8,000,000	500
Wangaratta	...	Supplied from Railway Tank	...	4,000
Wedderburn	...	Wedderburn	3,100,000	965
Wedderburn	...	Wedderburn	3,100,000	2,590
White Horse Ranges		Sebastopol	4,831,000	2,862
Total	...	... ...	1,988,076,550	674,791

1163. By the following summary of the total storage capacity and total cost of the waterworks named in the foregoing tables, it is shown that the former amounts to nearly seventeen thousand million gallons, and the latter to upwards of five millions sterling :— Capacity and cost of waterworks.

CAPACITY AND COST OF WATERWORKS.

Waterworks under—			Storage Capacity.	Cost.
			Gallons.	£
Government	...	...	11,659,347,200	3,861,015
Local Bodies	...	...	1,988,076,550	674,791
Trusts (Urban)	...	...	4,680,225	203,507
,, (Rural)	...	...	3,067,881,000*	709,587
Total	...	...	16,719,984,975	5,448,900

1164. Besides the irrigation trusts actually constituted, the Department of Water Supply had received applications to form trusts in the following districts. These applications were under consideration at the time of going to press :— Irrigation and water supply trusts proposed.

PROPOSED IRRIGATION AND WATER SUPPLY TRUSTS, 1888.

Name of proposed Trust.			Area of proposed Trust.		Amount of Loan proposed to be raised.
			Total.	Capable of being beneficially Irrigated.	
			Acres.	Acres.	£
Benjeroop West	...	...	6,400	5,500	3,600
Echuca Shire, No. 1	...	...	129,920	120,000	50,000
Rodney Shire ...	...	...	259,840	200,000	250,274
Yarrawonga Shire	...	...	262,400	192,000	20,500

* Capacity of the Wimmera Shire Reservoir only.

PROPOSED IRRIGATION AND WATER SUPPLY TRUSTS, 1888—*continued.*

Name of Proposed Trust.	Area of Proposed Trust.		Amount of Loan proposed to be raised.
	Total.	Capable of being beneficially Irrigated.	
	Acres.	Acres.	£
Wandella	32,290	17,000	14,800
Marquis Hill	14,300	11,840	12,900
Kerang East	17,920	15,000	15,000
Lake Charm	57,600	39,540	23,000
Pine Hills	15,120	13,730	10,623
Emu Valley	3,700	2,466	4,631
Lower Avoca	98,000	80,000	20,000
Echuca, No. 2	270,000	230,000	207,000
Werribee	1,460	1,383	30,455
Buckley Swamp	6,900	6,600	11,000
Harcourt	640	640	657
Jeruk	24,920	15,000	3,320
Shepparton Shire	96,000	85,000	126,124
Waranga Shire	102,220	85,000	107,150
Bacchus Marsh Shire	2,150	2,150	14,900

Chaffey irrigation scheme.

1165. In 1886 the Messrs. George and W. B. Chaffey, two gentlemen, Canadians by birth, who had had considerable experience in irrigation work in the United States, visited Victoria with a view of establishing an irrigation colony therein upon an extensive scale. They submitted their proposals to the Government, which included the grant, upon certain conditions, of an extensive block of land in the Mallee country, contiguous to the River Murray. The Government looked favorably upon their undertaking, but found themselves powerless to make the concessions asked for under the then existing law. They therefore introduced a Bill into Parliament, which eventually became law under the title of *The Waterworks Construction Encouragement Act* 1886,* giving the required powers to the Government, but prescribing that the concessions asked for by the Messrs. Chaffey should be open to public competition for a period of two months. Tenders were invited accordingly, and the Messrs. Chaffey being the only tenderers, were, in course of time, placed in possession of the land. By the kind permission of the Messrs. Chaffey, the following interesting account of their scheme has been drawn up by Mr. J. E. M. Vincent,

* 50 Vict. No. 910.

a gentleman attached to their firm, expressly for the *Victorian Year-Book* :—*

Chaffey Irrigation Colony.

"The Government of Victoria, about the middle of the present year, (1887) brought to a satisfactory conclusion negotiations which had for some time been pending with Messrs. Chaffey Bros., the well known firm of irrigationists, late of Ontario, California, an irrigation colony recently established by them and named after the important province in Canada where they formerly resided, and of which they are natives. The agreement which has been entered into involves the appropriation of an extensive area of land in what is known as the Mallee country, which is situated at the western boundary of the colony, on the Murray River, and near the borders of South Australia, the Government of which colony has entered into a similar arrangement with the same firm. Messrs. Chaffey Bros., according to the terms of the deed of agreement, enter into occupation, in the first instance, of two blocks of 25,000 acres each, upon which active operations have for some time been going on, although (from unavoidable delays having taken place in completing the negotiations with the Government) the works are not so far advanced at the date of this publication as they had anticipated, and the particulars herein furnished are consequently somewhat less complete. Briefly stated, the agreement in effect embraces the grant of 250,000 acres of land and the authority to use the Murray waters in irrigating the same for the purposes of cultivation, and includes all necessary enabling powers for the carrying out of an extensive scheme of colonization, the intention of Messrs. Chaffey being to lay out the land for such cultivation, and to construct the necessary works (the pumping machinery, &c., &c.), selling the land as they proceed in blocks of from five acres and upwards, each purchaser securing a proportionate share and interest in the irrigating works and participating in the privileges with respect to the use of the water, &c., under the agreement in question. The chief cultivation which it is intended to carry on is that of fruit (grapes, oranges, &c., &c.), but a large area will be devoted to the purposes of general agricultural production. There are certain stipulations in the agreement securing the non-disturbance of the beneficial flow of the river below the points of diversion, &c.; but as there is a similar diversion to be made lower down the river with respect to the South Australian scheme, and the Government of Victoria reserve the right to grant further diversions for irrigation purposes in addition to that which will be made under their agreement with Messrs. Chaffey, it is to be justly inferred that the resources of the Murray are amply sufficient for these two diversions and others that may follow. The water right which will be secured to owners and cultivators of the land under the Chaffey scheme is practically, therefore, a perpetual one. The licence under which it is conferred is granted for a period of 25 years 'with the right of renewal of the same from time to time for successive similar periods of 25 years,' &c. Messrs. Chaffey Bros. undertake to expend £10,000 during the first twelve months, £35,000 during the first five years, £140,000 during the second five years, £75,000 during the third five years, and £50,000 during the fourth five years—a total of £300,000 in twenty years in irrigation works, agriculture, horticulture, &c., and the establishment of a fruit-preserving industry, &c. Any serious breach of the conditions on the part of Messrs. Chaffey Bros. involves the annulment of the agreement on the payment by the Government of 80 per cent. on the value of the irrigation works and substantial and permanent improvements then existing upon the land resumed; but any land granted in fee-simple to Messrs. Chaffey Bros. and sold by them *bonâ fide*, or conveyed in trust for the agricultural school or college which the Chaffey Bros. undertake to establish, is exempted from resumption by the Crown. The improvements referred to are stated to include the construction and machinery of the irrigation works; the making of roads, railways, tramways, canals, water-races, drains, bridges; making and laying pipes or other conduits; clearing, fencing,

* A further account of the progress of this undertaking brought down to the month of November 1888, has been kindly supplied for this work by Mr. W. C. Philpot. It was received too late for insertion in the body of this volume but will be found in an appendix at its end.

preparing the ground, and planting with trees, &c.; the erection of substantial buildings, &c., &c. The carrying out of so extensive a scheme of colonization will involve the settlement upon the land of a very large number of cultivators, it not being the intention of Messrs. Chaffey to cultivate on their own account and for purposes of direct profit, but only, and to a limited extent, for experimental purposes, &c., their work being generally to co-operate in the successful and rapid development of the colony, to improve lands for sale, &c., &c. Neither is it contemplated to create a class of tenant cultivators; the lands are to be sold outright at the prices of £20 per acre for fruit growing, &c., £15 per acre for general agricultural purposes. Terms of payment extending over ten years, when desired, are allowed, 5 per cent. interest being added to the purchase money as above. As the fruit lands will take a few years to bring to profitable results, purchasers of same are offered irrigated agricultural land which will afford speedy returns, on lease, with the option of purchase, at the price of one-quarter of the produce (including water right, &c.). It is confidently anticipated, from Messrs. Chaffeys' Californian experience, and having regard also to the present productive powers of lands irrigated by the waters of the Murray, that a standard rate of yield of some 30 bushels to the acre of wheat, and, with respect to fruit, of from 1,000 to 1,500 marketable oranges per tree (in mature bearing growth and under efficient cultivation) may be steadily maintained, since the uncertainties attendant upon irregular or deficient rainfalls can here be avoided. The allotments or farms will vary in size from the minimum of 5 acres to 160 acres, which is the largest area that can be acquired direct from Messrs. Chaffey by any single purchaser. The lands which will be leased as above will only be limited in area by the cultivating abilities of the lessees. There is a large extent of land (14,000 acres) set aside for the erection, &c., of an agricultural college, which will be early proceeded with, and reserves are made for churches, schools, &c., &c. A prominent feature of the scheme is the laying out of an extensive site for a town, with numerous surrounding villa blocks each 2½ acres in extent. A broad avenue (200 feet in width), planted with several rows of trees, and running through the centre of the town, will be constructed, &c., by Messrs. Chaffey Bros. as among the earliest contributions to the list of public improvements. The colony is to bear the name of 'Mildura,' which was that attaching to the pastoral land which forms the chief part of the grant.

"At the present time (October 1888) the colony is in a prosperous condition. A large area of land has been sold and the population exeeeds 500. Brickmaking has been established and several buildings are in progress. A large number of fruit trees have been planted, channel making, fencing, steam-ploughing, ring-barking trees, and destroying scrub are all being carried on with vigour. Already complaints of the scarcity of workmen especially of mechanics are heard."

Leases and rental of farms.

1166. Throughout Victoria, the duration of leases of farms from private persons was returned in 1887–8 as averaging from 3 to 5 years; the extreme figures being 1 year and 14 years. The average rental of agricultural land per acre was stated to be from 5s. to 20s.; the extreme figures being 2s. and 40s. The average rental of pastoral land per acre was said to be from 2s. 4d. to 9s. 4d.; the extreme figures being 6d. and 25s. It may be mentioned that 3s. 6d. per annum for as much land as will carry one sheep is considered a fair rental; thus land capable of carrying two sheep to the acre ought to let for 7s. per acre per annum.*

* In certain parts of the colony, where the soil is of especially good quality—especially in the Western District—much higher rentals have been obtained. As for instance in the parish of Mortlake, 723 acres belonging to Mr. Webster were let on a grazing lease for a period of 10 years at 25s. per acre, and of this, 100 acres were sublet for agricultural purposes for 7 months for a sum of £199. At Weerangourt, 2,000 acres belonging to Mr. Anderson were let for 11 months for grazing purposes at a rental of £1 12s. 5d. per acre. Another estate in the same neighborhood was let at from 25s. to 33s. per acre for grazing only, and portion of the same estate was let as potato land at £6 per acre for 7 or 8 months. Near Colac, 2,000 acres belonging to the Hon. W. Robertson were let for 7 years at 26s. per acre for grazing only.

1167. 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 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 nineteen years:— Prices of agricultural produce.

PRICES OF AGRICULTURAL PRODUCE, 1870 TO 1888.

During February and March.	Wheat.	Oats.	Barley.	Maize.	Hay.	Potatoes.	Turnips.	Mangolds
	per bushel.	per bushel.	per bushel.	per bushel.	per ton.	per ton.	per ton.	per ton.
	s. *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
1870 ...	4 3	3 7	4 0	4 10	77	75 0	...	40 0
1871 ...	5 4	3 9	4 11	5 3	76	70 0	...	36 0
1872 ...	4 8	2 11½	3 6¼	4 2	64	65 6	...	28 1
1873 ...	4 9	3 5	4 1	3 10	81	67 4	...	24 5
1874 ...	5 9	5 6	5 3	5 9	88	118 3	...	31 4
1875 ...	4 5	4 3	4 6	4 8	89	89 0	...	28 0
1876 ...	4 7	3 3	3 10	4 8	82	87 0	...	23 8
1877 ...	5 10	3 7	3 10	4 4	93	114 0	...	31 6
1878 ...	5 1	4 6	4 4	5 4	87	115 0	...	37 3
1879 ...	4 2	3 6	4 1	4 2	75	92 4	...	25 6
1880 ...	4 0½	2 3½	4 8	3 6½	63	69 11	...	24 11
1881 ...	4 1¾	2 3	4 11¼	5 0	60	46 3	...	24 0
1882 ...	5 0	3 3	3 6	5 4	76	70 0	...	25 4
1883 ...	4 9	3 1	4 1	4 7	81	75 4	...	30 5
1884 ...	3 8	2 8	3 6	4 8	67	74 8	35 5	29 5
1885 ...	3 4	3 0	3 6	4 5	74	80 0	40 0	34 0
1886 ...	3 10	2 10	3 3	4 1	74	100 0	48 6	24 6
1887 ...	3 9	2 9	3 3	4 4	73	80 0	54 0	28 4
1888 ...	3 4	2 7	3 6	4 2	59	65 0	27 0	24 0

1168. The prices of all articles of agricultural produce, were extremely low in 1888, which was also the case in regard to most of the articles in the four preceding years. Wheat especially has shown a marked decline, for although the price was as high as 5s. 10d. in 1877, in the last five years it was less than 4s., falling to only 3s. 4d. in 1885 and 1888. There was also a serious falling-off in the prices of hay, potatoes, and turnips; the price of the first having fallen from 73s. in 1887 to 59s. in 1888, that of the second-named varied from 100s. in 1886 to 65s. in 1888, and that of the third from 54s. in 1887 to 27s. in 1888, the latter prices being, with only one exception in the case of potatoes, by far the lowest shown in the table. Likewise the price of oats and barley was lower than in 1888 on only two previous occasions, that of maize on three, and that of mangold on only one previous occasion. Prices of agricultural produce, 1887-8 and previous years.

Years of highest and lowest prices.

1169. It will be observed that the price of wheat and hay was highest in 1877, that of oats, barley, maize, and potatoes in 1874, that of turnips in 1887, and that of mangolds in 1870; also that the price of wheat was lowest in 1885 and 1888, that of barley in 1886 and 1887, that of oats and potatoes in 1881, that of maize in 1880, that of mangolds in 1876, and that of hay and turnips in 1888.

Price of wheat in London.

1170. The wholesale price of wheat per Imperial quarter* in London during 1887 varied from 28s. 9d. in September to over 35s. in January and June—the average for the year being 32s. 5d. The price has fallen off considerably since 1881 and 1882, and in 1886 was remarkable as being by far the lowest during the last 125 years—no lower price having been recorded since 1761, when it was 26s. 9d.† Although in 1887 the price slightly recovered itself, it was lower than in any of the previous seven years except 1886, and was as much as 13s. lower than in 1881. The following statement of the average *Gazette* price (wholesale) during the seven years ended with 1886 has been taken from an official source,‡ and that of the average price in 1887 has been taken from the London *Statist:*—

AVERAGE PRICE PER QUARTER OF WHEAT IN LONDON.

Month.	1880.		1881.		1882.		1883.		1884.		1885.		1886.		1887.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
January ...	45	11	42	5	45	7	40	2	38	7	33	7	29	10	35	5
February ...	43	5	41	9	46	0	40	11	37	3	32	8	29	5	32	7
March ...	45	7	42	7	44	7	42	3	37	7	31	10	29	10	33	2
April ...	48	1	44	6	45	11	41	11	37	5	34	1	30	7	32	6
May ...	45	2	44	5	47	3	43	2	37	9	36	8	31	10	34	6
June ...	45	1	44	6	47	5	42	10	37	2	33	6	31	7	35	1
July ...	43	9	46	5	48	5	42	2	37	0	33	8	31	2	34	3
August ...	43	11	48	6	50	0	43	6	36	11	33	5	32	5	30	10
September ...	41	2	52	3	43	11	41	10	33	9	31	3	31	10	28	9
October ...	41	9	47	1	39	7	40	5	32	3	30	11	29	11	30	1
November ...	43	9	45	11	40	10	40	3	31	5	30	11	31	2	30	9
December ...	44	1	44	7	41	2	39	6	31	1	30	6	33	2	30	9
The Year...	44	4	45	4	45	1	41	7	35	8	32	10	31	0	32	5

Price of wheat, barley, and oats in England.

1171. Another official authority§ gives the highest, lowest, and average *Gazette* price of wheat, barley, and oats in England and Wales as follows, during each of the eleven years ended with 1886:—

* The Imperial quarter is equal to 8 bushels.

† See Supplement to "*The Statist*" for 1887.

‡ Giffen's Statistical Abstract for the United Kingdom, 1872 to 1886.

§ Report on the Agricultural Returns of Great Britain, dated September, 1887, issued from the Privy Council Office, page 120.

Average Price of Wheat, Barley, and Oats in England and Wales.

Year.	Average Price per Quarter.								
	Wheat.			Barley.			Oats.		
	Highest Weekly.	Lowest Weekly.	The Year.	Highest Weekly.	Lowest Weekly.	The Year.	Highest Weekly.	Lowest Weekly.	The Year.
	s. *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
1876	50 8	42 8	46 2	40 2	30 11	35 2	31 2	23 10	26 3
1877	68 9	50 1	56 9	44 2	32 5	39 8	29 0	23 4	25 11
1878	52 4	39 0	46 5	44 8	30 9	40 2	28 5	20 7	24 4
1879	50 5	37 7	43 10	43 2	24 0	34 0	26 7	19 2	21 9
1880	48 4	39 5	44 4	37 7	25 7	33 1	28 2	20 2	23 1
1881	52 2	40 9	45 4	35 8	26 11	31 11	24 6	19 5	21 9
1882	51 3	39 2	45 1	36 11	25 10	31 2	25 9	19 1	21 10
1883	43 10	39 0	41 7	35 0	25 6	31 10	24 1	19 1	21 5
1884	39 0	30 5	35 9	32 8	27 1	30 8	23 5	18 10	20 3
1885	38 1	30 2	32 10	32 6	24 10	30 2	23 6	18 1	20 7
1886	33 11	29 0	31 1	29 7	22 4	26 7	21 4	16 7	19 0

1172. The value of the agricultural produce raised in Victoria during the year ended 1st March, 1888, may be estimated at close upon $7\frac{1}{3}$ millions sterling. The following table shows the means whereby such an estimate is arrived at :— Value of agricultural produce.

Value of Agricultural Produce,* 1887–8.

Name of Crop.	Gross Produce and Price.				Estimated Value.
			£ *s.* *d.*		£
Wheat	13,328,451	bushels	@ 0 3 4		2,221,409
Oats	4,562,530	„	@ 0 2 7		589,327
Barley	956,476	„	@ 0 3 6		167,383
Other cereals	1,065,511	„	@ 0 3 6		186,464
Potatoes	198,225	tons	@ 3 5 0		644,231
Other root crops	41,138	„	@ 3 0 0		123,414
Hay	624,122	„	@ 2 19 0		1,841,160
Green forage	264,457	acres	@ 2 10 0		661,143
Tobacco	11,853	cwt.	@ 2 16 0		33,188
Grapes, not made into wine ...	42,389	„	@ 1 0 0		42,389
Wine	1,167,874	gallons	@ 0 4 0		233,575
Brandy	3,352	„	@ 0 10 0		1,676
Hops	5,405	cwt.	@ 5 0 0		27,025
Other crops	6,178	acres	@ 5 0 0		30,890
Garden and orchard produce...	26,269	„	@ 20 0 0		525,380
		Total ...		...	7,328,654

* For a summary of the estimated value of agricultural produce during a series of years, see table "Value of Agricultural, Pastoral, and Mining Produce," *post.*

Specific weight of crops.

1173. 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 1887–8, ranged from 50 lbs. to 66 lbs.; oats, from 35 lbs. to 48 lbs.; barley, from 45 lbs. to 56 lbs.; and maize, 50 lbs. to 60 lbs. In the same year, taking the districts as a whole, the average weight per bushel of wheat was 60 lbs.; of oats, 41 lbs.; of barley, 51 lbs.; and of maize, 55 lbs.

Rates of agricultural labour.

1174. The following figures show the average rates paid for agricultural labour in the last two years. Rations are allowed in all cases in addition to the wages quoted, except in the case of threshers, hop-pickers, and maize-pickers :—

RATES OF AGRICULTURAL LABOUR,* 1887 AND 1888.

Description of Labour.	1886-7.		1887-8.	
	s.	*d.*	*s.*	*d.*
Ploughmen, per week	21	4	21	1
Farm labourers, „	18	6	18	1
Married couples, „	26	10	25	4
Females, „	10	11	11	10
Mowers, „	30	0	33	5
„ per acre	5	7	5	5
Reapers, per week	31	6	32	9
„ per acre	12	5	10	5
Threshers, per bushel (without rations) ...	0	6½	0	8½
Hop-pickers, „ „ ...	0	3½	0	3¼
Maize-pickers, per bag „ ...	0	5½	0	7½

Plant and improvements on farms.

1175. 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, 1887 AND 1888.

	1886-7.	1887-8.
Steam engines, number	526	605
„ horse-power	4,059	4,452
Value of farming implements and machines...	£2,667,671	£2,799,060
„ improvements on farms ...	£16,418,012	£15,660,135

Machine labour.

1176. 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:—

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

MACHINE LABOUR, 1887 AND 1888.

Average Rates paid for—	1886-7.	1887-8.
	s. d.	*s. d.*
Machine reaping, per acre { With binding ...	8 10	8 1
Machine reaping, per acre { Without binding	4 9	4 8
„ mowing, „	4 6	4 10
„ threshing, per 100 bushels :—		
With winnowing	25 3	22 6
Without winnowing ...	16 0	18 8

1177. 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, 1888, as derived from the municipal estimates alluded to :— Live stock, 1881 and 1888.

LIVE STOCK, 1881 AND 1888.

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, 1888 (estimated)	312,105	341,812	966,605	1,308,417	10,606,721	240,519
Increase ...	36,589	12,614	9,536	22,150	246,436	...
Decrease ...	...	...	...	...	...	1,417

1178. 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.

1179. The estimates for 1888, as compared with the numbers returned at the census, show an increase in all kinds of stock except pigs, in which there was a slight falling-off. 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, 1888.

1180. Speaking roughly, there are now in Victoria 4 horses, 15 head of cattle, 121 sheep, and 3 pigs, or, taking the different kinds together, 143 head of stock of these descriptions, large and small, to the square mile. Stock per square mile.

Poultry.

1181. 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, 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

Increase or decrease of poultry.

1182. 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.

Live stock in British Possessions.

1183. The live stock in the United Kingdom and any British Possessions, respecting which the information is available, is officially stated to have been as follows in the years named:—

LIVE STOCK IN BRITISH POSSESSIONS.

Possessions.	Year.	Number of—			
		Horses.	Cattle.	Sheep.	Pigs.
The United Kingdom ...	1887	1,936,925	10,639,960	29,401,750	3,720,957
Ceylon	1885	3,983	951,305	46,634	...
Mauritius	1884	12,000	15,000	30,000	30,000
Cape of Good Hope ...	1885	205,985	1,111,713	10,976,663	116,738
Natal...	1886	50,012	629,725	569,556	22,927
Canada	1881	1,059,358	3,514,989	3,048,678	1,207,619
Newfoundland ...	1884	5,436	19,884	40,326	...
Jamaica	1885	62,845	130,532	13,390	...
Australasia *	1886–7	1,372,756	8,264,778	86,352,020	1,143,966

Live stock in Foreign countries.

1184. The following table contains a statement of the number of horses, cattle, sheep, and pigs in some of the principal Foreign countries. The information has been derived entirely from official documents :—

* For particulars relating to each colony, see third folding sheet at beginning, and Appendix A at end of the last volume.

LIVE STOCK IN FOREIGN COUNTRIES (000'S OMITTED).

Country.	Year.	Number of—			
		Horses.	Cattle.	Sheep.	Pigs.
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	1885	2,911,	13,105,	22,617,	5,881,
Germany	1883	3,522,	15,787,	19,190,	9,206,
Holland	1884	269,	1,474,	753,	427,
Italy	1882	660,	4,783,	8,596,	1,164,
Hungary	1884	1,749,	4,879,	10,595,	4,807,
Norway	1875	152,	1,017,	1,686,	101,
Russia	1883	17,881,	23,628,	46,725,	9,362,
Sweden	1885	480,	2,366,	1,442,	516,
United States	1886	12,479,	48,034,	44,759,	44,613,

Live stock slaughtered.

1185. 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 1886 and 1887, those for the latter year being larger than those for the former in the case of cattle, but smaller in the case of sheep and pigs :—

LIVE STOCK SLAUGHTERED, 1886 AND 1887.

Year.	Cattle and Calves.	Sheep and Lambs.	Pigs.
1886	210,775	2,252,982	124,003
1887	216,345	2,234,730	123,023
Increase ...	5,570	...	...
Decrease ...	...	18,252	980

Purposes for which stock was slaughtered.

1186. The purposes to which the carcasses of the slaughtered animals were appropriated in 1887 were returned as follow :—

PURPOSES FOR WHICH LIVE STOCK WAS SLAUGHTERED, 1887.

Description of Live Stock.	Numbers Slaughtered for—			
	The Butcher and Private use.	Preserving or Salting.	Boiling down for Tallow or Lard.	Total.
Cattle and Calves ...	215,895	450	...	216,345
Sheep and Lambs ...	2,217,178	130	17,422	2,234,730
Pigs	58,292	64,731	...	123,023
Total	2,491,365	65,311	17,422	2,574,098

Stock slaughtered for preserving.

1187. In the 10 years ended with 1886, the returns show the average number slaughtered annually for preserving and salting to have been, of cattle 779, of sheep and lambs 119,300, and of pigs 41,379. These numbers, as regards pigs, are below, but as regards cattle and sheep, are much above the average numbers slaughtered for the same purposes in 1887.

Wool produced, 1886 and 1887.

1188. The quantity of wool produced in Victoria during the year 1887 may be set down as 48,420,119 lbs.,* valued at £2,413,759. These figures represent the excess of exports over imports during the year, to which is added the quantity and value of wool used in Victorian woollen mills. In the previous year, the quantity produced, similarly estimated, was 57,439,634 lbs., valued at £2,791,923.

Wool produced in Australasian colonies, 1883 to 1886.

1189. The following is a statement of the quantity and value of wool produced in the various Australasian colonies in 1886 and the three preceding years. 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, to which has been added an estimate for the quantity used for manufacturing purposes in Victoria during each of the years, but in the other colonies during the last three only:—

WOOL PRODUCED IN THE AUSTRALASIAN COLONIES, 1883 TO 1886.
(Excess of Exports over Imports.†)

Colony.	1883.	1884.	1885.	1886.
QUANTITY.	lbs.	lbs.	lbs.	lbs.
Victoria	65,930,000	61,369,000	53,390,100	50,439,634
New South Wales ...	182,873,449	171,612,279	165,857,466	171,228,430
Queensland	43,231,606	35,525,977	42,472,071	28,700,546
South Australia ...	42,254,621	47,296,784	45,329,646	40,991,388
Western Australia ...	3,861,927	4,272,948	4,968,000	6,139,917
Tasmania	8,257,765	8,215,101	5,774,142	8,300,180
New Zealand ...	68,123,194	82,138,718	87,470,035	92,741,733
Total	414,532,562	410,430,807	405,261,460	398,541,828
DECLARED VALUE.	£	£	£	£
Victoria	4,148,500	3,879,620	2,960,890	2,778,160
New South Wales ...	9,470,595	8,895,543	7,122,366	6,947,526
Queensland	2,277,878	1,889,504	1,779,682	1,413,908
South Australia ...	1,745,591	1,823,431	1,411,872	1,227,007
Western Australia ...	225,279	249,255	248,400	332,519
Tasmania	450,367	453,567	260,480	319,227
New Zealand ...	3,012,171	3,342,509	3,240,630	3,200,499
Total	21,330,381	20,533,429	17,024,320	16,218,846

* The quantity of *Victorian* wool exported in 1887, according to the Customs returns, was 102,357,691 lbs. or more than twice the total quantity given above as produced in Victoria.—(See footnote to *Wool*, Order 24, in Table of Imports and Exports, *ante*.) 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.

† The estimated quantity of wool manufactured in Victoria has also been taken into account in each of the four years, but that in the other colonies in the last three years only.

1190. It appears by the figures that Victoria, in 1886, did not produce a third as much wool as New South Wales, and produced not much more than half as much as New Zealand. She, however, produced nearly twice as much as Queensland—in which colony the clip was a third less than in the previous year—and nearly a fourth more than South Australia; Western Australia, notwithstanding the immense extent of her territory, produced less than the island of Tasmania. Wool produced in each colony.

1191. The figures also show that the wool produced in the Australasian colonies, in 1886, was less by nearly 6¾ million pounds than in 1885, and was also less by nearly 12 million pounds than in 1884; and, further, that the value of such wool was less in 1886 than in 1885 by about £800,000, and less than in 1884 by about £4,300,000. Wool produce of three years compared.

1192. The following statement of the wool produced in one year in various countries has been computed, except as regards Australasia, from figures given in the Third Annual Report of the Statistical Institute of Holland* :— Wool produced in various countries.

WOOL PRODUCED IN VARIOUS COUNTRIES.

	lbs.
Australasia (1885)	405,261,460
Russia (1878)	390,548,800
Argentine Republic (1882)	244,666,040
United States (1882)	233,073,000
United Kingdom (1882)	127,942,200
France (1879)	90,319,920
Spain (1878)	66,120,000
Germany (1881)	54,879,600
Cape Colony (1881)	42,427,000
Uruguay (1880)	41,369,080
Hungary (1880)	35,682,760
British India (1881–2)	21,400,840
Italy (1874)	21,378,800
Asiatic Turkey and Persia	13,224,000
Natal (1881)	12,496,680
Austria (1881)	10,909,800
Portugal	10,358,800
Belgium (1865)	4,408,000
British North America (1881)	3,570,480
Sweden (1870)	3,306,000
Other countries	96,976,000
Total	1,930,319,260

1193. The average price per lb. of Victorian wool in 1887, based upon its declared value before leaving this colony, as obtained from the Customs returns of exports, was 10⅞d., as against 11½d. in 1886, 1s. 1⅜d. in 1885, and 1s. 5¾d. in 1884. There was thus a fall of ⅝d. per lb. as compared with 1886, of 2½d. per lb. as compared with 1885, Fall in price of wool.

* See *Bijdragen van het Statistich Instituut*, Amsterdam, 1887, page 19; there given in kilogrammes, each of which has been assumed to be equal to 2·204 lbs.

and of $6\frac{7}{8}$d. per lb. as compared with 1884. This would depreciate the wool produced in Victoria during 1887 by £126,094 as compared with a similar quantity in 1886, by £504,376 as compared with a similar quantity in 1885, and by £1,387,000 as compared with a similar quantity in 1884.*

Price of wool in Melbourne

1194. In the foregoing paragraph, the price given is the average for all descriptions of wool included in the one total, so that it is possible that a variation in the quality may to a certain extent account for the difference in the declared value. The fall in the price of wools of like quality will, however, be readily recognised by means of the figures in the following table, which have been kindly supplied for this work by Messrs. R. Goldsbrough and Co. (Limited), Melbourne :—

AVERAGE PRICE OF WOOL IN MELBOURNE, 1885 TO 1888.

Description of Wool.	Average Price per lb. during the years—			
	1884–5.	1885–6.	1886–7.	1887–8.
	d.	*d.*	*d.*	*d.*
Greasy—				
Merino	$10\frac{1}{2}$	$8\frac{1}{2}$	$10\frac{1}{2}$	$9\frac{1}{2}$
Crossbred	9	8	9	8
Fleece or washed †	20	16	17	$15\frac{1}{2}$
Scoured †	19	15	18	16

Price of Australian wool in London.

1195. The average price of Australian wool in London, as officially computed from the returns of imports by the Agricultural Department‡ of the Privy Council, was $1\frac{1}{4}$d. lower in 1886 than in 1885, and $3\frac{1}{4}$d. lower than in the three previous years, 1882 to 1884, and $5\frac{1}{4}$d. lower than in any other previous ones. The following are the results obtained for the 22 years ended with 1886 :—

AVERAGE PRICE OF AUSTRALIAN WOOL IN LONDON, 1865 TO 1886.

	per lb. *s.* *d.*		per lb. *s.* *d.*
1865	1 $7\frac{3}{8}$	1876	1 $3\frac{1}{4}$
1866	1 $8\frac{13}{16}$	1877	1 3
1867	1 $7\frac{1}{2}$	1878	1 $2\frac{1}{2}$
1868	1 $3\frac{15}{16}$	1879	1 $2\frac{1}{2}$
1869	1 $2\frac{15}{16}$	1880	1 $2\frac{3}{4}$
1870	1 $3\frac{1}{4}$	1881	1 $2\frac{1}{2}$
1871	1 $2\frac{1}{4}$	1882	1 $0\frac{1}{2}$
1872	1 3	1883	1 $0\frac{1}{2}$
1873	1 $3\frac{1}{4}$	1884	1 $0\frac{1}{2}$
1874	1 $2\frac{3}{4}$	1885	0 $10\frac{1}{2}$
1875	1 $4\frac{1}{4}$	1886	0 $9\frac{1}{4}$

* See also Part *Interchange*, *ante*, where the export value of all wool—not Victorian wool only—is dealt with.

† Comprising both merino and crossbred.

‡ Report dated September, 1887, page 121.

1196. The Supplement to the *Statist* (London journal) of the 11th February, 1888, gives the following quotations of the price of greasy wool produced in four of the Australasian colonies during the eight years ended with 1887. The wool is described as "good average greasy" in the case of Victoria; "average greasy" in the case of New South Wales and South Australia; and "superior greasy" in the case of New Zealand. The average price of "good to superior" Victorian wool is also given :— Price of wool of each Australasian colony in London.

AVERAGE PRICE OF THE WOOL OF EACH AUSTRALASIAN COLONY IN LONDON, 1880 TO 1887.

Year.	Prices per lb. on 31st December.					
	Greasy Wool, the Produce of—					Good to Superior Wool, the Produce of Victoria.
	Victoria.	New South Wales.	South Australia.	New Zealand.	Australia Crossbred (Superfine).	
	d.	*d.*	*d.*	*d.*	*d.*	*d.*
1880	13	11	10	13½	14½	23½
1881	12	10½	9½	12½	14	22
1882	12½	10½	9	12½	13½	22½
1883	12½	10	9	12½	13½	22
1884	11½	9½	8	12	13½	22½
1885	9½	8	6½	10	11½	17
1886	10	8	6½	10½	12	18
1887	10	8	6½	11	12½	18

1197. The average prices of English wool from sheep of different breeds, and of South African wool, during the four years ended with 1886 have been published by the Agricultural Department of the Privy Council,* the former being got from the prices given weekly in the *Economist* newspaper, and the latter having been computed from the Customs returns of imports. The figures are as follow :— Price of English and Cape wool in London.

AVERAGE PRICE OF ENGLISH AND SOUTH AFRICAN WOOL IN LONDON, 1883 TO 1886.

Description of Wool.	1883.			1884.			1885.			1886.		
	per lb.			per lb.			per lb.			per lb.		
	d.		*d.*	*d.*		*d.*	*d.*		*d.*	*d.*		*d.*
English Leicester...	9	to	9½	8¾	to	9¼	8½	to	9	9	to	9¾
,, Half-breds	9½	,,	10¼	9	,,	9½	8¾	,,	9½	9½	,,	10¼
,, Kent ...	9½	,,	10	9	,,	9¾	9	,,	9½	9¾	,,	10½
,, Southdown	10¾	,,	14	10	,,	13½	9	,,	12¼	9½	,,	10½
South African ...		14¼			13½			9½			9¼	

* Report dated September 1887, page 121.

Price of other wools in London.

1198. The prices of the leading descriptions of wool in London at the close of each of the seven years ended with 1887, are thus quoted by Messrs. Helmuth, Scwartze, and Co. in the supplement to the London *Statist* of the 11th February, 1888 :—

AVERAGE PRICE OF WOOL OF DIFFERENT KINDS IN LONDON, 1881 TO 1887.

Description of Wool.	Average Price per lb. at end of—						
	1881.	1882.	1883.	1884.	1885.	1886.	1887.
	d.	*d.*	*d.*	*d.*	*d.*	*d.*	*d.*
Cape, Eastern, extra super. snow white	21	21	20½	19½	16	18	17½
,, average fleece... ...	12	11½	11	10½	8½	9½	8½
Buenos Aires, average fleece ...	7	6¾	6½	6	4½	5¾	5¼
Peru, middling	11	9½	10	7¼	7	8	8
Donskoi, average white carding	9½	8¾	8	7¼	7¼	8½	7
East India, Ferozepore, yellow	10¼	9½	9	7½	7¼	6¾	7¼
Lincoln, hogs	13	10½	10¼	10¾	10	11¼	10½
Alpaca, Islay, super. fleece ...	16½	15	16½	14½	13	12½	12¼
Mohair, Turkish, fair average	22	20	19	18½	15	14	13½

Value of pastoral produce.

1199. The following is an estimate of the gross value of pastoral produce raised on holdings of all descriptions in 1887–8 :—

VALUE OF PASTORAL PRODUCE, 1887–8.

Nature of Produce.	Value.
	£
Milk, butter, and cheese, from 345,104 milch cows kept, @ £8 10s. ...	2,933,384
Estimated value of stock produced in 1887 :—	
Cattle, 345,104, viz., 230,069, @ £8, and 115,035 (calves), @ 30s.	2,013,104
Sheep, 2,655,996, @ 7s. 6d.	995,998
Pigs, 73,038, @ £2 10s.	182,595
Horses, 15,750, @ £8	126,000
Excess of exports over imports of wool, Customs value	2,294,567
Estimated value of wool used in the colony for manufacturing purposes, 1,589,266 lbs., @ 1s. 6d.	119,195
Total	8,664,843

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, the late Surveyor-General of Victoria, to have taken place during a series of years on nearly 3¾ 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.

1200. Australian-killed fresh meat was delivered in London for the first time in the year 1880, when the supply consisted of 60 carcasses of beef and 555 of mutton. New Zealand fresh meat was first delivered in 1882. The following, according to the Agricultural Department of the Privy Council,* are the quantities delivered from Australasia in the five years ended with 1887:— Australasian fresh meat in London.

AUSTRALIAN AND NEW ZEALAND-KILLED FRESH MEAT DELIVERED IN LONDON, 1881 to 1886.

	cwt.
1881	11,300
1882	34,540
1883	93,420
1884	222,560
1885	230,400
1886	294,220

1201. In the same six years the average prices of beef and mutton in London, by the carcass, are quoted as follow†:— Price of meat in London.

AVERAGE WHOLESALE PRICE OF BEEF AND MUTTON IN LONDON, 1881 TO 1886.

	Beef per lb.	Mutton per lb.
1881 ...	4½d. to 7¼d. ...	5d. to 9d.
1882 ...	4¾d. ,, 8d. ...	5½d. ,, 9½d.
1883 ...	5d. ,, 8d. ...	5¾d. ,, 9¾d.
1884 ...	4¼d. ,, 7¾d. ...	5d. ,, 8¾d.
1885 ...	3¾d. ,, 6¾d. ...	4¼d. ,, 7½d.
1886 ...	3½d. ,, 6¼d. ...	4d. ,, 8d.

1202. Tame rabbits were kept in Victoria during the early years of the colony, but rabbits were first turned out upon an extensive scale by a landed proprietor in the Western district. They bred rapidly, and for several years there was a demand for specimens in most districts of the colony for breeding purposes. At that time no one seems to have thought of the nuisance they might eventually become, and of the large expenditure which would be necessary to keep down their numbers. There are now few parts of Victoria which are not infested with them, although, in consequence of the vigorous efforts which have been made by the Government, by Shire Councils, and by private individuals, to suppress the evil, there are not so many as formerly. It is found, however, that if efforts are relaxed they breed so rapidly that they soon become as numerous as ever. Some persons have advocated the introduction of animals hostile to rabbits, such as ferrets, weasels, or the mangouste Rabbits.

* Report dated September 1887, page 108.

† *Ibid.*, pages 114 and 115.

(Indian ichneumon*), but where this has been tried it has been found that the introduced animals have been so destructive to poultry that the rabbits were the lesser evil of the two. The most successful way of destroying rabbits has been found to be poisoning either with phosphorized oats or wheat, or with arsenic mixed with bran or chaff, or else with the fumes of bisulphide of carbon, which, being placed in their burrows, speedily effects its object if all the entrances are properly stopped. They are also largely trapped and shot, in which case, their flesh is available for food. The following account of the steps which have been taken to exterminate the rabbits has been supplied by the branch of the Department of Crown Lands under which the Rabbit Suppression Acts are administered:—

Rabbit Extermination.

The first Rabbit Act came into force on the 28th December, 1880. Its principal provisions are:—

Owners or occupiers are liable for destruction of rabbits on their land.

Licensees, part 2 Land Act 1869 and section 49 Land Act 1869, deemed owners.

Pastoral tenants not deemed owners or occupiers, and were exempted (altered by Act 813).

Crown liable for all unoccupied Crown land and land held under pastoral licence, but not liable to be served with notice by shire council to destroy rabbits, nor to be summoned in default of compliance (altered by Act 813).

The enforcement of the provisions of the Act (*re* the destruction of vermin on all private lands) entrusted to the shire councils with power to compel destruction of log, brushwood fencing, and stone walls when deemed to be harbour for vermin. Occupier failing to clear land after notice, council to clear and recover expenses in any court of competent jurisdiction.

The second Act No. 721 in force on the 24th December, 1881, repealed section 7 of Act 683 conferred power on inspectors of the councils to serve notices and to enter and destroy (if not complied with after 14 days) and recover costs.

Under the third Act No. 813 in force the 12th December, 1884:—

All licensees are owners and liable to be served with notices to destroy and be summoned in default of compliance after 14 days, shire to do the work and recover. It also places the Board of Land and Works in the same position, rendering it liable to be called upon to clear unoccupied Crown lands of rabbits, dead timber, and other harbour.

Gives power to Board of Land and Works to arrange with any shire to destroy rabbits on Crown lands on terms to be agreed upon.

Enables shires to recover expenses incurred in clearing private holdings before two justices in lieu of court of competent jurisdiction.

Authorizes shire council inspector to act on his own authority in lieu of waiting directions of shire council.

Provides that any person having a live rabbit in his possession be liable to a penalty up to £100 on conviction.

Provides that it shall be the duty of every shire council to take simultaneous action to destroy vermin on any day appointed by the Governor in Council, and continue such action till district is certified as clear. Any shire not complying may be proclaimed an infested district by Governor in Council, and a local committee appointed to attend to the matter, with power to perform all duties. Expenses not recoverable from an owner to be a debt due by council, and if not paid may be satisfied out of municipal subsidy.

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* *Herpestes mangos* of Desmarest.

Gives power to proclaim any animal a natural enemy of the rabbit and protect it.

The foregoing is a brief extract of the principal features of the present Rabbit Acts, and for further information it may be stated there are about 85 shires and boroughs in the colony of Victoria more or less infested with rabbits, but in many of them the pests have not, up to the present, increased to a sufficient extent to cause any damage. Active operations to destroy the vermin on Crown lands were not taken until towards the latter end of 1881. During the first two years the operations extended to only about 20 shires; but to such an extent had the evil spread, that it was early found imperative to extend the scope of operations, and at the present time the Department is working Crown lands in upwards of 60 shires.

The amounts expended on rabbit extermination are as follow :—

1879–80	£1,280	1884–5	£22,177
1880–81	£2,600	1885–6	£24,833
1881–2	£12,890	1886–7	£24,509
1882–3	£9,883	1887–8	£21,143*
1883–4	£10,063		

These amounts include expenditure on labour, inspection, materials, cartage, &c., and for working unoccupied Crown lands; the administration and clerical portion of the work entail in addition a cost of less than £150 per annum.

The pests have of late years been largely diminished, and operations on the whole attended with marked success. The greatest obstacle in the way of effectually clearing land of the pest is found in the difficulty of enforcing simultaneous and continuous action; when once this difficulty is overcome by the whole operations being placed in the hands of the Government, with sufficient powers to enforce the working of all the infested lands at one time, the rabbits will soon be effectually destroyed, and a moderate expenditure suffice to keep them within a very small limit.

A few years ago, on one estate alone, upwards of £15,000 was expended in efforts to clear the land from the pest.

During the past eleven years it is estimated that, including the expenditure of private individuals, shire councils, and the Government, loss by depreciation in grazing capabilities of land and destruction to crops, the colony has sustained a loss of about three millions by the introduction of these four-footed rodents; but the damage has been immensely reduced during the last three years, and at present is not great, though any relaxation of efforts would in two or three years result in the animals being as numerous as ever. Phosphorized wheat and oats, bran and chaff and arsenic, strychnine water, arsenic and carrots, have been amongst the most successful poisons, but where burrows abound, and can be got at, bisulphide of carbon is the most deadly and effective enemy of the rabbit, and never fails to destroy them when properly used, unless the soil be of too porous a nature to hold the gas; in this case digging out is the best remedy. In concluding, it may interest some persons who are not fully aware of the prolific nature of rabbits, to state that in three years, under favourable circumstances, two pairs of rabbits, if undisturbed in any way and sufficient food abounded, would increase to the enormous number of five millions, which fully shows the necessity that exists for continuous and vigorous action to destroy them.

Exports of rabbit skins.

1203. In the eleven years ended with 1887, over 31 millions of rabbit skins, valued at £225,000, have been exported from Victoria. In addition to these, many have been used in the colony by hat manufacturers and others, and large numbers have doubtless been destroyed or allowed to decay. The following are the exports of rabbit skins in the period referred to :—

* Nearly £400 of the amount goes toward defraying expenditure incurred in 1886-7.

Exports of Rabbit Skins, 1877 to 1887.

Year.	Rabbit Skins Exported.	
	Number.	Value.
		£
1877	700,565	5,790
1878	711,844	6,206
1879	1,036,372	7,322
1880	3,309,408	21,674
1881	4,473,108	32,217
1882	4,929,432	37,538
1883	4,245,596	30,364
1884	4,963,371	37,243
1885	3,424,259	23,548
1886	910,609	6,800
1887	2,663,314	16,294
Total	31,367,878	224,996

Rabbits sent to market in Melbourne.

1204. The number of couples of rabbits received at the Melbourne fish market, the number sold, and the number condemned during the last two years, was as follows :—

Rabbits Sent to Melbourne Market.

Year.	Number of Couples of Rabbits.		
	Sold.	Condemned.	Total.
1886–7	346,856	4,460	351,316
1887–8	418,618	2,272	420,890
Total	765,474	6,732	772,206

Destruction of rabbits by disease.

1205. For some time past experiments have been in progress in various parts of Australia upon a method of destroying rabbits by disease. The proposition now under consideration is that of M. Pasteur, the eminent French physician, which is to infect the rabbits with the rabbit itch or scab, a complaint which results from the presence of a parasite called *sarcoptes cuniculi*. It is believed that there is no danger of the complaint being communicated to human beings or live stock; and it is even stated that infected rabbits, if trapped or shot during the earlier stages of the disease, would not be unwholesome as food, since the germs could not go into the circulation, as the bodies of the eggs are larger than the capillary vessels. It is admitted that a lengthened course of experiments would be desirable before setting at large the infected rabbits. The Government of New South Wales has appointed a Royal Commission, which has had numerous sittings and has taken a

large amount of evidence upon the subject, but this Commission has not yet concluded its labours, nor has it given publicity to any of the results of its enquiries.

Fence between Victoria and South Australia.

1206. With the view of keeping the rabbits and wild dogs on the South Australian side of the border from crossing into Victoria, a fence of wire netting is in course of erection by the Victorian Government, commencing at about 36° 45′ south latitude, and extending to the Murray, a distance of 163 geographical miles. About two-thirds of this has been completed, and the remainder is being rapidly proceeded with. From the commencing point of this fence, the Government of South Australia has fenced south for about 45 miles along the Victorian frontier, but it is not known whether they intend to continue the fencing to the sea. It may be remarked that the distance from the Murray to the sea is 242 miles, so that the portion undertaken by Victoria covers two-thirds of the whole.

Flour mills.

1207. In 1888, as compared with 1887, an increase of 2 occurred in the number of mills; at the same time the wheat operated upon increased by 680,000 bushels, the flour made by over 14,000 tons,* the other grain operated upon by 57,000 bushels, and the hands employed by 74. The pairs of stones were fewer by 14, but the sets of rollers in use increased by 78. An increase of £54,248 took place in the estimated value of machinery, lands, and buildings :—

FLOUR MILLS, 1887 AND 1888.

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.			
1887 ...	120	112	8	2,840	392	131
1888 ...	122	116	6	3,120	378	209
Increase	2	4	...	280	...	78
Decrease	...	...	2	...	14	...

Year ended March.	Number of Hands employed.	Grain operated upon.		Flour made.	Approximate Total Value of—		
		Wheat.	Other.		Machinery and Plant.	Lands.	Buildings.
		bushels.	bushels.	tons.*	£	£	£
1887 ...	743	7,644,657	373,171	163,015	240,400	67,859	163,810
1888 ...	817	8,324,092	429,779	177,225	272,990	83,205	170,122
Increase	74	679,435	56,608	14,210	32,590	15,346	6,312

* A ton of flour is considered to be equivalent to 2,000 lbs.

Value of materials used and produced.

1208. 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 :—

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.

Breweries.

1209. The number of breweries returned in 1888 was less by 4 than that in 1887; but the hands employed in breweries increased by 26, and considerable increases took place in the sugar, malt, and hops used. The beer brewed in the year under review exceeded by 1¾ million gallons that in the previous year, and a higher value by £234,000 was set down for the machinery, plant, lands, and buildings :—

BREWERIES, 1887 AND 1888.

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.
1887 ...	72	51	2	1	18	502	1,037	14,605,024	667,478	891,294
1888 ...	68	50	2	...	16	512	1,063	15,002,848	746,519	998,775
Increase ...	...	...	...	...	...	10	26	397,824	79,041	107,481
Decrease	4	1	...	1	2	...	...	...	...	...

Year ended March.	Beer made.	Approximate Total Value of—		
		Machinery and Plant.	Lands.*	Buildings.
	gallons.	£	£	£
1887	16,088,462	140,170	198,596	252,135
1888	17,828,453	149,490	393,050	282,428
Increase ...	1,739,991	9,320	194,454	30,293

* The figures in this column apply to purchased lands only. Three breweries in 1887 and two in 1888 were upon Crown lands; in these cases no valuation of the land has been given.

1210. 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 :— Value of materials used and produced.

BREWERIES, 1880–81.

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

1211. The beer made in Victoria during 1887–8 amounted to 17,173,957 gallons; and the quantity imported, after deducting exports, was 1,173,959 gallons. These numbers give a total consumption of 19,002,412 gallons or an average of 18⅔ gallons per head. The consumption of beer per head in 1886–7 was only 17½ gallons and in the two previous years no more than 16 gallons. Consumption of beer per head.

1212. The following is a statement of the quantity of beer brewed in one year in the United Kingdom, four countries of Europe, and the United States :— Beer brewed in various countries.

BEER BREWED IN VARIOUS COUNTRIES* (000's OMITTED).

	gallons.		gallons.
United Kingdom (1885) ...	989,890,	Austria-Hungary (1884) ..	272,624,
Holland (1884)	932,228,	Belgium (1885)	206,074,
United States (1885) ...	594,063,	France (1883)	189,618,

1213. The average annual consumption of malt liquor per head in various countries may be set down as follows, the figures being generally calculated over a series of years :— Consumption of beer various countries.

ANNUAL CONSUMPTION OF BEER PER HEAD IN VARIOUS COUNTRIES.

	gallons.		gallons.
United Kingdom	28·74	Tasmania	10·00
Germany	19·38	Queensland	9·55
Holland	19·05	Switzerland	8·15
New South Wales ...	16·70	Austria-Hungary... ...	6·83
Victoria	16·41	France	4·53
United States	10·74	Sweden	2·52

1214. The brickyards and potteries were more numerous by 12 in 1888 than in 1887, and the increase of hands employed was 246; whilst the increased value of plant, lands, and buildings was set down as £25,135. The number of bricks made was larger than in the previous year by 9¼ millions; and there was an increase of £5,500 in the value of pottery made. The following are the comparative figures of the two years :— Brickyards and potteries.

* Computed, in most cases, from figures given in the *Bijdragen van het Statistisch Instituut*, 1887, page 15, there stated in hectolitres, each of which has been assumed to be equal to 22 Imperial gallons.

Brickyards and Potteries, 1887 and 1888.

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.			
1887 ...	226	225	106	58	103	65	1,203	2,271
1888 ...	238	236	102	57	108	73	1,159	2,517
Increase	12	11	...	...	5	8	...	246
Decrease	...	...	4	1	...	...	44	...

Year ended March.	Number of Bricks made.	Approximate Total Value of—				
		Bricks made.	Pottery made.	Machinery and Plant.	Lands.*	Buildings.
		£	£	£	£	£
1887	174,979,670	349,960	45,400	185,369	228,662	133,995
1888	184,211,300	368,420	50,850	157,365	280,161	135,635
Increase ...	9,231,630	18,460	5,450	...	51,499	1,640
Decrease ...	...	...	...	28,004	...	...

Tanneries, fellmongeries, &c.

1215. The establishments for tanning and wool-washing were more numerous by 1 in 1887-8 than in 1886-7, but the returns show a decrease of 38 in the hands employed, and of £31,000 in the value of plant, lands, and buildings connected with that industry. The work done was on the whole less than in the previous year; for although the hides and skins tanned were more in number by 270,000, the skins stripped were fewer by 236,400, and the wool washed less by 3,300,000 lbs. The following are the particulars for the two years :—

Tanneries, Fellmongeries, and Wool-washing Establishments, 1887 and 1888.

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.			
1887	140	66	...	1	20	53	773	1,546	3,458
1888	141	62	...	1	10	68	682	1,508	3,390
Increase ...	1	...	...	...	...	15	...	...	...
Decrease ...	...	4	...	...	10	...	91	38	68

* The figures in this column apply to purchased lands only. Twenty-nine of the brickyards in 1887 and twenty-six in 1888 were on Crown lands.

TANNERIES, FELLMONGERIES, AND WOOLWASHING ESTABLISHMENTS, 1887 AND 1888—*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.	£	£	£
1887	1,754,473	1,923,009	10,497,303	106,420	79,555	134,008
1888	2,024,817	1,686,609	7,157,273	84,587	88,740	115,347
Increase ...	270,344	...	...	...	9,185	...
Decrease ...	...	236,400	3,340,030	21,833	...	18,661

1216. 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 :— Value of materials used and produced.

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.

1217. The same number of woollen mills was returned for both 1886–7 and 1887–8, but the value of plant, lands, and buildings was set down as nearly £42,000 more in the former than in the latter year. An increase of 80 took place in the number of hands employed, and a small increase in the number of blankets and shawls manufactured, but a falling off of 96,000 in the number of yards of tweed cloth, flannel, &c., made :— Woollen mills.

WOOLLEN MILLS, 1887 AND 1888.

Year ended March.	Number of Woollen Mills.	Number of Spindles.	Horse-power of Steam Engines.	Quantity of Wool used.	Goods Manufactured : Quantity of—		
					Tweed, Cloth, Flannel, &c.	Blankets.	Shawls.
				lbs.	yards.	pairs.	number.
1887 ...	8	20,466	866	1,651,458	995,026	2,507	228
1888 ...	8	22,900	894	1,589,266	898,688	3,121	580
Increase ...	...	2,434	28	...	...	614	352
Decrease...	...	...	...	62,192	96,338	...	...

* The figures in this column apply to purchased land only. Four of the establishments in 1887, and five in 1888 were on Crown lands. In these cases no valuation of the land is given.

WOOLLEN MILLS, 1887 AND 1888—*continued.*

Year ended March.	Hands employed.		Approximate Total Value of—		
	Males.	Females.	Machinery and Plant.	Lands.	Buildings.
			£	£	£
1887	387	317	146,036	7,768	63,300
1888	399	385	185,636	7,367	65,900
Increase ...	12	68	39,600	...	2,600
Decrease ...	...	...	...	401	...

Value of articles used and produced.

1218. 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 then £79,298. The following are the figures :—

WOOLLEN MILLS, 1880–81.

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

Soap and candle works.

1219. The same number of soap and candle works was returned in 1887 and 1888, and the hands employed in the two years were about equal. The weight of soap made in the year under review was less by 5,411 cwt. than that in the previous year, but the weight of candles made was greater by 7,705 cwt. than in 1887, whilst the valuation placed upon the machinery, lands, and buildings was higher by £64,052 than in that year :—

SOAP AND CANDLE WORKS, 1887 AND 1888.

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.	£	£	£
1887 ...	34	22	12	481	408	130,609	46,714	73,358	40,976	36,720
1888 ...	34	25	9	470	407	125,198	54,419	81,376	84,109	49,621
Increase ...	...	3	...	...	...	...	7,705	8,018	43,133	12,901
Decrease ...	...	...	3	11	1	5,411	...	...	...	...

NOTE.—In addition to the other manufactures, 9,600 cwt. of soda crystals were made in 1887-8.

* The figures in this column apply to purchased land only. Two of the establishments in 1887 and one in 1888 were on Crown lands. In these cases no valuation of the land is given.

1220. The value of the raw material used, and of the articles produced, in soap and candle factories was returned for the twelve months preceding the census, with the following result. No later information exists on these points:— Value of articles used and produced.

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.

1221. Thirteen tobacco manufactories were returned in 1888, as against 11 in 1887, and the hands employed in the first exceeded those in the last named year by 113; there was an increase of 166,195 lbs. in the quantity of tobacco manufactured, of 1,806 lbs. in the quantity of snuff, and of 1,349,540 in the number of cigars made. The value of lands, buildings and plant in use was set down as greater by £28,435 in 1888 than in 1887:— Tobacco manufactories.

TOBACCO MANUFACTORIES, 1887 AND 1888.

Year ended March.	Number of Establishments.	Establishments employing— Steam-power.	Gas-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.		£	£	£
1887 ..	11	3	1	7	43	460	196	1,181,283	2,365	7,293,460	31,225	29,200	20,515
1888 ..	13	3	1	9	47	548	221	1,347,478	4,171	8,643,000	36,860	42,300	30,215
Increase ..	2	..	..	2	4	88	25	166,195	1,806	1,349,540	5,635	13,100	9,700

NOTE.—In addition to the other manufactures, 1,500,000 cigarettes were made in 1886–7 and 2,118,000 in 1887–8.

1222. 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:— Value of raw and manufactured materials.

TOBACCO MANUFACTORIES, 1880–81.

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

Distilleries.

1223. Nine distilleries were returned in 1888, as against eight in 1887; and an increase took place of 47 in the number of hands employed, of 29,131 gallons in the quantity of spirits made, and of £70,500 in the value of plant, lands, and buildings. The following are the figures for the two years :—

DISTILLERIES, 1887 AND 1888.

Year 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.	£	£	£
1887 ...	8	108	56	239,344	29,050	52,410	24,075
1888 ...	9	158	103	268,475	50,050	83,910	42,075
Increase ...	1	50	47	29,131	21,000	31,500	18,000

Consumption of spirits in various countries.

1224. According to the following figures, the consumption of spirits per head is greatest in Holland, next in Queensland, Western Australia, New South Wales, the United States, and Sweden in the order named. In all of these countries the consumption per head appears to be greater, whilst in Switzerland, Germany, New Zealand, France, South Australia, Tasmania, Austria-Hungary, and the United Kingdom it appears to be less, than in the colony of Victoria:—

ANNUAL CONSUMPTION OF SPIRITS PER HEAD IN VARIOUS COUNTRIES.

	Gallons.		Gallons.
Holland	2·08	Germany	·95
Queensland	1·85	New Zealand ...	·92
Western Australia ...	1·46	France	·85
New South Wales ...	1·39	South Australia ...	·70
United States ...	1·34	Tasmania	·69
Sweden	1·27	Austria-Hungary ...	·63
Victoria	1·12	United Kingdom ...	·59
Switzerland	1·04		

Other manufactories, works, &c.

1225. 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 70 than those returned in

1887. It will be observed that the establishments employing manual labour decreased by 1, whilst there was an increase of 71 in those worked with the aid of machinery. The males employed increased by 2,112, and the females employed by 652 ; whilst the value of lands, buildings, and plant shows an increase of £1,078,903. The totals of the two years are subjoined :—

MANUFACTORIES, WORKS, ETC., 1887 AND 1888.

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

Year ended March.	Number of Manufactories, Works, &c.	Manufactories, &c., employing—						Amount of Horse-power employed.
		Steam.	Water.	Gas.	Wind	Horse-power.	Manual Labour only.	
1887 ...	2,151	921	13	208	2	30	977	14,203
1888 ...	2,221	948	16	243	2	36	976	14,665
Increase	70	27	3	35	...	6	...	462
Decrease	...	...	...	...	...	...	1	...

Year ended March.	Number of Hands employed.		Approximate Total Value of—		
	Males.	Females.	Machinery and Plant.	Lands. *	Buildings.
			£	£	£
1887	32,545	5,807	3,834,829	2,480,283	2,267,434
1888	34,657	6,459	4,087,821	3,076,901	2,496,727
Increase ...	2,112	652	252,992	596,618	229,293

NOTE.—Exclusive of stone-breaking and tar-pavement works, which numbered 15 in 1887 and 17 in 1888. These works being carried on in connexion with quarries, it is found impossible to separate them therefrom.

1226. 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 1887–8 the total number

Manufactories of all descriptions.

* 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 172 in 1887, and 167 in 1888.

of establishments increased by 84, those of them which use steam or gas by 63, at the same time the hands employed increased by 3,311 ; the amount of horse-power by 688, and the value of machinery, lands, and buildings by £1,565,830. The returns of the two years are contained in the following table :—

MANUFACTORIES, WORKS, ETC., 1887 AND 1888.

(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.
					£
1887	2,770	1,459	21,019	45,773	11,068,158
1888	2,854	1,522	21,707	49,084	12,633,988
Increase ...	84	63	688	3,311	1,565,830

NOTE.—Exclusive of stone-breaking and tar-pavement works, which numbered 15 in 1887, and 17 in 1888. These works being carried on in connexion with quarries, it is found impossible to separate them therefrom.

Names of manufactories.

1227. 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 1887–8. 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 210 in 1887, and 201 in 1888.

MANUFACTORIES, WORKS, ETC., 1881 AND 1888.

Description of Manufactory, Works, &c.	1880–81.			1887–8.		
	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	9	760	219,700
Printing establishments*	89	202,475	569,797	154	3,564	866,116
MUSICAL INSTRUMENTS.						
Organ-building establishments ...	2	3,500	8,050	4	36	6,300
Pianoforte manufactories	5	1,700	4,150	3	11	2,300
CARVING FIGURES, ETC.						
Statuary works	...	...	...	1	...	...
DESIGNS, MEDALS, AND DIES.						
Die-sinkers, engravers, medalists, trade-mark makers	6	3,350	9,200	5	65	34,700
Indiarubber stamp manufactories† ...	2	350	1,700	...	...	...
Type foundry	1	...	...	...	...	...
PHILOSOPHICAL INSTRUMENTS, ETC.						
Electric-lighting apparatus manufactory	...	...	...	1	...	...
Philosophical instrument manufactories	1	...	...	3	14	5,360
SURGICAL INSTRUMENTS.						
Surgical instrument, truss—manufactories	6	2,400	5,600	4	17	10,735
ARMS, AMMUNITION, ETC.						
Blasting powder, dynamite, &c.—manufactories	3	9,964	16,737	6	75	41,410
Fuze manufactory	1	...	...	1	...	...
Shot manufactories	...	...	...	2	4	5,080
MACHINES, TOOLS, AND IMPLEMENTS.						
Agricultural implement manufactories	54	91,659	202,535	62	1,051	151,608
Boiler and pipe-covering manufactories	...	...	...	1	...	...
Cutlery, tool—manufactories ...	3	800	2,400	6	28	13,375
Domestic implement‡ manufactories	2	...	...	10	66	28,830
Evaporating apparatus manufactory	...	...	...	1	...	...
Iron foundries and engineering establishments§	147	329,395	723,919	156	6,100	1,240,366
Nail manufactories	...	...	...	2	13	2,700
Pattern-makers	...	...	...	5	21	5,095
Refrigerating machine manufactory	...	...	...	1	...	...
Sheet-iron and tin works	61	143,000	247,299	47	668	156,000
CARRIAGES AND HARNESS.						
Carriage lamp manufactories ...	3	900	2,950	2	15	6,450
Coach, waggon, &c.—manufactories	132	99,415	212,615	195	2,720	361,690
Perambulator manufactories ...	3	1,750	5,000	2	8	2,710
Saddle, harness—manufactories ...	47	35,792	81,130	57	465	97,592
Saddle-tree, &c., manufactories ...	4	2,400	6,860	4	22	4,500
Whip manufactories	3	940	2,950	3	16	2,460

* 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 brass-founders and pattern-makers.

MANUFACTORIES, WORKS, ETC.—*continued.*

Description of Manufactory, Works, &c.	1880–81.			1887–8.		
	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	34	8,150
Ships' wheels, blocks, &c.—manufactories	3	505	1,100	1	...	...
Floating-dock	1	...	...	8	180	432,431
Graving-docks	3	...	...			
Patent slips	2	...	...			
HOUSES, BUILDINGS, ETC.						
Architectural modelling works ...	11	3,584	8,900	14	81	24,200
Patent ceiling ventilator manufactories	2	250	1,600	3	41	5,220
Lime works	21	6,560	17,216	37	351	18,793
Roof-covering composition manufactories	2	944	2,180	...	...	...
Venetian blind manufactories ...	12	5,500	11,750	9	103	19,023
FURNITURE.						
Bedding, flock, and upholstery manufactories	15	13,350	26,880	22	214	59,369
Cabinet works, including billiard-table makers	63	131,000	258,188	67	1,302	219,196
Chandelier manufactory	...	...	...	1	...	...
Bedstead manufactory	...	...	...	1	...	...
Earth-closet manufactories ...	1	...	...	3	23	8,200
Iron-safe manufactories	2	670	970	2	17	4,160
Looking-glass manufactories ...	2	400	1,300	3	31	5,950
Picture-frame makers, &c. ...	13	5,627	11,550	5	19	12,380
Wood-carving and turnery works ...	10	4,965	10,800	15	63	16,585
CHEMICALS.						
Chemical works	6	25,160	43,600	11	136	83,910
Dye works	6	1,130	7,150	9	68	19,660
Essential oil manufactories ...	4	1,825	3,900	9	63	5,955
Ink, blacking, blue, washing-powder, &c.—manufactories	12	37,280	58,560	7	161	28,290
Ironfounders—charcoal manufactory	...	...	...	1	...	...
Japanner	...	...	...	1	...	...
Paint, varnish—manufactories ...	1	...	...	...	...	...
Printing ink manufactories ...	...	...	...	2	18	9,450
Salt works	8	4,882	10,810	8	36	5,840
TEXTILE FABRICS.						
Woollen mills	10	89,412	168,710	8	784	258,903
DRESS.						
Boot manufactories	105	355,418	686,922	97	3,886	199,228
Clothing factories	63	370,181	761,401	77	4,344	340,046
Fur manufactories	3	4,300	6,900	4	30	6,845
Hat, cap—manufactories	22	34,753	66,264	15	457	61,951
Hosiery manufactories	...	...	...	3	75	3,960
Oilskin, waterproof-clothing—manufactories	5	900	5,700	5	61	9,310
Umbrella and parasol manufactories	9	13,180	24,825	6	101	14,650
Wig manufactory	1	...	...	...	...	...

MANUFACTORIES, WORKS, ETC.—*continued.*

Description of Manufactory, Works, &c.	1880–81.			1887–8.		
	Number of Establishments.	Approximate Value of—		Number of Establishments.	Hands employed.	Approximate Value of Machinery, Plant, Lands, and Buildings.
		Materials used.	Articles produced.			
FIBROUS MATERIALS.		£	£			£
Rope, twine, mat, bag, sack—manufactories	18	66,975	102,280	13	298	102,031
Sail, tent, tarpaulin—manufactories	12	28,860	47,250	9	63	20,620
ANIMAL FOOD.						
Butterine factory	...	...	...	1	...	...
Cheese factories	28	17,733	31,586	17	69	19,015
Meat-curing establishments ...	16	192,150	258,790	23	257	57,850
VEGETABLE FOOD.						
Arrowroot, maizena, oatmeal, starch—manufactories	5	5,620	8,000	3	183	77,300
Biscuit manufactories	13	106,110	181,840	9	566	92,830
Confectionery works	8	61,600	88,800	11	364	69,660
Fruit evaporating works	...	...	...	1	...	...
Flour mills	144	1,397,099	1,637,351	122	817	526,317
Jam, pickle, vinegar, sauce—manufactories	25	84,430	132,170	22	349	71,369
Macaroni works	2	125	230	1	...	...
DRINKS AND STIMULANTS.*						
Aërated waters, gingerbeer, liqueur, &c.—works	114	91,849	196,810	149	937	273,956
Breweries	81	442,885	780,501	68	1,063	824,968
Coffee, chicory, cocoa, mustard, spice—works	12	235,355	322,786	12	156	83,530
Distilleries	6	26,368	44,500	9	103	176,035
Malthouses	14	67,635	98,000	16	109	109,130
Sugar, treacle—refineries	1	...	...	3	206	208,800
Tobacco, cigars, snuff—manufactories	16	126,450	199,320	13	769	109,375
ANIMAL MATTERS.						
Boiling-down, tallow-rendering—establishments	15	28,303	77,000	19	138	42,221
Bone mills and bone manure manufactories	15	50,225	70,845	11	53	18,380
Brush manufactories	8	15,700	27,800	9	151	19,688
Comb manufactory	1	...	...	...	...	...
Catgut manufactories	2	800	2,000	1	...	...
Curled hair manufactories ...	3	1,700	2,565	2	17	4,006
Glue, oil—manufactories	7	8,200	12,700	4	22	8,525
Leather belting (machinery) manufactory	...	...	...	1	...	...
Morocco, fancy leather—manufactories	3	2,480	4,400	3	18	1,580
Portmanteau, trunk—manufactories	7	5,680	9,520	7	32	14,110
Soap, candle—works	38	288,340	450,924	34	407	215,106
Tanneries, fellmongeries, and wool-washing establishments	151	1,008,531	1,406,274	141	1,508	288,674

* Places where wine is made are not included. The number of wine presses returned in 1887–8 was 489.

MANUFACTORIES, WORKS, ETC.—*continued.*

Description of Manufactory, Works, &c.	1880-81.			1887-8.		
	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.		£	£			£
Bark mills	8	17,000	25,650	3	19	3,880
Basket-making works	9	1,670	4,560	12	73	13,620
Broom manufactories *	2	6,200	13,000	1	...	...
Chaff-cutting, corn-crushing—works †	165	357,232	516,623	205	862	234,020
Cooperage works	24	17,829	35,243	26	156	36,755
Cork manufactories	2	2,100	3,100	1	...	...
Fancy-box, hat-box—manufactories	5	3,080	6,745	8	125	25,650
Paper manufactories	3	24,300	47,370	2	166	97,800
Saw mills, moulding, joinery, &c.—works	174	552,463	973,127	272	5,496	816,441
COAL AND LIGHTING.						
Gasworks	19	97,392	226,116	24	597	1,627,309
Electric-light works	...	...	...	1	...	...
STONE, CLAY, EARTHENWARE, AND GLASS.						
Artificial stone manufactory ...	...	...	...	1	...	...
Asbestos works	...	...	...	1	...	...
Brickyards and potteries	165	...	137,834	238	2,517	573,161
Cement tile works	...	...	...	1	...	...
Filter manufactories	1	...	...	2	7	1,515
Glass manufactories, works ...	9	12,705	41,150	5	190	20,560
Stone-breaking, asphalte, tar-pavement—works ‡	9	10,640	27,783	...	...	...
Stone and marble sawing, polishing—works	43	50,583	104,614	46	598	111,296
WATER. §						
Ice manufactories	2	2,000	7,000	4	38	42,442
GOLD, SILVER, AND PRECIOUS STONES.						
Goldsmiths, jewellers, and electro-platers (manufacturing)	28	62,020	109,650	22	318	109,300
Royal mint	1	...	...	1	...	...
METALS OTHER THAN GOLD AND SILVER.						
Bell foundry	1	...	...	...	...	...
Brass and copper foundries ...	...	...	...	19	363	112,370
Lead, pewter, and zinc—works ...	5	17,850	23,800	4	39	29,450
Pyrites works	1	...	...	1	...	...
Smelting works	7	32,396	48,610	3	70	24,000
Wire-working establishments ...	10	3,650	9,800	8	68	18,475
Total where only one return was received for each of certain descriptions ‖	...	257,910	400,080	...	309	154,136
Total	2,468	7,997,745	13,370,836	2,854	49,084	12,633,988

* See also Brush factories under "Animal Matters" *ante.*

† 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 about 18,200.

‡ Now included under the head of Stone Quarries—*post.*

§ Works for the storage and supply of water are not included in the manufacturing tables. For tables relating to these, see paragraph 1159 *et seq.*

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

1228. 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.

1229. By comparing the particulars respecting these manufactories, as returned in 1888 and in the first year of each of the two previous quinquennia, considerable increases at each successive period will be found in all the columns. The number of establishments increased by 10 per cent. between 1878 and 1883, and by 9 per cent. between 1883 and 1888 ; the hands employed increased by 40 per cent. and 7 per cent. in those intervals respectively ; and the value of machinery, plant, lands, and buildings increased by 28 per cent. in the first, and by 48 per cent. in the second, interval. The following is the comparison referred to :— Summary of manufactories at three periods.

SUMMARY OF MANUFACTORIES, WORKS, ETC., 1878, 1883, AND 1888.

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.
					£
1878 ...	2,370	929	12,698	32,688	6,665,540
1883 ...	2,612	1,248	16,612	45,698	8,519,486
1888 ...	2,854	1,522	21,707	49,084	12,633,988

1230. The stone quarries, stone-crushing, and tar-pavement works returned in 1888 were more numerous by 11 than in 1887, and the output of stone increased by 162,828 cubic yards, and the hands employed by 40. The following are the figures for the two years :— Stone quarries.

STONE QUARRIES,* ETC., 1887 AND 1888.

Year ended March.	Number of Quarries, &c.	Cubic Yards of Stone raised.†					Steam Engines in use.	
		Bluestone.	Slate and Flagging.	Sandstone and Freestone.	Granite.	Other.	Number.	Horse-power.
1887	155	530,380	2,007	7,833	1,500	12,800	22	855
1888	166	689,207	3,943	9,398	1,000	13,800	24	461
Increase	11	158,827	1,936	1,565	...	1,000	2	...
Decrease	...	...	...	...	500	...	...	394

* Including stone-crushing and tar-pavement works formerly included in the table of "Manufactories, works, &c."

† Also 120,000 roofing slates in 1888.

STONE QUARRIES,* ETC., 1887 AND 1888—*continued.*

Year ended March.	Number of Hands employed.	Approximate Total Value of—			
		Stone raised.	Machinery and Plant.	Lands.†	Buildings.
		£	£	£	£
1887	1,458	167,210	52,119	49,605	8,705
1888	1,498	174,839	55,771	51,330	11,179
Increase	40	7,629	3,652	1,725	2,474

Discovery of gold.

1231. Gold was first discovered in Australia by the Rev. W. B. Clarke, of Sydney, who, in 1841, found the precious metal in the mountainous regions to the west of the vale of Clwyd, in New South Wales, and in 1844 exhibited a specimen of gold in quartz to the then Governor, Sir George Gipps, and others. But the subject was not followed up, "as much from considerations of the penal character of the colony as from general ignorance of the value of such an indication." In 1850, however, Mr. E. H. Hargreaves returned to Sydney from California for the express purpose, as he states, of searching for gold; and on the 12th February, 1851, he succeeded in finding gold at Summer Hill Creek, in New South Wales. This discovery afterwards led to gold being found at other places in that colony, and to the discovery of the gold-fields of Victoria. The following is a short statement of the order in which a Select Committee, appointed in 1853‡ by the Legislative Council to consider claims for rewards for gold discoveries in Victoria, placed the various claimants :—The Hon. W. Campbell discovered gold in March, 1850, at Clunes; concealed the fact at the time from the apprehension that its announcement might prove injurious to the squatter on whose run the discovery was made, but mentioned it in a letter to a friend on the 10th June, and afterwards on the 5th July, 1851, which friend, at Mr. Campbell's request, reported the matter to the gold-discovery committee on the 8th July. Mr. L. J. Michel and six others discovered gold in the Yarra Ranges, at Anderson's Creek, which they communicated to the gold-discovery committee on the 5th July. Mr. James Esmond, a Californian digger, and three others, obtained gold in the quartz rocks of the Pyrenees, and made the discovery public on the 5th July. Dr. George Bruhn, a German physician,

* Including stone-crushing and tar-pavement works formerly included in the table of "Manufactories, works, &c."

† The figures in this column apply to purchased land only. Thirty-eight of the stone quarries in 1887 and 1888 were on Crown lands, and in these cases no valuation of the land has been given.

‡ The report of this Committee was dated 10th March, 1854.

found indications of gold in quartz "two miles from Parker's station" in April, 1851, and forwarded specimens to the gold committee on the 30th June. Mr. Thomas Hiscock found gold at Buninyong on the 8th August, and communicated the fact to the editor of the *Geelong Advertiser* on the 10th of the same month. This discovery led to that of the Ballarat gold-fields. Mr. C. T. Peters, a hutkeeper at Barker's Creek, and three others, found gold at Specimen Gully on the 20th July, worked secretly to the 1st September, then published the account. This led to the discovery of the numerous gold-fields about Mount Alexander.

Gold raised, 1886 and 1887.

1232. According to the estimate of the Mining Department, the gold raised in Victoria in 1887 was 617,751 oz., which is less than the quantity obtained in 1886 by 47,445 oz., representing, at £4 per oz., a diminished value of £189,780. The following are the figures for the two years :—

QUANTITY AND VALUE OF GOLD RAISED IN 1886 AND 1887.

Year.	Gold raised in Victoria.	
	Estimated Quantity.	Value, at £4 per oz.
	oz.	£
1886	665,196	2,660,784
1887	617,751	2,471,004
Decrease ...	47,445	189,780

Gold raised, 1871 to 1887.

1233. 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, has not since been sustained, the yield having again gradually fallen off since 1882, and being less in 1887 than in any other year since 1851. The subjoined figures give an estimate of the quantity of gold raised in 1871 and each subsequent year:—

ESTIMATED QUANTITY OF GOLD RAISED, 1871 TO 1887.

	oz.		oz.
1871	1,355,477	1880	829,121
1872	1,282,521	1881	858,850
1873	1,241,205	1882	898,536
1874	1,155,972	1883	810,047
1875	1,095,787	1884	778,618
1876	963,760	1885	735,218
1877	809,653	1886	665,196
1878	775,272	1887	617,751
1879	758,947		

Gold raised, 1851 to 1887.

1234. Carrying on to the end of 1887 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 about the middle of 1851. The figures give an average per annum during the whole period of about 1,507,000 oz., which is about two and a half times the quantity raised in 1887 :—

ESTIMATED TOTAL QUANTITY AND VALUE OF GOLD RAISED IN VICTORIA, 1851 TO 1887.

Gold raised in Victoria.	Estimated Quantity.	Value, at £4 per oz.
	oz.	£
Prior to 1887 ...	54,393,182	217,572,728
During 1887 ...	617,751	2,471,004
Total ...	55,010,933	220,043,732

Gold raised in Australasian colonies.

1235. Since the first discovery, in 1851, of gold in Australasia, 82¼ million ounces have been raised in the various colonies, two-thirds of which was got in Victoria. The following is a statement of the quantity recorded as having been raised in the respective colonies during each year. No column is assigned to Western Australia, as, although during the last two or three years some gold has been raised in the Kimberley district of that colony, all that is known of the quantity obtained is that in 1887 4,873 ounces passed through the Customs :—

GOLD PRODUCE IN AUSTRALASIAN COLONIES, 1851 TO 1887.

Year.	Victoria.	New South Wales.	Queensland.	South Australia.	Tasmania.	New Zealand.
	oz.	oz.	oz.	oz.	oz.	oz.
1851	145,137	144,121	...	...	...	...
1852	2,738,484	818,752	...	...	...	...
1853	3,150,021	548,053	...	...	...	...
1854	2,392,065	237,911	...	...	...	...
1855	2,793,065	170,146	...	...	...	...
1856	2,985,735	183,946	...	...	...	...
1857	2,761,567	161,043	...	...	...	10,437
1858	2,528,227	280,558	...	...	...	13,534
1859	2,280,717	323,984	...	...	...	7,336
1860	2,156,700	381,614	4,127	...	...	4,538
1861	1,967,453	459,879	1,077	...	...	194,031
1862	1,658,281	616,910	190	...	...	410,862
1863	1,627,105	467,399	3,937	...	...	628,450
1864	1,545,437	341,954	22,037	...	...	480,171
1865	1,543,188	364,541	25,339	...	...	574,574
1866	1,478,280	287,534	22,916	...	348	735,376

GOLD PRODUCE IN AUSTRALASIAN COLONIES, 1851 TO 1887—*continued.*

Year.	Victoria.	New South Wales.	Queensland.	South Australia.	Tasmania.	New Zealand.
	oz.	oz.	oz.	oz.	oz.	oz.
1867	1,433,246	269,407	49,092	...	1,363	686,905
1868	1,634,200	258,774	165,801	...	692	637,474
1869	1,337,296	252,130	138,221	...	137	614,281
1870	1,222,798	240,402	136,773	...	964	544,880
1871	1,355,477	321,469	171,937	...	6,005	730,029
1872	1,282,521	424,100	186,019	2,494	6,969	445,370
1873	1,241,205	360,850	194,895	98	4,661	505,337
1874	1,155,972	270,710	375,586	8,351	4,651	376,388
1875	1,095,787	229,386	391,515	13,742	3,010	355,322
1876	963,760	155,166	374,776	9,857	11,107	322,016
1877	809,653	122,629	428,104	11,811	5,777	371,685
1878	775,272	117,978	310,247	10,746	25,249	310,486
1879	758,947	107,640	288,556	14,250	60,155	287,464
1880	829,121	116,751	267,136	13,246	52,595	305,248
1881	858,850	145,532	270,945	16,976	56,693	270,561
1882	898,536	129,233	224,893	15,669	49,122	251,204
1883	810,047	122,257	212,783	15,939	46,577	248,374
1884	778,618	105,933	307,804	21,455	42,340	229,946
1885	735,218	100,667	310,941	18,327	41,241	237,371
1886	665,196	98,446	340,998	26,315	31,014	227,079
1887	617,751	108,101	425,923	36,569	42,609	203,869
Total	55,010,933	9,845,906	5,652,568*	235,845	493,279	11,220,598

1236. According to the above figures the total quantity of gold raised in each colony from 1851 to 1887 has been as follows :— Gold produce of Australia, 1851 to 1887.

SUMMARY OF GOLD PRODUCE OF AUSTRALASIA 1851 TO 1887.

	oz.
Victoria	55,010,933
New South Wales	9,845,906
Queensland	5,652,568*
South Australia	235,845
Western Australia	4,873
Tasmania	493,279
New Zealand	11,200,598
	82,444,002

1237. The average value of the gold raised varies in the different colonies. If it be estimated at £4 per ounce, the total value would be £329,776,008, or if at £3 15s. per ounce it would be £309,165,008.† Value of gold raised in Australasia.

1238. 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.

* This estimate, which has been carefully compiled from the Queensland Statistical Register, is higher by 45,426 ounces than that furnished by the Registrar-General of Queensland and published in the "*Australasian Statistics*, 1887," for which see Table XIX. in Appendix A at end of the last volume.

† Pure gold is worth £4 4s. 11½d., and standard gold (22 carats fine) £3 17s. 10½d.

‡ *Dictionary of Statistics*, page 220.

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

Gold produce of the world, 1851 to 1885.

1239. This would give an average of nearly £29,000,000 per annum, which is considerably higher than the following estimate of the world's produce of gold between the years 1851 and 1885, taken from *L'Almanach de Gotha* 1887†:—

GOLD PRODUCE OF THE WORLD, 1851 TO 1885.

		oz.		£
1851 to 1860 ...	Annual average	6,446,689	or	25,786,756
1861 to 1870 ...	„	6,108,330	„	24,433,320
1871 to 1880 ...	„	5,565,677	„	22,262,708
1881 to 1885 ...	„	4,793,690	„	19,174,760

Gold produce of the world, 1883 to 1886.

1240. By the following table, which, with the exception of the figures for Australasia, has been taken from the report for 1887 of Mr. James P. Kimball, Director of the United States Mint, it appears that during the four years ended with 1886 the world's annual production of gold has averaged something under 5 million ounces, the largest quantity being produced in the United States, the next largest in Australasia, and the next in Russia:—

GOLD PRODUCE OF EACH COUNTRY, 1883 TO 1886.‡

Countries.	1883.	1884.	1885.	1886.
	oz.	oz.	oz.	oz.
Australasia	1,430,501	1,502,543	1,442,437	1,389,048
United States ...	1,450,890	1,489,589	1,537,930	1,692,694
Russia	973,003	1,057,890	1,225,414	992,288
Mexico	46,220	57,213	41,913	29,699

* 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.

† Page 1065, where only the quantities have been given, in kilogrammes, which have been converted into ounces on the assumption that a kilogramme is equal to 32·142 oz. troy. The values have been calculated at a uniform rate of £4 per oz.

‡ When the figures for any year were not given by Mr. Kimball, those for a previous year have been inserted.

GOLD PRODUCE OF EACH COUNTRY, 1882 TO 1886—*continued.**

Countries.	1883.	1884.	1885.	1886.
	oz.	oz.	oz.	oz.
Germany	14,721	17,839	44,292	34,231
Austria-Hungary ...	52,649	53,291	53,484	53,484
Sweden	1,189	643	1,511	2,154
Italy	4,564	4,564	4,564	4,564
Turkey	321	321	321	321
Argentine Republic ...	3,793	3,793	3,793	3,793
Colombia	186,488	186,488	120,918	120,918
Bolivia	3,504	3,504	3,504	3,504
Chili	16,071	16,071	8,357	8,357
Brazil	30,599	30,599	38,699	48,277
Japan	9,321	9,514	8,518	10,703
Africa	34,649	40,177	66,952	69,523
Venezuela	161,449	226,055	226,055	161,353
Canada	46,124	46,124	34,713	32,142
Peru	5,786	5,786	7,264	5,464
China	258,968	300,913	224,898	176,524
The World ...	4,730,810	5,052,917	5,095,537	4,839,041

Value of the world's gold produce, 1883–1886.

1241. According to the figures, the gold raised in the world during 1886, if valued at £4 per ounce, would be £19,356,164; or if at £3 15s. per ounce, it would be £18,146,404. During the four years the value of the whole quantity raised would be £78,873,220 at the former, or £73,943,644 at the latter valuation.

Silver raised in Australasian colonies.

1242. Some years since, a silver mine was worked at St. Arnaud, in Victoria, but after a time it ceased to be remunerative, and the workings were abandoned. Since the establishment of a branch of the Royal Mint in Melbourne, a certain quantity of silver has been extracted annually from the crude gold lodged there for coining, and latterly the whole quantity of silver produced in Victoria has been from that source. It is difficult to obtain reliable information respecting silver produce, as in consequence of the silver being generally associated with lead and other metals, it is found economical to send the ore in a concentrated form to Europe for smelting. For Queensland and South Australia† no definite returns are available; and little or no silver has been raised in Western Australia and Tasmania. The following, so far as is known, are the quantities raised in Victoria, New South Wales, and New Zealand during each of the twenty-five years ended with 1887 :—

* When the figures for any year were not given by Mr. Kimball, those for a previous year have been inserted.

† It is known that in Queensland 2,183 tons of silver lead ore, valued at £80,092, were raised in 1887; 1,631 tons valued at £52,797 in 1886; 2,377 tons, valued at £49,922, were raised in 1885; and 15,519 tons, valued at £224,669, were raised in the previous six years; also that in South Australia 1,620 tons of silver lead ore, valued at £23,349, were raised in the previous ten years ended with 1884.

SILVER PRODUCE IN AUSTRALASIAN COLONIES, 1863 TO 1887.

Year.	Victoria.*	New South Wales.	New Zealand.
	oz.	oz.	oz.
1863	1,098	...	...
1864	5,688	...	...
1865	3,379	...	...
1866	2,348	...	...
1867	78	...	...
1868	5,761	...	...
1869	...	753	11,063
1870	...	13,868	37,123
1871	...	71,311	80,272
1872	8,011	49,544	37,064
1873	14,347	66,997	36,187
1874	11,906	78,027	40,566
1875	21,842	52,553	29,085
1876	26,355	69,179	12,683
1877	19,717	31,409	33,893
1878	22,995	60,563	23,018
1879	23,728	83,164	20,645
1880	23,247	91,419	20,005
1881	20,957	57,254	18,885
1882	20,343	38,618	5,694
1883	22,121	77,065	16,826
1884	27,070	93,660	24,914
1885	28,951	794,174	16,624
1886	26,422	1,015,433	12,108
1887	26,321	177,308 †	20,809
Total	362,585	2,922,299 †	497,464

Value of silver raised in Australasia.

1243. The total quantity of silver raised in the three colonies, according to the table, was 3,782,348 oz., which would represent a value at 4s. per ounce of £756,470; or, at 3s. 6d. per ounce, of £661,392.

Broken Hill silver mines.

1244. The bulk of the silver raised in Australasia is from the Broken Hill mines, situated in New South Wales, at or near the Barrier Ranges, close to the eastern frontier of South Australia. The principal mine is that of the Broken Hill Proprietary Company, which has a capital of £320,000 in 16,000 shares of £20 each, paid up to £19. From the time of the formation of this company on 13th August, 1885 to the 19th October, 1888, the ore treated amounted to 137,997 tons, the total yield of which was 6,500,346 ounces of silver, and 25,233 tons of lead. The dividends and bonuses paid, together with additional shares allotted to shareholders since the commencement, have amounted to a total value of £2,856,000. For the six months ended with October, 1888, the mine

* In Victoria and New Zealand, nearly all the silver produced has been extracted from crude gold.
† Exclusive of silver obtained in the form of silver-lead ore, of which 12,530 tons, valued at £541,952, was raised in 1887; 4,802 tons, valued at £294,485, in 1886; and 11,792 tons, valued at £306,941, in the ten previous years. If allowance should be made for the silver extracted therefrom, the quantity in 1887 would probably be not less than 3 million ounces, and the total up to the end of 1887 not less than 10 million ounces. The Broken Hill mine alone has produced over 6 million ounces. See paragraph 1244.

has paid a dividend of £2 per £20 share (£19 paid up) monthly. The manager of the mine reports that there are more than 700,000 tons of ore in sight, averaging 31 ounces of silver to the ton, and the directors anticipate the time when the present dividends will be doubled.

1245. The next table, with the exception of the figures for Australasia, has also been taken from Mr. Kimball's Mint report for 1887, and shows that the world's production of silver during the four years ended with 1886 was 392,367,408 oz., the largest quantity being raised in the United States, the next largest in Mexico, and the next in Bolivia:— Silver produce of each country.

SILVER PRODUCE* OF EACH COUNTRY, 1883 TO 1886.

Countries.	1883.	1884.	1885.	1886.
	oz.	oz.	oz.	oz.
Australasia † ...	116,012	145,644	839,749	1,053,963
United States ...	35,730,526	37,741,329	39,906,800	39,442,766
Russia	321,099	300,849	499,808	408,428
Mexico	22,868,390	21,080,974	24,835,159	25,521,809
Germany	7,415,159	7,971,216	7,403,588	7,855,505
Austria-Hungary ...	1,565,315	1,584,601	1,617,064	1,617,064
Sweden	50,881	58,370	74,762	99,030
Norway	181,441	205,291	231,422	231,422
Italy	940,443	940,443	940,443	940,443
Spain	1,746,436	1,746,436	1,746,436	1,746,436
Turkey	42,524	42,524	42,524	42,524
Great Britain ...	273,207	259,065	244,504	325,406
Argentine Republic ...	369,633	369,633	369,633	369,633
Colombia	587,781	587,781	309,367	309,367
Bolivia	12,374,188	12,374,188	12,374,188	12,374,188
Chili	5,142,720	5,142,720	5,796,553	5,796,553
Brazil	...	...	84,855	4,532
Japan	415,917	754,051	741,998	798,889
Africa	14,432	7,650	40,949	101,729
France	204,295	189,798	1,639,242	1,639,242
Peru	1,475,607	1,475,607	1,537,673	3,093,539
The World ‡ ...	91,836,006	92,978,170	101,276,717	103,772,468

1246. At 4s. per ounce, the quantity of silver raised in the world during 1886 would be worth £20,754,494; or, at 3s. 6d. per ounce, it would be worth £18,160,182. The quantity raised in the four years ended with 1886 would be worth £77,972,672 at the former, or £68,226,088 at the latter valuation.§ Value of the world's silver produce, 1883–1886.

* See U.S. Mint Report, 1887, pages 266 and 267, where the quantities are given in kilogrammes, which have been converted into ounces on the assumption that a kilogramme is equal to 32·142 oz. troy.

† Exclusive of silver-lead ore, in which the proportion of silver included was not stated. In 1886, the quantity so included probably amounted to not less than 1,000,000 ozs.

‡ British India, which, according to another authority, produced silver to the value of £914,367 in 1883, does not appear to be included.

§ In 1887, according to the 18th Annual Report of the Deputy-Master of the Royal Mint London, page 20, the highest average monthly market price per ounce of standard silver was $46\frac{13}{16}$d., and the lowest was $43\frac{9}{16}$d., the average price for the year being $44\frac{5}{8}$d., or $\frac{3}{4}$d. lower than the average price for 1886, and 4d. lower than that for 1885. The silver in the table, taken as a whole, was probably considerably below the standard.

Gold derived from alluvial and quartz workings.

1247. Of the gold which was raised in Victoria during 1887, 388,857 oz. was obtained from quartz reefs, and 228,894 oz. from alluvial deposits. These figures, as compared with those for the previous year, show a decrease of 27,983 oz. in the yield of quartz reefs, and of 19,462 oz. in that of alluvial workings. The respective proportions of quartz and alluvial gold raised were 63 and 37 per cent. both in 1886 and in 1887.

Value of gold per miner.

1248. The value of gold raised in Victoria 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 went on increasing until 1885, when it reached to £108 15s. 9d. per head. In 1886 the average was £3 17s. 5d. less, and in 1887 £11 18s. 7d. less, than in 1885. The following figures, which have been calculated from the figures supplied by the Secretary for Mines, express this proportion for the last seventeen years:—

VALUE OF GOLD PER MINER,† 1871 TO 1887.

	£	s.	d.		£	s.	d.
1871	93	6	1½	1880	81	18	11¾
1872	93	17	1½	1881	95	11	9½
1873	93	16	2½	1882	95	19	7¾
1874	99	8	3	1883	95	6	3½
1875	104	4	4	1884	106	14	6¼
1876	89	19	6¾	1885	108	15	9¼
1877	82	6	1¾	1886	104	18	4
1878	82	12	11½	1887	96	17	2
1879	76	1	2¼				

Value of gold per alluvial and quartz miner.

1249. 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 ten years:—

VALUE OF GOLD PER ALLUVIAL AND QUARTZ MINER, 1878 TO 1887.

	Alluvial Miners. £	s.	d.	Quartz Miners. £	s.	d.
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	76	4	2	144	9	10
1885	75	17	2	148	19	11
1886	72	11	2½	144	13	11½
1887	68	5	4	125	12	0

* For the number of gold miners at work in 1887, see paragraph 115, Volume I.

† 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. For wages of miners, see Part Interchange *ante*.

1250. The estimated yield of gold in the first half of 1888 was 307,010 oz., as against 291,237 oz. in the first half of 1887.* Twice the first quoted amount would give 614,020 oz. as the estimate for the whole of 1888, or 3,731 oz. more than the quantity actually raised in 1887, and 51,176 oz. less than the quantity raised in 1886. Estimated gold yield, 1888.

1251. Exclusive of dividends paid by a few private companies, respecting which the Mining Department was unable to obtain information, the following are the amounts of dividends paid by gold mining companies in Victoria, in the last two quarters of 1887 and the first two quarters of 1888 :— Dividends of gold mining companies.

DIVIDENDS OF GOLD MINING COMPANIES, 1887–8.

Quarter ended September, 1887	£105,726
„ December, 1887	132,403
„ March, 1888	111,149
„ June, 1888	117,215
Total in 12 months	£466,493

1252. 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 fourteen years :— Steam engines used in mining.

STEAM ENGINES USED IN GOLD MINING, 1874 TO 1887.

	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
1885	1,085 ...	26,627
1886	1,072 ...	26,920
1887	1,080 ...	27,218

1253. The value of gold mining machines of all descriptions, as estimated by the Department of Mines, decreased from £1,797,925 in 1886 to £1,783,406 in 1887. In the latter year, the value of those used in quartz mining was £1,472,874, whilst that of those used in alluvial mining was only £310,532. Mining machinery.

1254. The number of quartz reefs proved to be auriferous, as returned by the mining surveyors and registrars, was 3,831 in 1886, and Auriferous reefs.

* See "Mining Registrars' Reports" for first two quarters of 1887.

3,856 in 1887. 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.

1255. The approximate area of auriferous ground worked upon during the last quarter of 1887 was stated to be 314 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.

1256. It is impossible to obtain an exact statement of the yield o 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 831,375 tons in 1886, and 780,733 tons in 1887. The average yield per ton of these crushings was 9 dwt. 10·31 gr. in the former, and 9 dwt. 9·95 gr. in the latter, year. From similar estimates, extending over a long series of years, and embodying information respecting the crushing of nearly 23,400,000 tons of quartz, an average is obtained of about 10 dwt. 11 gr. of gold to the ton of quartz crushed.

Gold from various matrices.

1257. The following is the estimate of the Mining Department* of the gross and average yield of nearly 39½ millions of tons of the various minerals and drifts from which gold is obtained in Victoria. The quantity of gold included in the estimate is about a fourth of the total yield of the Victorian gold-fields from the period of the first gold discoveries to the end of 1887:—

GOLD FROM VARIOUS MATRICES.

Matrix.	Quantity treated.	Yield of Gold.	
		Total.	Average per ton.
From Quartz Reefs.	tons.	oz.	oz. dwt. gr.
Quartz	23,386,935	12,234,063	0 10 11·09
Tailings and mullock ...	2,187,540	344,370	0 3 3·56
Pyrites	119,364	252,241	2 2 4·70
From Alluvial Workings.			
Washdirt	13,392,843	998,627	0 1 11·79
Cement	380,388	88,326	0 4 15·45
Total	39,467,070	13,917,627	0 7 1·27

* *Mineral Statistics* 1887, Statement No. 6.

Deep shafts.

1258. The ten deepest shafts in the colony* are those of the Magdala (now Moonlight) Company, Stawell, 2,409 feet; Victory and Pandora, Sandhurst, 2,300 feet; Lansell's 180 mine, Sandhurst, 2,297 feet; Victoria Quartz Company, Sandhurst, 2,166 feet; New Chum and Victoria, Sandhurst, 2,126 feet; North Old Chum Company, Sandhurst, 2,050 feet; Great Extended Hustler's Company, Sandhurst, 2,040 feet; Newington Company, Pleasant Creek, 1,940 feet (not working); New Chum United Company, Sandhurst, 1,922 feet; and New Chum Railway Company, Sandhurst, 1,920 feet. It thus appears that the greatest depth to which the earth's crust has been pierced in this colony is a little over 2,400 feet. This, however, as is pointed out by the Secretary for Mines, is little more than half the depth of a bore which has been put down by the Prussian Government in search for coal at Schladebach, near Leipsic, the bore in question being the deepest in the world, viz., 4,560 feet.*

Gold-mining leases.

1259. Since the first issue of gold-mining leases, the total number granted has been 16,588, giving the right to mine over an area amounting in the aggregate to 315,460 acres. Of these leases, 534, for 12,372 acres, were granted in 1887, and 1,570, for 34,508 acres, were in force at the end of that year.

Minerals other than gold existing in Victoria.

1260. Silver, tin, copper, antimony, lead, and iron have been mined for at different times in Victoria, but little, if any, of these ores were raised in 1887. The silver obtained in that year was, as has already been stated, extracted at the mint during the process of refining the gold. Many attempts have been made to mine for coal, but the seams hitherto worked have been too thin to yield a profit; thicker seams, however, have been discovered at the Moe and at Mirboo, in Gippsland, and it is anticipated that valuable coal-fields will be opened up in those places.† The following metals also exist in Victoria, but up to this date have not been discovered in paying quantities:—Bismuth, cobalt, cadmium, manganese, molybdenite, osmiridum, and zinc-blende. Various limestones and marbles, as well as kaolin and other clays, also exist, and have been worked to a certain extent.

Coal raised in Australasian colonies.

1261. At the present time, the coal-producing colonies of Australasia are New South Wales, Queensland, Tasmania, and New Zealand.† In these 3,747,693 tons of coal were raised in 1887, but four-fifths of this quantity came from New South Wales. The following are the quantities returned as brought to the surface in each of those colonies during a series of years:—

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* See Reports of Mining Registrars for the Quarters ended 30th June, 1887 and 1888, page 6.

† So far as is known, only 16,510 tons of coal have been raised chiefly from Crown lands, in Victoria up to the present time. Of this, 3,094 tons was obtained in 1887 by the Moe Coal Mining Company.

Coal raised in Australasian Colonies, 1876 to 1887.

Year.	Tons of Coal raised in—			
	New South Wales.	Queensland.	Tasmania.	New Zealand.
1876	1,319,918	50,627	6,100	...
1877	1,444,271	60,918	9,470	...
1878	1,575,497	52,580	12,311	162,218
1879	1,583,381	55,012	9,514	231,218
1880	1,466,180	58,052	12,219	299,923
1881	1,769,597	65,612	11,163	337,262
1882	2,109,282	74,436	8,803	378,272
1883	2,521,457	104,269	8,872	421,764
1884	2,749,109	129,980	7,194	480,831
1885	2,878,863	209,698	5,334	511,063
1886	2,830,175	228,656	10,391	534,353
1887	2,922,497	238,813	27,763	558,620

Coal raised in various countries.

1262. The following is a statement of the quantity of coal raised in various countries during one year, the returns being generally those for 1884, 1885, or 1886:—

Annual Production of Coal in various Countries.*

	Tons.
United Kingdom	157,518,482
United States	106,780,033
Germany	58,020,612
France	20,014,597
Belgium	17,253,144
Austria-Hungary	17,191,500
Russia	4,500,000
British India	4,000,000
China	4,000,000
Australasia (1887)	3,747,693
Canada	2,091,976
Spain	1,000,000
Japan	900,000
Sweden	250,600
Italy	220,000
Chili	50,000
Other Countries (estimated)	8,000,000
Total	405,538,637

Leases for other minerals.

1263. During 1887, 17 leases of Crown lands were issued, conferring the privilege of working for minerals and metals other than gold; whilst at the end of the year the number and area of leases in force in Victoria were as follow:—

* The figures in this table, except those for Australasia and Canada, have been derived from the *American Almanac and Treasury of Facts*, 1888, p. 40, by Ainsworth R. Spofford, Librarian of Congress.

Leases for Minerals and Metals other than Gold, 1887.

Metals and Minerals.	Leases in force at end of 1887.	
	Number.	Area.
		acres.
Antimony	2	61
Coal	20	9,393
Copper and the ores of copper	3	275
Copper, silver, and lead	1	138
Infusorial earth	1	94
Ironstone	1	320
Lead	2	241
Lead, copper, and coal	1	233
Lignite	1	415
Slate	10	926
Tin and the ores of tin	9	1,058
Total	51	13,154

1264. The leases in force at the end of 1887, as shown in the table were greater by 7, and the area comprised therein was greater by 2,827 acres, than at the end of 1886. The leases for coal mining increased from 15 to 20, those for tin mining from 6 to 9, but those for copper mining fell from 6 to 3. It should also be mentioned that besides leases there were 167 licences issued during the year to search for metals and minerals other than gold, of which 148 were for coal. Leases for other minerals, 1886 and 1887.

1265. 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 1887 :— Minerals other than gold raised.

Value of Minerals and Metals other than Gold, 1851 to 1887.

Name.	Estimated Value.		
	1851 to 1886.	Year 1887.	Total.
	£	£	£
Silver*	77,325	4,600	81,925
Tin	665,290	420	665,710
Copper and copper ore	190,922	...	190,922
Antimony	169,295	...	169,295
Lead	5,326	...	5,326
Iron	12,535	...	12,535
Coal	17,506	4,230	21,736†
Lignite	3,542	...	3,542
Kaolin	7,444	...	7,444
Flagging	67,177	3,427	70,604

* Of late years the silver produced has been extracted from gold in the process of refinement at the Melbourne branch of the Royal Mint.

† The quantity of coal raised was 16,510 tons, inclusive of 3,094 tons raised by the Moe Coal Mining Company on private lands in 1887.

VALUE OF MINERALS AND METALS OTHER THAN GOLD, 1851 TO 1887—*continued.*

Name.	Estimated Value.		
	1851 to 1886.	Year 1887.	Total.
	£	£	£
Slates	4,356	3,105	7,461
Gypsum	7	...	7
Magnesite	12	...	12
Ores, mineral earthy clays, &c. ...	10,901	...	10,901
Diamonds	108	...	108
Sapphires, &c.	630	...	630
Total	1,232,376	15,782	1,248,158

Miners for minerals other than gold.

1266. 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 1887. The total shows a falling-off of 10 as compared with 1886 :—

MINERS FOR MINERALS OTHER THAN GOLD, 1887.

	Number of Miners.
Coal	35
Granite	12
Infusorial earth	2
Iron	4
Kaolin	8
Lead	3
Lignite	6
Silver and lead	2
Slate and flag	72
Tin	26
Total	170

Revenue from gold-fields.

1267. The revenue derived from the gold-fields amounted to £17,055 in 1885–6, and £14,584 in 1886–7. The amount in the latter year was made up of the following items :—

REVENUE FROM GOLD-FIELDS, 1886–7.

	£
Miners' rights	5,309
Business licences	248
Rents for leases of auriferous and mineral lands ...	6,531
„ mining on private property	1,397
Water-right and searching licences...	1,099
Total	14,584

State aid to mining.

1268. The State aid to the mining industry during the year 1886–7, including the cost of the Mining Department, may be set down at £103,654, as compared with £71,462 in 1885–6.† The former sum is

* For number of gold miners, see paragraph 115, Vol. I.
† See page 155 of the first volume of this work.

made up of £24,805, cost of the Mining Department and Mining Boards; £72,369 to assist miners in prospecting operations, and including the cost and working expenses of diamond drills; and £6,480 for coal-boring, geological and underground surveys, cutting tracks in unexplored regions, &c. The most important of these is the second item, usually known as the "Prospecting Vote," as it is a direct encouragement to those engaged in mining operations. A few years ago the expenditure under this head was only £20,000; but it has since been increased to £100,000—the actual expenditure in 1887-8 being £99,180.

Loans to mining companies.

1269. During the period from 1875–6 to 1879-80, the sum of £21,050 was lent to mining companies, but only £1,237 has since been repaid. Of the balance outstanding (£19,813), as much as £15,813 has been written off as non-recoverable.

Diamond drills.

1270. In 1885–6, £29,944, and in 1886–7, £21,000, was expended on the purchase and working (including office expenses) of diamond drills, as against which no set-off whatever appears in the revenue returns of the latter, and only six shillings—"for the use of boring rods"—in those of the former, year.

Operations of diamond drills.

1271. Of the fourteen diamond drills belonging to the Mining Department, eight were engaged in alluvial prospecting, four in coal prospecting, one in boring for water, and one was idle at the end of June, 1888. At the same date the two Tiffin water augers belonging to the Government were engaged in alluvial prospecting.

Mining on private property.

1272. An Act to legalize mining for gold and silver on private property,* and to compensate the owner and occupier thereof for the damage sustained by reason of the land being taken, or of their being deprived of possession of the surface thereof, in consequence of mining operations, came into force on the 24th November, 1884. Between that date and the 31st December, 1886, 435 leases were issued under it, covering an area of 85,080 acres; and during the year 1887, 124 leases were issued, covering an area of 23,090 acres.

Value of mining produce.

1273. The estimated value of the produce raised from Victorian mines and quarries in 1887 is summarized as follows :—

VALUE OF MINING PRODUCE, 1887.

	£
Gold	2,471,004
Other metals and minerals	15,782
Stone from quarries	174,839
Total	£2,661,625

* The Mining on Private Property Act 1884 (48 Vict No 796).

Agricultural, pastoral, and mining produce.

1274. The estimated value of the agricultural, pastoral, and mining produce raised in Victoria, during each of the last fourteen 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 pastoral produce was greater than that of the other two industries combined :—

VALUE OF AGRICULTURAL, PASTORAL, AND MINING PRODUCE, 1874 TO 1887.

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	10,203,914	3,357,252	20,933,309
1884 ...	6,565,527	9,887,229	3,228,738	19,681,494
1885 ...	7,118,388	9,049,679	3,091,244	19,259,311
1886 ...	7,260,735	8,911,336	2,839,120	19,011,191
1887 ...	7,328,654	8,644,843	2,661,625	18,655,122

Agricultural pastoral, mining, and manufacturing produce.

1275. 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.§ On the assumption that the value of manufacturing produce has increased since the census in the same proportion as the number of establishments, or by 16 per cent., the value in 1887 would be £6,250,400, which amount being 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 that year, amounting in the aggregate to 24,905,522.

Patents.

1276. The patents for inventions applied for in 1887 numbered 676, or 191 more than in 1886, and a larger number than in any previous

* For prices of agricultural produce in different years, see table following paragraph 1167 *ante*.
† The pastoral produce referred to is that derived from the live stock kept by farmers as well as that kept by graziers and squatters.
‡ Including the value of stone raised from quarries.
§ See paragraph 1228 *ante*.

year. Since 1854 the total number of patents applied for has been 5,565.

1277. The Victorian Copyright Act (33 Vict. No. 350) came into force in December, 1869. Copyrights—especially those for literary productions—have been increasingly numerous during the last five years, during which period they averaged about 551 per annum; whereas prior to 1883 the largest number registered was 158. The following copyrights have been registered since the passing of the Act:— Copyrights.

COPYRIGHTS, 1870 TO 1887.

Subject of Copyright.	Copyrights Registered.		
	Prior to 1887.	During 1887.	Total.
DESIGNS.			
Articles of manufacture, chiefly of—			
Metals	265	29	294
Wood, stone, cement, or plaster ...	51	7	58
Glass	9	...	9
Earthenware	6	3	9
Ivory, bone, papier-maché, &c. ...	38	10	48
Woven fabrics	15	2	17
Miscellaneous	17	...	17
LITERARY PRODUCTIONS.			
Literary works	2,705	421	3,126
Dramatic „	97	10	107
Musical „	95	5	100
WORKS OF ART.			
Paintings	5	1	6
Drawings	23	3	26
Engravings	1,062	63	1,125
Photographs	1,046	4	1,050
Sculpture	3	2	5
Total	5,437	560	5,997

1278. 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 1887, 1,669 trade-marks were submitted for registration, and 1,181 were registered. During the year 1887, the number submitted was 236—or 7 less than in 1886, and the number registered 168—or 6 more than in 1886. Trade-marks.