

ANNUAL REPORT
OF THE
DEPARTMENT OF AGRICULTURE
& STOCK

1927 - 1928

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INDEX

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DEPARTMENT OF AGRICULTURE
AND STOCK

FOR

THE YEAR 1927-1928.

PRESENTED TO PARLIAMENT BY COMMAND.

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INDEX.

	PAGE.		PAGE.
Agricultural Chemist, Report of	81	Maize Improvement	44
Agricultural Instructors' Reports	26	Milking Machines	63
Agriculture, Report of Director of	19	Northern Division, Report of Agricultural In-	
Analysis of Grasses, &c.	104	structor	35
Analysis of Soils	86	Northern Pig Board	46
Animals and Birds Acts	14	Paspalum Pasture Plots Analyses	95
Bacteriologist, Government, Report of	148	Paspalum Pasture Renovation Experiments	36, 42
Banana Insect Pests	73	Pasture Improvement	41
Bananas	56	Pathological Investigations	78
Blackleg Vaccin	150	Peanuts	21
Botanical Work	10	Pest Destroyers	116
Botanist, Government, Report of	71	Pest Destroyers Registered	134
Brands, Report of Deputy Registrar of	154	Pig Raising	6, 45
Butter	59	Pineapples	56
Callide, Cotton Research Station	53	Pleuro-pneumonia	145, 148
Central Division, Report of Agricultural Instructor	29	Pleuro Virus	148
Cheese	61	Pools	14
Chemistry Branch, The	11	Potatoes	21, 38
Citrus	56	Poultry Raising	7
Citrus Insect Pests	74	Poultry (Report of Instructor)	47
Contagious Mammitis Vaccin	149	Publications	15
Co-operative Associations	14	Quarantine Act (Stock)	145
Co-operative Associations, Report of Registrar of	140	Rice	25, 39
Cotton	7	Roma State Farm	23
Cotton Grading	53	Seed Maize Improvement	44
Cotton, Pure Seed Propagation	53	Seeds	112
Cotton Specialist's Report	49	Seeds, Fertilisers, Pest Destroyers, and Stock	
Crops, Experimental and Demonstration Plot Work	30	Foods Investigation Branch	12
Dairying	5	Seeds, Germinating Tests	121
Dairying, Report of Supervisor of	59	Seeds, Stock Foods, Fertilisers, and Pest	
Deciduous Fruit and other Pests	74	Destroyers Investigation Branch Report	112
Dingo and Marsupial Destruction	14	Seed Wheat Improvement Scheme	42
Dipping Fluids	143	Sheep and Wool Instructor's Report	153
Entomological Division, The	10	Slaughtering Act	146
Entomologist, Report of Chief	73	Soil Analyses	86
Fertilisers	115	Sorghum Varieties	33
Fruit	9	South Burnett Tick Cleansing Area	144
Fruit Culture, Report of Acting Director of	56	Southern Division, Report of Agricultural Instruc-	
Fruit Pests, Deciduous	74	tor	26
Germinating Capacity of Seeds Examined	113	State Farms	4, 22
Gindie State Farm	22	Stock Division, The	12
Grading of Dairy Produce	60	Stock Foods	81
Helidon Tick Cleansing Area	143	Stock Foods Examined	122
Herd Testing	68	Stock Movements	145
Home Hill State Farm	24	Stock, Report of Chief Inspector	143
Horses Exported	143	Stock Sales	146
Insect Pests	75	Sugar Industry, The	5
Kairi State Farm	24	Tableland Maize Improvement Scheme	45
Lactic Culture	150	Tick Fever	148
Library	16	Tobacco	37
		Veterinary Surgeon, Government (Townsville),	
		Report of	152
		Wheat Improvement	41

REPORT OF THE DEPARTMENT OF AGRICULTURE AND STOCK FOR THE YEAR 1927-28.

TO THE HONOURABLE THE SECRETARY FOR AGRICULTURE AND STOCK.

SIR,—I have the honour to present herewith my report for the year ended 30th June, 1928.

Most agricultural districts and every important branch of agriculture continue to make steady progress. On all sides there are indications of healthy expansion, and a general improvement in the agricultural situation within the State marked the period under review. This was due to bountiful and well-distributed rains over most of the farming areas.

Certain districts, however, suffered reverses as a result of an excessively wet season. Serious floods, attended with regrettable loss of life, occurred in the Central Division. Besides the loss of valuable lives, which I recorded with deep regret, much material damage and destruction of live stock occurred in some of the flooded country. The season otherwise was generally favourable.

In the Southern Division autumn rains encouraged an extension of cropping in the wheat areas, particularly on the Darling Downs. Early winter precipitations were lighter throughout the Downs and the Maranoa, with the result that the first promise of a good wheat germination was not entirely fulfilled. The country immediately west of the main Dividing Range was more favoured, beneficial spring rains ensuring satisfactory yields.

The months of October, November, and December were remarkable for a succession of very wet weeks which delayed harvesting and December had nearly ended before the last of the grain was in the bag. Though the continued rains had given rise to some apprehension, ultimate yields proved that the damage to the wheat crop was almost negligible. As a matter of fact, early estimates were, in many instances, well below actual production.

Wheat pool deliveries amounted to 3,575,000 bushels, and when due allowance is made for reservations for seed and feed the 1927 harvest was little less than four million bushels.

Other crops in the Southern Division responded well to the favourable season, though some suffered later from excessive wet weather. The early maize harvest was the heaviest for some years. Late planted crops were affected by serious floods in some of the maize-growing

regions. Estimates, in consequence, were not always realised. A visitation of mice caused a further reduction in the aggregate maize return which was approximately four million bushels.

Agricultural operations in the Central Division were interrupted or retarded by heavy and continuous summer rains which exceeded the average falls in most of the farming districts. Otherwise the season in Central Queensland was generally favourable and satisfactory yields of cotton and other crops were obtained. Earlier forecasts were not fulfilled on account of excessive soil saturation and insufficient sunshine during the growing period.

In the Northern Division similar conditions prevailed in the agricultural areas.

The rapid revival from seasonal reverses in some of the farming districts, to which some references were made in my last report, again demonstrated the remarkable recuperative powers of the State.

Among the first grain harvested for the year on the Darling Downs was a field of "Novo" wheat which was propagated and distributed the previous year under the departmental wheat propagation plot scheme. The yield, 40 bushels, was an early indication that the season was to be one of production beyond the ordinary. Many crops returned from 40 to 50 bushels an acre, the highest recorded yield being 66 $\frac{2}{3}$ bushels. In obtaining these results no fertilisers whatever were used.

The quality of Queensland wheat was proved in competition with grain from every State at the last Royal Show in Sydney where Downs growers gained a substantial share of the honours.

From results obtained it is evident that the wheat-breeding work at the Roma State Farm is having an important influence on the establishment and extension of the wheat industry in this State. It is also apparent that as a fodder and grain crop wheat is receiving much more attention from Queensland producers.

The departmental wheat propagation scheme, in which the Wheat Board is also interested, is proving its value generally as a means of bringing improved varieties into cultivation, and also

maintaining the types commonly cultivated in this State. An encouraging aspect of this work was the success achieved by growers who secured seed of varieties bred on the Roma State Farm and which was distributed by the Department. Details of this important work are set out in another section of this report.

It is noteworthy that the comparatively heavy yields on the Downs, which were produced without the addition of fertilisers, were largely the result of the more general application of better methods of cultivation.

Good progress is being made in the development of the new strain of "Durum" maize on the Atherton Tableland, to which I referred at length in my last report. By careful selection work, in which the botanical and other characteristics required in seed plants are studied very closely, a special type of grain is gradually being evolved. It is now possible to extend this propagation work on a thousand-acre unit basis. The aim in view is to provide sufficient seed of this new maize to meet fully Northern Tableland requirements.

Progressive experimental and other investigational work on tobacco cultivation in the North is proceeding satisfactorily.

Peanut production is approaching the limit of consumption and efforts are now being directed towards encouraging the more general use of the "nut" as a dietary article; and also a wider exploitation of its oil properties.

The provision of storage facilities and the installation of modern machinery at an approximate cost of £50,000 is engaging the attention of the Peanut Pool Board at Kingaroy. This is an indication of the progressive spirit animating those associated with this new industry.

As the result of experimental work in the Northern Division it has been ascertained that potatoes harvested in September may be kept in cold storage for five months at a temperature ranging from 34 to 40 deg. F. and planted after the wet season in the following April. This suggests the possibility of producing a winter potato crop in North Queensland. It has been ascertained, too, that potatoes grown on the temperate tablelands are suitable as seed for our tropical coastal regions, also that a reciprocal arrangement in respect to a continuity of seed supplies in the North is quite practicable.

Good results are accruing from the operation of the scheme for the improvement of farm horses. Since its inception in 1923-24 over fifteen hundred services have been recorded. The State stallions have left their mark in every district in which they have been utilised and many of their stock have already won distinction in the show ring. Draught horses of

good type still command good prices throughout the Commonwealth and the desirability of improving the breed within the State by continuing this useful service to the farmer is evident.

STATE FARMS.

The special purposes of their establishment having been achieved it was found in the course of the year advisable to close two of the State farms—Hermitage and Warren.

At Gindie the welcome spring rains were a prelude to a good season, and the natural pastures revived quickly. The water supply has been improved. The cattle stud has been strengthened by recent valuable purchases and many well-known Shorthorn families are represented in the herd. Buyers of bulls from the farm continue to express appreciation of the quality of the animals bred on Gindie.

The Suffolk Punch stock is also in demand, particularly in the sugar districts, where this breed of horse is well suited to plantation work. The Clydesdales and other stock on the farm are well conditioned and are giving satisfactory service.

Summer crops were grown with good results, as much as 32 tons of green fodder (Saccaline) being harvested. Fodder conservation in the form of hay and ensilage was also practised on the farm.

At Roma the season was unfavourable to the production of winter cereals and consequently the propagation and supply of pure seeds, and the continuity of wheat breeding and selection could not be carried on with the customary degree of satisfaction. The conditions called for very thorough cultivation in the propagation plots in order to make the fullest use of the small supply of moisture available. Matured grain limited in quantity, but good in quality was taken off these sectional plots. Conditions generally, however, were much more satisfactory than those of the previous season, and the October rains ensured germination and early development of the farm crops.

Extension work is being carried on in the Mount Abundance area on a wheat propagation plot of 100 acres. It is proposed to use the resultant grain as a pure seed source of supply for district settlers. In addition to bulk seed propagation the extension work at Roma covers specifically the testing of a large number of crossbred wheats from which it is expected to obtain plant types adaptable to the heavier soils in that locality.

General experimental work of a practical nature included the testing of peanut and cotton varieties and miscellaneous summer crops.

Interesting plant breeding work was continued with beans, peas, and vines,

At Kairi the weather was somewhat erratic throughout the year and the rainfall was less than the average in that part of the Atherton Tableland. Necessary developmental work was added to the ordinary farm operations. Close attention is being given to stock improvement and milk production. The dairy herd gave satisfactory returns, and the farm continues to supply a keen local demand for stud pigs.

At Home Hill sugar-cane on experimental plots and under ordinary field conditions cut an average of 45.22 tons an acre from plant crops. The average acreage yield of maize was 31 bushels. Experimental and other routine work was continued in respect of numerous other crops, including tropical fruits, peanuts, and rice.

The sectional reports incorporated herein reveal the extent of the progress made in the course of the year and the results of the more systematic development of agriculture and stock raising, which is becoming characteristic of the industry in this State.

THE SUGAR INDUSTRY.

A survey of last year's operations generally reveals the present position of the sugar industry in Queensland. According to the Government Statistician, the 1927 crop was the best yet harvested. The Statistician's figures for the term are not yet available, so the results now given must be regarded as approximate only. The present embargo on imported sugar expires next month, and it has been determined that the former arrangement shall be renewed for a further term of three years as from August, subject to the same prices and conditions that obtain under the existing embargo. This action was essential to the Queensland industry, and its renewal gave the greatest satisfaction to all sections employed in it.

In 1927 the total area under cane was just about 300,000 acres, an acreage considerably in excess of that of the previous year. The area from which cane was crushed was 209,636 acres, also an excess over the 1926 figures by 22,450 acres. The total tonnage of cane harvested was 3,555,827 tons, from which it is estimated that approximately, 485,745 tons of 94 n.t. raw sugar were extracted. This yield was much higher than that of 1926, exceeding it by 96,000 tons. The acreage yield was about 16.96 tons, as compared with 15.45 tons per acre in 1926. The sugar yielded per acre, 2.32 tons, was also better than that of the previous year. The quantity of cane required to make 1 ton of sugar was about 7.3 tons, which was the lowest on record, the commercial cane sugar in the product last year being particularly good. In this factor much

improvement has been shown in recent years, which is due to the higher efficiency of the raw sugar mills, better varieties of cane, the regulation of cane prices, and the work of the Bureau of Sugar Experiment Stations. The excess of sugar produced over home needs amounted to 152,400 tons. The percentage which went into home consumption was 68.8181. The estimated consumption in the Commonwealth is somewhere around 333,000 tons per annum. The molasses output was 15,855,804 gallons, and it is anticipated that, with the power alcohol plant operating at Sarina, this will be an important industrial and economic factor in the near future.

The present sugar season has opened out very promisingly, and it is expected that the crop will be about the same as last year. Grub damage, however, has been severe, particularly in the North, and grubs have also appeared in districts hitherto regarded as quite free from the pest. Their prevalence this year is due largely to congenial seasonal conditions. The Bureau of Sugar Experiment Stations, which is part of the excellent organisation which is characteristic of the whole industry in Queensland, is extending somewhat its beneficial influence. Its staff of trained men has been largely increased, and the services of student scientists who were sent abroad as the holders of Travelling Scholarships are now available to the growers and millers. Of the travelling scholars two, Messrs. Bell and Bennett, whose work has been in cane pathology and sugar technology respectively, are now actively employed. A third, Mr. Kerr, whose oversea studies have taken in soil physics and chemistry, has also returned.

The propagation of new seedling canes is being carried out on an extensive scale, and this activity is of the utmost importance to the farmers. The new canes are, of course, tested for their commercial value as well as to their resistance to disease.

In respect to general educational guidance, the Queensland sugar-grower has very little to complain about, and probably no primary industry in Australia is so well advanced along the lines of scientific organisation. This is as it should be, and, in fact, the sugar-growers have set a high standard and an impressive example to farmers in the other branches of rural enterprise.

DAIRYING.

In weather the industry was well favoured throughout the year, and its prosperity is reflected in the records of production for the term. In aggregate value it now ranks third on the list of our great primary enterprises.

Far more interest is now taken in herd testing as a result of the efforts of the Department to encourage the breeding of high-class dairy stock. Through the Dairy Cattle Improvement subsidy scheme there exists a definite demand for approved dairy sires, and this has acted as an incentive to breeders of stud stock to give closer attention to the production records of their herds. Only a small proportion of pure-bred cows were, however, tested in the course of the season, but there are signs of a broader appreciation of the soundness of the practice of systematic testing and breeding from animals possessing approved production records. The scheme provides a ready means of herd improvement, and it is satisfactory to observe that there is an increasing number of farmers seeking to avail themselves of its advantages.

The majority of dairy farmers are aiming to increase the quantity of their output, and are making sustained efforts to keep it at a uniformly high standard.

The quality of Queensland butter has decidedly improved, and this was noted particularly in the course of the term under review. This satisfactory position is due largely to a general improvement in farm practices and factory processes. The modernisation of manufacturing machinery was also a factor in this advance to higher grades. Most factory directorates are realising that, to meet trade requirements for a standard-quality product, it is necessary to install the best engineering equipment available.

The Australian brand, "Kangaroo," is now recognised as the hallmark of quality in export butter.

Cheese standards were also maintained by a number of factories throughout the season.

In addition to the regular work of grading dairy produce and advising factory managements in regard thereto, special attention was given by officers of the Department to matters relating to moisture content of butter and the misuse of preservatives.

The Department has continued to emphasise strongly that the three main factors in the success of dairying are herd testing, the use of approved dairy sires and the provision of fodder. In progressive movements it is recognised, however, that the immediate response is often disappointing, not because of active opposition, but of the apathy of those whom it is sought to benefit. In rural industries partial isolation is largely accountable for this indifference and apparent disregard for the advantages of co-operative effort.

The herd testing activities of the Department now cover a vast area, extending from the southern border to the far North, and the efforts of our officers have been responded to by enthusiasts in all portions of the State where the industry is established. The current testing period has so far been the most successful since the inception of the work.

Systematic fodder conservation is not as general as it should be, though there is evidence of a wider recognition of the importance of this practice and its place as a factor in the internal economy of the State.

Transport services are yearly becoming more efficient. The rail motors provided by the Railway Department have been used extensively and satisfactorily for the rapid carriage of cream in the districts which they serve.

The technical educational work of the Department has been responded to readily by factory staffs and others concerned. The certification of butter and cheese makers has been responsible largely for raising factory standards. A successful course of instruction for dairy operatives was held in the course of the year. These short schools of instruction are producing good results in the factory workers' better appreciation of the closer relationship of science with industry. Factory managements, through their outstanding success in various competitions within the Commonwealth and oversea, demonstrated once more the suitability of Queensland pastures and their own efficiency in manufacture.

The report of the Senior Grader incorporated herein indicates the high standard attained in Queensland by both butter and cheese. Excessive rains and consequent bad roads made it difficult, however, to maintain these standards on the same level uniformly throughout the season.

The estimated total quantity of butter manufactured for the year was 69,482,651 lb. Cheese totalled 14,000,998 lb., and condensed milk 6,801,896 lb.

The Senior Herd Tester reports that the number of herds submitted to examination in the course of the term was 300 as against 153 the previous season. The actual number of cows tested was 10,529.

PIG RAISING.

There is a slow but steady increase in the number of pigs kept. The present estimate is that there are no fewer than 200,000 in the State. Proportionately, the position of the industry in Queensland compares favourably with the position in other States.

The eight bacon factories in Queensland operated fully throughout the year. The plants are up-to-date in every respect, and slaughtering is carried out under modern and humane conditions.

The Northern Pig Board is now well established and is working successfully along co-operative lines.

The intensive educational campaign, initiated by the Department, on pig breeding, feeding, and marketing is bearing fruit, and an immediate result is seen in the improved type of baconers now coming forward. A successful pig club scheme is also part of this educational work. A school of instruction for pig raisers—the fore-runner, no doubt, of many similar assemblies—was also held in the course of the year.

A Pig Industry Committee, functioning as a branch of the Australian Pig Industry Council, was formed in the course of the term with the object of stabilising and regulating the industry. Useful work has been attempted by this body, though much remains yet to be done to effectively organise the several sections of the industry.

Average values for marketable pigs of all descriptions were lower than in former years. There is a prospect of early improvement in prices.

Efforts to trace diseased stock back to the farms whence they came—and, where possible, to the farms where they were bred—were continued during the year. Compulsory fire-branding of all animals trucked for treatment at co-operative factories is of assistance in making this work practicable.

The demand for fresh pork has increased both on the local and interstate markets. Limited supplies and the difficulty of securing refrigerated space on interstate steamers are difficulties against which the trade has to contend in the effort to extend business beyond the border.

The value of sound methods of breeding and feeding, better stock, higher standards, and other points in payable pig keeping, are kept constantly before the farmer, and his response is reflected in the generally improving quality of consignments to the factory.

POULTRY.

Poultrymen display a general tendency to increase the size of their flocks, and other farmers, who should be more interested in this branch of husbandry, are now manifesting a broader understanding of its place in rural

activities. This is more pronounced among orchardists and dairymen. On some fruit lands poultry keeping is an economical means of weed and pest control, besides adding to soil fertility. With the dairyman a flock of fowls is very useful as a means of turning what would otherwise be waste products—such as surplus skim milk and crop gleanings, whether green or grain—into profitable account, and many dairy farmers are finding this out.

There is every reason to believe that the recent increase in flocks and production will be sustained, and efforts to stabilise the industry are being continued.

Egg prices are still subject to the wide range of fluctuation experienced in former years, but they are now being kept within a more restricted radius.

Egg export is increasing in volume, and it is anticipated that the quantity available for overseas markets will this year be doubled. A closer study of market disposal of surplus production, which is rapidly becoming a problem in the industry, has become a necessity.

Little has been done in the way of exploiting table poultry possibilities, and an attempt is being made to interest producers in this channel of trade.

Advantage was taken of the bountiful maize crop to feed more of this grain to fowls, and this suggests the possibility of extending a steady minor market for the grain grower.

In the course of the year the whole industry was marked by an all-round activity; the extension of existing hatcheries and the establishment of new ones should bring about much greater development. This expansion is largely due to the attention given to the industry by the Department, under the ægis of which an intensive educational campaign has been carried out, while the economics of the industry have not been overlooked.

COTTON.

A very limited local demand for Queensland cotton marked the season under review. The situation was saved by outside market values, and on present appearances Queensland cotton will obtain prices in Liverpool that, coupled with the Commonwealth bounty, will give returns sufficiently high to make cotton-growing profitable where average yields have been gathered.

The prices realised for last season's crop which was sold in Australia, and which was the first one controlled by the Cotton Board, gave growers confidence in the future of their enterprise. They

were assured that a good market awaited their produce of this season. A reawakened enthusiasm was followed by an increased planting in the main cotton-growing areas where profitable returns for the preceding season's output had been received. Growers in other districts, where planting had formerly been restricted by seasonal adversity, came back to cotton, and generally a wave of optimism spread through the districts in which the crop is cultivated. Unfortunately the early hopes for profitable returns were not fulfilled. A lack of a prospective market caused the Australian spinners to advise the Cotton Board, soon after the crop was planted, that they would not be able to use any Queensland cotton. In explanation of this contradiction of early advices, it was stated that heavy importations of cotton cloth had checked the demand for Australian-spun yarns. In addition to this factor, the abnormally large crop in the United States in the season of 1926 forced world values for cotton, of the same varieties, grades, and condition as that produced in Queensland, down to a point at which yarns could not be profitably spun.

A committee, representative of all parties concerned in cotton-growing and manufacture in Australia, has placed a comprehensive scheme for the development of both the production and spinning sides of the industry before the Federal authorities. If the provisions of this committee's report are made effective a keen demand for Queensland cotton will develop, and at prices likely to be profitable to the grower.

Arrangements, which it is believed will prove satisfactory, have been made for the overseas disposal of this season's crop. Advices have been received that in Liverpool our cotton enjoys a reputation for good grading, and that our best lint is being used by lace manufacturers.

Present prospects of price maintenance are good. Advices from abroad indicate that probably only an average crop will be harvested this year in the United States. If that proves to be so, then it may be reasonably expected that the prices ruling now will continue for over the greater portion of next season's harvest in Queensland. The world's consumption of cotton continues on such a scale that at least average crops must be produced in the United States to hold down values to existing levels. Anything less than average will raise appreciably cotton prices. The prospect of profitable returns for our next season's crop, therefore, looks attractive.

A most unusual combination of variable weather conditions was characteristic of the season under review. At one period nearly every

section of the cotton belt gave promise of excellent yields. Very heavy rains were experienced at the critical stage of development and again during harvest time, with the result that both yields and quality were seriously reduced. Conditions suitable for the establishment of an early, well-prepared seed bed produced by good June rains existed in nearly every locality. The general standard of preparation and tillage left little to be desired. Good planting rains fell in mid-September in some of the Northern districts, and general rains occurred in October. Good strikes were obtained in nearly every district in the cotton belt, and with the amount of available moisture, excellent growth was made on all classes of soil. There was a prevailing dryness in most sections in November, and this toughened plant growth and permitted thorough cultivation. During this period conditions were conducive to a demonstration of the advantages of proper thinning and spacing of plants. The tendency towards the planting of larger acreages made this an operation of great importance, and practical demonstrations of correct methods must impress growers with the high economic value of sound field practice. Satisfactory weather conditions continued until February, when the wet season set in, lasting until April. This series of heavy rains culminated in some districts in serious floods. As a result of heavy and continuous falls at picking time the quality of lint was lowered and the weight of seed cotton reduced to a marked extent. Conditions in May were more favourable for harvesting.

Interest in the Southern district in the crop has waned on account of seasonal setbacks. Only about 700 acres were planted in the country below the Main Range, but yields were sufficiently satisfactory to form an opinion that, with a return of good seasons, growers may again be induced to regard cotton as a cash crop that they cannot afford to leave out of their field plans. Heavy and continuous rainfall was responsible for reduced yields in nearly every division of the cotton belt.

Yields in the Callide Valley have, as a whole, been equal to, or better, than those of previous years. An interesting attempt at ratooning was made in one section of the Valley, but the results were unprofitable.

Satisfactory growing conditions prevailed in most sections of the Dawson Valley, and a good type of fruiting plant was developed. In January prospects for good yields were excellent, and continued so until April, when heavy rains set in. Forty-three inches fell over four days at the head of Dee River, causing disastrous floods along its course, and the loss of eight valuable

lives, to which reference has already been made, is recorded with great regret. Serious losses of stock and crops were reported from many parts of the Valley.

In Central Queensland growing conditions and resultant crops were below average. Standards of field work on the farms reached a high level.

Sufficient seed to plant 30,000 acres was supplied to 2,500 growers by the Cotton Board, and 2,300 growers have advised that 25,000 acres of cotton have come to maturity. The probable yield is not known as yet, but up to the end of June the weight of receivals at the ginneries was approaching 8,500,000 lb. of seed cotton. So last season's figures, 8,054,951 lb., will this year be well exceeded.

The quality of the crop was lower than that of previous seasons. An unusually large percentage of the higher grades was of a wasty nature. The explanation is not clear at present, but field examinations indicated lack of uniformity in plant growth. This observation was confirmed by a marked irregularity in the development of the fruiting branches and the size of the bolls. In addition to this lowering of quality in the higher grades, which is being thoroughly investigated, a large amount of low-grade cotton was received. This was a direct result of the very heavy rainfall in April, when the thorough saturation of unpicked cotton resulted in loss of "bloom" in the lint.

Laboratory and field work is being carried on satisfactorily at the Cotton Research Station at Callide.

In plant selection no outstanding progenies were obtained, although two of large boll type were selected for further study.

Substantial progress is being made in seed improvement at the Research Station, and the benefit of this work is being passed on rapidly to the farmers. The aim is to distribute sufficient seed of a quality that, with the practice of correct methods of cultivation, high yields of good cotton will become characteristic of the industry.

The work of developing acclimatised strains has also been continued, but none has so far been produced that can be substituted with advantage for the Durango variety.

The number of experimental plots, in connection with which the co-operation of growers has been enlisted, has greatly increased. This phase of the work of the Cotton Section—which includes varietal trials, thinning and spacing tests, fertiliser experiments, soil studies, and insect problems—is becoming an important feature of the activities of the field staff.

Grading of seed cotton is another activity which is receiving the attention its importance warrants. There is a general tendency, especially on the part of growers of large acreages, to pack cotton without blending it, and this greatly hinders correct grading in the ginning process and militates against the maintenance of uniform standards. Appropriate measures are being taken for the correction of this tendency.

Insect pest and disease attack, though severe in some localities, was not generally very serious, and approved control and prevention measures were continued.

The study of soils and their effect on the cotton plant is becoming of greater importance. No doubt, as the economics of cotton-growing are better understood by the growers the value of suitable soils will be more evident to them. The ground work of investigation in this direction has already been performed with advantage generally to the industry.

FRUIT CULTURE.

Yields were satisfactory, but prices, particularly for citrus and temperate fruits, have been much below the average, though the quality has shown a decided improvement on previous years' marketings.

Bananas, under a consistent rainfall, showed good returns and moderately satisfactory realisations. This fruit still leads in value over other export fruits. Cultivation areas have been greatly extended, though the wide variation in returns and also in the published statements on the cost of production, suggests that there is a limitation of first class banana land in the districts in which the fruit is now grown extensively.

The State Nursery at Bribie is used exclusively for the propagation of healthy banana plants, but the conditions there are not altogether suitable for this work. The demand for nursery stock of all kinds was fair, most of the inquiries coming from distant parts of the State.

The limitation of citrus varieties is being practised, and the principal nurserymen now arrange to procure their budwood from selected trees.

Every year there is evidence that due regard is not being given by orchardists to the requirements of the trees when selecting sites, either for new gardens or for the extension of existing plantations. This neglect entails serious loss both in respect to yields and quality. It is rarely

profitable in practice to improve soils in which primarily essential elements are lacking, and this fact is responsible largely for the high percentage of small or inferior fruits that come on to the market. This phase of field work is receiving attention, but the effect of earlier planting on unsuitable sites and soils is, of course, beyond immediate remedy.

A good market awaited the pineapple crops, and the planting of this fruit is being revived on the far North Coast.

Deciduous fruits were in abundant supply during the season, and the quality was generally good.

The contentious subject of apple stocks has not been finally settled, though the remedy—the raising of sufficient seedling plants for local stock requirements and the budding thereon of suitable varieties—is entirely in the hands of local interests.

Two new legislative measures affecting the fruit industry—the Fruit and Vegetable Act of 1927, which supersedes the Fruit Cases Act, and the Primary Produce Experiment Stations Act—came into force in the course of the year. The former is in full operation and is being administered satisfactorily; while the latter introduces quite a new feature admitting of experiments with various crops on a contributing basis. Its provisions allow of concentration of effort on cultural, entomological, and pathological matters, and this must redound to the benefit of the particular branches of the industry concerned.

“Bunchy Top” investigations and control measures have claimed the services of all available inspectors, and this work is being covered by a vigorous and well directed campaign for the entire eradication, if possible, of this disease. It was found necessary to make temporary additions to the field staff to cope with this work, the complete success of which depends upon the growers themselves.

The year's returns show that 688,797 cases of fruit, each containing a bushel and a-half, were exported from the State; and 537,948 cases, each containing one bushel, were imported. Other trans-border and sea-borne trade figures are incorporated among the subsidiary reports appended hereto.

BOTANICAL WORK.

The extension of public interest in economic botany, which has been very pronounced in recent years, has added considerably to the work of the Government Botanist. Identification of specimens which are received from all parts of

the State occupies much time, and this, together with an enormous number of inquiries as to the properties of timbers, pastures, and weeds, indicates the place taken by botany in the economic life of the State.

Many visits to distant parts were necessary in order to identify plants reputed or suspected of being poisonous to stock.

Other field work included the continuance of a general collection of herbarium and other specimens, and special investigations as to the presence of poisonous plants on stock routes, reserves, and pastoral holdings in certain districts. Due publicity, which is appreciated greatly by stock-owners, was given to the results of these investigations.

An important section of the work of the year was the collection of seeds of native grasses on selected areas in the Central District, with the result that seeds of a number of the more nutritious are now available for trial this season.

Educational work was continued systematically, and this included lectures to public bodies, the senior students of the Teachers' Training College, and a special course of third-year science students at the Queensland University.

The value of the herbarium for reference purposes was again demonstrated during the year, and many additional plants have been incorporated in the general collection. Undetermined material also occupies much time in classification.

Additions to the Botanical Museum have been numerous; a rearrangement of the collection was found necessary in the course of the term.

An important phase of the year's work was the preparation of important scientific papers by the Botanist and his assistant for publication in the Departmental Journal and the proceedings of several scientific societies at home and abroad.

ENTOMOLOGY AND PLANT PATHOLOGY.

It is gratifying to report a widely growing public interest in entomology and plant pathology, and what they mean to the economic life of the community is being better and more generally understood. Some evidence of this is shown in a large and increasing volume of inquiries on these subjects.

Combat and control of predatory and destructive insect pests and plant diseases occupied the staff throughout the year. Banana pest investigation was one of the major interests, and close attention was given to the banana weevil borer.

It was found necessary to send an entomologist to Java to investigate the whole question of the biological control of this pest in that country, where some of its natural enemies have been discovered. A considerable amount of work had already been done here in investigating this method of control with a number of colonies of a predatory beetle. The main object of the entomologist's quest in Java is to find, if possible, new enemies of the banana borer and also to obtain colonies of known enemies for use in further investigations in Queensland.

There is no appreciable limitation of the incidence of the banana beetle borer, and very heavy infestations are reported. A number of growers co-operate with the Department in its measures of control, but many of them are making little or no effort to assist in this work. The departmental recommendations are beyond doubt sound as to the reduction of infestation, and they are therefore worthy of enthusiastic adoption. The grower has been impressed with the fact that there must be no relaxation of effort towards coping with this destructive pest.

Other pests affecting the banana have been subject to further investigation or field control experiments. Pests affecting deciduous fruits have received similar attention.

Losses from fruit fly in the Stanthorpe district this year were comparatively unimportant, and the opinion is held that the percentage of destruction was the lowest for six years.

Some attention was given to the question of native hosts of the Queensland fruit fly, but nothing new was revealed.

One officer was engaged exclusively on a detailed study of the cutworm, an important pest not only of cotton but also of many other economic plants. Other cotton pests were also subjects of concentrated study, in which satisfactory progress was made. As in previous years, much additional information on many other important insect pests was obtained, and much practical field work was performed of value and to the general advantage of every branch of agriculture.

An important development of our scientific work of the year was the opening of a new field station at Cairns for the purpose of carrying out an entomological survey in the North, besides field experiments and investigations in connection with banana pest control and related problems.

Pathological investigations and advisory work were continued satisfactorily throughout the term. Many results of the work of this Branch

were conveyed to the farmer through our Departmental Journal and also in leaflet, pamphlet, and bulletin form. In addition, much other important work, referred to in detail herein, was carried out by the officers of this Branch in the course of the period under review.

CHEMISTRY BRANCH.

The analytical work of this Branch shows a marked increase for the year. Completed analyses totalled 4,656, and in addition 4,976 samples of glassware were tested. Of 582 samples of export butter analysed only in 26 cases was an excess of moisture proven. Samples of export cheese were also analysed and, with only one exception, they were all up to standard.

Of the general analytical work, that relating to stock foods showed a very notable increase.

The good results obtained from licks for stock, particularly sheep, have induced graziers and others to bring them into far more extensive use.

In regard to stock foods generally, some analyses of more than usual interest and value were made, and these are detailed in the accompanying account of the work for the year.

Experiments designed for the improvement of old paspalum pasture, of which mention was made in my last report, and which were carried out at Runcorn, showed clearly the advantage of cultivating old pastures; but the results of fertiliser application, except in respect to fine bonemeal, were not conclusive. Other pasture experimental work is described in the attached report.

Some consideration has been given by the Chemist to the feeding of dairy herds. In our coastal areas the dairy farmers depend almost entirely on the natural pasture, which is available in succulent form practically throughout the year, and it is only during limited periods that artificial feeding may be required.

In the semi-coastal country, below the Dividing Range, for at least six months good natural pasture is suitable for grazing, and the feeding is usually supplemented by fodder crops, which are grazed off as required.

In the inland area, above the range, and with a much lower rainfall, fodder crops must be grown throughout the season, and frequently crops grown for grain are fed off once or twice in the younger stages of the growth.

Although the great value of silage is well recognised by dairy farmers, only in rare cases is the making of silage practised. Green fodders are, when opportunities arise, made into hay. Chopped-up green fodder is but rarely used.

In order to ascertain what dairy cows really get as food throughout the year under the system of grazing off, it was arranged to make monthly observations, and the results of these are tabulated among the appendices hereto.

The results of this investigation, although not complete, are very interesting and serve to demonstrate the high value of fodders on the Downs, and also show clearly that stock raised in this district cannot suffer from lack of lime or phosphates.

Much time was given to the examination of pest destroyers, and the general analyses carried out by the Branch covered a wide range of research and routine work, as illustrated in the tables and diagrams attached hereto.

SEEDS, STOCK FOODS, FERTILISERS, AND PEST DESTROYERS INVESTIGATION BRANCH.

Results of the work of this Branch as tabulated among the appendices submitted herewith indicate how valuable is its vigilance to the farmer. In all 2,846 seed samples were examined, as against 1,809 in the previous year. Of these samples by far the greatest number were taken officially, while others were received from vendors for examination, and others again were sent in by farmers.

In previous reports attention has been directed to the necessity of buying only strains of vegetable seeds suitable for our climatic conditions and general market requirements, and this is again stressed.

From attached information it will be observed that farmers and market gardeners do not as a rule avail themselves of the Departmental facilities for free seed testing, and those who do only make inquiries when they have met with failure in their sowings. It is obvious that, when advisable, samples should be submitted on purchase, and if this were done complaints as to germination failure would soon cease.

Arrangements have been made for seedsmen's representatives to take a short course of seed testing in the Departmental laboratory. This is a practical move towards improving present methods.

Stock food samples to the number of 381 were examined for the purposes of the regulating Act. Interesting particulars of this work, as well as of the general activities of the Branch over the year, are set out in an attached report.

STOCK DIVISION.

Livestock figures for the year, so far as they are available, show some decrease in flocks and herds, but, as pointed out last year, this is inevitable after a dry period, when potential losses must be considered in relation to actual losses. Some of the pastoral country in the far south-west and central-west has received no really beneficial rains, but in the districts where more favourable conditions ruled the livestock industry shows considerable improvement, store stock being in strong demand at good prices.

Wool supplies and prices are being well maintained, and in the sheep districts there is a general feeling of quiet confidence, induced by evidence of a return of a series of good seasons. In the southern districts particularly, the lambing was successful. Most of the coastal and nearer inland country had generous rainfalls and is now well stocked.

Larger consignments of farmers' wool are being received at the Departmental wool rooms for handling under the scheme of co-operation inaugurated some years ago, and which is proving so successful. The total quantity received was 89,118 lb.; this exceeded last year's offerings by 17,500 lb.

The economics of the grazing industry are still a subject of serious study by pastoralists and others directly concerned, and the general trend of effort is towards raising standards of stock breeding, marketing methods, and general services.

The State remains remarkably free from infectious stock diseases, and Queensland may be regarded as possessing some of the healthiest pastoral lands in the world.

Horses exported overseas numbered 544, a slight increase on last year's shipments. Work in the tick-cleansing areas was continued with satisfactory results. Registered cattle dips now number 4,432, an increase of 25 on previous registrations.

In the course of the year 126,849 cattle, 401,634 sheep, and 10,876 pigs were sold through the Newmarket saleyards at Brisbane. Average values were:—

Bullocks, 30s. per 100 lb.

Cows, 28s. per 100 lb.

Sheep, 3½d. per lb.

Lambs, 8d. per lb.

Pigs—

Porkers and baconers, 6d.; per head, £2 10s.

Suckers, slips, and store pigs, £1.

Vealers up to 80 lb., 17s. 6d.

A general improvement in country shops and slaughter-yards has been observed, and progressive changes each year show that Departmental suggestions and methods are meeting with ready acceptance. Thirty new slaughter-houses were erected in different parts of the State. These in some cases replaced old and objectionable structures.

Modes of meat delivery are altering, too, noticeably in the metropolitan area, where motor conveyances have replaced almost entirely the horse-drawn vehicle.

It has been found advisable to appoint additional meat inspectors for some of the northern districts of the State.

There was a slight increase in cattle killings within the metropolitan area, but a small decrease in all other classes of animals treated, excepting lambs.

From interesting details supplied by the Chief Inspector of Stock, in his appended report, it will be observed that considerably more pigs were treated at the several bacon factories, and condemnations were comparatively less than shown in last year's report.

The export meat trade returns also show a decided increase in business as compared with conditions in the previous term.

The services of the Government Bacteriologist have been largely availed of in the course of the year, and his work included the quantitative and qualitative examination of samples of water, dairy products, wrappers, blood, and lymph; also the microscopical examination of various morbid specimens, the supply of vaccines, and other laboratory products.

Immunisation of stud cattle from tick fever was carried on in the course of the term now reviewed. All the animals survived, thus making the third year in succession in which there has been a complete absence of mortality among the animals submitted for treatment.

A number of tested bleeders have been supplied to stockowners. In addition, observations were continued on bleeders whose blood had presumably lost some of its infectivity.

Effective measures were taken to prevent the spread of contagious mammitis, and in every case in which instructions have been followed carefully the Departmental method of autogenous vaccin treatment has proved an unqualified success.

The supply of pure lactic cultures to cheese factories was also a useful service rendered by this section. The importance of bacteriological research and the Departmental service in regard

to it and related activities were fully demonstrated in the meat industry exhibit at the Royal Show, at which the importance of general scientific services to rural industries was fitly recognised.

Lectures and demonstrations in country centres also engaged the attention of the staff with advantage to the farmer. Other educational efforts included advisory work by correspondence.

Field experiments are being conducted at Samford in order to determine the relative values of dipping methods and preparations. When these and other experiments now in progress are completed the results will be duly published.

Stock values are now much higher in the North. The demand for store bullocks has also strengthened. With the extension of Southern settlement and the subdivision of pastoral holdings in those districts suited for closer development, Northern pastures will probably become the most important source of supply for both fats and stores. Fat cattle are even being bought to-day in North Queensland to supply the Southern trade.

Details of the general work of the year at the Stock Experiment Stations at Yeerongpilly and Townsville are included among the appended reports.

THE STALLIONS REGISTRATION ACT.

The examination of stallions under "*The Stallions Registration Act of 1923*" was conducted in Southern and Central Queensland during last season, and the following is a table of the operations of the Southern and Central Districts Stallion Boards:—

Southern District Stallion Board.

—	Bloods.	Draughts.	Ponies.	Trotters.	Total.
Passed ..	52	60	49	20	181
Rejected ..	24	61	9	15	109
Percentage Passed ..	68.4	49.5	84.4	57.1	62.4

Central District Stallion Board.

—	Bloods.	Draughts.	Ponies.	Trotters.	Total.
Passed ..	10	6	1	1	18
Rejected ..	9	1	1	..	11
Percentage Passed ..	52.6	85.7	50	100	62

CO-OPERATIVE ASSOCIATIONS.

Within the year eleven additional rural co-operative associations were registered, making a total of 123 now registered under the Acts. Of these 45 are connected with the dairying industry and 55 with fruitgrowing.

Several associations have amended their constitution to meet altered circumstances, and other bodies are contemplating amalgamation with a view to more economical operation in the interests of their members.

THE ANIMALS AND BIRDS ACTS.

An open season for opossums and native bears was declared during the month of August, 1927. During that period 1,014,632 opossums and 584,738 bears were secured. The total value of the skins obtained reached a sum of £378,023, of which royalty, at the rate of 5 per cent., totalled £18,897 12s. 9d. This sum was credited to a trust fund established under the Acts for the protection and propagation of our native fauna.

During the season 8,124 permits were issued to trappers. The price of opossum skins at the local sales during the season averaged 59s. per dozen,

and of native bear skins 56s. 9d. per dozen. The maximum price obtained for opossum skins was 168s. per dozen, and for native bear skins 105s. per dozen.

The duties incidental to the administration of the Acts are now carried out by five full-time rangers, and assistance in observing the supervision of the Acts is also given by 298 voluntary rangers. There are at present in existence in the State approximately 160 sanctuaries, aggregating an area of about 1,750,000 acres, and of this number about 40 have been proclaimed since the 1st January, 1925. It is proposed to reserve further areas for the same purpose.

DINGO AND MARSUPIAL DESTRUCTION.

During the year a total of 51,611 dingo and fox scalps was paid for, representing a slight decrease on the figures for the previous year. The payment of bonus for scalps of wallabies and smaller marsupials is optional to the Boards, and only six Boards paid for wallaby scalps. Attached is a table of operations in connection with dingo and marsupial destruction since the inception of legislation in that connection:—

Year.	Kangaroos and Wallaroos.	Wallabies.	Bandicoots, Paddamelons, and Kangaroo Rats.	Dingoes (including Foxes).	Total.	Bonus Paid.			Government Endowment.		
						£	s.	d.	£	s.	d.
From 1877 to 30th June, 1906.	7,935,175	10,665,694	639,936	279,873	19,520,678	541,435	6	6	243,558	2	2
1906-7	398,284	81,746	9,758	489,788	11,990	11	5	3,146	5	1
1907-8	474,387	127,618	11,493	613,498	13,259	14	8	5,515	4	2
1908-9	509,006	105,110	13,897	628,013	16,063	16	4	5,399	3	6
1st July, 1909, to 31st Dec., 1910	..	1,198,059	103,534	23,828	1,325,421	31,419	17	6	5,260	7	9
1911	708,501	40,055	21,508	770,064	18,657	19	9	5,887	10	11
1912	912,795	43,267	23,743	979,805	25,340	8	7	6,271	16	9
1913	787,558	18,627	18,757	824,942	19,535	18	2	6,541	8	3
1914	433,325	9,044	21,061	463,430	15,665	4	6	3,467	19	8
1915	319,437	14,048	25,924	359,409	17,596	1	9	4,063	7	0
1916	202,612	5,330	26,525	234,467	17,143	3	8	3,596	5	6
1917	220,721	4,197	18,916	243,834	14,472	11	10	3,223	19	3
1918	211,306	5,287	22,206	238,799	17,264	19	10	3,450	18	6
1919	154,246	7,882	42,292	204,420	43,781	18	4	5,000	0	0
1920	129,980	35,215	52,333	217,528	54,721	1	2	5,000	0	0
1921	86,869	3,198	40,427	130,494	43,041	13	4	5,000	0	0
1922	155,932	7,300	54,369	217,601	58,421	17	1	5,000	0	0
1923	53,568	13,511	54,562	121,443	55,439	4	3	5,000	0	0
1924	46,717	2,197	44,251	93,165	34,793	7	2	5,000	0	0
1925	46,111	3,858	48,282	98,251	33,879	4	8	5,000	0	0
1926	65,227	3,873	52,249	121,349	36,337	0	11	5,000	0	0
Totals	7,935,175	17,780,335	1,274,833	906,254	27,896,399	1,120,260	1	5	339,382	3	6

POOLS.

Action was taken with respect to the following pools in the course of the year:—

Arrowroot.—An Order in Council dated 21st July, 1927, made provision for the Arrowroot Board to give security for money borrowed from the Commonwealth Bank or other institution approved by the Governor in Council. By Order in Council dated 10th February, 1928, the term of office of members of the Board elected after 15th April, 1928, was extended to three years instead of one as was previously the case.

Atherton Maize.—Provision was made by Order in Council dated 14th July, 1927, that members elected to the Board after 31st August, 1927, should hold office from 1st September, 1927, to 31st March, 1929, and members appointed thereafter should hold office from 1st April in each year to 31st March in the following year.

An Order in Council dated 21st July, 1927, authorised all growers to withhold from delivery to the Board in any one year not more than 5 tons of maize for food for their families and stock and for use as seed.

Butter.—An Order in Council dated 27th January, 1928, extended the operations of the then present Butter Board from 21st February, 1928, to 29th February, 1928, and on the 23rd February, 1928, a further Order was approved constituting a Board to deal with butter from the 1st March, 1928, to 30th June, 1931. The referendum in this connection resulted as follows:—6,083 voted in favour of the Board and 1,948 against.

Canary Seed.—On the 23rd December, 1927, an Order in Council provided for the Canary Seed Board to deal with canary seed harvested during the seasons 1927-1928, 1928-1929, and 1929-1930. The result of the referendum held before the making of the Order was 66 in favour of the Board and 33 against.

On the 23rd February, 1928, an Order in Council authorised the Canary Seed Board to give security for money borrowed from the Commonwealth Bank or other institution approved by the Governor in Council.

Cheese.—On the 14th July, 1927, the Cheese Board was again constituted for three years as from the 1st August, 1927. An Order in Council dated 13th October, 1927, provided that all moneys due by factories for equalisation purposes should be paid to the Board by agents of such factories.

Honey.—A referendum was held on the 16th August, 1927, to decide whether a Honey Pool should be constituted. As the necessary two-thirds majority was not obtained in favour of the pool, the pool was not constituted.

Queensland Maize.—A referendum was held on the 25th May, 1928, to decide whether a Queensland Maize Board should be constituted, the result of the referendum being as follows:—1,994 in favour of the Board and 1,987 against. As the necessary two-thirds majority was not obtained, the proposal accordingly lapsed.

Wheat.—By Proclamation dated 1st July, 1927, the Wheat Board was empowered to give security for money borrowed from any bank or other institution approved by the Governor in Council.

On the 8th October, 1927, Regulations providing for the establishment of a Hail Insurance Fund were revoked and new Regulations for that purpose issued.

By Proclamation dated 24th April, 1928, the operations of the Wheat Board were extended

for a further period of five years after opportunity had been given to growers to petition for a ballot to be taken on the question of continuance, but no petition was lodged.

PUBLICATIONS.

Additional information on the science, economics, and practice of agriculture is being collected continuously by the Department through research, field observations and experiments, and laboratory work, and this knowledge would be of little value to farmers and others concerned if it were not made available to them in a readable and digestible form. In this connection the "Queensland Agricultural Journal" and Departmental publications perform a useful service.

Officers engaged in directive, educative, and specialised work have made full use of the media at their disposal, and it is due to the regularity and practical value of their contributions that the Journal has become an acknowledged authority on the industry it efficiently serves; and that this and other Departmental publications have an ever-widening circulation. As a publication dealing with the principles and practice of agriculture in this State the Journal has proved of definite value to those engaged in primary production, and there is evidence that it is appreciated accordingly.

Many new or revised bulletins and pamphlets on subjects of especial cultural or scientific importance were published by the Department in the course of the year.

Departmental officers have also contributed to a comprehensive radio programme in co-operation with the Queensland Government Radio Service. Lectures so delivered consisted of brief digests of seasonal information, facts, and general educational matter prepared in narrative form and covering a wide range of topics.

The making and releasing of a series of cinematographic films, showing the development, progress, and present standards of our chief primary industries, was also an important feature of the Department's publicity work. In addition numerous photographic prints, depicting the various phases of country life and its wealth and progress in Queensland, were also distributed through approved channels.

Information of a strictly news nature relating to the agricultural situation, Departmental activities, and seasonal notes on farming practice, plant and animal pests and diseases, is prepared and issued regularly to the metropolitan and country Press.

There is ample evidence that agricultural news is regarded as of general and increasing importance, and more space is being apportioned by the daily press to notes and informative articles on the industry. This is a very healthy sign.

The Departmental Library is open to and is frequently used by Press representatives, contributors, and also students. This service has provided further opportunities for the dissemination of useful agricultural information.

THE LIBRARY.

The Library now contains a wide range of agricultural literature. Most of the additions in the course of the year were received as gifts, or in exchange for Departmental publications. They came from nearly every civilised country in the world and were in many languages.

In the course of the period under review 1,929 persons visited the library for the purpose of obtaining technical information. The usefulness of the library for general reference purposes was appreciated by officers in every branch of the Department, as well as University students and the general public.

A hundred and one translations of documents and printed matter in foreign languages were made for this and other Departments. One thousand six hundred and thirty-six books, bulletins, and pamphlets were included in monthly accession lists which were circularised for the information of Departmental officers. Two thousand seven hundred and one new publications were received, classified, and catalogued.

A large number of Europeans of the farming class, sent by the New Settlers' League, were interviewed and advised on agricultural matters. A similar service was extended to many more prospective settlers from the British Isles.

CONCLUSION.

The present situation of agriculture in Queensland reveals a general tendency towards a better balanced industry. Much more study is being given to the economics of agriculture. Farmers are realising that a season of heavy production does not necessarily mean the attainment of a full measure of prosperity, for price problems are immediately created by over-supplied markets. In much recent discussion the fact has been stressed that the surplus problem is at the root of the farmers' difficulties. There are two obvious lines of approach to this problem—namely, through balancing output with market requirements, and systematised marketing. Much thought is being given to the subject, but it is obvious that no general formula will cover all commodities and conditions in all parts of the State. Every district and

every commodity has its special marketing difficulties awaiting complete solution. Through concentrated and co-ordinated effort, aided by appropriate legislation favouring the industry in Queensland, much is being attempted towards evolving a satisfactory system of orderly marketing which will benefit both the producer and the consumer. The Queensland farmer now possesses much greater bargaining power than he had formerly through centralised selling, which has followed the establishment of commodity boards and the consolidation of existing co-operative associations on a commodity basis.

While the fundamentals of efficient production are not being neglected, the importance of finding solutions for economic and social problems affecting the man on the land is recognised, not only by leaders in the industry but by others who are more or less concerned directly in the improvement of agriculture in this country. It is plain that constructive effort must be directed towards the attainment of a true balance in the industry, and to accomplish this it must cover the whole range of capitalisation, production, marketing, distribution, and consumption.

The Department is giving increased attention to economic investigation, and some results of this work have been circulated widely, to the general advantage of those engaged in primary enterprise.

A fuller understanding or appreciation of country life, its special problems and relative matters, is evident among farmers, and they are, through their organisations, developing a definite sense of direction towards agricultural betterment.

Both on the production and marketing sides there is a greater tendency to get right down to business, to work along proven lines and make full use of present means, improving them where possible, and extending methods that have stood practical test.

The variation in production on different holdings and in different districts suggests the opportunities that are in the hands of the farmers themselves of modernising methods of cultivation and improving the quality of crops, thus lessening costs. Individual action is quite as important as co-operative action in the establishment of high standards of production, and in the regulation of output, whether in respect of quality or volume, to comply with market demands. However efficient public or community services, commodity boards, or co-operative enterprises may be, the farmers' business success, if climatic and other hazards beyond control are eliminated, is in his own hands. He must primarily make his own standards of living for himself. Inefficiency in

farm practice, or lessened productivity, must react inevitably to his disadvantage against any measure designed to extend the radius of his opportunity.

With the return of good seasons the cattle industry is moving once more towards prosperity.

Dairying is in a relatively favourable position, and dairy farmers are realising, in the main, that the production of high quality milk and increased quantity of butter-fat from fewer cows at less cost is the quickest way of increasing the net farm income. Our average yearly output of butter-fat per cow is far too low, and it is apparent that many dairy farmers are not making any substantial profit on their business.

These facts were confirmed by a Departmental investigation into the economics of the industry, which was continued in the course of the year. Some of the results have been published, and further particulars will be circulated from time to time.

In many districts in Queensland dairying may be carried on under the congenial conditions that are conducive to high quality production, and it is reasonable to expect that the average yield of milk per cow in Queensland should be greater than it actually is. It is realised that our averages are based on the production of all herds registered, without any regard to the fact that some herds are milked only during the period of the year in which the natural pastures are abundant. This practice obviously lowers the average production, as computed for statistical purposes, of our full-time dairy herds.

The records of the Department, however, indicate a very wide variation in the production of butter fat per cow in the herds tested (and it may be assumed that these herds are not below the average in output), and there is, therefore, considerable room for herd improvement in the State, a phase of the dairying industry to which the Department is giving full attention.

Every opportunity is taken of impressing the dairyman with the necessity of making adequate provision for the storage of fodder. It is recognised that, for various reasons, fodder conservation is not always practicable, and those who condemn the improvidence of the dairy farmer often fail to appreciate these circumstances. After making due allowance, however, for the difficulties facing some producers, the practice of providing ample stores of fodder is not as general as it should be, and it is a matter that calls for the serious consideration of every dairy farmer who aims to control a prosperous enterprise.

In the course of the year the Board of Agriculture was constituted as a co-ordinating agency for the prevention of overlapping in scientific and other investigations designed to benefit agriculture in Queensland. A survey of the investigational work now proceeding has been made with a view to determining what overlapping, if any, exists, the measures to be adopted to secure effective co-ordination and co-operation, and other relevant matters. A register of agricultural research, experimental and demonstration work has also been compiled for the information of the Board in formulating its plans.

Under the provisions of "*The Primary Produce Experiment Stations Act of 1927*" it has been decided to establish two banana experiment stations, one at Kin Kin East, near Gympie, and the other at Pawngilly, on the Russell River. They will, it is considered, meet the present requirements of the banana industry.

The main object of these stations is to enable the Department to carry out various forms of necessary research work, and to secure co-ordination among all concerned in the progress of primary industry.

These stations will be similar to the Sugar Experiment Stations already established in their operation and the character and quality of their service to the farming community. The approximate annual value of the banana industry is £1,000,000 sterling; and it is ordinarily a profitable enterprise capable of considerable improvement and much greater expansion. The upkeep of the stations will be a charge in the form of a levy on the industry which they benefit. The fund so accumulated will be subsidised. The principle is accepted that where growers are interested financially in a scheme they will take a more active interest in contributing to its success, and this will, no doubt, ensure complete co-operation between the Department and the farmers concerned.

Much useful work has already been performed in connection with the banana industry, and those engaged in it have, as a rule, applied themselves very closely to the problems with which it is beset, achieving some considerable results, but obviously much yet remains to be done.

There are large areas in the State suited to the cultivation of the fruit, and the districts in which the industry has been established are the main sources of supply for the Commonwealth. Experiments with bananas have been carried out in the North with a view to developing types suitable for the conditions in that part of the State; and the satisfactory results obtained have stimulated an extension of banana growing on our Northern littoral. There is room for

much greater development, and this fact is recognised by, and is receiving the attention of, officers of the Fruit Branch.

Farmers are appreciating more the value of experiment and research, for which such stations provide the facilities and the service, and are realising that this work affords the only sure means by which they can travel with any degree of satisfaction along the rough and often disappointing road of hard experience.

The establishment of boys' and girls' pig and poultry clubs, in co-operation with the Department of Public Instruction, also claimed attention in the course of the year. This movement has been marked by much enthusiasm among club members and their parents and teachers, and already it has produced some practical results. It expresses in a very useful way the advantage of keeping the young people on the farm in touch with the best in rural life and of developing natural qualities of leadership, responsibility, good citizenship, and community service.

Agriculture generally throughout the State is showing evidence of healthy progress, and the reports of the several branches of the Depart-

ment which are attached hereto will serve to indicate the systematic development of agriculture and stock-raising in Queensland.

The prospects for the coming year are promising. Winter rains have been general over the agricultural districts, and a good germination has been secured for plantings of root and fodder crops. Grass is plentiful in the coastal and nearer inland areas.

Appended are reports from the Director of Agriculture; the Supervisor of Dairying; the Cotton Specialist; the Director of Fruit Culture; the Chief Entomologist; the Chief Inspector of Stock; the Agricultural Chemist; the Officer in Charge of the Seeds, Fertilisers, Pest Destroyers, and Stock Foods Investigation Branch; the Government Botanist; and Registrar of Co-operative Societies.

To this report will be attached statistical tables compiled by the Registrar-General, and containing much interesting and valuable information bearing on the position of agriculture and its allied industries in Queensland.

E. GRAHAM,
Under Secretary.

REPORT OF THE DIRECTOR OF AGRICULTURE.

I have the honour to submit my report for the year ending 30th June, 1928.

Seasonal conditions and their effect on the principal crops grown are specially referred to in the several reports submitted herewith by officers of the staff. These latter serve to emphasise the uncertainties attached to agricultural production, which have perforce to be met on the part of the producer with a philosophic optimism and a determination to try again to win through.

My grateful acknowledgment of the work of each and every officer on the staff and his untiring energy and zeal shown in carrying out his duties is hereby recorded.

A brief survey of some of the principal crops and conditions of the departmental work connected therewith is made:—

Wheat.—Last year the Maranoa crop practically failed, the district being subject to one of its low rainfall periods, a cyclic feature common to Australia and more or less pronounced in inland districts. The Inglewood district also suffered in the same way, but not quite so severely as the Maranoa. The main crop on the Darling Downs was backward until the September rains, cold, dry weather having been experienced. Although the rains were at first light, the crop quickly responded, as reserves of subsoil moisture, particularly on the heavy black soils, were still in evidence. With a continuation of the rains and suitable weather from the beginning of October until just before the harvest, the crops generally made wonderful progress. It was significant to note that the first crop harvested in the Allora district ("Novo") was grown from seed distributed the previous year under the Departmental Wheat Propagation Plot Scheme. The yield—40 bushels per acre—was thought to be good at the time, but this was merely an indication that it was to be a season of abnormal yields. Many crops came under notice which returned from 40 to 50 bushels per acre, the highest recorded yield being 66 $\frac{2}{3}$ bushels. The inherent richness of the soil requires no comment beyond the fact that these extraordinary yields were obtained without fertilisers of any kind being used. One example amongst many might be quoted where a crop of "Cedric" wheat, also a Roma cross-bred, grown on land near Southbrook which had been cropped previously for 45 years without any fertiliser, was estimated to return 42 bushels per acre. Two years previously a similar quantity of grain had been harvested from the same area.

The aggregate quantity of wheat harvested in the State was around four million bushels, three and three-quarter millions, approximately, being delivered to the Pool, and the remainder being held for seed and feed purposes. Continuous rains from the middle to the latter end of harvest bleached the late-garnered wheat; the quality of that taken off when the weather was favourable proved excellent. This fact was borne out at the Sydney Royal Show last Easter, when several Queensland-grown samples held

their own in the Commonwealth Champion Prizes, for which growers in New South Wales, Victoria, South Australia, and Western Australia competed in a season noted for its high-quality grain.

In the Strong White Class, Mr. F. Armstrong, of Pilton, Darling Downs, tied for second place with a yield of 48 bushels per acre (Pusa No. 4 wheat) with 91 $\frac{1}{2}$ points; the winning sample (Comeback), with a yield of 22 bushels per acre, gaining 92 $\frac{1}{2}$ points. Another Queensland exhibitor, G. S. Gillespie, of Milmerran, tied for first place with "Cedric" in the Strong Flour Red Wheat Class, both competitors securing 89 points.

As previously mentioned, "Cedric" is a Roma State Farm production, and is a cross between "Bunge" and "Cedar," the latter a well-known "Farrer" wheat belonging to the Fife class. Evidence of the prolificness of another new Roma State Farm crossbred wheat and its adaptability to local conditions may be cited where 4 bushels supplied by the Department to Messrs. Noller Bros., of Oakey, returned 309 bushels, representing an increase of 77.25 per cent. Calculated on the basis of acre yield, the return was 56 $\frac{1}{8}$ bushels, the seed having been sown thinly over a field of 5 $\frac{1}{2}$ acres. These figures serve to illustrate some pertinent facts bearing on wheat production in Queensland, viz.—

That the wheat-breeding work at Roma State Farm, linked up as it is with the activities of Field Officers of the Department and with those of the Wheat Board, is exercising a good effect in establishing the industry on a sound basis.

That wheat as a fodder and grain crop is increasing in popularity and economic importance; it is also a potential exportable product, and for these reasons is deserving of every possible means of encouragement.

Apud of this subject, mention might be made of the phenomenal advance in settlement in Western Australia, due to that State's liberal land settlement conditions, which have brought about a consequential increase in the area cropped with wheat. It has also assisted in the development of the sheep industry—Australia's two most potential industries.

Wheat Propagation Plots.—The scheme carried on in conjunction with the Wheat Board was continued, and proved its value generally as a means of bringing improved varieties into cultivation, also in maintaining the purity to type of the wheats commonly cultivated. Details of this and of the Departmental wheat experiment plot work are dealt with in detail in the reports submitted by the officer closely associated with it, Mr. C. S. Clydesdale, Assistant Instructor in Agriculture.

Wheat Crop Competitions.—A 20-acre field crop competition was initiated for the 1927 season by the combined efforts of the Wheat

Board, the Royal National Association, the Royal Agricultural Society of Toowoomba, the Eastern Downs A. and H. Association, and the Western Downs Agricultural Association of Roma, the latter association not being represented, however, in the competition owing to district conditions being too dry.

The judging of 51 crops, 26 in the Toowoomba and 25 in the Warwick district, was carried out personally. The final results were submitted to the parties concerned. A list of the prize winners is as follows:—

Toowoomba District Competition—

- 1st—Ziesemer Bros., Bongeen—"Currawa,"
- 2nd—H. C. M. Sharpe, Milmerran—"Warrior."
- 3rd—J. Ritson and Sons, Clifton—"Warren."

Warwick District Competition—

- 1st—S. P. Cutmore, Swan Creek—"Clarendon."
- 2nd—P. O'Mara, Tannymorel—"Clarendon."
- 3rd—J. E. Tucker, Freestone—"Waratah."

Royal National Association's Grand Champion Cup—

- 1st—S. P. Cutmore.
- 2nd—Ziesemer Bros.
- 3rd—H. C. M. Sharpe.

The distance traversed in carrying out the judging—about 1,500 miles—is somewhat of a handicap when roads happen to be wet, as the crops require to be examined and compared as far as possible at similar stages of growth. This and other phases of the competition render it expedient that the larger areas be divided up so that local competitions might be judged by their own or neighbouring committees, the winning crop in each local area being eligible for the championship, the judging of which might be delegated in the ordinary way to this Department. The latter system is followed with satisfactory results in the Southern States.

Maize.—Details of the seed maize improvement work and of the seasonal conditions which obtained appear in the accompanying report of Mr. C. McKeon, Assistant Instructor in Agriculture, who is specialising in this section.

Certain pertinent features in connection with the maize industry are to be noted:—

Queensland is the principal maize-producing State in the Commonwealth, and climatic and soil conditions here are favourable to an expansion of the industry, should economic conditions warrant it.

The present crop is expected to be in excess of the average quantity produced, notwithstanding disabilities due to excessive rains and, latterly, through losses occasioned by the incidence of the mice plague. At the present time prices are below the cost of production.

A trade prejudice exists against red maize, which on this account is not so readily saleable as whole-coloured yellow grain in the interstate and overseas markets.

Growers in Southern and Central Queensland are still adverse to the formation of a Pool, expression having been given to this fact at five ballots taken within the last five years. A panacea for the greatest disability of all—the lack of a remunerative market—is not readily found.

Obviously, no improvement in consumption will take place through feeding to working horses, as each motor-driven vehicle or tractor put into commission is performing work which had previously or could be done, if conditions warranted it, by horses.

Storage on Farms.—Consistently low prices for this season's maize have induced growers to consider ways and means of storage on farms. Much information has been furnished direct to those interested in the tanking of their grain pending a recovery of the market.

Co-operative storage at local centres offers a natural means of attaining the same object.

Seed Maize Improvement.—A good deal of attention was given to this section during the year. In Southern Queensland, floods and continuous rain were responsible for a great deal of damage to the seed propagation plots. In the North, however, the weather was generally more favourable, and it is satisfactory to report that excellent progress was made in the development of the new Departmental strain of "Durun" maize at the central propagation plot near Tolga. A special type of grain is gradually being evolved by careful selection work, in which a close study is made of the botanical and other characteristics required in the seed plants. It is now possible to extend the seed propagation work on a thousand-acre unit basis, and, all things being favourable, the objective to provide sufficient seed for planting all Tableland maize fields for the 1929-30 season should be reached.

An up-to-date grading machine will be shortly installed by the Department at the central seed propagation farm, where it is intended to propagate the stud seed maize required each year for zone distribution to maintain the hard, sound, disease-resistant characteristics of this new yellow variety.

Tobacco.—Following on the formation of the Commonwealth Tobacco Investigations Committee and the co-ordination of a section of its experiment work with that of the various State Departments of Agriculture and the British Australian Tobacco Company, representatives of each—Messrs. Tregenna, Pollock, and McGee—made an inspection, prior to the last planting season, of a number of the more likely soils and situations for tobacco-growing in the North. Subsequent to this visit, a series of small subsidised experiment plots was established, details concerning which are to be noted in the report of the Northern Instructor in Agriculture, Mr. N. A. R. Pollock, who has been actively associated with this important development work. Reference is also made to the Mackay district operations in the report of the Instructor in Agriculture for the Central district, Mr. G. B. Brooks, but unfortunately in this latter series the results were negative owing to the prolonged wet season.

The tobacco, however, in the more northerly plots made fairly satisfactory growth, aided by the fertilisers designedly applied to soils of chosen character and type to provide just the right kinds and quantities of plant foods required for the production of certain classes of leaf.

In the progressive experiment work it was decided to erect a small flue-curing room at the most convenient centre—Mareeba; and an expert in the flue curing of tobacco, Mr. R. Howell, was loaned by the Commonwealth Tobacco Investigations Committee and located at Mareeba and carried on this work during the curing season, officers of this branch assisting in every possible way. Results were of sufficient importance to warrant a recent visit of inspection by Messrs. C. M. Slagg (the new appointee to the position of Director of Commonwealth Tobacco Investigations) and Dr. Darnell Smith, of New South Wales, who is also a member of the Committee referred to. Before an official announcement is made of the result of the experiments, a manufacturer's opinion is being sought.

Peanuts.—Through the determination shown in the last few years by a number of growers in the Kingaroy district to build up the peanut industry on a co-operative basis to meet the whole of the Commonwealth requirements, the objective has now been reached. As a matter of fact, this year's crop, estimated to exceed 3,000 tons, represents more than the normal quantity annually consumed. Efforts, however, are being directed towards encouraging the more general use of the peanut as an article of diet, for the extraction of its valuable oil, and for the manufacture of tasty, edible products. In this way the production could be still further increased, otherwise the growing popularity of the crop may induce over-production.

The work of erecting storage silos and modern machinery to the order of the Peanut Pool Board at Kingaroy, at a cost of approximately £50,000, is a further indication of the progressive spirit of those persons who are closely associated with the industry.

Only quite recently, the expressed desire of the Board was to bring about a change from the Red Spanish to the Virginia Bunch variety, so that nuts of better value, larger and more attractive, might be grown. At time of writing, matters respecting a fairly large importation of Virginia Bunch nuts had not been finalised. The alternative offering of propagating all available local supplies of this variety, although it will take another twelve months to produce the whole of the Board's requirements, may be the safer way on account of the possibility of introducing disease.

Potatoes.—Experiment work in North Queensland, detailed in the report of the Northern Instructor in Agriculture, proved two very significant facts—

(a) That potatoes harvested in September and intended for "seed" purposes could be held in cold storage for five months at a temperature ranging from 34 degrees to 40 degrees F. and planted again in the following April, after the wet season. Grown in this way during the

winter, at a time when potatoes cannot be produced elsewhere, it is possible to satisfactorily raise this valuable food crop in the tropics.

(b) That potatoes grown in the temperate tableland country are suitable for seed to plant on the tropical coastal area, also that a reciprocal arrangement in respect to a continuity of seed supplies is practicable.

Poisoning Ink Weed.—The testing of several different plant poisons at Millaa Millaa, North Queensland, provided useful data in respect to methods of keeping this common pest in check. Its appearance on recently felled and burnt country is inevitable, and the growth induced by a 100-inch rainfall and rich scrub soil is abnormal. Its subjection ordinarily entails going over each acre of clearing four or five times—a very costly undertaking; and the incidence of the pest checks the establishment of artificial grasses and holds up dairying operations; it also minimises the settlers' returns.

Two poisons stood out prominently—Roberts' Pear Poison and Arsenic Pentoxide. The former was the only one that would kill out the old plants as they stood. Both were effective on young growth, even when the former poison was reduced to half strength. Personal observation of the areas sprayed showed that soft ink weed only a few months old was readily killed, roots and all, when brushing preceded spraying, the brushing automatically decreasing the amount of poison used, which latter was to some extent a set-off against the additional labour required to slash down the top growth. Where numerous unburnt logs and stumps exist, brushing facilitates operations very much. If this work can be immediately followed up by planting Paspalum, Kikuyu, Giant Couch, or other suitable grasses, such have a much better chance of establishing themselves.

Inspections of Land preceding its Design for Settlement.—Officers of the staff were deputed on a number of occasions to carry out inspections, generally in the company of other officers from the Lands Department, this course of action tending to a fuller knowledge of the adaptability and value of the country for different forms of agriculture or grazing.

Inspection of Settlement Lands.—Latterly, the assistance of Agricultural Instructors has been invoked in connection with further development work in the Dawson, Callide, and Upper Burnett districts, principally that associated with the Development and Migration Commission.

General.—Perusal of reports submitted by the several officers on the staff will indicate that good progress was made in dealing with a number of matters of importance in the more systematic development of agriculture and stock-raising.

During the year under review the demand on my time for advisory and administrative work has permitted of an opinion being formed that agriculture generally throughout the State is showing healthy signs of expansion.

State Clydesdale Stallions (Season 1927-28).—Five State Clydesdale stallions were used in the farmer's draught horse improvement scheme

last season. The stallions were stationed for the season in the respective districts as indicated hereunder, and the number of mares served by each is as follows:—

Stallion.	District.	Number of Mares Served.
Bold Wyllie	Nanango	76
General Wallace	Murgon	67
Premier Again	Wondai	49
Warwick Lad	Proston	49
Prospector	Toogoolawah	53
	Total	294

The strong demand for draught stallions made by the South Burnett districts was not evident elsewhere, probably owing to the unfavourable seasonal conditions which were experienced in some districts in the early part of 1927. This will explain the reason of so many stallions being forwarded to one locality.

The flood rains experienced early in 1928 interfered considerably with the travelling of the stallions, particularly in those districts where heavy black soil and swollen streams were to be met with.

The stallion "Glenalla," one of the original six purchased in 1923 in Victoria, developed an unsoundness, and during the year under review it was found necessary to geld him.

Since the inception of the scheme in 1923-24, a total of 1,532 farmers' mares have been served by State stallions, and the following districts have benefited in one or more seasons, viz.:—Roma, Wallumbilla, Rosewood, Clifton, Boonah, Kingaroy, Mary Valley, Crow's Nest, Laidley, Beaudesert, Tabooba, Chinchilla, Cunningham, Murgon, Nanango, Proston, Wondai, and Toogoolawah.

In all of the districts enumerated above, the State stallions have left their mark. The Brisbane Royal National Exhibition and numerous country shows bear witness to the fact that a considerable improvement has been effected in the Clydesdale stock of the State.

Draught horses of good type command good prices throughout the Commonwealth. They are in demand in all agricultural districts and in the large cities. Record prices have recently been paid for individual animals of the Clydesdale breed in the Southern States—to wit, 500 guineas paid by a South Australian to a Victorian breeder for a filly foal. This transaction was preceded by high prices paid for stud animals of outstanding quality in the early part of 1927, when a New South Wales breeder purchased in Victoria a seventeen months' old colt for £1,500. On the occasion of the disposal sale of a well-known Southern stud one stallion was sold for 2,050 guineas, one mare for 1,850 guineas, one for 775 guineas, and other animals realised varying large amounts.

Such reports indicate the desirability of improving the breed in this State, and also possibly the desirability of considering the question of assisting individuals or groups of breeders to purchase approved stallions, either by the payment of a subsidy or by breeding suitable sires on a State Farm. It is interesting

to note that the Government of West Australia has allocated the sum of £4,000 this year to be used as a £ for £ subsidy for settlers buying good stallions.

Royal National Show.—In August last year, the Department staged a representative exhibit, included in which were several educational sections illustrating the activities of several officers of my branch.

The initial and subsequent preparatory work and the setting up of the agricultural exhibits called for a great deal of ingenuity and attention on the part of members of the staff, for which assistance I wish to tender my grateful acknowledgments.

A number of exhibits were also prepared and sent to the Southern States and to the Agent-General's Office, London.

STATE FARMS.

Two farms were closed during the year—Hermitage and Warren. Clearing-out sales were held at each place, and the respective farms leased to approved tenants.

GINDIE.—The welcome break last October of droughty conditions that prevailed from the early part of 1926 was followed by a good season. More than the average amount of rain was registered during the year—29½ inches, the average being 25.9 inches. Natural pastures benefited generally, one feature being an unlooked-for increase in the growth and luxuriance of Red Flinders grass.

Water Supplies.—The recent successful boring operations at the homestead, where a strong supply was obtained at the depth of 350 feet (275 feet of water), has relieved the tension and the unsatisfactory conditions manifest during the drought through the diminution of water supplies in the wells on this farm, an occurrence also noticeable elsewhere in the district.

Live Stock.—Opportunity is taken of expressing appreciation of the recent Southern purchases made for the stud—3 heifers and 1 bull. The strengthening of the stud in this way will be a distinct forward move in the policy and improvement of the district's beef herds.

Cattle on hand for use in this direction are—61 Studs—10 bulls of various ages, 51 females, also 44 Appendix females.

Out of 51 stud females, 32 are available for use this season, belonging to the well-known families, viz.—10 Duchess's, 8 Gem's, 3 Rose's, 5 Lady Rose's, 5 Princess Miriam's, 1 Gazelle.

Out of the 44 Appendix females, 30 are also to be mated this year. The foundation females of this group were purchased from the well-known Belltrees Herd at Scone, New South Wales, and received the approval of the Inspector for the Shorthorn Herd Book. The latter herd has been kept pure for upwards of 60 years, but Stud Book registrations were not followed up. They, therefore, form an excellent foundation for the breeding up through the four generations, on which registrations registered pure-bred bulls must be used in order to comply with the regulations of the Stud Book Society before the progeny become eligible for Shorthorn Herd Book registration.

Pure-bred Herd—207 head, comprising 164 females of different ages, 4 herd bulls, 20 bull calves (unbranded), 19 heifer calves (unbranded).

Store Stock—78 steers and bullocks.

The progressive breeding arrangements will permit this year of an 80 per cent. infusion of "Masterkey" blood, which strain is now well established in the Gindie stock. "Masterkey" was imported by Mr. Anthony Hordern for his Milton Park Stud, Bowral, New South Wales, at a cost of 4,000 guineas.

The four animals recently added to the Gindie State Farm Stud, and previously referred to in this report, are of "Masterkey" (imp.) and "Doone Monarch" (imp.) blood, these latter being two of the most noted sires brought to Australia in recent years. Purchasers of bulls bred at the farm speak well of the quality of the animals supplied in comparison with this class of bull available elsewhere.

Sales were made during the year of 10 herd bulls and 68 bullocks and fat cows.

Horses.—Suffolk Punch (pure bred), 35 head on hand, made up of 1 stallion, 4 colts, 28 females of different ages, and 2 geldings.

Eight animals were sold during the year to farms in the Mackay district, where the breed is in favour for sugar plantation work.

The importation of a sire from England is recommended to carry on the improvement of this stud.

Clydesdales (pure bred), 35 on hand, comprising 1 stallion, 7 colts, 24 females of different ages, and 3 colts. One colt was sold during the year which the owner is well satisfied with.

The fillies bred on the place are of good quality, and it would be a decided advantage to import or otherwise procure a fresh, high-class sire to still further increase the standard of quality of our females.

Other horses, 12 draughts (11 females and 1 gelding) and 6 saddle horses.

Farm Operations.—Thirty-five acres were planted with summer fodder crops. Excellent yields resulted, that of Saccaline being computed at 32 tons of green fodder per acre. Wet weather spoiled a large proportion of the Soudan grass hay; 180 tons of ensilage and 30 tons of hay were conserved. A small irrigation plant is now necessary to ensure green fodder supplies for stable stud stock. Sufficient water of good quality is available for this purpose in the new sub-artesian bore.

ROMA.—*Winter Cereals, 1927 Crop.*—The season under review was the worst experienced, so far as the winter cereals crops were concerned, since the inauguration of the farm. The paucity of the previous summer and autumn rains hampered cultural operations and precluded the conserving of moisture in the soil, with the result that the seed was sown in a dry seed bed; germination was delayed until June. Only 31 points of rain were registered in the next three months, but unfortunately was of little or no value to crops other than those growing on light

soils. Yields from these areas were correspondingly light, and the propagation of supplies of pure seed of different varieties and the continuity of wheat breeding and selection work was seriously interfered with.

To ensure the germination of seed in the plant breeding plots, attention was given to the watering and subsequent cultivation of the wheat. These having been planted on light soil made the best possible use of the very limited supply of moisture (31 points) which fell in July, August, and September. Matured grain, limited in quantity but of good quality, was harvested from these sectional plots.

1928 *Crop.*—Conditions this year are much more satisfactory than those of last year. Since the rains last October good falls have occurred each month, consequently the conditions could hardly be improved upon for germination and early development of our crop. Similar remarks are applicable to the district crop. Some additional preparation of the land was, of course, necessary to cope with foreign growths, which, unfortunately, were the cause of a loss of valuable conserved moisture during cleansing operations.

In accordance with Departmental arrangements made with the Wheat Board, extension work is being carried on this season at two of the new holdings on the Mount Abundance resumed area. Here the wheat propagation plots are 100 acres in area, the intention being to use the resultant seed as a source of pure seed supply for other settlers who wish to plant wheat next year. Extension work other than that with the Wheat Board outlined above is in hand on the same farms as those selected for bulk seed propagation. Our work deals specifically with the testing of a large number of this farm's crossbred wheats, and will permit of selection of plant types showing adaptability to the heavier classes of soil common to the Downs country on Mount Abundance.

General Experiment Work—Peanuts.—Seven varieties of peanuts were tested out for the purpose of making selections of the best and most prolific kinds for future propagation.

Cotton.—Three-quarters of an acre of land was divided up into 11 plots. Six were fertilised with superphosphate at the rate of $\frac{3}{4}$ cwt. per acre, the balance being unmanured. A special strain of Durango cotton was used, so that selection work might be carried on in the field with the object of segregating and developing plant types showing adaptability to Western conditions and environment. The average increase in yield of seed cotton attributable to the use of superphosphate was 89 lb. per acre.

Plant Breeding.—Exclusive of the main wheat and maize sections, this interesting work was continued with cowpeas and snake beans and stratagem and paragon peas.

Miscellaneous Crops.—Several different kinds of summer-growing crops were grown for fodder or kept under observation so that seed might be raised for further tests; also to meet district requirements.

KAIRI.—Weather conditions throughout the year were erratic, and the amount of rain registered was far short of the average. During the period July to December last year, there was insufficient rain to do much good. The wet season set in on 18th January this year, and practically terminated two months later. Only 35.16 points of rain were registered, this being a little more than half our normal average.

Development Work.—The timber on the section of scrub country felled last year was burnt and the area planted with Paspalum seed. About 60 chains of fencing was also erected.

Agricultural Operations.—Ploughing and planting of 90 acres of maize land was late, and the crop suffered in consequence. On this account it is not what it should be.

Lucerne.—Five acres were prepared and seed planted in March, but the strike was uneven; however, the weak patches can be cultivated again and replanted at a favourable opportunity. Sugar-cane, also a number of miscellaneous crops, were grown during the season.

Live Stock.—The number of cattle in the two studs are—

	Jerseys.	Milking Shorthorns.
Milch cows	40	38
Bulls	2	2
Heifers	20	19
Yearling bulls	9	6
Yearling heifers	10	6
" Bucket " calves	15	12
	96	83

Production.—Considerable attention has been given to this, the more important side of the business. The production of butter in milk yield was 11,766 lb., averaging 260 lb. of butter per cow for the twelve months; the average quantity of milk produced being 1½ gallons daily with a 4.1 test. With better grass supplies and more regular hand-feeding, these figures could be considerably augmented. Extensive alterations and concreting of feeding stalls are necessary to permit of hand-feeding being done economically.

Pig Section.—Forty-seven Berkshires and 18 Tamworths represent the animals on hand of different sex and age. The demand for stud pigs of both breeds is keen, and no difficulty has been experienced in disposing of all the stud animals which can be bred. Under the circumstances more accommodation, particularly for sows, is required.

Grass Paddocks.—Grass has suffered generally from fungus and insect attack, causing serious curtailment in supplies. Rhodes grass was practically wiped out by rust and the attack of a species of mealy bug.

HOME HILL.—*Sugar-cane.*—The average yields over experimental plots and the fields grown purely for revenue purposes were 45.22 tons per acre from plant crops and 15.23 from ratoons. As the actual cash returns per acre have been

in favour of plant crops, it is considered better to discard ratooning for revenue purposes, or until heavier returns from ratoons are possible.

Maize.—The average yield per acre was 31 bushels, but under irrigation conditions the ultimate costs are prohibitive unless maize is grown on a comparatively large scale and with the advantage of labour-saving devices.

Potatoes.—This crop was unintentionally divided into three sowings with peculiar results. Although soil conditions so far as cultivation is concerned were uniform, the weather varied during the three different periods of growth. The first section was sown on the 20th April, the second on the 27th, and the third section on the 18th May. The first two sections were sown in soil slightly on the dry side, but sufficient to bring the plants above ground before the May rains. The third section struck rain before the plants had germinated, with the result that a large proportion of the sets rotted and the return was 62.3 per cent. less than the best from the other two sections.

Lucerne.—The results from this experiment were the second year's growth of lucerne sown on two different plots. One contained 1½ acres and the other 1 acre. The germination on the smaller plot was irregular, and the resultant hay inferior to that on the larger plot, two portions of which had been fertilised with Howe's mixture before the lucerne was sown and while the land was under cane four years previously. These two spots showed a very marked improvement in yield as each succeeding cut was lifted. The figures for the year are—the small plot returned 19¼ cwt. per acre of inferior grassy hay as against 31¾ cwt. per acre of sound, marketable produce from the larger area.

Bananas.—Planted adjoining the stable pump eighteen months ago, from which locality sufficient suckers (Cavendish variety) were obtained since November last to plant out half an acre for a more extensive trial on a commercial scale. The stools were then encouraged to fruit; although this plot is only .08 of an acre, the yield for the year has been at the rate of 456 bunches per acre, the average bunch containing 11 dozen.

Yams.—The Millie and Mamie varieties previously reported yielded (when the vines were staked) at the rate of 3¾ tons per acre from the Mamie variety, and 7.85 per acre from the Millie plot. As the cost of training the vines over sticks was too expensive from a commercial aspect, a trial was made to grow this crop without staking allowing the vines to run over the ground like sweet potatoes; and although this experiment is not yet complete, there is now a promising growth of tubers.

Sorghum.—For green feed this crop responds quickly to irrigation, is cheaply grown, and last year yielded at the rate of 6 tons per acre from a growing period of five months.

Pineapples in their second year yielded as follows:—

Ripley Queen, 2,332 fruit per acre = 7,043 lb.

Rough skins, 4,336 fruit per acre = 9,755 lb.

Smooth leaf, 2,116 fruit per acre = 11,574 lb.

Peanuts.—The following varieties were grown—Strain 21, Toeban, White Hybrid, White Spanish, and a creeper variety, the nuts of which are more saleable for direct consumption than the upright growing sorts. These plots were sown on the 18th August, gathered 13th January, and stacked around poles with cross pieces a foot above ground, but the unusually heavy rain during February damaged most of the stacks before they were properly cured. A small portion of each, however, has been saved for seed.

Rice.—Japanese Upland varieties were again tried, this time the sowing being carried out in

the early autumn. The problem with rice culture here is to time the sowing so that the crop comes up quickly and covers the ground before weed growth and to arrive at maturity before irrigation, which should take place during the temperate portions of the year. By planting in rows, scarifying, and irrigating down the rows in furrows, the crop can be cleaned and irrigated at will, but cannot be harvested except by hand, which is too expensive. Another trial will be made in rows irrigated by a modification of the Hawaiian system, and the furrows between the rows scarified down after the last watering so as to permit the use of a mower for harvesting.

SUMMARY OF OPERATIONS PER ACRE BASIS TO 31ST MAY, 1928.

Crops.	Rain and Irrigation during Growth.		Particulars of Costs.	Costs.			Realisation.			Remarks.
	In.	In.		£	s.	d.	£	s.	d.	
Maize	7.32	8.60	Seed and cultivation	5	2	0				
			Irrigation	4	16	0				
Lucerne	47.56	5.24	Harvesting	6	13	0	12	14	0	Second year's growth.
			Cultivation	4	15	0				
			Irrigation	7	8	8				
Potatoes	9.52	3.10	Harvesting	6	11	7	32	14	5	Three sections (see General Remarks)
			Cultivation and seed ..	16	8	10				
			Irrigation	2	19	9				
Pines	47.56	3.60	Harvesting	9	1	9	30	6	2	Plots again in fruit
			Cultivation	9	5	9				
			Irrigation	7	4	11				
Sorghum	41.49	4.01	Harvesting	6	13	7	23	19	0	For fodder purposes
			Cultivation and seed ..	2	8	2				
			Irrigation	3	11	11				
Experiment plots of ratoon cane	42.03	31.64	Harvesting	0	18	4	17	1	0	
			Cultivation	10	9	2				
			Irrigation	11	14	6				
Plant cane for revenue ..	48.41	25.36	Harvesting	10	7	6	48	7	0	
			Cultivation and plants	24	0	0				
			Irrigation	12	19	6				
Ratoon cane for revenue ..	42.03	18.37	Harvesting	21	8	6	98	0	7	
			Cultivation	8	3	4				
			Irrigation	7	3	6				
			Harvesting	8	1	0	29	2	1	

INCOMPLETE EXPERIMENTS.

Bananas	47.56	37.90	Cultivation	47	7	6				Preliminary trial plot
			Irrigation	29	10	0				
Oranges	47.56	3.55	Harvesting	3	10	0	42	0	0	Annual expenses. No return yet.
			Cultivation	17	2	6				
			Irrigation	6	6	2				
Fodder and miscellaneous fruits	47.56	13.10	Cultivation	8	14	8				Small plots for preliminary experimentation
			Irrigation	23	3	2				
			Harvesting	3	0	11	0	11	0	

Grapes and Miscellaneous Fruits.—The following varieties of grapes growing, but fruit destroyed by bower birds before maturing, namely—Hamburg, Wilder, Goethe, and Iona. Two Flat China peaches produced 2 quarts of sound, juicy fruit of good flavour. Custard apples, Spink's Special, Avocada pear, and custard apples not yet bearing. All these trees have been pruned, and the grape vines trained on fence trestle instead of the upright frames hitherto employed.

Adlay grass is not to be compared with sorghum or saccaline for fodder purposes.

Irrigation.—The Hawaiian system is still proving beneficial, not only to cane but also to other crops grown in rows, but to be effective the

distribution of the water must be made in well-defined cross sections over each field, in which the flow is made as short as possible consistent with the cost. Experience points to a length of 4 or 5 chains flow being distance that suits this district.

Rainfall.—For the twelve months ending 30th June, 1928, 47.86 inches fell, of which 31.63 fell during the last six months.

Water Levels in Wells.—The water in No. 1 well came up 1 foot 7½ inches during the year, and that in No. 2 well 1 foot 10½ inches.

H. C. QUODLING,
Director of Agriculture.

EXTRACTS FROM AGRICULTURAL INSTRUCTORS' REPORTS.

SOUTHERN DIVISION.

The Instructor in Agriculture for the Southern Division, Mr. A. E. GIBSON, reports:—

Following on the rains experienced in May and early June of last year, an increased area of land compared with that of 1926 was sown to wheat, and the general appearance of the young crop gave considerable promise during the early stages of its growth, but more particularly in the Darling Downs area.

The rainfall records for July and August showed a decrease compared with the averages for those of May and June; and due to the fact that precipitations generally had been lighter throughout the Maranoa than the Darling Downs. The consequences were more noticeable in the former than in the latter districts, with the result that by the end of August the Maranoa crops were beyond help.

In the Darling Downs conditions were somewhat better, owing to larger reserves of soil moisture being available, and up to 12th September, when the outlook improved slightly, due to light showers being experienced, the vitality of the wheat crops was almost beyond conception.

Good rains were experienced in the Central and Western areas, up to 250 points in some instances being recorded, and the wheat areas also participated; these rains were further supplemented by later falls on the 2nd of October, which put a satisfactory wheat yield beyond all reasonable doubt. Further rains were received throughout October, November, and December, with the result that harvesting operations were delayed, and the old year reached its final week before the wheat harvest of Queensland for 1927 was fully garnered.

Although alarming reports were received, stating that considerable damage had been experienced owing to continued rains, the ultimate yields showed that these were unfounded—or at least greatly exaggerated. Considerable bleaching of the grain was, of course, inevitable, but beyond this the amount of damage was negligible.

As a matter of fact, farmers' estimates of yields were exceeded in numerous instances by the actual grain obtained. The deliveries to the Wheat Pool ultimately reached the total of 3,575,000 bushels, and, allowing for reserves of seed and feed grain, the 1927 harvest very probably reached the 4,000,000 mark. As an example of yields, it might be stated that Messrs. Zeisemer Bros., of Cecil Plains, harvested 22,400 bags from an area of approximately 2,000 acres.

Conditions which favoured the revival of the wheat crop were equally propitious for that of maize, to which latter crop a considerable area was sown, as good prices had been offering for Western stock-feeding purposes. As a result of the partial relief received over a portion of the drought-stricken areas, prices receded somewhat, but those who were able to harvest their grain early participated, and fair returns were received for a considerable portion of the crop. Some growers held over their grain from the

early crop in anticipation of the market recovering, but prices gradually receded, and at present values are considerably below what must reasonably be reckoned as the cost of production.

The early crop was probably the heaviest harvested for some considerable period; and conditions being still favourable a large area was also sown for the late crop, which made rapid, vigorous growth. The almost continuous rains of February resulted in floods in many of the maize-growing areas, and considerable damage resulted to the crops, many being completely destroyed. At one period it was estimated that the total maize harvest would be in the vicinity of 5,000,000 bushels, but flood damage was responsible for a reduction of this estimate, which suffered a further depreciation by the recent visitation of mice, and it would appear that, as a result of these combined factors, the ultimate yield will probably be in the vicinity of 4,000,000 bushels.

Other agricultural crops, generally, suffered more or less from the excessive wet weather experienced between the months of October and April, particularly root crops, and very few prime potatoes of Queensland origin have been available for some considerable period, supplies being invariably Southern produce. One redeeming feature is the fact that the subsoils over a considerable portion of Queensland's agricultural districts, particularly those of the wheat areas, have received a thorough soaking, which it is reasonable to expect will be reflected in subsequent crops, or at least those of 1928.

As a result of weather conditions, the field activities of this branch were considerably impaired, and further experimental work in connection with pasture improvement delayed. Other experimental trials suffered in accordance, and generally the whole of the season's field operations were more or less hampered or delayed.

During the spring of 1926, considerable interest was aroused by articles which appeared in the press dealing with electro-culture, and somewhat extravagant claims were put forward on behalf of the apparatus of at least two inventors—i.e., Rushworth's and Christofleau's. It was claimed by the use of the former that the electrical shocks were transmitted through the soil every 30 seconds by means of a thin ribbon of copper buried 12 inches in a furrow alongside of a plot; and similarly by another on the other side of the plot. In order to distribute the influence of the shocks over and under the soil, the ends of the ribbon from opposite corners of the plot were connected by two overhead wires to the terminals of an induction coil and attached to two dry cells. Contact was arranged for by means of a clock operating the electric current every 30 seconds.

Christofleau's apparatus consists of a metal cap constructed of copper and zinc, and this is attached to an elevated pole. An iron pointer carrying wire aerials is attached to the metal cap, from the lower portion of which a galvanised

wire of No. 10 gauge is conveyed through insulators to within 2 ft. of the bottom of the upright post and thence led along a furrow in a due northerly direction. As the alleged electrical influence is supposed to extend for 5 ft. only on each side of the wire, it is necessary that a similar apparatus be erected every 10 ft. apart. It is stated, however, that electrical energy can be transmitted for any length of wire in a north-south direction.

With the idea of testing out the two systems on their individual merits, 20 perches of land were selected at Yeerongpilly Experimental Station that had previously been under lucerne and had recently been ploughed and cultivated to a fine tilth, for the trials.

Five plots of 4 perches each were laid out in the following order:—

1. Electro-culture, Christoffeau's system.
2. Control, unmanured.
3. Fertiliser, 600 lb. p.a.; 4-14-10 mixture.
4. Control, unmanured.
5. Electro-culture, Rushworth's system.

Following on the erection of the electrical apparatus on plots 1 and 5, fertiliser was applied to No. 3 at the rate of 600 lb. per acre of 4-14-10 mixture. This was composed of nitrogen 4 per cent. from dried blood; Phosphoric acid 14 per cent., from superphosphate and Nauru phosphate; potash, 10 per cent. (muriate).

Plots were sown with the following in equal areas of 42 ft. 4 in. by 4 ft.:—

- Maize (Funk's 90 days), in drills.
- White panicum, broadcast.
- Saccaline sorghum, in drills.
- Sweet potatoes, in drills.
- Tomatoes, in drills.

Climatic conditions being favourable, rapid growth was made by all varieties, and the first fully matured crop for green fodder was harvested in March, and the final harvesting of all plots effected in July.

Yields were as follows:—

—	Maize.				W. Panicum.				* Saccaline.				Sweet Potatoes.				Tomatoes.			
	Tons	cwt.	qr.	lb.	Tons	cwt.	qr.	lb.	Tons	cwt.	qr.	lb.	Tons	cwt.	qr.	lb.	Tons	cwt.	qr.	lb.
No. 1 Electro-culture (Christoffeau's)	15	14	2	17	27	11	0	25	26	19	2	27	6	17	3	6	4	2	0	11
No. 2—Control ..	15	0	3	14	24	18	1	17	23	13	0	15	3	14	1	6	2	5	3	20
No. 3—Fertiliser ..	15	19	1	0	33	1	1	15	28	5	0	0	3	6	2	11	1	2	3	24
No. 4—control ..	18	9	3	3	32	12	1	14	29	14	3	12	4	11	3	13	0	9	0	0
No. 5—Electro-culture (Rushworth's)	17	4	2	2	27	6	2	15	22	3	1	3	2	3	2	15	0	4	2	10

* Includes ration cutting.

As will be noted, only in two particular instances were yields from the electro-culture plots higher, whilst consistently higher yields were obtained from the control plots in every other case. Tomato records were interfered with by outside influences, the position of plots 3, 4, and 5 being particularly favoured for such.

In view of the inconclusive results obtained, and to the fact also that the patentees of Christoffeau's apparatus claimed that efficiency was increased if left in position for a period extending over several seasons, a further trial was suggested, and at the same time another set of apparatus was obtained on loan from the agents—Messrs. A. Troughet and Company, of Perth, W.A.—for the purpose of establishing the second trial on an area of land which it was thought would show more conclusive results from the use of fertilisers. The area used for

the previous experiment being in the meantime laid out as follows:—

- No. 1—Christoffeau's Electro-culture.
- No. 2—Control.
- No. 3—Hutton's Complete Special Fertiliser, 600 lb. per acre.
- No. 4—Control.
- No. 5—Fertiliser, 600 lb. p.a., 4-14-10 mixture.

The five plots occupied the same area but the three crops—maize, saccaline, and white panicum—occupied the space previously occupied by five, consequently each represented an area 42 ft. 4 in. by 6 ft. 8 in.

Sowing was completed on 10th October, following on a good soaking rainfall, and, with the incidence of further favourable growing conditions, the crops were ready to harvest on the 21st and 22nd December, or a period of 66 days from date of sowing. The following are the computed yields:—

—	Maize.				Saccaline.				W. Panicum.			
	Tons	cwt.	qr.	lb.	Tons	cwt.	qr.	lb.	Tons	cwt.	qr.	lb.
No. 1—Electro-culture	19	13	1	17	31	7	1	1	15	11	1	20
No. 2—Control	18	12	3	10	34	5	2	27	15	4	0	14
No. 3—Hutton's Special Complete Fertiliser	17	18	0	25	35	9	0	15	20	7	3	21
No. 4—Control	20	13	3	24	34	11	2	10	19	6	0	0
No. 5—Fertiliser 4:14:10 mixture	20	13	0	27	33	3	3	27	16	1	1	21

It will be noted that the best results were obtained from the use of mixture 4-14-10 in the case of maize, No. 5 giving an increase of 1 cwt. 1 qr. 23 lb. over and above the next highest yield,

that of No. 4, a control plot. Whether the expenditure on this quantity of fertiliser is justified to obtain an increase of less than 1½ cwt. per acre is open to question.

The heaviest yields of saccaline and panicum were obtained from the plots fertilised with Hutton's Special Fertiliser. In these instances, the same quantity of fertiliser gave an increase of 17 cwt. 2 qr. 5 lb., and 1 ton 1 cwt. 3 qr. and 21 lb. respectively. Here, again, it is open to question whether the expense incurred was justified by results.

The returns obtained from the electro-culture plots were no more than anticipated, and the opinion is expressed that little benefit, if any, is obtained from the utilisation of the apparatus. Compared with the highest yields obtained from the control (unmanured) plots, that of No. 1 (electro-culture) showed deficiencies of 1 ton 0 cwt. 1 qr. 25 lb.—3 tons, 4 cwt. 1 qr. 9 lb.—and 3 tons 14 cwt. 2 qr. 8 lb. in maize, saccaline, and panicum respectively.

The foregoing simply comprises the results obtained from the electro-culture plots last year.

Due to the extremely favourable weather conditions obtaining subsequent to the first harvesting of the fodder crops, as set out in the foregoing, a ratoon cutting of saccaline was obtained on the 28th of March; yields were as follows:—

	Tons.	cwt.	qrs.	lbs.
No. 1—Electro-culture	21	4	0	2
No. 2—Control	25	10	1	4
No. 3—Hutton's special fertiliser	30	14	0	11
No. 4—Control	30	6	3	4
No. 5—Fertiliser 4-14-10 mixture	31	4	1	9

Attention is drawn to the fact that No. 5 plot gave a somewhat higher yield and points possibly to a more lasting effect on the soil than Hutton's special complete fertiliser.

From the indifferent results obtained from Christoffeau's electro-culture plot, it appears that no benefit has been derived from the installation of this apparatus, so far at least as the ratoon crop was concerned.

These areas were again prepared and sown, with the exception of No. 5, on 1st June this year, with a mixture of Dun Field Peas and Florence Wheat, at the rate of $\frac{3}{4}$ bushel of peas and 1 bushel of wheat per acre, the layout being as follows, and in similar sized areas to those noted previously:—

- No. 1—Christoffeau's electro-culture.
- No. 2—Control.
- No. 3—Fertiliser.
- No. 4—Control.

Another site was chosen for the duplicate electro-culture and fertiliser plots on a poorer class of soil of a heavy clay type, situated near the laboratory of the Stock Experiment Station. These were set out in areas 60 ft. x 20 ft. and sown on the same date with a similar mixture of field peas and wheat to that used on the original electro-culture plots. The layout was as follows:—

- No. 1—Control.
- No. 2—Electro-culture, Christoffeau's.
- No. 3—Control.
- No. 4—Fertiliser, 4-14-10 mixture.
- No. 5—Control.

Possibly, more conclusive results regarding the use of fertilisers on this particular class of soil will be obtained. At the present date (30th June) the crop is well above ground and looking remarkably healthy on all plots.

CLEARING-OUT SALES AT HERMITAGE AND WARREN STATE FARMS.

The Minister having decided that the Hermitage and Warren State Farms had fulfilled the purposes for which they were established, and that their further existence was not justified, decided to close both institutions. Following on instructions received, both of the farms were visited, and stock-sheets, together with valuations were prepared.

Hermitage.—Due to the fact that certain necessary repairs and replacements, together with the painting of buildings, required attention and supervision, a considerable portion of my time during the latter part of the year was absorbed in connection with these and other matters incidental to the finalising of the farm's activities.

Tenders were called for the lease of the property for a period of three years, with an option of renewal for a further period, but met with a surprisingly poor response from the farming community. The property was eventually leased to an approved tenant at a satisfactory figure.

Arrangements having been concluded with the firm of J. Allman and Co., auctioneers, Warwick, a clearing sale was held of stock, plant, machinery, building material, &c., on 24th and 25th January, at which a good attendance of buyers was secured. All assets listed for sale were disposed of at satisfactory prices.

Warren.—This clearing sale was originally listed for 28th and 29th February, through Messrs. Hempenstall Bros., of Rockhampton, but, owing to wet weather, was deferred till 5th and 6th March, on which dates a well-patronised clearing sale was held, and stock, implements, men's quarters, plant, &c., disposed of at satisfactory figures.

Similarly, tenders had been called for the lease of this farm, but these also met with poor response. An approved tenant eventually secured the property for a term of three years, with option of renewal.

GENERAL DUTIES.

The problems confronting the new settler, and the established farmer in search of information, were responsible for a considerable amount of correspondence being dealt with, and included many subjects on which information was desired that are not usually classed under the heading of agriculture.

In addition, my services have been availed of during the past year in the capacity of judge at the Royal National, Maryborough, and Gin Gin Agricultural Shows.

CENTRAL DIVISION.

The Instructor in Agriculture for the Central Division, Mr. G. B. Brooks, reports:—

SEASONAL CONDITIONS.

Adverse conditions are invariably associated with sparse and irregular rainfall. During the year under review agricultural operations were, however, considerably interrupted through an excess of moisture, rainfall in most districts being over the average. A good deal of damage was done to crops, fences, and pastures through flooding, more particularly in the alluvial areas adjacent to the Fitzroy River and its tributaries. As the heavy rains were experienced during the latter part of summer, the cotton and potato crops were considerably damaged, while maize and fodder crops also suffered. Large numbers of stock were drowned in the Wowan and Baralaba areas. Apart from the losses occasioned along the river and creek frontages, the season under review may be considered as being on the whole of a favourable nature. Satisfactory yields of cotton and other summer crops were generally secured. Although satisfactory returns will in most cases be harvested, the crops will generally be under what was anticipated. Plant growth was really retarded on account of the soil being over saturated, and also by the lack of sunshine. Wet conditions interfered with crop trials, the roads being in many localities practically impassable for a considerable time.

ACTIVITIES.

On the closure of the Warren State Farm in April, Mr. W. H. Bechtel was attached to the Central Division Instructional Staff as Acting Assistant Instructor. Field Assistant Straughan has, as in previous years, been engaged principally in attending to experiment and demonstration plot work. Apart from routine, instructional, and office duties, a good deal of my time was given to tobacco investigation work and the

raising of crops suitable for the production of power alcohol; while several visits were made to the Theodore irrigation project, and reports furnished in connection therewith. Reports were also supplied dealing with wheat-growing in the Central District, fodder crops, cassava, and tobacco. Assistance was given in judging the primary products sections at the Bundaberg, Miriam Vale, Gladstone, Mount Larcom, Rockhampton, Wowan, and Mackay Shows.

In regard to the agricultural survey commenced during the previous year in the Central District, reports were furnished to the Chairman of the Committee by the various officers engaged thereon. The portion surveyed extended from Flaggy Rock to Sarina. A further area lying to the west of the Connor's Range (Bolingbroke Holding) was later inspected by the soils officer, Mr. R. W. Winks.

In view of the fact that the dairying industry is about to be established in the Mackay district, an agricultural survey of extensive areas of grazing country that is being made available for closer settlement is a matter of much importance. It would be an advantage, both to the settler and the State, were the agricultural survey to precede the designing of the respective areas by the Lands Department.

The following is a summary of the Experimental and Demonstration, &c., Plots supervised by this branch for the 1927-28 season:—

Subsidy plots (fertiliser experiments)	..	2
Sorghum seed propagation plots	..	30
Sorghum variety trial	..	13
Sorghum improvement plots (selections)	..	2
Observation plots	..	2
Onion variety trial	..	3
Root crop trials	..	7
Winter green-feed trials	..	4
Rice variety trials	..	2
Cassava, arrowroot, and sweet potato plots	..	4
Tobacco plots	..	4
Green manuring trial plot	..	1
Total	..	74

District.	Locality.	Nature of Plots.	Totals.
Dawson Valley	Rannes	.. Sorghum propagation, sorghum variety, observation	..
	Thangool	.. Sorghum propagation (2); sorghum variety; sorghum improvement; onion variety	3
	Biloela	.. Sorghum propagation (3); sorghum variety; root crops	5
	Wowan	.. Subsidy; sorghum variety; sorghum improvement; onion variety; sorghum propagation; root crops; winter green feed	7
	Jambin	.. Sorghum propagation; onion variety; rice variety; sorghum variety; winter green feed	5
	Goovigen	.. Sorghum variety; rice variety	2
Boyne Valley	Buneru	.. Sorghum propagation; sorghum variety	2
	Ubobo	.. Subsidy; sorghum propagation; sorghum variety	3
South Coast	Littlemore	.. Sorghum variety	1
	Mount Larcom	.. Sorghum propagation (6); onion variety; root crops	8
	Ambrose	.. Sorghum propagation; sorghum variety; winter green feed	3
	Raglan	.. Sorghum propagation (2); observation	3
	Rosedale	.. Sorghum propagation (3); sorghum variety; observation; root crops	6
	Colosseum	.. Root crops	1
	Miriam Vale	.. Sorghum propagation (2); root crops	3
	Archer	.. Sorghum propagation	1
	Bundaberg	.. Cassava; sweet potato; arrowroot	3
	North Coast	Marlborough	.. Sorghum propagation (2); root crops	3
Sarina		.. Sorghum variety; cassava and starch crops; tobacco (4); green manuring trial plot	7
Rockhampton	Alton Downs	.. Sorghum propagation; fodder demonstration	2
	Pink Lily	.. Sorghum propagation	1
Total			74

EXPERIMENTAL AND DEMONSTRATION PLOT WORK.

With the limited staff available it has not been possible to carry out any extensive scheme of detailed experiment work. Activities were directed more to the demonstrating, particularly to farmers in newly settled areas, the best products to grow for a particular purpose; such as fodder for dairying, root and other crops for pig raising, &c. Crop trials and plant improvement work was mostly confined to grain, saccharine sorghum, and starch producing crops; and cassava, arrowroot, and sweet potatoes for the production of power alcohol. Comparative trials with several varieties of onions were also carried out, as well as the testing of various fertilisers in the raising of winter fodders. During recent years attention was given to the improvement of the sweet potato. In addition to the selection and breeding up of high yielding strains of varieties obtained from most of the sweet potato growing countries, 42 new cross-breeds were raised from seed. Some 25 of these are of a high commercial value, giving exceptionally good yields; while the tubers are of excellent cooking quality. These new types have been distributed over a very wide area, including the Southern States, Northern Territory, New Guinea, East Indies, and South Africa. It is pleasing to note, from letters received and also from articles appearing in agricultural publications, that the new sorts are proving a valuable acquisition to the standard varieties already under cultivation. The propagation of cuttings for distribution has for the present been discontinued by this branch. Special attention is now being given to the improvement of the sorghum crop, which was taken in hand some years ago, and discontinued on account of the pressure of other work. Forty varieties are now under observation.

CONSERVATION OF FODDER.

During the summer advantage was taken by farmers, more particularly those engaged in dairying, to plant areas of sorghum, Sudan grass, and corn to provide feed for the autumn and winter months. The heavy summer rains not only damaged the crops but considerable difficulty was experienced in converting the material into silage, the land in many instances being really too wet to permit of harvesting being carried out.

WINTER FODDER DEMONSTRATION PLOTS.

During the past ten years it has been the practice of the Instructional Branch to arrange with farmers in suitable localities to plant various fodder crops in order to demonstrate the best varieties to grow either for dairying or pig raising purposes.

Largely as a result of these activities, the growing of winter fodders has become so universal in several districts that it was decided to decrease the number of demonstration plots to

four, and to give increased attention to summer-growing crops, mainly sorghums. The farms on which the plots were located are as follows:—J. R. Adsett, Jambin; H. Wolff, Ambrose; S. Hoare, Alton Downs; J. Lindley, Wowan.

PROVIDING GREEN MATERIAL FOR AN EXTENDED PERIOD.

Although several varieties of cereals were sown in the respective plots, this was not done with the view of carrying out comparative trials, but to demonstrate the value of making provision for a supply of green material during the months when the natural grasses have lost their succulence. Owing to the irregular rainfall invariably experienced during the winter in the Central District, the keeping up of a supply of green feed for the dairy herd, by successive sowings of one variety, cannot be generally carried out. Given a supply of soil moisture, advantage has to be taken of this to sow a number of varieties which will mature at widely different periods. Planting is carried out immediately the hot humid summer weather has passed, so that feed may be available during early winter. April has usually been found to be the most suitable month in which to sow.

Varieties to Plant.—The following varieties were sown, maturing in the order given:—Skinless barley, Cape barley, Florence wheat, Huguenot wheat, Ruakura oats. The oats invariably mature much later than the other cereals mentioned, consequently if not required for green feed can be converted into hay. Field peas were mixed with all cereals at the rate of half a bushel to the acre. This mixture not only gives greatly increased weights of green fodder, but adds very materially to its feeding value.

Rate of Seeding.—The rate of seeding per acre was as follows:—Wheat and skinless barley, 1 bushel; Cape barley and oats, 1½ bushel.

Seasonal Conditions.—There was sufficient moisture present in the soil at the respective places to ensure a satisfactory germination. Prior to coming into ear, however, a long dry spell was experienced, more particularly at Alton Downs, where the soil is of a heavy basalt nature. This had the effect of decreasing the returns, more particularly of the early maturing varieties.

Another feature that has an important bearing upon green weights recorded is that, owing to the different periods of maturity, it was not always possible to visit the plots at the time when each sort was at its stage of maximum development. As already mentioned, the growing of the crops was not a matter of comparative trials but rather an effort to demonstrate to surrounding farmers the most suitable varieties to grow.

Yields of Green Material.—The weights of green fodders recorded at the respective places are as follows:—

YIELDS IN TONS PER ACRE.

Crop Planted with Field Peas.	J. R. Adsett, Jambin.	H. Wolff, Ambrose.	S. Hoare, Alton Downs.	J. Lindley, Wowan.
Florence wheat	7.92	5.22	4.7	5.00
Skinless barley	3.6	7.01	3.5	6.00
Cape barley	6.48	5.94	3.02	5.75
Ruakura oats	13.01	10.94	4.41	11.5
Huguenot wheat	7.2	7.74	5.56	7.6
Field peas .. .. .	..	5.94	..	..
Planted	11-6-27	5-7-27	4-6-27	11-5-27
Rainfall during growth and month previous to growth. Inches	15.76	13.93	14.51	13.93

DEMONSTRATION CROPS SUITABLE FOR PIG-RAISING PURPOSES.

While fodder crops previously mentioned provide for the dairy herd, the root crop plots are intended to demonstrate the advantage of making provision for a supply of pig feed for a period of some six months from planting. In order to carry this out, it is essential to utilise a number of crops that will mature in rotation, say, from the latter end of May to December.

The varieties included in the following list can be planted in the Central District during the latter end of March. There is considerable risk in planting prior to this date on account of aphid attack. Although Swede turnips may be sown somewhat earlier, there is little advantage to be gained by doing so, as the yellow variety, even if planted three weeks later, will be the first available.

Varieties.—The crops selected, together with the time they become available for use, provided they are all sown during the latter end of March—

Rape—Available end of May and June. In a favourable season several cuttings are secured.

Yellow and green top Aberdeen turnips—June and July.

Swede turnip; cabbage—July-August.

Silver and sugar beet; field carrots; chow moellier—August-October.

Long red mangels—October-November.

Yellow globe mangels—November-December. The globe variety withstands the hot weather much better than the long red.

Method of Planting.—Sugar and silver beet, carrots, turnips, and rape were sown in rows about 2 ft. 6 in. apart, sufficiently wide to permit of scuffling. All other varieties in 3 ft. rows. The rape and silver beet were sown in a continuous row; the turnips and beet thinned to about 8 in., the carrots from 4 to 6 in., the chow moellier and mangels to 15 in., while the cabbage was spaced somewhat wider apart.

It may be mentioned that, in the event of an indifferent germination of mangels and sugar beet, the blanks can be filled up by transplanting, preferably during dull, moist weather. On account of the enormous yields usually secured from mangels, the time spent in this work will be well repaid.

ROOT CROPS.

The following is a list of the growers, showing location and yield of the respective varieties:—

RESULTS.—YIELDS IN TONS PER ACRE.

Crop.	J. Hales, Rosedale.	J. J. Kelly, Mount Larcom.	A. P. Lawton, Wowan.	S. Larson, Miriam Vale.	J. Larson, Colosseum.	A. Rake, Marlborough.
Rape—						
First cut	5.11	14.57	5.11	23.97	4.11	22.00
Second cut .. .. .	..	15.13	..	7.12	..	..
Silver beet—						
First cut	15.72	17.28	6.28	13.75	15.22	14.00
Second cut .. .. .	..	16.22	..	..	..	..
Chow Moellier	17.28	8.64	9.03	20.43	6.68	25.00
P. Aberdeen turnip	29.12	40.00	19.04	23.17	Not planted	Not com- puted
G. Aberdeen turnip .. .. .	..	..	18.46	83.34	Not planted	Not com- puted
Field carrot	7.86	12.88	11.78	20.43	Not planted	19.00
Swede	31.07	40.15	21.12	39.82	Not planted	Not com- puted
Drumhead cabbage	21.22	25.53	6.26	22.00	Not planted	21.00
Sugar beet	24.73	22.41	16.00	40.20	22.40	Not com- puted
Long red mangel	33.50	33.50	28.39	53.14	31.11	29.11
Yellow globe mangel	31.54	31.72	26.03	50.79	34.47	28.11
Planted	14-7-27	17-5-27	13-6-27	6-5-27	20-8-27	2-5-27
Rainfall	16.00	13.9	16.6	14.00	14.00	..

NOTE.—Rainfall includes total rain which fell during growth and for the month previous to planting.

WINTER FODDER AND FERTILISER TRIALS.

Areas on which combined fodder and fertiliser trials could be carried out extending over several years were arranged for in two districts—viz.,

Boyne Valley and Wowan. The crops grown were similar to those in the demonstration plots, with the exception that field peas were omitted. As a result of the prolonged drought there was



DWARF JAVA SORGHUM.



NIGERIAN SORGHUM TRIAL ON FARM OF MR. J. EDMONSTONE, ROCKHAMPTON.



NIGERIAN SORGHAM TRIAL ON MR. J. EDMONSTONE'S FARM, ROCKHAMPTON.

practically no subsoil moisture, consequently the crop had to depend almost entirely upon isolated showers. The trials at Wowan were carried out on the farm of Mr. A. E. G. Barnard, the soil being a brown brigalow scrub loam and fairly representative of the district.

In the Boyne Valley the plot was located on the farm of Mr. A. J. Turner, Ubobo, the soil being a sandy, alluvial loam. Dry conditions were experienced shortly after germination, causing the respective varieties to come into ear very early, the result being low yields. The results showed that practically no benefit was obtained from the fertilisers applied. Any difference in weight would appear to be due to slight variation in soil.

SORGHUM VARIETY TRIALS AND STUD PLOTS.

The abnormal wet season interfered very considerably with the carrying out of the trials. Of the forty trials arranged for nine were not planted, the continuous rains preventing the preparation of the soil; eight were destroyed by flood; in seven records in regard to the yield of grain could not be secured as a result of the depredations of parrots and mice; one grain variety germinated in the ear while standing in the field. Particulars in regard to seven have not yet been obtained.

The results obtained from the respective grain and saccharine varieties in the various districts are as follows:—

SORGHUM TRIALS.

Grower and District.	Variety.	Yields.		Rainfall.
		Grain.	Green Feed.	
		Bushels.	Tons.	
A. E. Russell, Thangool	Honey .. .. .	..	32.3	35.00 approx.
G. E. Heinche, Ambrose	Dwarf Java	23.64	..	Flooded
J. J. Kelly, Mount Larcom	Standard Milo	40.12	..	14.34
	Cream Milo	38.3	..	14.34
	Collier .. .. .	..	33.00	14.34
W. Wolff, Ambrose	Dwarf Java	33.00	..	33.74
	Collier .. .. .	..	22.10	33.74
F. Sturm, Ambrose	White African	Damaged by birds	15.6	33.17
J. R. Adsett, Jambin	Dwarf Cream Kaffir	Damaged by birds	14.01	24.57
S. Larsen, Miriam Vale	Honey .. .. .	..	18.57	Flooded
W. Lloyd-Jones, Rosedale	White Yolo	34.00	6.75	Flooded

NOTE.—Rainfall includes the total rain which fell during growth and the month previous to planting.

STARCH-PRODUCING CROP TRIALS.

Several reports have been submitted during the year in regard to the trials of crops that promise to be suitable for the production of power alcohol. Previously these trials were confined to the Plane Creek district, where a distillery has been established for the manufacture of spirit for internal combustion engines.

NIGERIAN SORGHUMS.

A fine collection, embracing twenty-five varieties of sorghum in the seed head, was received from the management of the Australian National Power Alcohol Company, Sarina. These were introduced from Nigeria, and consisted of both grain and saccharine types. An outstanding feature was the large size of both the head and grain. A number were also quite distinct to those previously grown in Australia, having grain in various shades of yellow.

Arrangements were made for propagation in the Archer and Pink Lily districts. The manager of the Biloela Cotton Research Farm, Mr. Hodge, very kindly planted a small area of the respective varieties, and has kept very complete records of development. The growth made at each of the centres mentioned was most luxuriant, as most of the varieties attained a height of from 15 to 18 ft. A good deal of damage was done by floods and strong winds. This was particularly the case at Archer. Nearly all sorts are very late

maturing, which may be due to not being acclimatised. Considerable difficulty was experienced in saving the grain from destruction by parrots. For this reason records in regard to grain yields were not obtainable.

Particulars in regard to green weight, height, &c., are as follows:—

NIGERIAN SORGHUMS.

Variety.	Tons.	Average Number of Stalks per Stool.	Extreme Height Reached.
			Ft. in.
Fara fara yan ruwa	46.47	9.8	16 0
Fara fara mori	32.34	6.3	15 3
Fara fara doron zabo	27.79	7.1	16 8
Maibakin Kwono	37.84	5.7	16 0
Dawa hasawa	42.19	5.6	17 0
Fara fara zauna inuwa	19.64	2.8	15 0
Maibakin soshiya	40.88	5.7	18 0
Fara fara kujeran kurchia	23.36	4.0	13 3
Fara fara pasakundu	38.02	4.8	18 6
Fara fara	30.95	4.7	15 0
Fara fara jan kwono	28.33	4.4	14 0
Yalai	26.41	4.8	13 9
Janari	14.91	3.5	16 5
Lebon rakumi ja	27.00	4.0	15 10
Lebon rakumi fari	46.49	7.2	15 7
Buku	25.52	5.0	15 3
Kaura inuwa	25.06	4.3	15 6
Kaura maifarin soshiya	27.31	4.0	8 0 to 12 6
Kaura maibakin soshiya	19.27	3.3	16 0
Kauru zauna inuwa	31.54	3.9	13 0
Kauru maimasba	25.28	3.4	13 0
Giant Honduras selection	62.84	8.2	14 0 to 15 0

These plots were not harvested in time for the results to be embodied in the 1926-27 report, consequently the yields are appended herewith. During the past year operations were extended to the Bundaberg district, two plots being established—one at the Sugar Experiment Station, the other on the farm of Mr. P. Knudson, Bonna. These trials embraced 18 varieties of cassava, 1 of arrowroot, and 12 of sweet potatoes. The yields from those plots will not be determined until the latter part of July.

The returns from the plots in the Plane Creek area are as follows:—

Comparative trial plots, Cassava and Arrowroot, carried out at Sarina and Koumala, area 1 acre, three rows of each variety.

SPECIAL VARIETIES.

Variety.	Sarina.	Koumala.	Average.
	Tons.	Tons.	Per Acre. Tons.
Sao Pedro Preto	26.5	25	25.7
Seedling 1049	30	20	25
Singapore Red	16	29	22.5
Itaparica	24	20	22
Tapicura	20.5	23	21.7
Creolinha	22	20	21
Valenca	19	22	20.5
Mantiaga	18.5	23	20.7
Mangi	23	17	20
Basiarae	23	17	20
Trapicura	18	14	16
	21.8	20.9	21.3

SELECTION NATIVE VARIETIES.

Variety.	Sarina.	Koumala.	Average.
	Tons.	Tons.	Per Acre. Tons.
Selection 1	14	26	20
Selection 3	18	22	20
Selection 6	12	25	18.5
Selection 4	16	16	16
Selection 2	15	11	13
Selection 5	10.5	7	8.7
Average	14.2	17.8	16
Queensland arrowroot ..	27.6	25.9	26.7

Rainfall during the growing period amounted to approximately 50 in.

The area of cassava grown by farmers in the Plane Creek district suffered to some extent through the abnormal wet season. Floods were experienced on several occasions from December to April. The tubers were harvested during May and treated at the distillery. I was unfortunately held up by the floods at Theodore while harvesting operations were in progress.

Cassava is being grown by farmers in a number of localities for pig-feeding purposes. As the tubers invariably contain hydrocyanic acid in varying quantities, tests are being made to determine whether the amounts present are harmful to stock.

TOBACCO.

The matter of investigating the possibilities of growing tobacco in the Central District was discussed in Brisbane with Messrs. Tregenna and McGhee, experts associated with the Australian Tobacco Investigation Committee. Subsequently an inspection was made, in company with those gentlemen, of lands to the west of the coastal

range, between Mackay and St. Lawrence, that gave promise of being suitable for the raising of a high quality leaf. Although a large portion of the country inspected will shortly be available for closer settlement, it is at present being held solely for grazing, consequently a good deal of difficulty was encountered in securing the necessary assistance in trying out the soils in the respective localities. Arrangements were eventually made for six trial plots. The belt of country being investigated extends south from Eton to a distance of some 60 miles. No trouble was experienced in raising the necessary seedlings, but when ready for transplanting an abnormally wet season set in. This not only delayed planting out but subsequent heavy rains unfortunately flooded and damaged a number of the plots after the plants had been well established. Besides the heavy precipitation individual falls were recorded on three occasions, in the district, of 10 in., 12 in., and 14 in., respectively, within a period of twenty-four hours. As a result of these adverse conditions, the results obtained from the trial cannot be considered as being a true index of the possibilities of the district for this important crop. Operations in regard to some of the plots have not yet been finalised.

As a comprehensive scheme is being carried out in practically the same type of country, extending from Bowen to Cairns, Northern Division, the results obtained from these trials should be of very material value in determining future operations in the Central Division.

ONION VARIETY TRIALS.

Three plots were established, two of which gave satisfactory returns. The crop on the farm of Mr. J. Adsett, Jambin, made an irregular germination due to variation in soil moisture. While the portions that germinated immediately after planting gave onions of good size and quality, those that came up considerably later developed second growth on the advent of hot moist summer weather.

In regard to the other plots, conditions were dry during the early part of the season, which curtailed the growing period somewhat for late maturing varieties. The early sorts in consequence gave the best results; bulbs 5 inches in diameter and 18 ounces in weight being quite common. The returns secured are as follows:—

ONION TRIALS.

Yields in Tons per Acre.

Variety.	Growers.	
	S. Paine, Wowan.	J. C. E. Jacobsen, Mt. Larcom.
Italian Queen	15.2	17.6
Early W. Silver Skin ..	10.3	12.9
James's Long Keeping ..	Failed to mature	10.6
Brown Spanish	Failed to mature	Failed to mature
Planted	28-5-27	14-6-27
Rainfall	18.61 in.	9.20 in.

Rainfall for period during growth and month previous to growth.

The yields on Mr. Adsett's plot were not completed.

EXPERIMENT AND DEMONSTRATION PLOTS—WINTER CROPS.

The following is a summary of the Experiment and Demonstration Plots, Winter crops, arranged for in the respective districts, season 1928. Details in regard to those in the Boyne Valley have not yet been finalised.

District.	Locality.	Nature of Plot.	No of Plots.
Dawson Valley	Goovigen	Onion variety trial	1
	Dululu	Cereal variety trial; winter green feed	2
	Biloela	Cereal variety trial; root crop; winter green feed	3
	Wowan	Onion variety trial; fertiliser trials	3
	Thangool	Observation; onion demonstration	2
South Coast	Jambin	Onion variety trial; winter green feed; root crop	3
	Rosedale	Demonstration plot; winter green feed	2
	Raglan	Demonstration plot	1
	Ambrose	Root crop; winter green feed	2
	Miriam Vale	Root crops (2)	2
North Coast	Marlborough	Root crop; winter green feed; onion variety trial	3
	The Caves		..
Rockhampton Area	Kalapa	Cereal variety trial	1
	Stanwell	Onion variety trial	1
	Wycarbah	Onion variety trial	1
	Alton Downs	Winter green feed	1
Boyne Valley	To be arranged.		

GENERAL REMARKS.

Agricultural development is making steady progress in the Central District. During the year a new butter factory was erected by the Port Curtis Dairy Company at Rockhampton. This company is at present negotiating for a factory at Monto. The Mackay and District Dairy Company anticipates that their factory will be an accomplished fact by the end of the year. Six factories are at present operating in the Central Division, Bundaberg drawing a large portion of its supplies from the southern end.

Much expansion has also taken place in farming operations in the more recently settled Callide, Theodore, and Gladstone-Monto areas.

The prospects for the coming year are most promising. Winter rains have been general over the agricultural districts. A good germination has been secured for the plantings of winter fodder and root-crops. Grass, although dry, is plentiful in the coastal areas. Unfortunately, in parts of the far West drought conditions still prevail.

NORTHERN DIVISION.

The Instructor in Agriculture for the Northern Division, Mr. N. A. R. POLLOCK, reports:—

Seasonal conditions in the Northern Division in the areas devoted to agriculture and to depasturing cattle throughout the past year were generally good, but on the areas devoted to sheep raising, especially on the rolling downs, the rainfall was, in most instances, considerably below the average, Winton, Mackinlay, Gilliat, and other centres recording less than 5 inches for the year under review. East of a line drawn from Richmond to Muttaborra the rainfall, however, was better, especially in the direction of Prairie and Torrens Creek, where sheep in considerable numbers were sent on agistment from less fortunate centres. Except for the fact that the Northern flocks had been greatly depleted in numbers during the extremely dry year 1926, thus allowing more acreage per sheep on the holding, and better opportunity for agistment elsewhere, it is probable that losses would have been serious.

The increase in prices offered for cattle, both as fats and stores, coupled with the better season experienced, has considerably heartened pastoralists engaged in that industry. The Northern meatworks will operate over a longer season than usual, while a considerable number of cattle, mainly drawn from the eastern Gulf country and lower peninsula, have been sold for transport South. The meatworks at Biboohra are not operating this year, largely owing, it is stated, to the inability to obtain a continuous supply. Since the Etheridge Railway was closed to heavy traffic, it is considered more profitable to drive the cattle that would otherwise be trucked on that line to centres on the Great Northern Railway. The peninsula cattle ordinarily treated at Biboohra are consequently being trucked to Mungana, and transported upwards of 200 miles beyond an existing factory.

FODDER CONSERVATION.

Discussions concerning provision for the sustenance of livestock during periods of abnormally low rainfall, by purchase of fodder, transport to relief country, or by conservation of fodder on the holding, have inclined many pastoralists to the conclusion that the only practical and economical solution of the difficulty is to accumulate supplies of fodder grown and conserved on the holding in normal years, either as hay or ensilage or both. Arrangements were made by the Department with several individual graziers in the rolling downs country to grow areas of fodder crops, totalling somewhere about 100 acres, for trials in this direction during the year, seed of fodder sorghum varieties, Sudan grass, cowpea, and velvet beans being supplied for the purpose. Unfortunately, the amount of rain experienced was insufficient to promote growth, yet indications were obtained of the tenacity of life possessed by the sorghum family under dry conditions, and of their response to even small showers.

As an instance of the suitability and productivity of sorghums in the West under irrigation with artesian water, the following extract from a letter dated 25th June, 1928, received

from Mr. A. B. Docker, of Blairmoor, in the Winton District, is informative:—

“I have the sorghum still coming on although it is cold; some of it is over 6 feet high; it ought to do well in the spring when it stools again. Honey sorghum at Bellfield is over 10 feet high—a splendid growth, beating all the other sorghums. I am very surprised at it growing in the winter so well.”

It is satisfactory to note that growers are not discouraged, since they are prepared to carry on next season, and in cases to increase the area to be cultivated.

The value of hay made from the natural grasses of the rolling downs when cut at the right time and properly cured is instanced in the analysis of a sample secured at Mr. N. Philp's holding, Stanley Downs, Stamford, in the Hughenden District, which the Agricultural Chemist returned as—Water, 9.0; ash, 18.2; protein, 8.3; fibre, 25.4; fat, 1.6; carbohydrates, 37.5. This shows a remarkably good fodder value for grass hay, providing in itself a sufficiently balanced ration for maintenance in dry seasons. The analysis of the ash showed—Lime, 1.2 per cent.; phosphoric acid, 0.36 per cent.; chlorine, .567 per cent.—which is satisfactory.

PASTURE IMPROVEMENT.

Rolling Downs.—The nutritive value of the bush hay as shown in the foregoing analysis offers an inducement to improve the yield, not only to allow of a greater amount being cut off a given area for conservation as hay, but to increase the carrying capacity of the holding. Most natural pastures on the rolling downs carry a large proportion of Mitchell grass of a more or less tussocky nature, according to its age, which disallows close cutting with a mower. As the yielding capacity of a grass usually decreases, as is natural, when it ages, a renovation of the pasture is suggested. It is thought that a discing with a oneway disc harrow followed by an ordinary harrow would cut down the old tussocks and level off the ground, which, being naturally sown by the seeds falling during previous seasons, would make a quick response when rain fell and provide a heavier yield of hay per acre when cut. At the same time seeds of legumes natural to the West, or of others found to succeed there, might be sown to improve the protein supply. In this connection *Psoralea*, *Rhynchosia*, *Glycine*, *Phascolus*, &c., species suggest themselves. A recent analysis of *Psoralea cinerea*, which is common in many Western localities, showed in percentages of the air-dried material—Moisture, 9.8; ash, 10.2; protein, 22.0; fibre, 10.1; fat, 7.4; carbohydrates, 40.5; the ash yielding—Lime, 2.6 per cent.; phosphoric acid, 0.5 per cent.; and chlorine, .157 per cent.

An analysis much as this at once shows the increased value such a legume would give when added to the pasturage. The practice of discing a fresh portion of the holding each year, while improving the pasturage, would tend also to minimise, if not to eradicate, noxious growths such as “Feathertop” (*Aristida* sp.) or others of little value.

Paspalum Pastures.—The deterioration of paspalum pasturage after being laid down for a few years is most noticeable wherever this grass is grown, irrespective of whether the soil on which it grows is of a rich or poor nature. On the Atherton Tableland, which is one of the most fertile areas in the State, and blessed with an excellent rainfall, the paspalum pastures laid down from seven to fifteen years, which in the first few years carried more than one beast to the acre, now require several acres for one beast. This is not due to depletion of the soil fertility, but rather to the matting of the surface roots, which form a tangled mass tending to strangle one another, thus impeding the performance of their functions, and preventing the free entry of rain water as well as aeration of the soil. The remedy lies not in the application of top-dressings of fertiliser, which the plants for the foregoing reasons could not take advantage of, but in ploughing or otherwise breaking up the pasture, and thus destroying the whole or the majority of the offending roots.

The experiments on the Tableland, as well as in the Southern Division, initiated in 1925, the results of which appeared in the Annual Report of the Department for the year 1925-26, showed that in plots unfertilised and fertilised by top-dressings on ploughed land, and heavily harrowed land respectively, the heavier yields of grass from the unfertilised plots on the ploughed land proved conclusively that top-dressings on unploughed land were unprofitable, and that all that was necessary to renovate the pasture was simply to plough and harrow it thoroughly after the rainy season had set in; ploughing before the rains fall on the Tableland will result in killing out the greater part, if not the whole of the grass. A further experiment, which might more aptly be designated a demonstration area, was initiated during the year under review, when 10 acres of paspalum pasture that had been laid down some fifteen years ago were ploughed with a mould board plough in January after heavy rain had fallen, and then well harrowed. The ploughed portion was divided into two areas of 5 acres each, to one of which 7½ cwt. of a fertiliser composed of a mixture of equal parts of superphosphate and finely ground Nauru phosphate rock was applied as a top-dressing at the rate of 1½ cwt. per acre in mid March. Two small areas were enclosed by hurdles on the land ploughed only, the ploughed and top-dressed land, and on the land neither ploughed nor top-dressed. A cutting from each enclosure on 6th June gave as green grass the following results calculated as an acre yield:—

	Tons	cwt.	qr.	lb.
Ploughed only	1	13	0	8
Ploughed only	0	13	2	0
Ploughed and top dressed ..	1	1	2	12
Ploughed and top dressed ..	1	16	1	23
Untreated	0	7	1	20
Untreated	0	6	0	8

In viewing the field, there is no perceptible difference in the growth on the ploughed only and on the ploughed and top-dressed areas, but the contrast between the growth there and on the untreated area is most marked and truly reflected in the results of the cuttings. The value of the trials will be indicated during the coming year, when more cuttings will be made and notice taken of the preference, if any, of stock for a particular area.

Kikuyu grass (*Pennisetum clandestinum*) appears to increase in popularity as a pasture grass on the Tableland each year, and may well be tried in hand-planting on old *Paspalum* pastures, where difficulty exists in breaking them up.

The increasing spread of Townsville wild lucerne (*Stylosanthes mucronata*) is a matter of extreme gratification. Seed of this legume was distributed several years ago to settlers in various parts of the North, and opportunity was taken to cast a little from the carriage window in journeys by rail. It is now to be found growing naturally here and there in all coastal districts of the North, on the Tableland, and well up the Peninsula, adding a much increased value to the pasturage.

The importance of pasture improvement in the North warrants a great deal more attention than is possible with the present staff, and, with the increased work in other directions, suggests the early appointment of additional officers.

WEED-KILLING SPRAYS.

With the object of overcoming the difficulty experienced by many settlers on the Tableland in grassing areas where the felled scrub had been newly burnt off, due to the thick and rapid growth of inkweed (*Phytolacca octandra*), and also to eradicate the inkweed of several years' growth which had taken possession of clearings, especially in the Millaa Millaa district, series of experiments in spraying were undertaken during the year on growth of some three years, and on young growth of not more than a few months' duration, respectively. The materials used were Roberts' Pear poison, Cooper's Weedicide, arsenic pentoxide, arsenical solutions, and ferrous sulphate solutions. On the old growth of inkweed Roberts' Pear Poison distributed by Roberts' pump and atomiser was the only material to kill the growth outright, the next most successful being the arsenic pentoxide, which killed all top growth but allowed fresh growth to be made from the roots.

On the young inkweed, Roberts' Pear Poison at half strength and arsenic pentoxide at $\frac{1}{2}$ lb. to $1\frac{1}{2}$ gallons water were both successful in killing the plants outright. Arsenical solutions and ferrous sulphate solutions were a failure. The fact that poisonous sprays killing inkweed will also tend to kill the young grass minimises the value of the experiment in some degree.

On the new burns, it is thought, at present, that a stand of grass will be established more economically by the usual practice of eradicating the inkweed by hand. On old inkweed, while Roberts' Pear Poison was effective, the cost of material at £3 8s. 9d. per acre, plus the cost of labour in application, does not make the proposition attractive.

Further trials in weed control are suggested in the coming year, when a gaseous treatment of old inkweed might be tried, and other spray mixtures used on the young inkweed or other noxious growths.

TOBACCO.

Though tobacco for pipe and cigarettes has been produced in Southern Queensland and other States for upwards of fifty years, its growth has never become an important industry, due to a

poor smoking quality combined with a bad aroma in the leaf produced, which made no appeal to the consuming public.

Though the production of cigar leaf, which for over twenty years was profitably carried out by a number of growers in the North, has declined, it was not through the smoking quality of the leaf but rather to a coarse texture combined with poor curing and a lack of leaf suitable for wrappers or even binders, in that produced in recent years.

Investigations and experiments in the Southern States proved that climatic influences were not a factor in the production of the bad smoking quality complained of, and that something in the soil not revealed in the agricultural analysis must be held as responsible.

A small flue-curing barn was erected at Mareeba, in which all the leaf from the plots at Mareeba, Dimbulah, Petford, Almaden, Chillagoe, Carbeen, Herberton, Tumoulin, Hot Springs road, Innot Springs, and Mount Garnet, with small quantities from Binbee, Cardington, and Hervey's Range, were cured, the balance of leaf from these latter plots and that from Charters Towers, Pentland, Mount Buckley, and Collinsville being air cured.

The variety "Dunbur," which is largely grown in New South Wales, was grown on all the plots.

The result of the trials has been to prove that in not one instance did the cured leaf from any plot, either air dried or flue cured, emit any disagreeable odour or produce any bad flavour when smoked, but on the contrary provided a smoking quality agreeable in every way. In addition to an acceptable quality, it was proved that the desirable texture and colour of the leaf most desired could be secured. The strength of the tobacco produced on the various plots varied with the richness of the soil, that having the most vigorous growth giving the strongest "smoke."

Australia consumes some 20,000,000 lb. of tobacco leaf annually (which amount will increase with that of population), and sends some £3,000,000 sterling abroad for purchase. It is estimated that something like 40,000 acres under the crop will be needed to supply present requirements, in cultivating which probably 10,000 hands would be required. The production of £3,000,000 of extra capital in North Queensland will mean much to the State and Commonwealth, for it will not only prevent the despatch of that amount overseas, but will induce a settlement in country that is, at present, practically vacant, and provide haulage for railways, such as the Mount Garnet, Chillagoe, and Etheridge lines, which are now being worked at considerable loss.

In the course of the coming year it is considered desirable that trials of other varieties in the production of "Bright Tobacco" should be made, including experiments in spacing of plants and times of planting. Trials also might be made with varieties suitable for air-curing; such as White Burley, which are more suited for rich soils.

MAIZE.

The maize crop now being harvested on the Tableland gives promise of exceeding the previous highest yield, which was recorded in the year 1916, when 937,085 bushels, at an average

of 50.28 bushels per acre, were taken off. Though that average acre-yield may not be exceeded this year, the extra acreage planted in comparison should allow the total yield to closely approach, if not to exceed, 1,000,000 bushels.

Diplodia and Other Fungi.—The sample of grain being received at the silos is of a much better quality than that of last year, due to the lower percentage of grain damaged by *Diplodia* and other fungi, which are less in evidence than in an average season. Usually the months of March and April are marked by dull and cloudy days accompanied by a drizzling or misty rain, which retards the drying out of the grain and induces attack by moulds wherever moisture can gain entry to the cob. This year these months were remarkably free from the drizzling rain, while the dull and cloudy conditions were largely replaced by those of bright sunshine.

The resistance of the Durum variety of maize to attack by *Diplodia* is again shown in the counts made of cobs in each of the 4 acres on which fertiliser trials were conducted. In these trials 1 acre was sown with Durum and the other 3 with selected local seed. The resulting percentages of cobs affected with *Diplodia* and moulds induced by moisture where the husk was damaged by insect attack were respectively on each acre:—

	Durum Forest Soil.	Local Forest Soil.	Local Scrub Soil.	Local Scrub Soil.
<i>Diplodia</i> ..	0.7	4.58	2.3	6.94
Moulds ..	1.78	3.7	2.3	4.5

It will be noted that the percentage of *Diplodia*-affected cobs (dead grain) with the Durum variety is exactly the same as in last year's report, strong evidence when compared with the percentages from selected local seed of its resistance thereto.

Durum Maize.—The crop of Durum maize, a variety bred by the Departmental Maize Specialist, Mr. C. J. McKeon, which is being grown each year for stud and pure seed selection purposes on W. S. Allen's farm, "Burnside, Tolga, where it is isolated from maize crops of any other variety, has in its second year given very encouraging results both in disease resistance and in yield. As previously noted, a count of cobs on a measured area gave a percentage of 0.7 affected by *Diplodia*, as against a percentage of 4.8 with selected local seed on a farm 1½ miles away. The yield from a measured plot without fertiliser was at the rate of 66 bushels 42 lb. per acre.

A noticeable feature in this year's crop was the much higher percentage of cobs yielding grain of the desired type over that of last year, which augurs an early fixation of type and demonstrates its suitability to Tableland conditions.

So satisfactory has this variety proved that it is probable arrangements will be made to seed about 1,000 acres, protected from inoculation by buffer areas sown with the same variety, from which to obtain pure seed sufficient for all Tableland requirements.

Maize and Fertiliser Trials.—The second year's trial of fertilisers designed by the Agricultural Chemist was conducted on soil which

last year, after being ploughed and subsoiled to a depth of some 18 in., grew a leguminous crop which was ploughed under when in full growth.

A comparison of the results with those recorded last year shows that the application of fertiliser in such large amounts does not have any influence in increasing the yield, but on the contrary may, as the average of the non-fertilised plots is higher in each instance than that of those to which fertiliser was applied, be held to have exerted a prejudicial influence.

POTATOES.

The acreage cropped with potatoes during the past year in North Queensland has again shown an increase, chiefly in the Lower Burdekin and Tableland districts. The yields generally have been satisfactory, though a few crops on the coast were damaged by frost and late blight in July of 1927.

The Tableland crops matured and were harvested at a time when the big crops in Victoria and Tasmania had caused a glut on the market, consequent on which Northern growers were unable to secure the satisfactory prices usually obtained. Coastal crops now coming in are bringing good prices.

Storage of Seed Potatoes.—Experiments were conducted in the storage of seed potatoes that were harvested in September by cold storage and the tray method, respectively, the tubers being similar in both cases.

For cold storage the seed potatoes were railed to Brisbane the first week in November, when the first indications of sprouting were noticed, and kept in cold storage there at a temperature of between 34 and 40 deg. until the last week in March, when they were railed back to Townsville. The experiment was most successful, the seed arriving in perfect condition and well sprouted. They were planted the first week in April, and have now produced an excellent crop on Mr. A. W. Hughes's farm at Woodstock, in the Townsville district. It is considered that if tubers for seed or culinary use were placed in cold storage shortly after harvest when the skins had dried sufficiently for marketing in the ordinary manner, they could be held there for a considerably longer period, not only for seed purposes but to relieve a glut in the market.

Unfortunately, the facilities for cold storage in Townsville do not carry a guarantee that a temperature of 32 degrees or lower will not be reached.

By the tray method the seed potatoes were spread two deep on trays made of 3 x 1 battens with bottoms of 1 in. wire-netting, which were placed in a tier with spaces of about 10 in. between in such a position under cover as would allow a maximum of ventilation and light. In this position the skins quickly assumed a green tinge, while the sprouts which appeared later also darkened in colour, and were retarded in growth. The seed was inspected from time to time, and when on one occasion some potato moths were noticed, was steeped in a formalin solution of 1 lb. to 30 gallons of water, which was effective in sterilising any eggs laid.

Unfortunately, the value of the experiment was negatived by the attack of a species of mealy bug which appeared suddenly, and in the absence of facilities for fumigation could not be

controlled. This insect fed on the young sprouts and rendered the tubers unfit for seed. Indications, however, were given that in the absence of the mealy bug the seed would have kept until the end of March, for at that time some of the tubers later attacked were still sound.

Experimental.—Further comparative trials of varieties in which the seed was supplied from plots grown on the coast to those on the Tableland and vice versa were continued. Unfortunately, late or Irish Blight had an effect on some of the varieties at Bowen, and severe frosts

at Woodstock and Pentland, where seed of all the varieties were planted, so damaged the crops that records of yields there were not made. On the Lower Burdekin, excellent results were obtained on Mr. G. S. McKersie's farm, from which samples with cards attached showing the yield per acre were exhibited in Ayr, attracting much attention. Results at Tolga are low in many cases, owing to a lack of rain during the four weeks prior to flowering; the percentage of smalls in consequence was high.

The total yields worked out as if on an acre are:—

Variety.	W. S. Allen, Tolga.				W. Wright, Bowen.				G. McKersie, Ayr.				A. W. Hughes, Woodstock. (Cold Store Seed).			
	Tons	cwt.	qr.	lb.	Tons	cwt.	qr.	lb.	Tons	cwt.	qr.	lb.	Tons	cwt.	qr.	lb.
Clark's main crop	3	8	3	0	2	6	3	7	8	4	2	14	6	12	2	10
Up-to-date	6	17	0	11	3	1	0	14	7	5	0	26	7	16	1	14
Tasma	5	4	0	12	2	15	2	8	7	16	1	19	5	16	2	20
Scottish Triumph	6	12	1	1	3	9	0	16	7	12	0	7	5	7	0	10
Gold coin	5	8	0	4	3	13	1	14	6	7	0	2	6	5	1	1
Dalhousie	6	7	2	20	3	14	0	26	5	15	0	26	8	5	3	26
Cook's favourite	6	9	2	16	3	5	3	20	8	9	3	14	6	3	3	19
Arran's comrade	6	9	2	16	3	7	0	19	8	6	0	23	5	0	2	26
Carmen	4	12	1	8	2	15	1	6	7	11	3	18	6	13	0	19
Trafalgar carmen	6	3	3	0	2	6	3	21	7	5	2	13	5	14	0	13
Arran's Chief	4	17	1	20	1	19	3	15	6	0	2	13	4	13	0	5
Templar	6	4	1	9	4	14	1	4	5	14	0	16	5	0	3	9
White Albino	7	6	0	16	2	1	2	25	5	3	2	1	7	12	2	25
Lochar	8	6	0	20	5	4	3	22	5	1	3	11	6	3	1	4
Queen of the Valley	4	2	0	0	3	1	3	8	4	15	0	8	8	5	0	0
Brownell's	5	8	0	4	2	3	0	24	3	9	2	7	6	4	0	27
Victory	5	2	2	16	4	13	1	17	4	6	2	19	4	6	2	19
Coronation	5	3	2	19	4	4	1	19	6	3	3	0	6	3	3	0
Teasdale	6	1	0	0	3	13	1	10	7	1	2	16	7	1	2	16
Rose Queen	5	10	0	0	2	17	2	14								
Factor	5	9	1	12	3	8	0	25					6	0	1	15
Delaware	7	5	1	12	4	16	0	8					5	7	3	3
Dakota Red	4	0	2	4	1	4	2	22					7	4	2	11
Northern Beauty	3	2	3	12									5	19	2	26
Manhattan	6	5	2	24									4	18	1	17
Circular Head	1	8	2	20									4	15	3	16
Ally	2	0	0	8									5	4	2	11
Tinwald Perfection	4	3	1	4									5	2	2	24
Carmen 3	5	2	2	26									4	8	2	27
Great Scott	6	3	3	0									4	2	0	5
Short's Prolific	6	12	1	10									4	14	3	7
Cambridge Kidney	4	15	1	2									5	19	2	19
Crusader	3	19	3	0									4	17	0	26
Majestic	1	13	0	22									6	5	3	15
Carmen Fulleye	5	0	3	3									5	12	0	13
Arran's Victory	5	9	0	24									1	13	2	20
Southern Star	2	17	2	6												
Langworthy	7	14	3	26												
Imp. Brownells	2	19	1	19												
Witch Hill	5	2	2	15												
Snowflake	2	18	1	4												
Sutton's Flourball	6	5	2	24												
Satisfaction	7	13	0	24												
White Elephant	7	10	1	24												
Batlow Cross	4	6	1	20												
Blue Imperial	3	8	3	0												
Beauty of Hebron	4	15	2	18												
Manistee	3	12	2	20												
Gold Jungle	3	0	2	0												
Kerr's Pink	2	8	3	8												

FERTILISER EXPERIMENTS.

Excepting the second year trials of a formula of fertiliser mixtures designed by the Agricultural Chemist, which proved to be of no value, and the top-dressing of an area of ploughed paspalum pasture with a single mixture also designed by the Agricultural Chemist, trials of fertilisers on crops were not undertaken. This is to be regretted, as the application of fertiliser in quantities that will admit of profit tends to cheapen production and to make farming more profitable.

UPLAND RICE.

While satisfactory yields have been obtained with varieties of Upland Rice on rich soils in the coastal areas, when cultivation was possible to keep down weed growth, it has been found

that the expense thereby entailed renders growth of the crop unattractive. Rice is of somewhat slow growth in the first few weeks after germination when, planted as it is in the warm months of the year, it has to contend with abundant weed growth which, owing to the wet state of the ground, cannot always be overcome. As a commercial crop on the coastal areas, under a heavy rainfall during the growing season and on fertile soils, considering the prices realisable for the product, there does not appear any possibility of it being established. On poorer soils of a free mechanical character, such as are suitable for the production of bright tobacco, where weed growth would be light, better success might be obtained with the use of fertiliser applied with the seed in the drill.

COTTON.

Only two growers, one at Carbeen and another at Chillagoe, appear to be giving cotton any attention, neither being at all enthusiastic regarding the monetary return from the crop. Unless as a rotative crop in connection with the production of bright tobacco, there does not appear any prospect of cotton-growing being seriously undertaken in the North.

SUMMER AND WINTER GREEN FODDERS.

The usual series of plots in demonstration rather than experimental work in connection with fodders to feed in a young state to dairy cows in the summer and winter months were undertaken in various Tableland centres and on the coast, with good results.

As these fodders can be held to have passed the experimental stage, having given consistently good returns in past years, the estimation of results in yield has not been regarded as of primary importance, growers being advised to cut and feed or to graze off the different crops in their young growth, when they possess a narrower nutritive ratio than in later growth. The opinion of all who have done this is that an appreciable increase in milk production has resulted, but not even approximate figures of the extent of increase could be obtained. Information of this nature would be of very great value in popularising the practice, but appears impossible of attainment from the average farmer, unless some recompense for the time occupied in weighing milk, &c., could be given.

It is thought that reliable data in connection with various feeds, not only for dairy cattle in milk production, but for pigs in growth and fattening, might with advantage be collected at the State Farm at Kairi, or by arrangement with a farmer who would be subsidised and work under the immediate direction of a Departmental officer.

Summer Feeds.—Those which have proved the best in the North, especially on the Tableland, are white panicum, teosinte, and pearl millet, all being very palatable to stock in the young growth as well as milk productive, though in their later stages of growth, while they all show a decrease in the percentage of protein content, teosinte and pearl millet also lose their palatability. Cowpeas and velvet beans make excellent growth both on Tableland and coast and provide the means, by feeding during shortages of young growth of grass or succulent crops, of securing a better balanced ration. Amongst cowpea varieties the Groit variety, introduced by the Department some years ago, has given very satisfactory yields wherever grown. Estimates made during the past season showed the following yields:—

	Tons.	Cwt.	Qr.	Lb.
Innisfail	8	3	3	20
Innisfail	11	17	3	12
Atherton	11	14	2	16
Kulara	10	0	1	16
Yungaburra	14	19	1	4

From a seed selection area at Tolga quantities of seed, it is expected, will be available for sale after August.

In winter feeds, Florence wheat has given the most consistently good yields of all varieties grown, and is recommended with skinless barley for the whole of the Tableland. Oats, Sunrise

and Ruakura varieties, are only recommended in the wetter districts about Millaa Millaa and from there towards Evelyn and Ravenshoe. The best success in winter-grown legumes has been obtained with the Dun field pea, the yields being so much better than other varieties of peas and vetches as to merit its exclusive growth as a winter legume.

LUCERNE.

Though plots of lucerne were established in a few centres years ago by the Department, and have done remarkably well, growth of the crop has not tended to become as general as its importance warrants. Several plots were arranged in extension of this work, and sowings made at the close of the year under review, results of which will be available later on, and included in the next Annual Report.

SORGHUMS.

As noted earlier in this report, the growth of sorghums for ensiling was undertaken in many parts of the rolling downs, but resulted in failure, due to insufficient moisture. Failure from quite the opposite cause—namely, too much rain—is recorded from Millaa Millaa, where a settler desirous of trying the crop was supplied with seed from small plots in variety trials. Here, owing to the heavy rainfall, not more so than usual, all varieties became so infected with "rust" that growth was almost prohibited and failure resulted. Proof of the unsuitability of sorghums for extra humid conditions has been experienced previously, so that the crop has been recommended only on the drier parts of the Tableland. The Honey variety, introduced by the Department some years ago, is becoming generally grown in the North. Pure seed of this variety is available for sale at the Townsville office.

TOMATOES.

The promise of a record crop in the Bowen district mentioned in my last Annual Report was frustrated by a visitation of late or Irish Blight (*Phytophthora infestans*) in July, from which all growers suffered. According to the report of the Bowen Fruit Export Co-operative Association, the despatch of cases of tomatoes up to 30th June in the year 1927 was two and a-half times greater than in a similar period of any previous year. The shortages in July, August, and September, in which the heaviest shipments are usually made, however, only allowed a total of 161,997 cases being handled for the year, somewhat over 100,000 cases less than that of the record year. The present season promises a heavy crop, as the area planted is not less than that of the previous year.

TRUCK CROPS.

While market gardens for local supply are common to all districts, the Bowen farmers until recently were the sole caterers for Southern markets, shipping south during last year through their Export Society 6,366 cases of cucumbers, 732 cases of chillies, 444 cases of rock melons, 1,027 cases of egg fruit, 1,715 bags of pumpkins, and 13 bags of French beans.

It is pleasing to note that settlers on Kennedy Creek, in the Cardwell district, are meeting with success in truck farming, and after supplying Northern markets are commencing to send south.

The Northern requirements in vegetables are large and insufficiently met owing to a lack of distributing facilities. It is thought that if agencies were opened in Townsville and Cairns, for the organised sale and distribution of fruit and vegetables, much benefit would be experienced by both producer and consumer.

INSECT PESTS.

On the whole, damage to crops by insect pests was not serious, being much on a par with that of average years.

Nematodes were perhaps more in evidence owing to the extension of potato-growing, and were prevalent in many of the tobacco plots, though without doing serious injury. As tobacco-growing will probably be an important industry in the North in the near future, Nematode trouble therewith may be serious, since the soils of free mechanical character suited for that crop are also those in which ellworms are most persistent.

PLANT DISEASES.

The outbreak of late blight in the tomato and potato crops in the Bowen district in July, 1927, was most serious, and resulted in the total loss of crops just then coming into production. This set-back has impressed growers of the value of the preventive treatments so repeatedly advised, and has resulted, according to the manager of the Bowen Fruit Export Society, in the purchase by growers of more apparatus and material during the last twelve months than the aggregate sales in that connection by the association during the previous six years of its existence.

OFFICIAL.

Viewing the importance of the trials of tobacco suitable for pipe and cigarette smoking, in collaboration with the Australian Tobacco Investigation, and what success therein would mean to North Queensland, personal attention in that direction was very largely given, while much of the Assistants' time was also occupied in work connected therewith. In addition, the Field Assistant attached to the Townsville office was detailed to inspect and report on areas of country towards the heads of Murray Creek, St. Helens Creek, and the O'Connell River and country on the Eungella Range, respectively, such inspections necessitating over a month's absence. In consequence, instructional work in other directions had in a considerable measure to be neglected and plot work much curtailed, which is regrettable.

During the coming year, extension of plot work in tobacco and the call for instruction in the growth and curing of the crop, already being experienced, implies a similar if not greater amount of attention being demanded. This, with the added call in other directions, notably fodder conservation in the West, stresses the advisability of the early appointment of additional Assistants desired.

WHEAT AND PASTURE IMPROVEMENT.

Mr. C. S. CLYDESDALE, Assistant Instructor in Agriculture, reports:—

The early preparation of land and the excellent rains recorded in June gave the wheat crop a good start. From then on until early in September the rainfall was very light and the outlook at that time anything but promising.

Matters improved, however, soon after this date, as light rains commenced to fall on the 11th and continued until the 14th of that month; these wrought a complete change over the major portion of the wheat belt, indicating that the harvest generally would be a good one.

From observations made during the course of my duties in connection with the wheat improvement work, there was evidence in October that 1927 was to be a year both of extraordinary yields and of high bushel weights. Early-harvested crops, under the influence of bright, sunny weather, produced grain of A1 quality, but continuous rains set in about the middle of the harvest, and where this delayed operations, as it unfortunately did in a number of localities, a proportion of the late-garnered grain was more or less bleached.

An encouraging feature in connection with the wheat plot work was the confirmation by ocular evidence of the success attending growers who had availed themselves of the opportunity of securing seed wheat raised for distribution by the Department from Roma State Farm-bred varieties—Florida, Flora, Pilot, Waterman, Warrior, Watchman, Three Seas, Warchief, Novo, Cedric, Bewar. These and other well-established standard varieties have undoubtedly improved the economic position of wheatgrowing in the State. In addition to the Roma-bred varieties mentioned, another, the latest and possibly one of the most promising to date, is Duke of York wheat, which so far has proved very suitable to Queensland conditions, and on this account is likely to become very popular with growers.

Evidence of the prolificness of the Darling Downs wheat crops was to be noted in the field by the extraordinary number of bags of grain left by the harvesting machines. Twelve to sixteen bag crops to the acre were of common occurrence, and these figures were exceeded on several occasions. Such yields, uninfluenced as they were by the use of fertiliser of any kind, point to the fact that where improved methods of cultivation were followed, the crops on the soils so treated responded quickly, and were in a condition when the time came to meet the insistent call for the abundant supplies of plant food and moisture necessary to properly mature their grain.

It was unfortunate that the Maranoa and South-Western districts were not favoured with June rains in sufficient quantity to permit of the strong development of the wheat crop, which was never robust at any time in these localities. Yields, consequently, were far below normal; in fact, many crops were given over to grazing by stock.

Notwithstanding these drawbacks, the wheat crop was a record.

STUD PLOTS, 1927.

Four centres were chosen for the necessary tests and observation work with new Roma State Farm crossbreds. One hundred and fifty different samples were planted out at Jandowae, Allora, Inglewood, and Cunningham, respectively.

At Jandowae and Allora the wheats made excellent growth, but the reverse obtained at Inglewood and Cunningham, owing to the dry weather experienced.

An appreciable part of my time and that of other field officers was taken up in bringing this section of the season's work to finality. It is satisfactory, however, to report that many wheats of excellent promise were noted, and the seed selected is being used in the progressive propagation scheme of working up supplies of grain for the consequential field trials.

STUD PLOTS, 1928.

Wheat.—Extension work with last year's selections was arranged for at Jandowae, Allora, and Southbrook—100 single drills at each, including check rows. Additionally, ten plots, each $\frac{1}{80}$ of an acre, were planted, with special varietal selections.

The mice plague, so general on the Darling Downs during the planting season, was responsible also for a good deal of damage to these plots, necessitating resowing.

Oats and Barley.—Varieties on hand were supplemented by others obtained from the South, each collection now consisting of nearly fifty different kinds. Seed of these was planted out for convenience in working at the same places as the wheat plots were established.

The season so far has been propitious for quick germination and growth, but the incidence of the mice plague may discount results.

DEPARTMENTAL SEED WHEAT PROPAGATION PLOTS, 1927.

Plots were established at the following centres:—Oakey, Messrs. Noller Bros.; Inglewood, E. Rowlings; Cunningham, W. E. Lyell; Jandowae, E. C. Stewart; Kumbia, J. and F. Noller—so that the new crossbred wheat, "Duke of York," could be tried out under field conditions, and a sufficiency of seed obtained to put the variety into general cultivation at an early date.

Dry conditions on the South-western Line affected the yields, but elsewhere they were satisfactory.

In the Oakey district, Messrs. Noller Bros. were supplied with 4 bushels of seed, which returned 309 bushels, showing that for each bushel sown 77.25 bushels were harvested. This variety exhibited its prolific nature elsewhere, and the field characteristics are promising.

Chondrometer weights of harvested grain range from 64 to 66 lb. per bushel.

SEASON 1928.

Areas planted this season under a similar arrangement to last year, and representing a continuation of seed propagation work, are as follow:—E. C. Stewart, Jandowae, 10 acres, "Duke of York" wheat; A. Hughes, Maryvale, 3 acres, "Duke of York" wheat; Geitz Brothers, Allora, 5 acres, "Duke of York" wheat; E. Rowlings, Inglewood, 10 acres, "Duke of York" wheat.

Two plots, as noted hereunder, were also planted with Belah oats, this variety having shown up prominently in minor trials—W. A. Lyell, Cunningham; E. Rowlings, Inglewood.

SEED WHEAT IMPROVEMENT SCHEME, 1927.

Department of Agriculture and Wheat Board.—In furtherance of the arrangements made in conference by the Director of Agriculture and the Wheat Board to carry on the originally designed scheme to propagate supplies of pure seed for delivery to the Board by growers under the 6d. per bushel premium, 29 field plots were arranged for, aggregating 240 acres in area, particulars of which are shown in schedule form.

The yields generally were fairly satisfactory. Where these were low the cause of the reduction could be attributed, in the main, to the dry weather conditions experienced at the respective centres.

SEASON 1928.

Arrangements were made under the existing scheme with the Wheat Board and sites selected for 10 seed wheat propagation plots, comprising 210 acres, with the following farmers:—

Name and Address.	Variety.	Area.
		Acres.
T. A. Aisthorpe, Bindango ..	Cedric ..	25
T. A. Aisthorpe, Bindango ..	Duke of York ..	25
G. R. Aisthorpe, Hodgson ..	Cedric ..	25
T. A. Aisthorpe, Hodgson ..	Duke of York ..	25
G. J. Smith, Maryvale ..	Flora ..	10
H. C. M. Sharp, Lavella, via Milmerran	Warrior ..	10
H. S. Handley, Pampas ..	Waterman ..	10
A. Hughes, Maryvale ..	Amby ..	10
Noller Bros., Oakey ..	Cedric ..	10
Noller Bros., Oakey ..	Duke of York ..	10
C. Smith, Clifton ..	Beewar ..	10
W. E. Sizer, Milmerran ..	Pusa No. 4 ..	10
R. Hembrow, Wallumbilla ..	Duke of York ..	10
P. H. Imhoff, Allora ..	Pilot ..	10
R. H. Rippingale, Maryvale ..	Canberra ..	10

PASPALUM PASTURE RENOVATION WORK.

As a result of previous seasons' work, an extension was decided upon, a small field of Mr. Alex. Hunt's farm at Maleny being set aside for the purpose.

The initial ploughing of 2½ acres, part of the field, was effected early this year. Owing to wet weather intervening, it was decided to hold over the top-dressing with fertilisers until the spring.

Comparisons between ploughed and unploughed areas, with and without fertilisers, are to be made.

GENERAL DUTIES.

The wheat improvement work, which absorbed the major portion of my time, is showing good promise. Instructional and general duties, which were of a varied character, necessitated a good deal of travelling in different districts.

Assistance was given in the maize and broom millet selection work, also at silage demonstrations and the planting up of dairy and pig fodder experiment plots.

SUMMARY, DEPARTMENT OF AGRICULTURE AND STOCK—WHEAT BOARD PLOTS, SEASON, 1927.

Name and Address of Grower.	Variety.	Area.	Amount of Seed Per Acre.	Treatment of Seed.	Date Harvested.	Estimated Yield Per Acre.	Was Crop affected by Rust, Smut, or Bunt?	Summary of Opinions Expressed by Growers.
G. J. Smith, Maryvale	Flora ..	Acres. 5½	Lb. 60	Carbonate of copper	9-12-27	Bushels. 41	No	From a standpoint of yield and freedom from rust this wheat compared favourably with other varieties grown on farm. Sown thinly on new land too rough and dirty to drill and covered with "Sundercut," it yielded less than Gluyas, Pusa, and Florence, which averaged 12½ bags, but compared more than favourably with them.
J. Flegler, junr., Irongate, <i>via</i> Pittsworth	Warrior ..	70	53	Carbonate of copper	20-27-11-27	30	Slightly rusty	
H. C. M. Sharp, Lavelle, <i>via</i> Milmerran	Warrior ..	10	50	Carbonate of copper	1-2-11-27	30	No	Under similar conditions the Warrior yielded higher than Florence, Warren, Cedric, Roma Red, and Canberra. Rain, which saved the average of the Queensland crop was too late to be of any marked benefit to Warrior. Had rain fallen during August, the yield would have been phenomenal.
H. S. Handley, Pampas	Waterman ..	6	40	Carbonate of copper	3-12-27	25	No	This wheat was not grazed, and stood up well, and stooled heavier than any wheat I know of. The grain was hard and plump. Owing to the heavy rain early in the year most of the paddock was waterlogged, consequently diminishing the yield. I like this wheat and intend planting 30 acres next season.
W. E. Sizer, Lavelle, <i>via</i> Milmerran	Waterman ..	14	45	Carbonate of copper	15-11-27	18½	No	Sown in June the variety made exceptional growth and stooled well. Owing to dry weather it became patchy. After rain this wheat made a wonderful recovery.
A. Hughes, Maryvale	Amby ..	6	60	Carbonate of copper	26-11-27	39	No	This yield was the best I had. The land was worked well. There was only another crop in the district that I know of that yielded higher, namely Canberra, which went 46 bushels.
E. C. Stewart, Jandowae	Amby ..	10	45	Carbonate of copper	12-11-27	14½	No	Amby straw rather short and very thin. Yielded about 10 bushels less than Duke of York.
Jas. Bell, Maryvale	Cedric ..	8	52	Bluestone	15-12-27	16	No	<i>Note.</i> —About one-third of each crop suffered rather badly from depredations by wild ducks. The yield was considered light compared with other varieties. I intend giving it a further trial next season.
Noller Bros., Oakey	Cedric ..	10	50	Carbonate of copper	15-11-27	49	Little flag rust	Very satisfactory, good yielding variety—has proved an excellent wheat for this district.
Smith Bros., Allora	Watchman ..	80	45	Carbonate of copper	20-11-27	24	Slight trace of rust	For yield this variety compares very favourably with most other varieties. <i>Note.</i> —This crop promised well but suffered badly from excessive rains when over-ripe.
C. Smith, Clifton	Beewar ..	9	40	Bluestone	26-11-27	27	No	Very good, vigorous grower. Good stooler and yielded well. Is inclined to shed rather easily.
Hausler Bros., Oakey	Beewar ..	10	43	Carbonate of copper	21-11-27	30	Slightly rusty	Very good when compared with other varieties. Is inclined to be a little weak in straw.
C. H. Morris, Victoria Hill, <i>via</i> Clifton	Bunge No. 1	12	60	Bluestone	15-11-27	4	Slightly smutty	<i>Note.</i> —Heavy black soil. I consider on my class of soil that this variety should not be sown until July, as it is a quick-maturing variety.
Mason and Sons, Highland Plains, <i>via</i> Oakey	Pilot ..	10	35	Carbonate of copper	20-11-27	36	No	<i>Note.</i> —Lightly worked land; crop suffered from dry weather in its early stages.
W. E. Sizer, Lavelle, <i>via</i> Milmerran	Pusa 4 ..	4	45	Carbonate of copper	15-11-27	25	Rust on flag	Of the three varieties I had Pilot gave a good return although the other varieties yielded a little better. I consider this variety compared very favourably with other varieties. It came into ear during the dry weather and after rain recovered well.

MAIZE IMPROVEMENT.

Mr. C. McKEON, Assistant Instructor in Agriculture, reports:—

During the early part of the season the prospects for a very heavy yield, not only from the Departmental plots, but for the whole State, were exceedingly bright, but the continuous rains and the consequent flooding in many districts not only reduced the yield, but also seriously affected the quality of the grain.

The early-sown crops were particularly promising, but wet weather delayed harvesting, and, as the crops remained in the field for several weeks after ripening, very heavy losses resulted through the plants lodging and the ears becoming saturated.

In some localities many crops were totally destroyed by floods. In the inland districts, where the rainfall was not so heavy and continuous, good yields are being obtained, particularly from the mid-season and late-sown crops. Growers on the Atherton Tableland have experienced a very good season, and the yield in this district promises to be a record. The general opinion is that the yield for the whole Tableland will average at least a ton per acre.

The new Departmental variety, Durum, again gave very good results, and growers are very keen to get supplies of seed.

SEED MAIZE IMPROVEMENT.

Several plots of each of the following varieties were sown in Southern Queensland, viz.:—Improved Yellow Dent, Golden Beauty, Star Leaming, Reid's Yellow Dent, Funk's Yellow Dent, and Funk's 90 Day, as well as some small plots of other varieties and selections which are being tried out.

The whole of these were more or less affected by excessive rain and in several instances by

flood waters. Several of the early and mid-season sowings made splendid growth and would have given very heavy yields if it had been possible to pick the crops as soon as they were ripe. Unfortunately, weather conditions did not permit of this being done, and several were practically ruined for seed purposes by the time the weather cleared. The late crops, in many cases, were handicapped from the commencement owing to the sodden nature of the ground, and to the fact that little or no inter-row cultivation could be carried out.

Twenty different plots were sown in the principal maize-growing district, and, although all looked very promising during the early stages of growth, and the majority developed very fine crops, every one was more or less damaged by continuous rain or by flood waters, and only seven of these were in a fit condition when harvested to select seed from. It was therefore found necessary to limit the quantity of grain selected for seed.

An indication of the general damage occasioned by flood waters to this year's maize crop may be noted from the above remarks. This was of course greater in some localities. Three Departmental seed maize plots were completely swept away, and several others more or less suffered damage during the extended wet season.

Peanuts.—Fertiliser, Spacing, and Variety Trials in conjunction with a Rotation of Maize.

A duplicate series of plots, one at Memerambi and the other at Wooroolin, were established. This year an additional area was selected alongside the original plot to provide for alternate crops of peanuts and maize so that data on this rotation, common in the district, might be available.

Details are as follow:—

No. of Plot.	Fertiliser.	Yield per Acre of Peanuts.		Yield per Acre of Maize.
		1927. B. Young.	1927. J. Cavanagh.	1928. J. Cavanagh.
		Cwt. qr. lb.	Cwt. qr. lb.	Bush.
1	Unfertilised	5 3 26	7 0 0	52
2	200 lb. Nauru superphosphate mixture	7 1 18	8 0 4	58.57
3	200 lb. Nauru superphosphate mixture	7 2 0	7 3 2	61.85
	80 lb. muriate of potash			
	1,000 lb. lime	8 0 4	8 1 6	57.57
4	400 lb. Nauru superphosphate mixture			
	160 lb. muriate of potash	7 0 6	7 2 10	55.14
	1,000 lb. lime			
5	1,000 lb. lime	7 0 26	7 2 10	50.57
6	Unfertilised	7 2 10	7 0 0	53
7	80 lb. muriate of potash	8 0 4	7 3 2	58
8	200 lb. Nauru superphosphate mixture			
	80 lb. muriate of potash	8 3 20	8 0 0	58.28
9	65 lb. nitrate of soda			
	200 lb. Nauru superphosphate mixture	7 0 16	7 3 22	54.57
10	80 lb. muriate of potash			
	Unfertilised			

UNFERTILISED AREA.

No. of Plot.	Variety Trials.	Yield per Acre of Peanuts.		Yield per Acre of Maize.
		1927. B. Young.	1927. J. Cavanagh.	1928. J. Cavanagh.
		Cwt. qr. lb.	Cwt. qr. lb.	Bush.
11	Red Spanish	6 2 12	7 0 0	53
12	White Spanish	6 2 2	7 2 20	53.14
13	Virginia Bunch	8 1 16	9 2 16	55.28

SPACING TESTS.

Plot No.	Variety.	Distance between Rows.	Yield per Acre of Peanuts.			Yield per Acre of Maize.
			1927.		1928.	
			B. Young.	J. Cavanagh.	J. Cavanagh.	
		Ft. in.	Cwt. qr. lb.	Cwt. qr. lb.	Bush.	
14	Red Spanish	2 4	7 1 18	9 1 6	54.14	
15	Red Spanish	2 8	6 3 4	8 1 26	54	
16	Red Spanish	3 0	5 1 2	6 1 20	57	
17	Red Spanish	2 4	7 3 2	8 2 18	53.85	
18	Red Spanish	2 8	7 0 26	7 3 22	59.71	
19	Red Spanish	3 0	6 0 18	6 3 24	57.71	
20	Virginia Bunch	..	9 3 0	10 1 22	62.14	

No details were available from the plot of maize on B. Young's farm owing to the plots being damaged by storm waters. The variety of peanuts used in the fertiliser trials was Red Spanish, the local standard spacing being used—viz., 2 feet 8 inches between the rows, and plants 12 inches apart. Owing to the unsettled weather, threshing of this season's crop has been delayed.

Atherton Tableland Seed Maize Improvement Scheme.—The crop now being harvested is the second of this variety (Durum) grown in the Tableland district, and the results to date have been more than satisfactory. The type of grain has been well maintained, and one of the most pleasing features of all is the exceedingly small percentage of mouldy (*Diplodia*) ears present in the crop, one very pertinent reason in breeding this variety being to produce a type of grain which would be more resistant to mould than the types grown on the Tableland. The yield so far has compared more than favourably with that of the local variety.

In trials conducted during the 1926-1927 season this variety yielded at the rate of 61.33 bushels per acre, whilst the yields on the other Departmental plots sown elsewhere, and solely with selected local seed, ranged from 33.15 bushels to 44.46 bushels per acre. The percentage of mouldy ears in the Durum variety was only 0.7 per cent. in contrast to 11.7 per cent. in some of the latter plots. No figures are yet available for this season's crop, but it is considered that the percentage of mouldy ears in the large propagation plot is as small, if not less, than last season. Local growers are greatly interested in the Departmental Seed Maize Improvement Scheme, and large numbers recently visited the farm on which this variety is being grown, and have spoken very highly of the quality of the grain. Extension work is under consideration with the object of planting upwards of 1,000 acres of forest country next season, and present appearances point to an early realisation of a very practical objective of this seed maize improvement scheme.

GENERAL DUTIES.

The following places were visited on instructional and other work:—Beaudesert, in connection with the planting of broom millet plots and later to make selections from same; Cooroy and Maleny, to make cuttings and take particulars of pasture improvement trials; Kilcoy and Goomeri, to arrange for fodder trials; and Yamsion, to give a demonstration in stock silage.

REPORT OF THE INSTRUCTOR IN PIG-RAISING.

PRESENT STATUS OF THE PIG INDUSTRY.

Improved seasonal conditions throughout the whole of the districts in which pig breeding and feeding is carried on have materially improved prospects from the standpoint of the producer growing green crops, roots, and grain for his pigs.

The business of pig-raising is, to some extent, a seasonal one, in that during periods of very dry weather, when there is often only a limited water supply, farmers dispose of many of their breeding sows and boars and reduce the number of young pigs kept. In seasons of abundant rainfall and ample food supplies, there is a natural rush back into the business, and breeding stock rapidly increase in numbers.

Statistics, however, inform us of a steady, even if slow, increase in the total number of pigs kept, and it is estimated that at present there are no fewer than 200,000 pigs in the State.

Returns for ten years showing the number of pigs in the State of Queensland—

Year.	Number of Pigs.
1916	129,733
1917	172,699
1918	140,966
1919, a dry year	99,593
1920	104,370
1921	145,083
1922	160,617
1923	132,243
1924	156,163
1925	199,598
1926	183,662
1927	Totals not yet available

The dry seasons during the latter part of 1925 and 1926 were responsible for a reduction in numbers, but the drop was only a temporary one, not permanently affecting the totals. Queensland's 200,000 pigs compare favourably with the totals of other States, considering the meagre population and extent of the country.

TOTAL NUMBER OF PIGS IN AUSTRALIA, 1925-26.

New South Wales	382,331
Victoria	339,601
Queensland	199,598
South Australia	90,794
Western Australia	74,316
Tasmania	41,009
Northern Territory	382
Federal Territory	343

Commonwealth Total 1,128,374

The 1926-27 figures will probably show a decrease on the above, for both New South Wales and Victoria have suffered severe losses as a result of swine fever outbreaks, while the figures for the present year in both these States will, it is thought, be below normal.

Excessive rains followed by floods over very wide areas in the Central Division were responsible for considerable losses of live stock and for a general temporary setback to the industry. The pig industry in Central Queensland has since revived and is now prospering.

BACON FACTORIES.

The eight bacon factories in operation in Queensland have been fully occupied throughout the year, and considerable improvement has been effected in the type of building and in the surroundings at these establishments. The factories are up to date in every respect, and the slaughtering is carried out under the most modern and humane conditions possible. The factories on the Darling Downs have been enlarged and brought up to date; those in the metropolitan area are being extended, while the Central and North Queensland factories, though much smaller, are, nevertheless, of approved design.

THE NORTHERN PIG BOARD.

The activities of the Atherton Tableland Pig Pool Board, now known as the Northern Pig Board, have been watched with very considerable interest by many folks concerned in the industry. That the board's organisation has been a success is beyond doubt, and the fact that from a state of chaos and doubt the industry has been revived and placed on a permanent and lucrative basis is but another indication that there are vast possibilities in co-operative effort, judiciously handled along the most approved lines.

EDUCATIONAL CAMPAIGN.

Tangible results have accrued from the instructional campaign carried out by officers of the Department. An increasing volume of correspondence between the pig raisers and the Department indicates a desire on the part of the farmer to co-operate still further in improving the conditions under which pigs are produced, handled, and marketed. The largely increased demand for better quality breeding stock and the improved prices farmers are prepared to pay for the correct type of pig is also an indication that they are appreciating more and more the value of these animals.

The Queensland Government Radio Service continues to prove a useful medium in educational work.

THE PIG CLUB SCHEME.

This is a co-operative effort organised by officers of the Department of Agriculture and Stock, in collaboration with officers of the Department of Public Instruction, and has grown to considerable dimensions. Many new clubs have been formed and club membership largely increased. The scheme provides for both senior and junior membership.

Many prominent prize-winning animals have been exhibited by club members.

FARM BOYS' CAMP.

As an outcome of the pig club schemes' operations, the officials of the Royal National Agricultural Association, Brisbane, in an endeavour to add their quota of interest and practical support, have arranged a farm boys' camp at this year's Royal National Exhibition at Brisbane.

The scheme is an educational one, aiming at providing the opportunity for country lads to attend and gain an insight into the educational value of a big show.

PIG FARMERS' SCHOOL.

The first Pig Farmers' School to be organised in the Commonwealth was held at the Queensland Agricultural High School and College, Gatton, in June. It was a successful assembly that suggested the possibilities of similar schools being organised in other divisions of the State.

QUEENSLAND PIG INDUSTRY COMMITTEE.

Earlier in the present year representatives of the producing and manufacturing interests in Queensland met to discuss the formation of the Queensland Pig Industry Committee.

The committee has now been at work for some months, and functions as a branch of the Australian Pig Industry Council. Much useful work has already been attempted, though much remains to be done to effectively organise the several sections. The Queensland committee meets monthly at the head office of the Department of Agriculture and Stock.

PIG PRICES.

The average range of values for all descriptions of market pigs has been lower this year than in 1925-26, and as a result farmers have not been encouraged to enlarge their herds to the same extent as during periods of higher values. Still, the season has been a good one, and feed supplies have been cheaper, so that production costs have actually been lower than during previous years. There is an indication that at the end of the year prices will rise again, and already the price for prime quality bacon pigs on a dressed weight basis (95 to 120 lb.) has increased from 5½d. to 7d. In round figures, the average bacon pig has been worth 12s. 6d. less this year on the farm than in 1925-26.

A lower range of values for pork products at the provision shops is having a good effect in increased local consumption.

The position at present is that of the 245 lb. of meat that Australians consume during a year, only 18.1 lb. consists of bacon, ham, pork, and lard. The consumption of beef averages 169.1 lb. and of mutton 58.6 lb. The average American and Canadian divides up his meat products consumption roughly as follows (the Australian figure indicated for reference):—

	Beef and Veal.	Mutton and Lamb.	Pork and Lard.	Total.
	lb.	lb.	lb.	lb.
American ..	71.9	5.3	77.1	154.3
Canadian ..	70.0	8.4	87.7	166.1
Australian ..	169.1	58.6	18.1	245.8

These figures cover a series of years, and should be regarded as approximate only. They serve to indicate that Australian consumption of pork products is very low in comparison with some other lands.

SWINE FEVER.

Had it not been for the regulations which were continued during this year, and which are to be enforced for a further period of twelve

months, we should probably have been faced with an outbreak of swine fever, which became rife in some portions of the Southern States.

DISEASES IN PIGS.

Efforts to trace diseased stock back to the farms whence they came and, where possible, to the farms where they were bred, have been continued throughout the year, and much useful work has been done, this particularly so with regard to tuberculosis. The compulsory fire-branding of all pigs forwarded for treatment to the co-operative bacon factories has been effective in making this work practicable. It is hoped the proprietary bacon factories will adopt similar measures.

THE FRESH PORK TRADE.

There has been a much increased demand for fresh pork, and quite an extensive trade has developed in pork, both for local sales and for the interstate trade. There are abundant market outlets outside our own borders for chilled and frozen pork and for other pork products, but limited local supplies and the difficulty of securing refrigerated space on interstate steamers are obstacles to progress against which manufacturers have to contend. Nevertheless, the markets are there, though the price offering there and overseas at present is by no means attractive.

IMPORT OF PORK PRODUCTS FROM NEW ZEALAND.

Quite a stir has been caused in the pig industry in Australia by the introduction earlier in the year of quantities of pork products from New Zealand. This matter is now being inquired into in the several States.

STATE FARM STUDS.

The Berkshires and Tamworths at the Kairi State Farm have proved a valuable asset, and have been a most profitable addition to the farm stock. Other Government institutions, notably the Queensland Agricultural High School and College, Gatton, and the various hospitals, are engaged in the distribution of improved breeds of stock at very reasonable rates.

EXHIBITION OF STOCK AND PORK PRODUCTS.

At the 1927 Royal National Exhibition, Brisbane, one of the finest displays of meat products yet staged in the Commonwealth was on view. This included a very fine exhibit of both frozen pork and of bacon factory products. A similar display is being arranged for at the 1928 Exhibition. These displays are of very great value in focussing attention on the value as articles of diet of these farm products. The Department co-operates with other bodies concerned in the staging of exhibits.

The pig sections at many country shows have been given new life and have aroused greater interest as a result of Departmental efforts in co-operating with show societies in judging and otherwise.

PUBLICITY WORK.

A constant endeavour has been made to carry on extension work by giving publicity through the "Queensland Agricultural Journal" and other publications to the value of improved

methods, better stock, higher standards, and otherwise, and as a result of this much useful information has been made available to the farmers. That this has been appreciated is evidenced by the increased demand for pamphlets, leaflets, and lecturettes.

E. J. SHELTON,
Instructor in Pig Raising.

REPORT OF THE POULTRY EXPERT.

Although it is difficult at present to indicate to what extent the poultry industry has developed during the past year, the progress it has made must be very considerable if the supplies coming in to the local market may be taken as an index. From a general inspection of farms throughout Queensland, a consistent improvement is noticed in the class of stock kept and in methods of feeding. This, no doubt, is responsible for some of the increased supplies, but on the other hand there is a general tendency on the part of the farmer at present interested in poultry raising to increase the size of his flock, while others who have given no consideration to it in the past as an adjunct to other farming operations appear to be gaining a better conception of the part poultry should play in the economics of rural industry. This is more pronounced among fruitgrowers and dairymen, and to them Departmental instructors may with safety recommend the extensive keeping of poultry. With the former the keeping of poultry is an economical method of weed and pest destruction, and at the same time adds considerably to the fertility of the soil. With the dairyman the keeping of poultry as a side line is a very sound proposition, because, having at all times a surplus of skim milk, and usually a surplus of grain sorghums and maize, his only cost is labour.

There is every reason to believe that the increased production will be sustained, although producers shall have to accept lower values for their product during the winter period, owing to flock increase throughout the State, but it is believed that, provided the marketing organisation can maintain prices profitable to producers during the glut period, a lower value during the winter months will be perhaps beneficial to the industry, for it will tend to make the consumption of eggs more stable. The violent fluctuations in price that have been experienced in Queensland in past years have not, it is contended, been for the good of poultry raisers. These fluctuations have been from 10d. to 3s. 3d. per dozen, but during the year just past their range was more restricted—viz., 1s. 4d. to 2s. 9d.

There is still room for much improved conditions, but it is only by increasing spring prices that flocks will be increased in numbers sufficiently to bring about greater production during winter months, with corresponding lower values.

As has been mentioned, it is believed that not only will the present production be maintained, but that there will be still further development during the coming season, as many producers who cater for the day-old chick trade have extended their plants in order to be in a position to cope with increasing orders, while incubator distributors advise that record sales have been made.

Many factors have assisted to make such development possible, including the instruction given by the Departmental officers, better marketing organisation, reduced feeding costs, and facilities that exist for the procuring of chickens and mature stock of high-producing qualities at prices within the reach of any producer.

Many demands have been made upon the time of Departmental officers for the inspection of farms, principally in the metropolitan area, but country districts have not been neglected, although they have not been visited as often as in previous years, owing to, in the first place, sickness among local flocks and the excessively wet conditions in the early part of the present year. Every effort has been made, however, to provide suitable instruction extended as widely as possible. This has taken the form of regular contributions to the "Queensland Agricultural Journal" issue of poultry pamphlets free of charge, lecturing to poultry clubs both in Brisbane and in country centres, co-operation with the Department of Public Instruction in the formation of school poultry clubs, and, to a limited extent, judging at country and suburban shows. The confidence that producers have in the Department is reflected in the increase in correspondence and from the number of personal inquiries being made at the office. During one month no fewer than forty-seven persons called at the office for information on poultry, fourteen of whom desired to commence poultry raising. Naturally, much time is taken up with interviews of this nature.

Early in the year Professor Goddard, of the Queensland University, delivered a series of twelve lectures to poultry breeders on the question of breeding. The desire for information on the part of producers was evidenced by the good attendance throughout the series. An effort will be made in the course of the coming year to organise another set of lectures.

The most outstanding feature of poultry marketing organisation has been the complete agreement of the Queensland Egg Board and the merchants acting as agents on the question of equalisation of prices. This alone has justified the establishment of the Egg Board, as it is only by equal prices for equal quality that unanimity may be obtained among producers.

The export of eggs, both overseas and interstate, has been conducted on a larger scale during the past season than has been the case in previous years, but it is anticipated that the overseas export during the coming season will have to be double that of last year in order that the surplus may be removed from the local market. After the export season there still remains a surplus of production over consumption. This surplus has to be cold-stored, but it is a regrettable feature that this year many of the eggs stored for local requirements acquired

during the process of storing foreign odours. These odours were due in one case to the state of the room, and in another to the fact that the eggs had not been correctly packed. Cold storage is essential to the stability of the industry, and certain conditions as to storage and packing should be made compulsory.

Table poultry markets have, as in previous years, not been subject to any appreciable degree of exploitation. The production of purely table poultry, with the exception of ducks, is not extensively practised. Most of the birds marketed are old hens that have ceased to be profitable and young roosters. Good prices, however, are usually obtained for the best prime birds that are offered for sale, but in most cases producers try to obtain too great a development, retaining the bird until it is old and "staggy." Younger birds, or birds showing little spur development, are what are required.

The bounteous maize crop has been largely availed of by the poultry raiser, and it is questionable if this grain has ever been used so extensively in Queensland as it is at present. Its price has largely reduced the cost of production, and the knowledge of its value gained by the poultry raiser during the past year will materially assist in maintaining a steady demand for this grain in future, which will be beneficial to both the maizegrower and the poultry producer. Other foods which are being used more extensively are grain sorghums. This grain is largely used by poultry raisers in the Dawson Valley, and when fed in conjunction with milk gives excellent results.

DISEASE.

With the intensive conditions under which poultry are now kept, it follows as a natural consequence that it is possible for disease to assume serious proportions, particularly among flocks in which the sanitary arrangements are unsatisfactory. Many farm inspections have been made for the purpose of disease investigations, and in nearly all cases it has been found necessary, in the first place, to induce the grower to practise better sanitation before there was any hope of successfully combating the outbreak. In other instances the trouble has been due to a derangement of the digestive organs on account of the feeding of mouldy, musty, and otherwise unsuitable foods. The disease known as Coccidiosis caused severe losses among several lots of chickens of different breeders, but advice on treatment soon arrested the outbreak.

It is very pleasing to be able to report that very few inquiries have been made on the treatment of poultry tick. By this it is not assumed the seriousness of this pest is any less than in previous years, but that the educational campaign conducted has been of much value.

P. RUMBALL, Poultry Expert.

REPORT OF THE COTTON SPECIALIST.

The outstanding features of the season under review have been the very limited demand for Queensland lint cotton in Australia, and the unfavourable seasonal conditions which existed in most of the cotton-growing areas. The combination would have resulted in one of the most disastrous seasons that the cotton growers of this State have experienced but for the values for lint which have been ruling in the world's markets. Fortunately, these values have been on such a level that it appears this season's Queensland cotton will obtain on the Liverpool market prices which, in conjunction with the Commonwealth bounty, will give returns sufficiently high to make cotton-growing profitable where average yields have been obtained.

The prices realised for last season's crop, which was marketed in Australia and was the first one controlled by the Cotton Board, gave the growers confidence in the future of the cotton-growing industry. In addition to this, the growers were assured that a good market awaited their produce of this season. The effect was an awakened enthusiasm in cotton growing which, under the early favourable climatic conditions, resulted in an increased acreage in the main cotton-growing areas where the returns had been profitable in the preceding season. Growers in other districts, where adverse conditions in previous seasons had affected the returns from cotton growing to such an extent as to make it unprofitable, also returned to growing this crop again. Generally speaking, a greater feeling of optimism ruled throughout the cotton-growing areas at the start of this season than had existed in any crop since those of the "boom period," which existed during the years 1921 to 1925.

Unfortunately, the early hopes for a profitable crop did not materialise. A lack of a prospective market caused the Australian spinners to advise the Cotton Board, soon after the crop was planted, that they would not be able to use any Australian cotton. In explanation of this contradiction to earlier advices, that an increased supply of Queensland cotton would be necessary to meet all requirements, it was advised that heavy importations of cotton cloth had checked most of the demand for Australian spun yarns. In addition to this factor, the abnormally large crop in the United States of America in the season of 1926 forced the world values for cotton, similar to Queensland cotton, down to a point where the Australian merchants could import yarns cheaper than for what the Australian spinners could produce them. At this juncture the Commonwealth Government announced that a protective tariff on certain cotton goods would be brought into operation on 1st July, 1928. Protests from various interested parties influenced this Government to alter the date to 1st January, 1929.

No provisions were then made regarding the importation of yarns, and in April of this year a committee representative of all parties interested in the growing and spinning of Australian cotton interviewed the late Hon. H. E.

Pratten, Minister for Customs, to place before him a comprehensive scheme for the development of the cotton-growing and spinning industries of this country. A very sympathetic hearing was given the committee, and its recommendations have been placed with the Tariff Board for consideration. If the various provisions of the committee's report are put into effect, it can be confidently expected that a keen Australian demand for Queensland cotton will develop, and at prices which will make cotton growing a profitable enterprise in the areas which are suitable for the growing of this crop.

When it became apparent that this season's crop would have to be sold overseas, the Cotton Board got in touch with reputable firms of cotton brokers in Liverpool, and eventually made arrangements with an important firm to handle the whole of the shipments for this season. The Government Head Grader, Mr. L. L. Gudge, who was on leave in England at the time, interviewed this firm, and upon his return to Queensland advised that it can be expected that these brokers will make every effort to sell our cotton to good advantage.

Mr. Gudge also interviewed the firm of brokers who handled the crop while it was acquired by the State Government. They expressed regret that the whole of the 1926-27 crop had been held in Australia, as they had developed substantial connections for the selling of Queensland cotton. The brokers informed him that our cotton enjoyed a reputation for good grading, and that our best cottons were being used by lace manufacturers.

The Cotton Board has again arranged with the Commonwealth Bank to finance the season's crop. As was the case last season, advances will be made on a basis of 65 per cent. of a conservative estimate of the value of the lint. These advances will be paid to the grower according to grade and staple, as determined by the Government graders stationed at the ginneries. The following schedule of prices sets out the same, which also includes the Commonwealth Government bounty:—

Grade.		Staple I.	Staple II.	Staple III.
		d.	d.	d.
A	.. ..	3	3.25	3.5
B	.. ..	2.75	3.125	3.3
C	.. ..	2.25	2.5	2.75
D	.. ..	1.5	1.5	1.75
X	.. ..	2.75	3	3.2
XX	.. ..	2.125	2.25	2.75
XXX	.. ..	1.25	1.5	1.75

At the completion of the disposal of the entire crop, any surplus, after paying all expenses, will be pro rated per pound of seed cotton and paid to the growers as a bonus.

The world's prices for American Upland cotton of similar quality to that of the Queensland crop, as has been pointed out, have been on a decidedly higher plane than existed during

the period when the bulk of last season's crop was sold. The present crop forecasts from the United States of America as to the acreage and condition of the 1928 crop in that country, indicate that only an average crop will probably be harvested. If such a crop is obtained, it can be expected that the present ruling prices will be maintained for over the greater portion of the next season's harvest in this country. The world's consumption of cotton continues on such a scale that at least average crops in the United States of America must be produced to hold down the values to the present levels. Any decrease of crop will appreciably raise the prices of cotton. The possibility of profitable prices for next season's crop, therefore, looks attractive.

An event of extreme importance to the cotton growers has been the placing of the cotton-growing industry under the provisions of the Rural Workers' Award. As originally passed, the award stipulated the minimum wage for all labour employed by the grower, but allowed the picking of the crop on a piece-rate basis. The Cotton Board applied for an interpretation of this clause of the award and asked the Arbitration Court to fix a rate for picking. After hearing the merits of the claim, the Court fixed a flat rate, for this season, of a 1½d. for the first picking of clean cotton and 2d. for the second picking, irrespective of hours or a minimum wage.

The season under review has been characterised by a most unusual combination of variable rainfall conditions. Generally speaking, the results obtained from growing cotton crops under such conditions have been satisfactory in only a few districts, although at one period of the season nearly every section of the cotton belt gave promise of returning excellent yields. Unfortunately, a period of very heavy rainfall was experienced at the critical stage in the development of the plants and again during the harvesting season. These periods of rainfall lowered the yield and the quality of the harvested crop to such an extent that it may be said this has been one of the most unfavourable seasons the cotton-growers of this State have experienced since the present revival of cotton-growing.

Favourable conditions for establishing an early well-prepared seed-bed existed in nearly every district through the occurrence of splendid rains in June. Owing to the prevailing optimism as to the possibilities of excellent returns, the general standard of preparation was of a good quality and in many cases left little to be desired. Good planting rains, in mid-September, were

experienced in some of the Northern districts, and general rains occurred around the first of October and again during the middle of the month. In fact, the best planting conditions prevailed of any of the last six seasons. Good strikes were obtained in nearly all districts, and, with the amount of available moisture, excellent plant growth was made on all classes of soils. Slightly dry conditions were experienced in most sections during November, which toughened the growth of the cotton plants and allowed the cleaning-up and the proper cultivating of the fields.

During this period, the field officers of the Cotton Section carried on active propaganda to demonstrate the advantages and desirability of properly thinning the plants to distances which observations and experiments had indicated were necessary to obtain the best results. The tendency to enlargement of acreage made this operation of extreme importance, and it was believed that practical demonstrations of the correct methods would be of high economic value to the growers. Excellent responses were received from these demonstrations, and it is safe to state that this present crop has been the best thinned one to date.

Favourable growing conditions continued in most districts from November on, although in some sections of the Northern areas a slight deficiency of moisture was experienced. January was generally favourable to excellent crop development, but during February a repetition of the old "rainy season" conditions prevailed. In some areas very heavy rainfall was experienced, while, generally, showery cloudy weather was recorded. These conditions continued on through March and to some extent in April, until the middle of that month, when in many areas a series of heavy rains culminated in severe floods. These storms occurred at a most unfortunate time, as there were large amounts of open cotton awaiting picking. Such heavy rains lowered the quality of the lint and reduced the weight of the seed cotton to a marked extent. They were easily the most disastrous storms that the cotton areas have experienced at picking time. Conditions improved after that and during May were more favourable to the harvesting of the crops. Frosts were experienced on 13th, 14th, and 15th May in many of the cotton-growing areas. Showery weather occurred again in June.

The following table shows the monthly totals of rainfall which were experienced at the various representative centres in the cotton areas:—

MONTHLY RAINFALL.
1st July, 1927, to 30th June, 1928.

Location.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	Total.
Laidley	38	17	124	286	466	518	377	1,280	96	753	83	182	4,220
Boonah	39	30	72	579	400	403	380	1,557	109	683	65	209	4,526
Murgon	84	46	103	442	366	583	530	1,191	58	359	157	281	4,200
Gayndah	99	60	313	419	689	642	325	1,214	32	242	9	287	4,331
Eidsvold	124	58	161	452	224	590	297	792	77	228	37	295	3,335
Many Peaks	137	124	126	420	588	452	767	2,576	81	1,107	53	286	6,717
Rockhampton	227	72	139	219	342	914	340	1,801	292	2,168	11	127	6,652
Westwood	120	112	211	144	227	360	393	709	409	2,199	18	206	5,108
Wowan	119	135	150	362	543	314	521	1,121	272	1,375	37	206	5,155
Biloela	110	28	146	488	221	349	515	702	114	936	32	257	3,898

The results obtained under the "wet season" conditions varied according to the nature of the rainfall and the soils. As a whole, increased yields of higher quality would have been obtained from the same amount of rainfall if it had fallen in a few soaking rains rather than in many showers over a prolonged period. The following descriptions of the results obtained in each of the main cotton-growing districts indicate how the crop developed under such climatic conditions.

DIVISIONAL RESULTS.

A marked decrease in interest in cotton-growing existed in all sections of the Southern District with the exception of the Brisbane Valley. The results obtained from the late-planted crops of last season were disheartening, and during this season many cotton-growers turned their attention to maize-growing, due to the good spring rains and the prevailing high prices of this grain. Approximately only 700 acres of cotton were planted this side of the Main Range. The luxuriant growing conditions caused disaster to any cotton-crops growing on the flats, but on the hill slopes sufficient satisfactory yields have been obtained to indicate the value of this crop to the Southern farmers. It is to be hoped that the apparent prevalence of a cycle of rainy seasons will induce these growers to go in for cotton-growing again, as it is believed that this is a cash crop that they cannot afford to leave out of their farming operations.

The acreage planted in the Lower Burnett, along the Kingaroy Line, was approximately the same as that of last season. Unfortunately, continuous heavy rainfall was experienced during December, with the result that many of the plots became water-logged and so grassy that the plant growth was badly checked. These conditions prevailed through most of January, with the result that a considerable acreage of crop was abandoned. Where it was possible to cultivate and clean the fields, good yields have been obtained. It is believed that, with a better selection of well-drained soils, the farmers of this district would be well advised to include cotton-growing in their operations for the coming season.

The same conditions as existed along the Kingaroy Line hold true for the Central Burnett District as far as Gayndah. Generally speaking, excessive rainfall has caused either an abandonment of crops or very low yields to be obtained. Crops on well-drained soils have given good returns, however, and the growers who can obtain such conditions, in this section of the district, should again engage in cotton-growing.

The results obtained in the Mundubbera area of this district, as a whole, have been slightly better than those of last season. Early indications gave promise of excellent crops being obtained, but a severe, dry, hot spell in January seriously checked the development of the plants. In spite of this unfavourable condition, good yields were obtained, and it is anticipated that a considerably increased acreage will go into cotton during the coming season.

The growers in the Upper Burnett have experienced the worst season since this settlement started. Although an excellent start was obtained, the conditions of excessive rainfall,

which existed until mid-January, caused a rank growth of plant with a late-developed crop. Favourable conditions during the rest of January allowed of the development of a promising prospect for the obtaining of a good yield. Unfortunately, heavy rainfall occurred during February, as much as 8 in. having fallen in one storm. Under such conditions, most of the plants on the rich alluvial flats made a very rank growth with a consequent loss of the bottom bolls. Favourable conditions in March allowed of the development of a very heavy top crop; but a storm in mid-April, in which from 8 to 20 in. of rain occurred, when the bolls were just opening well, checked the maturing of the crop. Heavy frosts on 15th May froze a large percentage of the sappy, fully-developed bolls, thus completing the worst season experienced by this district. In spite of such results, a large acreage is anticipated for the coming season.

The yields which have been obtained in the Callide Valley during the past season, as a whole, have either been equal to, or better, than those realised in previous seasons. Excellent strikes were obtained over the whole of the area, with the exception of a certain acreage of ratoon cotton. Good growing conditions prevailed through most of the season, with the exception of January, when a period of showery weather caused the development of a sappy plant with little ability to withstand short periods of dry, hot weather, which occurred later in the season. Excellent yields were obtained under such conditions, however, but the quality of the lint was inferior to that of the previous crop. Not only was a high percentage of the early crop of a wasty nature, but a large acreage of cotton was unpicked when the mid-April storms occurred. The heavy rains lowered the grade of the remaining part of the crop to a much lower level than this valley has ever previously averaged. It is believed that had the usual quality been obtained, the general enthusiasm would have resulted in a substantial increase in acreage during the coming season. It appears that, even with such cash returns as probably will be obtained, the acreage of this crop will be maintained and, if marketing conditions are improved before planting time, an increase in acreage will result.

An interesting attempt to ratoon a considerable acreage in one section of this valley occurred this season. Unprofitable results were obtained, however, and it is to be hoped that the growers in this area will devote their energies to growing annually-planted crops under good farming practises. The results obtained by the average growers in this valley, and on the Callide Cotton Research Station, indicate that there is no necessity to ratoon to obtain a strike and early plant development. Experiments conducted on the Research Station demonstrated that the cold temperatures "winter" kill a large percentage of the old roots, so that nothing is to be gained by attempting ratooning. The losses from corn ear worm attack and the general results obtained in the ratooned crops, would indicate that this method of growing cotton is not only unprofitable in this valley, but is dangerous, from the point of view of insect attack.

The Dawson Valley district has experienced one of the most variable seasons since cotton has been grown in it. The planting conditions were the best that have been experienced for years.

Good growing conditions prevailed in most sections, and a splendid fruiting type of plant developed. By mid-January excellent crops were to be seen in most areas, although somewhat dry conditions existed in certain of them. The rainfall was patchy from then on, but, as a whole, the prospects for good yields for the district appeared better than any previous one for many seasons. A catastrophe occurred in the district in mid-April when, during a four-day storm, in which 43 in. fell at the head waters of the Dee River, serious floods swept over the district. Eight lives were lost, and it was fortunate that most of the homes were on tall blocks on high ground, otherwise many more might have been drowned. The losses of crops, stock, and property were formidable in some areas, however, and an appreciable amount of cotton must have been swept away. It will be difficult to estimate the full amount of damage done by this flood to the cotton farms. With the amount of work necessary to repair buildings and fences, the growers may not be able to prepare sufficient land to plant their ordinary acreages. It is to be hoped that means of assistance will be afforded which will allow the growers to be able to get their ordinary acreages planted in time to obtain full benefits from their crops and thus have an opportunity to recoup some of their losses.

The remaining cotton-growing areas of the Central Queensland district have had a very poor season, as a whole, and unprofitable results have been obtained. The planting rains did not occur until mid-November, and under the excessive wet conditions a badly-fruited plant resulted. It is to be hoped that better conditions prevail next season, as taking the district generally, unprofitable results have been obtained during the last two seasons.

STANDARD OF CULTIVATION.

The general standard of the preparation of the seed-bed was of the highest average quality of any crops of recent seasons. Excellent rains fell through the winter, which allowed of a well-prepared seed-bed, with good moisture in the surface soils. Considerable difficulty was met with in maintaining clean cultivation owing to the showery conditions which existed in October and again in January and February. In many cases, on poorly drained soils, the crops were abandoned as the cost of cleaning them would have been prohibitive. As has been stated, the standard of thinning was excellent, and it was unfortunate that such showery conditions did not allow of a full demonstration of the value of this operation.

CROP YIELD FOR THE SEASON.

The total yield for the whole of the State will be decidedly less than the condition of the crop at mid-season gave promise of being obtained. Owing to the feeling of optimism regarding the prospects for good returns for the season, a decided increase in acreage took place in the Upper Burnett, Callide Valley, and Dawson Valley areas. The general standard of cultivation was good in these sections, and fields of 20, 30, and 40 acres were of common occurrence, with a few 100-acre blocks, and one partnership of 300 acres. By the end of January, the majority of these fields were heavily laden, but

from then on adverse climatic conditions reduced the yields in all districts, with the possible exception of the Callide Valley. Profitable yields would have been obtained even then, but for the occurrence in April of the series of heavy storms which swept the cotton belt. Sufficient seed to plant 25,000 acres of cotton was supplied to 2,000 growers by the Cotton Board. In applying for registration numbers in the autumn before commencing forwarding cotton, 1,800 growers advised of 23,500 acres having been grown to maturity. It is not known, at present, how much cotton will be obtained from this acreage. On 30th August the ginneries had received 11,354,491 lb. of seed cotton. In all districts there is still a certain amount of top crop to be harvested from plots which have escaped severe frosts. It is estimated, however, that the crop will reach 11,775,000 lb. as compared to last season's crop of 7,054,951 lb.*

QUALITY OF THE CROP.

The character of the crop has been of a lower quality than has usually been obtained in previous seasons. An unusually large percentage of the higher grades has been of a wasty nature. The explanation is not clear. Field examinations of the fibres from different portions of the plant indicated that a very irregular growth had been made. The growth of the structure of the plant confirmed this observation, as a marked irregularity in the development of the fruiting branches and the size of the bolls could be seen. It was noticed that, under the showery weather conditions, the plant growth became of a sappy nature, and that such growth was quickly checked during the occurrence of any periods of hot dry weather. In some sections the lower subsoil moisture was deficient, so that the development of the plants was made with surface moisture. In other districts excellent rainfall gave ample moisture to a good depth. Wasty cotton was produced under all conditions, however, to a much higher proportion than in the previous season. It is believed that the irregularity of growth of the plants affected the development of the fibres, thus causing a variation in the length and character of the staple from the different portions of the plant. Owing to a high percentage of the bolls being allowed to open before the harvesting started, it can be seen that a picking might include matured and immatured fibres, thereby producing a wasty cotton.

This large amount of wasty, immature fibres has necessitated placing a considerable proportion of the cotton, which would ordinarily be of the highest seed cotton grade, into an immature grade, thereby reducing its value. In addition to this cause of the lowering of the quality of the crop, there has been a large amount of low-grade cotton. This was the direct result of the very heavy rainfall in mid-April, when the unpicked cotton was so thoroughly soaked that all of the "bloom" of the lint was destroyed. Such cotton was of a dull weathered appearance, and had to be classed into grades representing appreciably lower values than would have been obtained without the occurrence of the storms.

* These figures were kindly supplied by the manager of the Cotton Board.

CALLIDE COTTON RESEARCH STATION.

The staff has again been successful in bringing through the bulk of the experiments to a satisfactory completion. The results have not yet been written up, but will be published later in the Annual Report of the station. Excellent yields were produced in most of the plots, and from the results obtained it would appear that the methods being used are fairly reliable for the production of profitable crops of cotton.

The station was unfortunate enough to have the bulk selected breeding block awaiting the selection operations when the mid-April storm occurred. The cotton received such a soaking that a fair percentage of the seed started to germinate. As the character of the lint was so badly affected, it was decided that the usual selecting of large numbers of plants of the standard type which is being bred on the station would not be justifiable. The plots are being picked separately, however, and the seed will be used to plant the whole of the station next season. This will allow of the increasing of this plot, although no work of improvement has been possible for this season.

Selections were made in the progeny groups and new selections were made in the bulk plots, so that ample material for further individual plant studies will be available for next season. No outstanding progenies were obtained, although two promising ones of large boll type were picked separately for further study in increase plots in a similar manner to that described in last season's report. The strain described then was grown on a field basis this season, but the non-uniformity of length of lint indicated such a degree of instability that it is being discarded.

PURE SEED OPERATIONS.

Substantial progress has been made in increasing the improved seed which was developed on the station two seasons ago. In that season, enough seed was obtained to plant the fields of two growers adjacent to the station. The crops from their fields increased this stock of seed sufficiently to allow of the planting of 800 acres with 16 growers this spring. This acreage, in spite of severe losses due to the seed in the unpicked crops being injured by the mid-April storm, has produced enough good seed to plant at least 13,000 acres at the rate of 20 lb. per acre. This acreage will be distributed in the Callide and Dawson Valleys in the coming season.

The seed obtained from last season's bulk selection plots on the station was distributed to the same two adjacent growers for increasing during this season. Their crops have produced sufficient seed to plant in the neighbourhood of at least 2,000 acres. This stock will be distributed in the coming season to groups of isolated growers in the Callide Valley for further propagation. It can be seen therefore that a system of supplying improved seed which has been developed at the Research Station is now operating. As the quality of the seed on the station improves, the benefits shall be quickly passed on to the growers, and it is anticipated that ultimately they will be receiving a supply of seed which, if they apply the proper cultivation methods, will give them excellent yields of good cotton.

The operations connected with the development of a supply of acclimatised seed for the Upper Burnett district have also received a serious check during this season. Heavy floods occurring in mid-season and again in mid-April completely destroyed the crops of the progeny block and bulk selected increase plots. Fortunately, Messrs. R. W. Peters and N. E. Goodchild, the officers who are conducting the operations connected with these plots, were able to select a considerable number of plants for progeny investigations before the mid-April storms. The seed from these plants, with the reserve stock of this season's progeny plantings, will allow of the sowing of a representative block of progenies for the next season's operations.

In addition to the abovementioned activities, the work of developing acclimatised strains was continued in several of the other varieties which the Department has introduced. No outstanding features of decided merit were observed in these varieties, and nothing has shown up this season which would indicate that better results could be obtained by substituting any of them for the Durango cotton.

EXPERIMENTAL PLOTS.

A substantial increase in the number of experimental plots with grower co-operators has taken place this season. This phase of the work of the Cotton Section is developing each season and is becoming one of the most important features of the activities of the field staff. In this section of the work there may be grouped investigations in varietal tests, thinning and spacing tests, fertiliser and green manure trials, soil studies, and insect problems. In each season the value of such experiments is becoming more apparent to the growers. The class of co-operators is also improving to a standard which indicates that any beneficial results obtained will be applied by the influential members of the communities in which the work is being conducted.

GRADING.

The grading of the seed cotton at the ginneries has again been performed by the staff of Government graders. The irregularity of the climatic conditions has made the grading of this crop one of the most difficult since the work has been done by the Government. Not only has a considerable amount of "wasty" cotton been received, but the occurrence of so much showery weather during the opening of the crop has caused an abnormal amount of stained and dull cotton. Each bale of lint is again being classed by the Government Head Grader. This allows of a close supervision of the work of the graders at the ginneries, and enables a correction to be made of any discrepancies which may show up soon after their occurrence.

The outstanding feature of the cotton received at the ginneries has been the general tendency, especially on the part of the growers of large acreages, to pack the wool packs without blending the cotton. Ample evidence was obtained of cases where the picker's sacks had been dumped one on top of the other. This method forms layers of cotton of different grades and greatly hinders the correct grading and blending of the cotton in the ginning process. In a variable season, such as this one, the situation is aggravated and the growers should endeavour to blend

the contents of each wool pack. If the present methods of packing without blending are continued, it is questionable if the high standard of uniformity of grade within the one bale which Queensland cotton now enjoys can be maintained.

INSECT PESTS AND DISEASES.

Generally speaking, this past season has experienced only a moderate amount of insect attack.

Cutworms (*Euxoa radians* Guen) were practically absent, and with the excellent moisture and growing conditions, good stands were maintained.

Some damage to young cotton in the Callide Valley was done in October by the early brood of corn ear worms (*Heliothis obsoleta* Fab.). In nearly every case, these either came out of "standover" cotton crops or fields of old crops which were to be ratooned. A severe invasion of this caterpillar again occurred in mid-December in annual cotton adjacent to abandoned ratooned fields. The excessive weed growth caused by the excellent growing conditions forced most of the growers with ratooned fields to abandon them and to concentrate on their annual cotton. These abandoned crops afforded excellent harbourage for the corn ear worm. Heavy migrations of the caterpillars occurred in December, and fully 60 to 90 per cent. of the squares, flowers, and, in some cases, even the terminals of the main stalks and fruiting branches were destroyed in the adjoining crops of annual cotton. This attack ceased around Christmas time, and under the excellent growing conditions a very good crop of bolls developed in time to mature before the occurrence of frost.

Similar attacks were experienced in the Upper Burnett areas. In most cases these occurrences appeared to be associated with the growing of crops of maize during the previous season. Some of these old maize plots had been ploughed early enough, ordinarily, to have destroyed any harbouring pupæ, yet the attack in the new cotton crop was as severe as where no ploughing had been done. The explanation of this attack is not clear under the circumstances.

There was a remarkable freedom from serious loss caused by the mid-January and March broods of this caterpillar. These are the broods which, in the past, have caused such severe damage, especially to late-planted crops. It is possible that with such a large percentage of the crop planted in late September and mid-October immunity was afforded through the "early planting" factor. Most of the late-planted crops also escaped serious damage, although at the Callide Research Station a block of late November plantings were so seriously attacked that no picking was done in them. These plots were adjacent to a commercial field which had been badly attacked in December by a brood which had bred up in an adjoining field of standover cotton. This closeness of source of attack may explain the severe loss in the late cotton on the station. It is interesting to note, however, that October-planted cotton adjoining this late cotton suffered practically no damage and bore a heavy yield.

In every season, the apparent large degree of immunity from corn ear worm attack has been observed in early-planted crops of cotton in

every district. In cases where attacks were experienced, such as occurred this season in the early fields adjacent to standover crops in the Callide Valley, the plants have been able to produce a profitable crop. It certainly appears therefore that, from the standpoint of protection from this pest alone, early planting is advisable. When the cultural advantages are also considered, it makes early planting all the more desirable. In connection with early planting it appears that, if possible, the cultivation of all fallows adjacent to the field of young cotton, should be done by the end of August. It is believed that a considerable proportion of the over-wintering pupæ will be destroyed by such an operation at that time. Any such check is highly desirable, owing to the rapidity with which the later broods of this pest breed up.

The pink boll worm (*Platyedra gossypiella* Saunders) was again severe in the areas adjacent to Rockhampton. With the suitable climatic conditions for the development of "boll rot" fungi (*Fusarium moniliforme*), the puncturing of a boll by this insect has resulted to a large extent in the complete loss of the boll. It can be seen therefore that every method of eradicating this pest should be taken. Inspections made in the Callide Valley indicated that a good control was being kept over the spread of the pink boll worm in that district. It is present, but to such a small degree that, if the proper methods of cultivation are practised, it is believed it will prove to be a negligible factor under the climatic conditions which usually exist.

The Large Stainer (*Dysdercus sida* Montr.) occurred in only moderate numbers this season over most of the Cotton Belt. A considerable proportion of stained cotton was received at the ginneries, however. As the population of the other major sucking insect (*Tectacoris lineola* F.), sometimes called the Chinese Bug or Harlequin Bug, occurred in comparatively small numbers, it is possible that the Large Stainer was responsible for a considerable proportion of the damage. The climatic conditions were extremely favourable for the development of fungus diseases, which might account for the high amount of damage from staining when only a moderate population of sucking and staining insects were present.

The small stainer bug (*Oxycaenus luctuosus* Montr.), has only occurred in comparatively small numbers this season. This bug sucks the seed in the open bolls and thereby assists in the introduction of a fungus disease which rots the inside of the seed. Inspections of seed from the different grades of seed cotton received this season indicated that little damage had been done from this source. It would appear, therefore, that the smaller populations of the sucking bugs have allowed a plentiful supply of seed of good quality to be obtained under climatic conditions which were very favourable to the growth of fungoid diseases.

The False Stainer (*Aulacosternum nigrorubrum* Dall.) has again been in evidence. It is not believed, however, that this insect had done so much damage as was the case last season.

A Departmental Bulletin, "Cotton Cultivation in Queensland," by W. G. Wells, Cotton Specialist, and E. Ballard, Commonwealth Cotton Entomologist, has been issued during this

past season. This bulletin deals with the cultivation of cotton in this State and gives detailed descriptions of the insects which attack the cotton plant in Queensland and the methods of combating some of them.

ACKNOWLEDGMENTS.

The section is again indebted to Mr. Brännich and his staff for the kind assistance which has been given in analysing a large number of soil samples collected during the season. The study of the soils and their effect on the cotton plant is becoming of greater importance with each crop. As the economics of cotton growing become more appreciated by the growers, the value of suitable soils will become more apparent. A comprehensive series of studies of the soils and their effect on the cotton plant under different climatic conditions is therefore of prime importance. The groundwork of such investigations has been started, and with the valuable assistance of Mr. Brännich and his staff a considerable understanding of the soil problems has already been accomplished.

Mr. Coleman and his staff have again given valuable assistance to the section through testing the germination powers of different lots of seed submitted to him during the season.

The section has again received valuable assistance from Mr. Veitch and members of his staff. Mr. G. A. Currie has conducted an interesting

range of experiments at the Callide Cotton Research Station, which have been of assistance in attacking the problem of controlling the Corn ear worm and the cut worm. Miss M. G. Evans has continued her investigations of the sucking and staining insect pests of cotton. The section is also greatly indebted to Mr. I. W. Helmsing, Staff Artist to the Entomological Section, for the preparation of an excellent set of coloured plates and drawings for publishing in the Bulletin "Cotton Cultivation in Queensland."

STAFF CHANGES.

It is advised with pleasure that no losses have occurred this season in the personnel of the staff.

The promotion of Cadet Grader Mr. W. A. R. Cowdry to the position of Junior Cotton Grader has been the only change to take place.

I desire to put on record my appreciation of the excellent work which the members of the staff have performed this season. A very large number of experiments have been conducted, especially with grower co-operators, and the standard of cultivation and the results obtained from them indicate the industry and efficiency of the various officers connected with the work.

W. G. WELLS, Cotton Specialist.

REPORT OF THE ACTING DIRECTOR OF FRUIT CULTURE.

The condition of the fruit industry during the year 1927-1928 has been satisfactory in respect of yield; but prices, particularly of temperate fruits and citrus, have been much below the average, though the quality has shown much improvement on the previous year's crop. Bananas, under consistent rainfall, have flourished and provided good quality fruit, which has been disposed of at satisfactory prices. Custard apples, under humid conditions on approaching maturity, ripened very rapidly, with a consequent depreciation in prices, really resulting in a glut, which was effectively handled by the Committee of Direction of Fruit Marketing. Tomatoes (which have been classified as a fruit for tariff purposes) in the Southern district suffered severely from the effect of heavy and continuous rainfall, and blight has taken a heavy toll of the remainder. The indifference with which this disease has been treated warranted a special regulation whereby spraying or dusting has been made compulsory.

Much improvement has been noted in the condition in which fruit has been marketed, both in respect of maturity and grading, to which the application of the Fruit and Vegetable Act has probably had some influence.

With the exception of blight in tomatoes, disease has been reasonably absent, though exceptions have been noted in respect of fruit fly and codlin moth in temperate fruits. Citrus have not been invariably free from fruit fly and scale insects. Unfortunately, in an effort to relieve the local market by shipping to New Zealand, the indifference of one supplier in including fly infested fruit was responsible for the concession for admission of citrus to New Zealand being promptly withdrawn.

NURSERY STOCK.

A fair demand has been experienced for nursery stock of all kinds, planting being mostly effected in distant parts of the State.

CITRUS.

A suggestion for limitation of varieties of citrus has been given effect to, and the principal nurserymen have procured their budwood from selected trees, principally in the Howard district. In respect of orchards it becomes more obvious every year that due regard has not been exercised as to the requirements of the trees when selecting the orchard site. In consequence returns from many orchards are low and in numerous instances not more than half of what under favourable conditions would be expected; therefore the general average is most appreciably reduced. Theoretically, soils may frequently be sufficiently improved to produce reasonable crops, but in practice this is rarely profitable, and the absence of such improvement is mainly responsible for the high percentage of small or inferior fruits being sent to market. This feature is receiving attention from members of the field staff in an endeavour to dissuade planting under unsuitable conditions, but the effect of earlier planting does not admit of remedy. The fact has yet to be recognised that

the finest fruit are not produced in the coastal areas in Southern Queensland. Exception will be taken to this statement, but whatever individual tastes may be, these must be subordinated to market requirements. A comparison of the coastal and Gayndah fruit, also the prices averaged, affords most striking illustration.

Some alterations have been effected in the field instructional staff, which will have result in a better distribution of work and it is expected will give more satisfactory results, particularly in the Northern district, to which an Assistant Instructor, stationed at Bowen, has been added.

BANANAS.

Bananas still maintain supremacy for value in exports and, given reasonable attention, will so continue. The area included in this crop has been much extended, which originates the query whether suitable land will continue to be available. It must be admitted that the banana land of to-day is not all up to requirements, hence the wide variation in the returns from different plantations and the published statements re cost of production. Obviously, as but very little of the Southern areas admit of cultivation and general improvement, we must look to the North for maintenance of supplies in the not far distant future. Realisation of the proposition of establishing experiment stations in the Northern and Southern districts would undoubtedly improve the prospects generally, both in respect of disease control and improving the quality of the fruit. Unfortunately "bunchy top" maintains a grip of the Southern area, and drastic measures must be employed to encompass its eradication. In this connection a great part of the responsibility rests with the grower, but unfortunately is not recognised to the extent that might be expected.

The State Nursery at Bribie Island has been devoted exclusively to the propagation of healthy banana plants. The desirability of propagating tropical plants in a temperate climate and then forwarding through to the more tropical for planting is open to serious question, and conditions are not favourable at Bribie for the propagation of tropical plants which could be profitably grown under suitable conditions.

PINEAPPLES.

Pineapples have met with good sales and the numerous inquiries for suckers or gill sprouts indicate extensive planting. As with other plants, a high percentage is planted in indifferent soils, mostly poor sandy loams, in which no system of fertilising nor profitable treatment can prolong the existence of the plantations beyond a few years. In a local area, pines have been grown continuously on the same site for over forty-five years, and now present a most inviting appearance. The planting of pines is again being taken up in the Northern district, which will mean a decided extension of the fruit season.

DECIDUOUS FRUITS.

Deciduous fruit from the Stanthorpe district have been abundant in quantity and generally of excellent quality. The Jonathan apples deserve special mention as the best samples that have been available on the Brisbane market for many years. The contentious subject of apple stocks has not been finally disposed of, though the remedy is entirely in the hands of the local interests in raising a sufficient supply of seedling plants for local requirements and working these over with desirable varieties. To eliminate as far as possible the trouble with imported trees, arrangements were completed with a Tasmanian firm that samples of trees to be supplied were first submitted to this office for approval, and, provided the supplies are up to sample, there will be no ground for complaint from this source.

LEGISLATION.

The Fruit Cases Act, which covers the provisions relative to condition, packing, grading, maturity, &c., of fruit and vegetables, has been superseded by the Fruit and Vegetable Act of 1927, which is being administered with satisfaction. The Primary Produce Experiment Stations Act of 1927 is quite a new feature, admitting of experiment of various crops on a contributing basis. The provisions admit of concentration of effort in dealing with cultural, entomological, and pathological features, and, where availed of, will materially benefit the particular branches of the industry concerned.

FIELD INSPECTORS.

Continued presence of "bunchy top" and the extent of infestation absorbed the services of all available inspectors in a comprehensive effort

to eradicate the disease by starting well beyond the north of infestation and inspecting all plantations thence to the Southern border. Their number, however, was found to be inadequate to the extent of work involved, consequently 10 temporary inspectors have been added, which will admit of the work being simultaneously conducted from the Northern and Southern areas.

In the Stanthorpe district growers have shown a much better appreciation of the obligations, thus permitting a reduction in the number of inspectors in that district.

Inspections of imports both by rail and by sea have been satisfactorily performed with a minimum of friction.

Inspections under the Quarantine Act have engaged an appreciable part of the Port inspector's time. Generally the overseas line have been up to standard but occasions have been noted where fumigation or destruction has been necessary. The application of new conditions which apply to straw packing entails much inconvenience and extra labour.

A statement giving imports and exports is submitted by the Senior Fruit Inspector, which shows a satisfactory balance in favour of the State.

Imports	537,948 cases
Exports	688,797 cases

The majority of cases exported contain 1½ bushels, those imported 1 bushel.

GEORGE WILLIAMS,
Director of Fruit Culture.

FRUIT AND PRODUCE FROM SOUTHERN STATES TO QUEENSLAND, YEAR 1927-28.

	Fruit.	Potatoes.	Vegetables.	Onions.	Plants.	Seeds.
	Cases.	Bags.	Packages.	Bags.	Packages.	Packages.
Brisbane	195,646	154,623	11,545	35,124	728	2,146
Wallan-garra	305,398	73,800	8,071	..	..	..
Rockhampton	997	20,037	8,660	..	25	..
Bowen	286	2,085	..	692	2	..
Townsville	27,790	23,480	880	13,625	18	..
Innisfail .. .. .	..	376	..	178	2	..
Cairns	7,831	12,743	212	5,778	15	..
Totals	537,948	287,144	29,368	55,397	790	2,146

IMPORTS UNDER THE QUARANTINE ACT AND COMMERCE ACT.

Rockhampton, 3,380 packages ; Townsville, 6,911 packages ; Cairns, 11,198 packages ; Brisbane, 103,074 packages ; Commerce—Brisbane 975 packages.

FRUIT AND PRODUCE TO SOUTHERN STATES FROM QUEENSLAND, YEAR 1927-28.

	Bananas.	Peanuts.	Arrowroot.	Citrus.	Pines.	Tomatoes.	Potatoes.	Various Fruits.	Pumpkins.	Grass Seed.
	Cases.	Bags.	Cases.	Cases.	Cases.	Cases.	Bags.	Cases.	Tons.	Bags.
Brisbane	5,390	2,180	6,689	994	9,353	18,146	4,366	205	18,389	7,848
Wallan-garra	683,407	1,306	..	29,817	170,240	351,547	5,254	44,134	60,277	..
Rockhampton .. .. .	..	..	..	..	..	..	..	..	..	..
Bowen	53	..	..	11	7,347	156,876	..	505	1,627	..
Townsville .. .. .	..	..	..	..	..	..	..	..	..	..
Innisfail	14,342	..	..	..	200	316	..	125	..	..
Cairns	261	86	..	..	2,977	260	..	80	..	..
Totals	688,797	3,572	6,689	30,811	179,593	369,793	8,720	44,349	80,293	7,848

	Maize.	Vegetables.	Ginger.	Cucumbers.	Plants.	Strawberries.	Egg Fruit.	Chillies.	Mangoes.
	Bags.	Packages.	Packages.	Cases.	Packages.	Trays.	Cases.	Cases.	Cases.
Brisbane	75,966	2,053	76	10,345	..	..	..	..	..
Wallan-garra .. .. .	..	47,950	..	48,644	60	14,400	..	..	..
Rockhampton .. .. .	..	..	..	..	..	..	..	..	..
Bowen .. .. .	..	..	..	12,274	..	..	711	1,246	..
Townsville .. .. .	..	..	..	..	..	..	..	..	12
Innisfail .. .. .	..	10	..	40	..	..	..	..	..
Cairns	49,870	..	..	..	1	..	..	..	..
Totals	125,836	50,013	76	58,989	61	14,400	711	1,246	12

Note.—In bananas, citrus, pines, tomatoes, various fruit and cucumbers: The totals of these items are made up from Brisbane and Wallan-garra. Other ports are included in Wallan-garra return.

A. PERSON,
Senior Plants Inspector.

REPORT OF THE SUPERVISOR OF DAIRYING.

The dry conditions that prevailed in the dairying districts during the early portion of the period were changed by widely distributed and most beneficial rains in December and January.

The continuance of favourable weather conditions for the remaining portion of the period ensured an abundant production and an adequate supply of grasses and fodder crops for dairy cattle.

The favourable climatic conditions are reflected in the figures setting out the production of dairy products for the period, which constituted a record, exceeding that of 1925, which was the peak year in production, by 1,243,313 lb., and will inspire renewed confidence in the industry.

The progress of the dairying industry is an important factor in the development of the agricultural and stock raising resources of the State.

Primary producing interests of the State greatly outweigh those of manufacturing, and seasonal conditions favourable to the dairy industry have a most important influence on the progress and prosperity of the State, as it occupies third place in value in our primary producing industries, in which the great pastoral industry, comprising wool, live stock, and meats, still holds premier position, notwithstanding the disadvantageous climatic conditions which prevailed in portion of the State devoted to pastoral pursuits.

A further development of all secondary industries allied with our chief primary industries is to be hoped for, so as to ensure that the land, capital, and labour at present employed in connection with our live stock and agricultural interests will be utilised to the best advantage, thereby stimulating the further development of the vast areas of fertile land within the State by pastoralists and agriculturists.

The Australian market is the more profitable for dairy products, and a policy that creates an increased consumption within the Commonwealth will assist the development of large areas and ensure the progress of an important branch of agriculture along sound financial lines.

Quality of Butter.

The grading of dairy produce enables the grading officers of this division to obtain reliable information regarding the quality of the butter produced from one season to another. An examination of one box from each churning is made, and the results are reported to the factory concerned. The system enables a comparison to be made between butters produced under varying climatic conditions and from mixed varieties of pasturage and fodder crops such as are associated with the production of dairy products

throughout the State, from Atherton in the North to Beaudesert in the South, and as far west as Roma.

A review of the position enables me to state that a decided improvement has taken place in the quality of the butter produced during the period under review.

Modernisation of butter factories has resulted in a marked improvement in the quality of a number of brands of butter. While the majority of our more modernised butter factories are producing a butter that consistently scores high points, the output from a few factories does not reach the desired standard of quality. Unfavourable seasonal conditions, excessive heat at one period, and the flooding of dairy centres were responsible for irregularity in the quality of the product.

Standardisation of Product.

The trade requires a standard quality product, uniform in flavour, texture, colour, and moisture content. Such a product will command a higher price on the overseas, State, and interstate markets.

Modern dairy factory equipment is an essential in the production of butter of standard quality and condition and to ensure efficiency in manufacturing procedure.

Kangaroo Brand.

The adoption of the "Kangaroo" as an all Australian brand, denoting a high quality product, has been a benefit to the industry, and by the exercise of careful attention by inspecting officers will be an important factor in the standardisation of Australian high grade butter.

Processing.

Manufacturing defects were seldom recorded in the graders' notes, the body and texture of the butters generally being creditable to the factory operatives.

The installation of modern machinery for controlling the various operations in butter making ensures the production of a butter with the desired body and texture.

Defects in Flavour.

The greater portion of butter graded lower than first is the product of cream delivered to the factory in an overripe or stale condition.

Although it is not impossible with our modern methods of manufacture—neutralisation and pasteurisation of cream—to make a fairly good quality of butter from overripe cream, it is found that much of it is lacking in keeping quality, an all important feature in export butter.

It is essential that the factory shall be supplied with cream that will produce the highest quality of butter in order to secure to the producer a profitable price for the product.

Where practicable, cream should be delivered to the factory not less frequently than four times a week. The market favours a mild flavoured, durable butter, which can be produced only from a high grade product.

Moisture in Butter.

In addition to the regular work of grading dairy produce and advising factory managements on matters relative thereto, special attention was given by the grading officers to the moisture content of butter and the addition of preservative to butter.

The practice of testing butter for moisture has been given more attention during the season under review than previously, with a view to standardising the moisture content.

Altogether 788 samples of export butters and 290 of local sale butters were submitted to the Agricultural Chemist for analysis. The results were communicated to the factory managements for their information and guidance. In 39 instances the legal standard was exceeded, the excess having been fractional. The butters from which the samples were taken were withheld until reconditioned, so as to conform to the legal standard, or sold for cooking purposes.

The results prove that factory managements do not intentionally produce butter with a moisture content exceeding the standard, but constant checking is necessary in the best interests of the industry, while it assists manufacturers in the production of a uniform product.

In some brands the moisture content was too low. The modern combined churn and worker has made possible the incorporation of a standard moisture content of approximately 15 per cent. without injury to the body and texture of the product.

Butter makers should consider it an important part of their duties to test every churning for moisture and aim at standardising the factory output.

Grading.

It is interesting to note the improvement in quality generally of Queensland butters from the grading figures during the past season.

The following table shows the percentage results of the grading of butter for the past three years:—

Grade.	Year 1925-26.	Year 1926-27.	Year 1927-28.
	Per cent.	Per cent.	Per cent.
Choice ..	8.3	35	37.6
First ..	60	42	44.5
	68.3	77	82.1
Second ..	22.7	15	13.5
Third and pastry	9	8	4.4

The quantity of cheese produced for the past twelve months amounted to 14,000,998 lb., which almost equalled the annual record of 1925.

The general quality of the cheese was higher than in previous years.

The quality of the cheese manufactured in the spring was very creditable. Following the heavy rains and rank growth of grass and herbage with prevailing warm nights, the quality of the product was not maintained. When high night temperatures prevailed the evening milk, when delivered at the factory the following morning, would be strongly flavoured and overripe, especially when care was not taken to reduce the temperature of the milk immediately it was drawn from the cow. The product of milk of this quality would be sharp and strong flavoured associated with short keeping qualities. Every endeavour must be made to eliminate this class of cheese.

The trade requires a clean flavoured and mild close-bodied product, possessing good keeping qualities mellowing with age. It has on occasions been said that a strong flavoured rough texture cheese meets a quick market at a fair price. Such cases, however, are exceptions attributable to inefficient marketing, and the best interests of the industry will ultimately be served by the production of a uniform high quality cheese that finds a ready market at the highest rates.

During the autumn and winter months the average quality of the product improves generally, and demonstrates to the producer the advantages to be obtained by cooling the milk as soon as it is produced.

To improve the quality of the milk intended for cheese-making it is essential that it be produced under sanitary conditions, cooled as soon as possible, and kept cool until delivered at the factory. Early delivery is desirable, and is facilitated by the use of motor transport where practicable. Many dairymen do not realise the great benefits to be derived from cooling. This practice has become more general and an improvement in quality has resulted. The cooling, however, should be done under suitable conditions. If all producers will give their attention to this matter, it will raise the standard of quality and secure a higher price for the cheese.

Inferior, bad flavoured milk will produce a low-grade article, and modern methods of treatment (pasteurisation) will not eliminate defects. The quality of the cheese is dependent upon the purity and freedom from taints of the milk from which it is produced.

Grading of Milk.

The systematic grading of milk supplies to a cheese factory is essential in the production of a uniform high-class cheese. The educative value of such work is most helpful to all engaged in the industry.

By the classification of the milks it is possible for attention to be given to sources of supplies below first grade, with a view to raising the standard of the product. The grading is entrusted to men trained in the work and who hold certificates of competency. The work to be

efficient must be carried out methodically and by modern procedure. The personal equation enters largely into the work of milk-grading.

Practical experience is essential in estimating the most important factor in determining the quality of milk—that is, its flavour. Modern methods of classification of milk for cleanliness, acidity, and bacteriological count are necessary in making effective the work of the graders, and all cheese factories should be provided with a complete grading outfit.

The methylene blue test is a valuable aid in determining the bacteriological count, and indicates the conditions under which milk is produced, handled, and delivered to the factory. All milk supplies should be submitted to the test periodically and all doubtful supplies with unerring regularity.

Carelessness in grading milk is an injustice to suppliers of a first-grade article, for, while the majority deliver a high-grade milk, their efforts are depreciated to a great extent by the reception of a low-grade produce. Every effort made to uplift the quality of the milk supply is in the best interests of the producer, since it conduces to high quality in the raw material and the cheese produced therefrom. By the co-operation of all interests the standard of the produce can be raised.

The product of a number of factories maintained a high standard of quality throughout the season.

Curing Temperatures for Cheese.

During the past season the temperatures and conditions under which cheese was matured received close attention, with the result that the greater part of the cheese manufactured was held at suitable temperatures. The beneficial effects were evident. The cool-cured cheese is cleaner in flavour and the body, texture, and keeping quality is superior to cheese cured at varying temperatures. Curing is a most important factor in the production of a high-grade cheese, and the general adoption of modern ripening conditions will place the produce of this State in a higher position on the oversea markets.

Despatch of Cheese to Market.

A large amount of cheese intended for local and interstate markets was despatched from the factories unceased.

This is not in the interests of the industry, as loose cheese, more especially the new and immature, is frequently damaged in transport. The method is not conducive to the maintenance of a clean and generally attractive appearance, so essential in food products.

Carting of Whey.

The practice of removing the whey from the factory to the farm in milk-cans is general, and there can be no doubt whatever that this practice contributes to the defects in the output from some factories. The improper cleansing and

sterilising of the cans after such use has augmented, during the past season, the proportion of undesirable flavours in cheese. In all instances where this system obtains it is necessary that whey tanks shall be washed every day, that the whey shall be removed from the cans immediately after they return to the farm, and that the cans be thoroughly washed and sterilised with boiling water and allowed to dry and air before placing milk in them. To effectively sterilise a can the use of boiling water or live steam is essential, and if the cans are not thoroughly cleansed it is impossible to deliver a high-grade milk.

Treatment of Whey.

Where pasteurisation of the milk is not carried out, the whey should be heated to 180 deg. Fah. at the factory before delivery to the suppliers. This procedure is strongly recommended as a means of preventing the spread of disease amongst farm animals that are fed on the product. It also checks the development of undesirable bacteria and the contamination of milk-cans, carts, &c.

Pasteurisation of Milk for Cheese.

A large quantity of the cheese grading below first, and the want of uniformity in the product of a number of factories, are due primarily to the varying quality of the milk supply. High-grade cheese is the product of an almost perfect milk supply. Unsuitable conditions associated with the production, handling, and delivery of milk, give rise to its contamination by dirt and bacteria, which produce variation in the ripeness and faulty flavours of varied kinds.

The method of manufacture of cheese from raw milk is frequently varied in an endeavour to produce a uniform article. Each vat of milk requires to be carefully watched throughout the process.

The experienced and skilful maker checks, hastens, or modifies the process according to the ripeness and general condition of the milk he is treating.

The defects most commonly met with are of a bacterial origin, and the adoption of a process to check the ripening and growth of harmful bacteria present in milk preparatory to its manufacture into cheese will enable the cheesemaker to adopt a more routine system and produce a high-grade uniform cheese.

The system of pasteurisation which has been adopted in the manufacture of butter, with undoubted success, will prove a most important factor in uplifting the quality of cheese.

Pasteurisation of the milk and the addition of a clean starter will ensure the production of a more uniform and high-grade article than can be produced from raw milk of the average quality received throughout the year. The general adoption of the process is urged, as it is a most important factor in raising the standard and securing uniformity in the product.

Every effort must be made to secure the production of high-quality dairy products. The maintenance of quality is vital to the industry, as on the basis of quality our dairy products must compete on the overseas markets.

TESTING OF GRADE HERDS.

The building up of the grade herds is a matter of importance to the industry, and this can be accomplished by systematic herd testing, breeding, and feeding.

The majority of our dairy farmers have very mixed herds, the production records of which have not been ascertained so as to enable them to cull the low producers and increase efficiency.

In advanced movements the initial response may be disappointing, not because of opposition, but generally owing to the indifference of those whose interests are associated with the project.

In movements pertaining to rural industries and activities, partial isolation is accountable, to an extent, for the absence of greater support to co-operative effort. Sustained interest is essential to success in all activities, and the influence of a few progressive dairy farmers has a beneficial effect in their neighbourhood.

Representations made by officers of this Department have met with response by enthusiasts in all portions of the State where the dairying industry is established. The activities of herd testing cover a vast area, extending as far North as Cairns, Atherton, and Charters Towers.

The first essential in the success of the movement is to obtain the support of the dairy farmers throughout the State, and it is gratifying that the work is extending and is appreciated by many progressive dairy farmers, whose support has been accorded for some years past.

The opening up of further areas of Crown lands to close settlement will result in an extension of the dairy industry. This State cannot afford to lag behind, and it is essential that a better method of dairying be employed in the industry.

The importance of herd-testing has been advocated through Departmental channels for some years past. Its importance, however, justifies its inclusion as one of the three main factors in modern dairy farm practice—viz., herd-testing, the breeding up of herds using approved dairy sires, and providing fodder.

An increase in the average yields of cows adds to the value of dairy lands. For instance, a farm land carrying one cow to two acres will gain in value as production per cow increases, as follows—an increase of 20 lb. of butter fat per annum, when butter fat is worth 1s. 6d. per lb., represents an increased return per acre of 15s. per annum.

The testing period of 1927-28, which is now approaching its termination, was the most successful since the inception of the work in this State.

Favourable seasonal conditions made possible the testing of the majority of the animals over a full lactation period.

TESTING OF PURE-BRED HERDS.

The demand for the progeny of officially tested dams was limited for years past, and had a tendency to discourage the breeding of high-class dairy stock.

The introduction of the Dairy Cattle Improvement Subsidy Scheme by the Honourable Forgan Smith, Minister for Agriculture, has, however, increased the demand for approved dairy sires, and acted as an incentive to breeders of high-class stock to ascertain the production records of females constituting their stud. Still the records for the past season show that only a small proportion of the pure bred females in the State have been tested.

Improvement in the standard of pure-bred dairy cattle, as in the case of grade herds, can only be accomplished through systematic testing and breeding from those with approved production records.

Purchasers of young sires are now asking for an animal bred from parents with high production records. The stud breeder, to meet the demand, must give attention to the testing of females in order to breed this class of sire, for which there is an increasing demand.

THE DAIRY CATTLE IMPROVEMENT SUBSIDY SCHEME.

Better breeding is an incentive to better feeding and care of stock.

Breeders of dairy stock in all parts of the world recognise that milk production, like the varying characteristics of various breeds of domesticated animals, is hereditary. High-producing dairy herds are the result of breeding and caring along scientific and common-sense lines.

Much has been accomplished by pioneers in this important branch of rural industry. The early breeders of dairy live stock, in conjunction with the breeders of beef cattle and sheep, did a national work the value of which is increasing with the settlement of the vast areas of this State by dairy farmers and stock raisers.

From a survey of the dairy live stock statistics it is apparent that the number of pure-bred dairy sires in use is far too low. The use of inferior sires retards the progress of the industry.

In other States of the Commonwealth and in many countries of the world this matter is claiming attention, and efforts are being made, by co-operative effort and helpful legislation, to encourage the introduction of approved dairy sires into the herds. The Dairy Cattle Improvement Subsidy Scheme provides a means of increasing the production of the dairy herd, and it is satisfactory to find that under its provisions a number of high-class dairy sires have been placed in our dairy herds throughout the State.

FODDER CONSERVATION.

Fodder conservation is by no means general. Many farmers, as a result of the losses in recent seasons, have realised the need for making provision to carry them over the dry spells, but unfortunately a number do not make provision to ensure themselves against loss of revenue, or the more serious loss of dairy stock through drought conditions.

MILKING MACHINES.

During the past year there has been a general increase in the number of milking machines used throughout the various dairying districts.

Their use provides for efficiency in dairy management, but in too many cases improper care and attention have resulted in their inefficiency and the supply of inferior produce.

It is essential that they should be thoroughly cleansed before and after use, and any neglect to do so will no doubt result in inferior supplies. Haphazard methods of arrangement of boiling water supplies, &c., are the chief cause of ineffective attention being given to this very important matter of cleanliness.

The soaking of rubber parts in unsterilised solutions is deprecated, and several instances have been recorded during the past season where this practice has led to the discarding of machines, when the fault lay not with the machine but with the inefficient methods of cleansing and sterilising.

In the economics of dairying, machine milking is to play a big part, but not until the dairyman realises more fully the need for making effective provision for the rapid and thorough cleansing of the appliances. A few pounds spent in properly equipping the dairy with effective apparatus for cleansing purposes would be of incalculable value in the quality of the product.

A flavour characteristic of rubber is frequently associated with milk drawn by machines. Owing to the extended use of milking machines, the matter of the production of a substitute for rubber in the construction of teat cups and tubes might well be the subject of scientific investigation.

TRANSPORT.

The transport services are yearly becoming more efficient, owing to the increased motor vehicles engaging in this work. The country centres are, however, seriously handicapped in the matter of roads. The old-time earth roads are not in keeping with the needs of present-day transport, and during wet weather, present, in far too many cases, a serious handicap to the dairying industry where rapid transport from farm to factory is essential.

The inauguration of rail motor services has been a distinct boon to those centres where they are employed. Their value justifies a further increase in their use on several of our branch lines.

The matter of co-operative cartage of cream is receiving consideration amongst suppliers to certain factories. In many cases the cream transport services could be much improved by such a movement.

TECHNICAL EDUCATION.

The activities of the branch, which, it will be noted throughout my report, are mainly directed on the educational side of the industry, have been met by a ready response on the part of those engaged therein.

The certification of butter and cheese makers has been responsible for the raising of the standing of that particular work, and has led to more efficiency through the responsibility which now rests upon certificated operators.

A course of instruction for dairy factory employees was held at the Queensland Agricultural High School and College, Gatton, during May. The syllabus of examination for milk and cream testing and grading and butter and cheese making certificates was covered during the course, at which the Principal and staff of the College were assisted by officers of the Department of Agriculture.

These short schools of instruction are of great value to the industry, inculcating as they do an appreciation for the application of scientific principles to the industry.

It is hoped that factory managements will continue to show their increasing interest in the education of employees along sound scientific lines.

SUCCESS OF QUEENSLAND FACTORIES.

Factory managements are to be congratulated for again demonstrating through their success at various competitions during the past year that they can produce butter and cheese equal in quality to that of any State of the Commonwealth. The keen interest taken by factory operatives in dairy products competitions is evidenced by an increased number of competitors, and their attendance at all important dairy exhibitions augurs well for the future progress of the industry.

A large percentage of the dairy products of the State has reached a high standard, and our efforts must be directed to even greater improvements and the ultimate elimination of all products below first grade.

The modernisation of butter factories is still engaging the attention of increasing numbers of directorates. The large amount of capital which has been invested in the work evidences the optimism of all concerned in the future prosperity of the industry.

Cheese factories have not received the same attention that has been given to butter factories in this regard, but it is hoped that in the near future this work will be actively engaged in and the cheese manufacturing section modernised.

IMPROVEMENT OF DAIRY BUILDINGS.

Hygiene in production is the keynote to quality in dairy products. On the sanitary condition of the dairy premises depends the grade and keeping quality of butter and cheese.

Extensive improvements throughout the dairying districts have been effected in the cow bails and dairy houses.

The requirements of "*The Dairy Produce Act of 1920*" are being observed by a majority of the farmers, who realise that the provisions are enacted for their own benefit. There are many,

however, who still endeavour to carry on with primitive structures which are difficult to maintain in a cleanly condition.

The following report has been submitted by the Senior Grading Inspector, Mr. G. H. E. HEERS:—

Taking the season generally, it may be regarded as highly satisfactory, both from the point of quality and production.

Following an exceptionally dry winter, very little rain fell before the last week in September, when nearly 2 inches were registered. This was augmented by approximately 6 inches for each of the months of October, November, and December over many of the dairying centres, and was followed in the new year by one of the wettest six months on record. For various reasons production did not respond to the changed conditions as rapidly as was predicted at the outset. However, Queensland's wonderful recuperative powers are well evidenced by the fact that in September the surplus butter graded for export was 18,201 boxes, whilst for November the amount had increased to 79,660 boxes, and therefrom steadily increased to 134,320 boxes for March. The closing months found production well maintained, supplies of cheese particularly being heavy for this period of the year.

GENERAL QUALITY.

There were times when a very high standard was reached with both butter and cheese, though it is regretted that this was not always maintained. To some extent this might be accounted for by the bad state of the roads during the excessively wet periods, as it is known that serious delays took place in the transportation of cream to butter factories.

CHEESE.

The quality of cheese fluctuated greatly, and even most of our recognised leading factories at some time or other produced an article of very medium and occasionally low grade quality, even with the assistance of pasteurisation. Some of the main factors operating against the production of a high quality cheese were the use of unclean high acid milk, unclean utensils and milking machines, and faulty starters, whilst the bad influences of whey were very noticeable throughout.

With the advent of cooler weather conditions there was a distinct improvement in quality in many quarters. During the month of May, particularly, some very fine quality cheese came forward, but it was not long before a number of brands again fell away, and so far as quality was concerned the year closed unsatisfactorily.

Generally speaking, there has been an improvement in the body and texture of cheese. The over-firm and corky texture of a few seasons ago has now almost disappeared. This change should manifest itself in actual values of the product on the overseas market. The problem

of a standard colour has raised a difficulty, as the interstate trade is demanding a pale and yet paler cheese, whilst the English market insists on a still higher colour. Quite recently we experienced an epidemic in the form of a colour fault resembling that of mottle, which it is believed was due to the work of bacteria and not through faulty manufacture.

The crating of cheese has shown considerable improvement.

BUTTER.

As previously mentioned, some excellent-quality butters were produced, in which most of our leading factories participated. It is unfortunate that, as in the case of cheese, the high standards often reached were not maintained. The factories situated on the Downs, however, retained their standard much better than did those on the coast, and were well to the front in the recent show conducted by the Factory Managers' Association.

There is no doubt that the coastal factories suffered considerably through the transport conditions obtaining during the many wet spells.

Several factories did not seem to be able to regain their former standard of quality, and in some instances it was apparent that the use of inferior creams was the principal reason. Whether this was due to laxity in the grading of cream or by the managements' policy is difficult to say.

MANUFACTURE AND FAULTS.

In some quarters the inclination towards tallowy butters was too common. This was probably due to a desire to produce butter which would contain the maximum moisture content allowable even at the expense of quality. The success which followed the low neutralisation methods practised at some of our leading factories in recent times has influenced a number of makers to rather overstep the safe margin in low acidity, until they are producing an over-processed article altogether devoid of character. Quite recently, however, an appreciable improvement in the direction of fuller flavour was noticeable. Feedy and fishy taints are now almost negligible, thanks to the virtues of pasteurisation.

TIMBER TAINT.

In a number of instances the big output found factories with exhausted stocks of boxes towards the end of the season, thus necessitating the purchasing of unseasoned timber, with the usual result—"timber taint." Factories would be well advised to give this question more serious attention.

TEXTURE TROUBLE ON COAST.

The most serious occurrence during the year was the strange phenomenon which caused the texture of practically the whole of the butter produced in the coastal area to become clammy

and sticky. The fault had previously only been met with in isolated cases. This season it first made its appearance in early April, and quickly spread through the whole of the coastal factories, causing much concern. Although many of our most skilful butter-makers tried every conceivable means to combat it, the trouble continued more or less to the end of the season. The synchronising of the excessively wet season with the occurrence lent colour to this being directly responsible, but in all probability it will be found to be due to the unbalanced chemical condition of our natural fodders, brought about by the abnormal weather conditions.

Experiments carried out by our Analytical Branch prove conclusively that serious fluctuations in the composition of fodder occur under certain conditions between the early and maturing stages of growth. It is quite feasible that the seasonal conditions experienced would be sufficient to bring about abnormal variations in the composition of grasses and herbage. Suffice it to say that had the trouble not occurred the improvement noted in quality over the year would have been much greater.

WEIGHTS.

Consignments checked throughout the year disclosed very few to be under weight, but it is safe to say that many thousands are lost to the industry annually through careless weighing at many of our factories. It is quite common to find boxes packed to contain 56 lb. comprising

the same consignment actually weighing 56, 56 $\frac{1}{2}$, 56 $\frac{3}{4}$, 57, and even up to 58 lb., and still have the box marked "Bare Weight." As a contrast, let me here quote our experience when checking the weight of New Zealand butters, of which large quantities were imported into Queensland last year. Out of twelve boxes taken at random from a lorry eleven weighed 56 lb. 3 oz., and the other 56 lb. 4 oz.; in fact, never have I seen a greater variation than about 4 oz. in New Zealand packing. This should serve as an object lesson, as I am afraid many of our managers look upon the weighing of butter as a boy's job. Should any further visualisation be necessary to emphasise the importance of careful weighing, let it be remembered that 4 oz. excess weight per box means a loss of approximately £2 on every 100 boxes packed.

GENERAL.

In conclusion, it seems difficult to understand why a number of both our butter and cheese manufacturers show little or no concern regarding the continuous unsatisfactory grades of their products. This attitude shows a wrong conception of the market demand.

The fact that they are able to clear their stocks at fairly high prices through the operations of the Cheese Board should not lead to the obscuration of the important factor that the stable prosperity of the industry can only be secured by the production of a high-class uniform article.

BUTTER GRADED FOR TWELVE MONTHS, JULY TO JUNE, 1927-28.

Month.	GRADE.								Total.
	Salted.				Unsalted.				
	C	1	2	3	C	1	2	3	
July	8,373	11,702	1,008	287	1,477	707	672	354	24,580
August	1,894	10,323	1,066	173	1,529	531	545	228	16,289
September	3,179	10,105	2,367	540	501	542	687	280	18,201
October	7,462	10,710	2,945	640	1,072	993	926	329	25,077
November	35,585	20,128	5,895	1,889	9,939	2,139	3,316	769	79,660
December	41,869	31,786	6,670	1,543	8,983	5,765	4,830	487	101,933
January	47,534	34,598	11,906	3,102	9,543	5,461	5,889	1,472	119,505
February	27,438	48,601	15,519	6,565	2,393	4,042	2,927	1,884	109,369
March	43,088	57,532	15,321	5,903	4,399	3,683	3,221	1,173	134,320
April	15,638	39,043	12,354	5,043	1,097	986	1,629	870	76,660
May	20,907	42,580	6,031	1,589	543	631	1,082	112	73,475
June	9,950	17,912	2,064	420	478	213	199	103	31,339
Total	262,917	335,020	83,146	27,694	41,954	25,693	25,923	8,061	810,408

Total, 12 months—Salted 708,777 boxes
Unsalted 101,631 boxes

Grand total 810,408 boxes

Pastry included in third grade.

CHEESE GRADED.
JULY TO JUNE, 1927-1928.

	1	2	3	Total.
July	2,225	1,150	95	3,470
August	2,575	1,087	37	3,699
September	2,376	690	26	3,092
October	2,443	1,689	45	4,177
November	1,409	2,732	161	4,302
December	2,266	2,907	99	5,272
January	3,126	4,076	148	7,350
February	2,718	3,110	318	6,146
March	5,461	3,121	182	8,764
April	2,743	1,831	65	4,639
May	3,758	1,038	12	4,808
June	3,633	1,007	69	4,709
	34,733	24,438	1,257	60,428

The following report has been submitted by Mr. G. B. GALLWEY, Inspector of Accounts:—

I have to report that during the past year a continuous audit has been made of the accounts

of butter factories to ensure that the amount of butter actually manufactured has been credited to suppliers under the provisions of "The Dairy Produce Act of 1920."

My inspections show that the provisions of the Act have been carried out at all factories visited.

The standardisation of books of accounts in all factories would be an advantage. Several good systems commend themselves, and no doubt, with the co-operation of the managers and secretaries of factories, a simple and concise form of keeping accounts could be evolved.

BUTTER MANUFACTURE.

The total manufacture for the year ended 30th June, 1928, was 69,482,651 lb. The following table shows the monthly output and the approximate value to the supplier:—

Month.	Butter Manufactured.	Average Price.	—	
1927.				
July	3,192,252	s. d. 1 6	£	236,919
August	2,939,047	1 5½	£	211,244
September	2,638,882	1 5½	£	192,418
October	3,693,338	1 5	£	261,569
November	5,834,871	1 3	£	364,678
December	8,789,559	1 2	£	512,724
	27,087,949		£	1,779,552
1928.				
January	9,305,545	1 2	£	542,823
February	8,601,212	1 1	£	465,899
March	8,506,541	1 2	£	496,215
April	6,382,474	1 2	£	372,311
May	5,528,177	1 3	£	345,543
June	4,070,828	1 4	£	271,349
	42,394,777		£	£2,494,140
Total	69,482,726		£	£4,273,692

CHEESE MANUFACTURED.

The amount of cheese manufactured for the year ending 30th June, 1928, was 14,000,998 lb.

The following table shows the monthly manufacture:—

1927.	Lb.	Lb.
July	919,232	
August	895,242	
September	837,096	
October	875,773	
November	1,034,001	
December	1,522,986	
	6,084,330	
1928.		
January	1,547,178	
February	1,403,066	
March	1,525,668	
April	1,179,378	
May	1,219,847	
June	1,050,139	
	7,925,276	
	14,009,606	

CONDENSED MILK.

The following table shows the amount of condensed milk manufactured for the year ending 30th June, 1928:—

1927.	[Lb.	Lb.
July	240,114	
August	299,544	
September	292,846	
October	316,740	
November	1,318,988	
December	753,396	
1928.		
January	890,106	
February	818,160	
March	630,630	
April	538,314	
May	379,638	
June	323,400	
	6,801,876	

The following report has been submitted by Mr. L. F. ANDERSEN, Senior Herd Tester:—

The year under review has been the most successful since the herd-testing scheme was introduced in Queensland.

Splendid spring rains fell in all the dairying districts, and further good falls at short intervals produced an abundance of feed throughout the season.

Many centres which had submitted herds during the previous year continued throughout this season. It may be mentioned that a number of centres have completed three years' continuous testing, and are commencing the fourth season, showing conclusively that they are appreciating the work carried out by this branch.

New centres have been formed during the year in nearly all our dairying districts, and I feel sure that, given fair seasons, the herd-testing work will expand rapidly during the next few years.

The following are the principal districts in which herds have been submitted during the year:—

South Coast—Springbrook and Currumbin.

West Moreton—Prenzlau and Boonah.

Darling Downs—Oakey, Greenwood, Kingsthorpe, Milmeran, Clifton, and Kilarney.

North Coast—Maleny, Obi Obi, Kandanga, Eumundi, Cooroy, Traveston, and Wolvi.

Burnett—Miva, Cinnabar, Coolabunia, Meandu Creek, Broadwater, Lakeside, Byrnestown, Binjour Plateau, Mundubbera, Grosvenor Flat, Eidsvold, Mulgeldie, and Monto.

Central—Lowmead, Murray's Creek, Yandaran, Mount Larcom, Millman, Pheasant Creek, Dixalea, Bushley, Buneru, Goovigen, Biloela, Ridglands, and Marlborough.

A few herds were also submitted on the Atherton Tableland.

The total number of herds submitted was 300, as compared with 153 last season.

The actual number of cows submitted to test was 10,519.

The mean average of all cows tested is shown as 17 lb. milk, 4.37 per cent. fat, and .74 lb. butter fat daily. This average is considerably better than that of last season.

The Darling Downs districts hold pride of place in production this year. Of all cows tested in these districts the average daily production was as follows:—21.8 lb. milk, 4.25 per cent. fat, and .93 lb. butter fat, or approximately 1.1 lb. commercial butter.

The best average daily production of butter-fat in a herd, 1.31 lb., was obtained on the Downs, and the highest average yield of milk in a herd, 36.4 lb., was also recorded in that district.

It is noted that during the past season a number of cows gave a production exceeding 5 gallons of milk daily.

In order to ascertain whether dairymen are culling the unprofitable animals, I made inquiries during the year from dairymen who have tested their herds for two or more seasons. The figures obtained showed that approximately 22 per cent. had been culled, and in at least one herd 40 per cent. had been drafted out.

The following tables furnish full details of each district's testing:—

GENERAL AVERAGE ALL DISTRICTS.

	Year.	Number of Herds Tested.	Number of Cows Tested.	Average Daily Production of Milk. Lb.	Average Daily Fat Per cent. Lb.	Average Daily Production of Butter Fat. Lb.
General Average	1927-1928	300	10,519	17	4.37	.74

SUMMARY OF YEAR'S OPERATIONS.

Number of herds tested	300	Daily amount of butter fat produced in individual herds—	Lb.
Number of cows tested	10,519	Mean	0.74
Daily yield of milk in tested herds—	Lb.	Highest	1.31
Mean	17.0	Lowest	0.26
Highest	36.4	Amount of milk yielded by individual cow daily—	Lb.
Lowest	4.8	Highest	53.5
Butter fat content of herd milk—	Per cent.	Lowest	2.1
Mean	4.37	Amount of butter fat yielded by individual cow daily—	Lb.
Highest	6.22	Highest	2.00
Lowest	3.4	Lowest	0.10

HERD-TESTING, 1926-27.
DISTRICTS.

District.	Month.	Number of Herds Tested.	Number of Cows Tested.	Average Daily Production of Milk.	Average Daily Fat per cent.	Average Daily Production of Butter Fat.
				Lb.		Lb.
ATHERTON DISTRICT.						
Atherton	November	6	83	18.4	4.3	.79
Atherton	January	8	101	22	4.06	.89
Atherton	April	8	170	19	4.2	.80
		22	354	19.8	4.19	.83
SOUTH COAST.						
Currumbin	November	7	210	18	4.06	.73
Currumbin	January	7	252	14.7	4.3	.63
Currumbin	March	9	299	14.5	4.6	.67
Currumbin	May	8	217	12.3	4.9	.60
Currumbin	June	8	149	9.5	4.9	.46
Springbrook	November	7	226	15	4.2	.63
Springbrook	December	8	293	19.7	4.4	.87
Springbrook	March	9	349	18	4.84	.87
Springbrook	May	9	363	14	5.2	.72
Springbrook	June	8	203	9.1	5.1	.46
		80	2,561	14.5	4.65	.67
WEST MORETON.						
Boonah	December	3	154	23.4	4.18	.98
Boonah	February	3	167	19.02	4.26	.81
Boonah	April	3	139	14.57	4.71	.68
Boonah	June	3	94	12.1	4.85	.58
Rosevale	December	1	23	25.6	3.83	.98
Rosevale	March	1	32	18.8	4.13	.77
Rosevale	April	1	32	14.5	4.77	.69
Rosevale	May	1	20	21.3	4.2	.89
Rosevale	June	1	43	14.5	5.0	.72
Prenzlau	March	10	204	19.1	4.1	.78
Prenzlau	April	7	121	15.8	5.0	.79
Prenzlau	June	7	80	12.3	4.8	.59
		41	1,109	17.6	4.48	.79
DARLING DOWNS.						
Kingsthorpe	August	7	82	20.4	4.4	.90
Kingsthorpe	October	7	78	21	4.2	.84
Kingsthorpe	December	2	35	27.3	4.1	1.09
Kingsthorpe	February	6	89	23.8	4.4	1.04
Kingsthorpe	April	6	74	21.5	4.9	1.05
Kingsthorpe	June	6	62	22.4	4.7	1.05
Greenwood and Oakey	December	1	16	25.7	4.2	1.08
Greenwood and Oakey	January	13	287	26	3.8	.99
Greenwood and Oakey	March	15	315	22	4.12	.90
Greenwood and Oakey	May	15	288	21.3	4.18	.88
Killarney District	December	6	188	21.1	4.1	.86
Killarney District	January	7	269	21.7	3.98	.86
Killarney District	March	11	335	20.6	4.25	.93
Killarney District	May	8	256	16.3	4.5	.73
Clifton	February	12	265	25.3	3.87	.98
Clifton	April	11	253	21.2	4.27	.90
Clifton	June	11	221	18.9	4.3	.81
Milmerran	June	8	225	16.7	4.2	.70
		152	3,338	21.8	4.25	.93
NORTH COAST.						
Kandanga	February	5	200	18.3	3.9	.71
Kandanga	March	7	252	12.9	4.4	.57
Kandanga	June	7	217	9.7	4.54	.44
Tiaro	January	7	238	16	3.78	.60
Tiaro	March	6	147	12.8	4.1	.52
Tiaro	May	6	115	9	4.9	.44
Obi Obi	March	9	473	14.8	4.7	.70
Obi Obi	May	8	473	13.3	5.1	.68
Obi Obi	June	8	390	10	4.85	.48
Maleny	July	6	192	9.6	4.8	.46
Maleny	October	7	194	13	4.1	.53
Maleny	December	6	254	19.5	4.2	.82
Maleny	February	8	287	18.7	4.23	.79
Maleny	April	6	253	16.2	4.83	.78
Maleny	June	6	168	10.8	4.83	.52
Eumundi	November	1	20	19	3.85	.73
Eumundi	January	1	20	17	4.0	.68
Eumundi	April	1	21	15	4.25	.64
Eumundi	May	1	20	10	4.9	.49
Miva	December	1	25	14.4	3.55	.51
Miva	January	1	32	16	3.66	.58
Miva	March	1	27	11	3.7	.41
Miva	June	1	11	13.6	4.6	.62

HERD-TESTING, 1926-27—continued.

DISTRICTS—continued.

District.	Month.	Number of Herds Tested.	Number of Cows Tested.	Average Daily Production of Milk.	Average Daily Fat per cent.	Average Daily Production of Butter Fat.
				Lb.		Lb.
NORTH COAST—continued.						
Traveston	December	6	105	17	3.7	.63
Traveston	January	2	43	16	3.8	.61
Traveston	April	2	45	13	4.0	.52
Walvi	November	11	339	19	3.8	.72
Walvi	January	2	39	17.5	3.85	.67
Walvi	March	2	38	15.8	4.55	.72
Walvi	May	2	68	14	4.65	.65
Cooroy	July	1	11	10.5	4.4	.46
Cooroy	January	1	19	21	4.2	.88
Cooroy	March	1	23	17	4.67	.80
Cooroy	May	1	21	12.5	5.0	.62
Cooroy	June	1	15	10.7	4.9	.52
Ridgewood	February	4	134	17.3	4.1	.71
		146	4,929	14.5	4.32	.63
BURNETT DISTRICT.						
Cinnabar	February	7	282	17.5	4.22	.74
Cinnabar	March	1	36	11.5	5.1	.58
Cinnabar	April	6	176	12.4	5.5	.68
Cinnabar	May	4	96	13.4	5.64	.75
West Coolabunia	January	6	103	24.9	3.97	.99
West Coolabunia	March	6	117	20.7	4.13	.85
West Coolabunia	May	6	105	13.4	4.52	.60
West Coolabunia	June	4	43	10.5	4.65	.48
Coolabunia	November	1	14	20.6	4.0	.82
Coolabunia	January	1	16	18.6	4.37	.81
Coolabunia	April	1	19	17.5	4.7	.82
Coolabunia	May	1	23	12.8	5.46	.70
Coolabunia	June	1	23	10.7	5.3	.57
Meandu Creek	February	9	261	21.8	3.90	.85
Meandu Creek	April	9	292	17.5	4.25	.74
Meandu Creek	June	9	262	12.7	4.64	.59
Lakeside	December	1	44	13.4	3.7	.50
Lakeside	February	1	49	14	3.88	.54
Lakeside	April	1	50	8.6	4.3	.37
Lakeside	May	1	29	6.2	5.71	.35
Byrnestown	December	4	151	18.8	3.82	.72
Byrnestown	February	2	92	13.7	4.48	.61
Byrnestown	April	2	58	11.0	5.47	.60
Mundubbera	February	2	113	15.8	3.83	.60
Mundubbera	April	2	100	9.3	4.7	.43
Mundubbera	June	1	43	6.9	5.5	.38
Binjour Plateau	August	10	151	16.5	4.26	.70
Binjour Plateau	October	9	151	21.8	3.7	.81
Binjour Plateau	December	2	47	22.8	3.81	.87
Binjour Plateau	February	6	132	20.9	4.04	.84
Binjour Plateau	April	5	103	15	4.48	.67
Binjour Plateau	June	3	55	12.8	4.4	.56
Monto	March	8	148	11.4	5.34	.60
Eidsvold, Hallywell	August	6	87	16.6	3.92	.65
Eidsvold, Hallywell	November	5	98	22.2	3.82	.85
Eidsvold, Hallywell	January	6	154	17.2	4.16	.71
Eidsvold, Hallywell	March	7	169	16	4.5	.72
Eidsvold, Hallywell	May	4	89	12.3	4.8	.59
Grosvenor Flat	August	4	56	11.5	4.26	.49
Grosvenor Flat	October	4	60	14.2	3.7	.52
Grosvenor Flat	December	4	76	15.6	4.0	.62
Grosvenor Flat	February	4	88	14.1	4.1	.58
Grosvenor Flat	April	4	64	10.0	4.6	.46
Grosvenor Flat	June	2	27	8.1	4.6	.36
Mulgeldie	November	8	170	21.4	3.9	.84
Mulgeldie	January	15	334	17.9	4.14	.74
Mulgeldie	March	17	370	13.7	4.63	.63
Mulgeldie	May	4	59	11.3	5.07	.57
Broadwater	November	9	193	22	3.72	.82
Broadwater	January	11	356	21.9	3.78	.83
Broadwater	March	12	391	16.4	4.05	.66
Broadwater	May	9	241	11.0	4.85	.53
		267	6,466	15.2	4.43	.67
CENTRAL DISTRICT.						
Bushley	December	1	13	22	4.0	.88
Bushley	February	1	13	22	3.95	.87
Bushley	April	1	17	15	4.6	.69
Bushley	June	1	18	10.7	5.5	.59
Lowmead	December	1	100	15.5	4.2	.65
Lowmead	February	1	99	14	4.2	.59
Lowmead	April	1	98	11	4.4	.88
Lowmead	June	1	69	8.4	4.9	.41

HERD-TESTING, 1926-27—continued.

District.	Month.	Number of Herds Tested.	Number of Cows Tested.	Average Daily Production of Milk.	Average Daily Fat per cent.	Average Daily Production of Butter Fat.
				Lb.		
CENTRAL DISTRICT—continued.						
Bunerau	January	3	60	19	3.8	.72
Bunerau	March	1	17	21	4.0	.84
Goovigin	July	1	13	10.6	5.2	.55
Goovigin	January	1	17	15.5	4.8	.74
Goovigin	March	1	11	17	4.34	.74
Goovigin	May	2	23	11.4	5.0	.57
Goovigin	June	2	27	11.5	4.55	.52
Biloela	December	5	80	20	4.1	.82
Biloela	February	6	106	17.8	4.18	.74
Biloela	March	3	51	16.2	4.2	.68
Biloela	April	4	55	13	4.6	.60
Biloela	May	2	36	11.2	4.4	.48
Biloela	July (1927)	3	40	11.3	5.0	.56
Biloela	June	5	57	11	4.7	.51
Marlborough	August	3	94	8.6	4.7	.40
Marlborough	November	2	71	15	4.5	.67
Marlborough	January	3	80	19.3	4.0	.77
Marlborough	March	3	84	17.8	3.96	.70
Marlborough	May	3	124	12.3	4.35	.53
Marlborough	June	3	138	10	4.2	.42
Ridgeland	December	2	18	22.8	3.8	.87
Ridgeland	February	2	34	20.7	3.6	.74
Ridgeland	March	1	25	14	3.5	.49
Ridgeland	April	1	20	15	4.56	.68
Ridgeland	May	1	20	13.5	3.86	.52
Ridgeland	June	1	25	12	3.8	.46
Dixalea	December	1	18	16	3.5	.56
Dixalea	February	2	41	26.5	3.65	.98
Dixalea	April	2	38	21.8	3.85	.84
Dixalea	June	2	43	13.5	4.3	.58
Pheasant Creek	November	11	193	20.4	3.95	.80
Pheasant Creek	January	11	200	20.8	4.0	.83
Pheasant Creek	March	11	232	19.3	4.2	.81
Pheasant Creek	April	1	18	14	3.9	.55
Pheasant Creek	May	7	148	15	4.8	.72
Pheasant Creek	June	4	94	20	4.37	.87
Milman	January	1	15	22	4.3	.95
Milman	March	1	20	18.5	4.0	.74
Milman	June	1	25	10	4.62	.46
Murray's Creek	January	1	24	16	3.7	.59
Murray's Creek	March	1	37	12	4.7	.56
Yandaran	December	1	43	11	4.3	.47
Yandaran	February	1	46	10	4.6	.46
Yandaran	April	1	41	8	4.8	.38
Yandaran	June	1	28	6	4.8	.29
Machine Creek	November	5	90	16	4.0	.64
Machine Creek	January	9	207	19.7	3.75	.74
Machine Creek	March	10	250	16.8	4.3	.72
Machine Creek	May	10	222	11.5	4.82	.55
		167	3,826	15.3	4.29	.66

REPORT OF THE GOVERNMENT BOTANIST FOR 1927-28.

GENERAL.

Correspondence and personal interviews with farmers, pastoralists, &c., took up most of the time of the office. The inquiries submitted extended over a wide range of subjects dealing with various phases of plant life. The major portion dealt with plants sent in for identification and report as to their properties, useful or otherwise. Where the replies have been deemed to be of more than individual interest, they have been utilised by the Editor of the Departmental Publications for the pages of the "Queensland Agricultural Journal." Reports on a number of subjects were asked for by the Commonwealth Council for Scientific and Industrial Research, and reported on as far as our present knowledge of the particular subject allowed. On two occasions we have been required to give technical evidence before the Criminal Sittings of the Court—the one at Cairns with reference to identification of timber reputed to be from Crown lands, the other at Brisbane concerning the determination of grass and weed seeds.

FIELD WORK.

(a) *General Collecting.*—A visit was paid to Tambourine Mountain with Dr. Du Rietz, a visiting botanist from the University of Upsala, Sweden, and the opportunity taken of doing a fair amount of collecting. A visit to Quilpie in May for the purpose of reporting on poisonous plants on the trucking reserve and main stock route afforded an opportunity for obtaining a general collection of herbarium material of Western plants. I spent my vacation period during October and November in a tour of Western Australia and the Southern States, making very large collections, a set of which when determined will be incorporated in the Queensland Herbarium. A visit to Cairns for Court work enabled the Assistant Botanist to spend a few days on general collecting in the neighbourhood of Cairns and on the Atherton Tableland.

(b) *Poisonous Plant Investigations.*—In February the Assistant Botanist visited Purga for the examination of paddocks where losses of sheep had occurred, supposedly from eating poisonous plants, but no poisonous plants were found on the property in sufficient quantity to cause trouble.

In May, I visited Quilpie for the purpose of inspecting the trucking reserve and main stock route for poisonous plants. A heavy loss in a travelling mob of bullocks had recently occurred. The cause of the trouble was put down to the Fuchsia Bush (*Eremophila maculata*), which was plentiful and in full succulent growth on the reserve. Leaf specimens brought to Brisbane

and examined by the Agricultural Chemist gave a very strong positive test for hydrocyanic acid. The stock affected were in poor condition. Several mobs have since been on the reserve, but practically no losses have occurred, and it would seem that, with careful droving and stock in reasonable condition, little trouble is to be feared. Publicity was given to the results of the examination of the area in the metropolitan and local press.

In June, the Assistant Botanist visited Palmwoods for the purpose of inspecting paddocks where losses among calves had occurred. In coastal areas, where there is a good deal of secondary growth, a certain number of poisonous or reputed poisonous plants is always likely to be found, and in this case the destruction of several species was recommended.

(c) *Seed Collecting.*—During March the Assistant Botanist visited the Central district for the purpose of collecting seeds of native grasses, and seeds of a number of the better sort of native grasses are now available for trial this coming season.

EDUCATIONAL.

Lectures were delivered during the year before various public bodies on different phases of plant life. Lectures are given once a month from May to October, inclusive, before senior students of the Teachers' Training College; these are popular lectures designed for student teachers so that they may have something on which to base the botanical side of their nature-study lessons. A course of twenty lectures was given on forest botany at the University to third-year Science students, third-year Agricultural students, and Cadets of the Provisional Forestry Board undergoing their preliminary training at the Queensland University.

HERBARIUM.

In my last report I mentioned that the work of getting the Australian section of the herbarium into the new herbarium boxes was well in hand. This has been finished, and the herbarium is now in good working order for reference purposes.

The herbarium of the late Dr. F. H. Kenny and the moss herbarium of the late C. J. Wild, mentioned in previous reports, have now been incorporated in the general collections.

Exchanges of botanical material have been continued with the Botanic Gardens, Singapore; Botanic Gardens, Buitenzorg, Java; Royal Botanic Gardens, Kew, England; British Museum, London; United States National Herbarium, Washington; California Botanic

Gardens, Los Angeles; Arnold Arboretum (Harvard University), Boston, U.S.A.; Botanic Gardens and Museum, Berlin; and Mr. A. Morris, Broken Hill.

There are large quantities of undetermined material on hand from various collecting trips, but this material is gradually being classified and put away in the herbarium as opportunity presents.

BOTANICAL MUSEUM.

Additions to the Botanical Museum have not been very numerous. Specimens of dried fruit, barks, and woods have been added from time to time. A commencement on a rearrangement of the Museum collections was made during the year, and this work is now practically completed.

PUBLICATIONS.

The following publications were issued during the year:—*White, C. T.*: Two Papuan Species of *Ardisia* ("Journal of Botany," London, September, 1927); *Vinca rosea*, a Reputed Cure for Diabetes ("Queensland Agricultural Journal," October, 1927);

White, C. T., and *W. D. Francis*: Plants Collected in the Mandated Territory of New Guinea by C. E. Lane-Poole (Proceedings of the Royal Society of Queensland, vol. xxxix., No. 6).

Francis W. D.: The Anatomy of the Australian Bush Nut—*Macadamia ternifolia* (Proceedings of the Royal Society of Queensland, vol. xxxix., No. 4; The Rain Forest of the Eungella Range (Proceedings of the Royal Society of Queensland, vol. xxxix., No. 8); The Growth Rings in the Wood of Australian Araucarian Conifers (Proceedings of the Linnean Society of New South Wales, vol. liii., part 2).

In addition to the above, I communicated before the Royal Society of Queensland a paper by Dr. B. H. Danser, of the staff of the Botanical Gardens, Buitenzorg, Java, on a "Revision of the Queensland Polygona." This was published as vol. xxxix., part 3, of the Society's Proceedings.

C. T. WHITE,

Government Botanist.

REPORT OF THE CHIEF ENTOMOLOGIST.

I have the honour to submit herewith my report of the activities of the Division of Entomology and Plant Pathology for the year ending 30th June, 1928. Staff and other matters are dealt with by myself, and I have also reviewed the work of the Entomological Branch of the Division, while the activities of the Pathological Branch are dealt with in extracts from a memorandum submitted by Mr. Simmonds, Plant Pathologist.

STAFF AND ACCOMMODATION.

The most notable change in official entomological circles in Queensland during the year under review was the return of Mr. Ballard, Commonwealth Cotton Entomologist, to England. Mr. Ballard's services were, unfortunately, no longer available to Australia, and he left Queensland in July, 1927, and since his departure the supervision of the work of the entomologists investigating cotton problems has reverted to the Chief Entomologist. The staff associated with the Division, as at 30th June, 1928, thus consisted of ten officers engaged in entomological investigations, three dealing with plant pathological problems, one illustrator, and one clerical officer. The Chief Entomologist, as in previous years, was associated with the activities of both the Entomological and Pathological Branches of the Division.

A development worthy of mention is the fact that a new field station has been opened in North Queensland, the headquarters of the officer allotted to that station being at Cairns.

I have felt ever since coming to Queensland that an extension of the policy of decentralisation of entomological work was essential, and it is pleasant to be able to record the fact that the Division has now two field stations—one at Stanthorpe in the South, and the other at Cairns in the North.

The problems handled at Stanthorpe are those associated with deciduous fruits and vegetables, while it is intended that certain tropical fruit problems and some of the investigations associated with general agriculture and forestry shall be handled at the Cairns field station. The agricultural and silvicultural wealth of North Queensland amply justifies the departure that has just been made.

With respect to head office accommodation, the only matter worthy of record is the fact that the gas fittings in the old rooms occupied by some members of the entomological staff were replaced by electric light fittings, and the change from gas to electrical illumination has been much appreciated.

The accommodation at Stanthorpe is precisely the same as it was last year, and is proving quite satisfactory. The officer stationed at Cairns has been provided with accommodation in the Court House.

BANANA INSECT PESTS.

As in previous years, a great deal of attention has been given to banana insect pests, the most destructive of which in Queensland is the

banana weevil borer (*Cosmopolites sordida* Chev.) As indicated in my earlier reports, little remains to be done in connection with the life history aspect of this problem, and more urgent work on other banana pests has precluded any possibility of giving attention to the few minor life history points still to be investigated.

A development of very considerable importance was the sending of Mr. Froggatt to Java to investigate the whole question of the biological control of the banana weevil borer. It was felt that the Department had conducted a very extensive investigation into the life history and artificial control of this pest, but that, to complete the work, more attention should be devoted to the possibilities of biological control. Some considerable amount of work had already been done in introducing colonies of a predatory beetle (*Plesius javanus* Er.) from Java, a number of colonies having been imported between the years 1921 and 1926. It was felt, however, that it was quite possible that other natural enemies, not yet known to entomologists, might be present in Java, and these might be of appreciable help in assisting to maintain control of this insect, which is, according to our present available information, of but little economic importance in Java. Mr. Froggatt accordingly sailed for Java at the end of May, the object of his trip being, if possible, to locate new enemies of this pest and also to bring or forward colonies of known enemies such as the Leptid fly (*Chrysopila ferruginosa* Wied.) and the Histerid beetle (*Plesius javanus* Er.).

The incidence of banana weevil borer is just about the same as in recent years, many plantations being very heavily infested. Quite a number of growers are regularly using Paris green baits, but the number of plantations in which little or no effort is made at control is still all too large.

The present Departmental recommendations are undoubtedly of very considerable value in reducing borer infestation, and are worthy of enthusiastic adoption. It must not be thought that there should be any relaxation of effort at artificial control simply because an entomologist has been sent abroad in search of natural enemies of this very serious banana pest. It is quite possible that no new natural enemies of importance may be located by Mr. Froggatt, and even if the contrary proves to be the case, which I sincerely hope will be so, several years must elapse before new enemies, if introduced and established in Queensland, can be sufficiently widely distributed to appreciably reduce infestation. Hence the Departmental advice is to continue to enthusiastically adopt its recommendations.

The banana thrips (*Anaphothrips signipennis* Bagnall) was again in evidence in North Queensland, and was also quite abundant in some parts of the Gympie district. Circumstances did not permit of any detailed investigations of this pest, but it is hoped that further field control experiments will be conducted in North Queensland in the spring and summer of this year.

Little has been heard during the past year of the fruit spotting bugs (*Pendulinus lutescens* Dist. and *Pendulinus fuscens* Dist.) that have recently been responsible for so much loss in fruit in the Byfield district. Fruit marked in a similar manner has, however, been recently received from the Glastonbury section of the Gympie district.

The fruit-eating caterpillar (*Tiracola plagiata* Wlk.), that was so destructive in the previous year, did not reappear in epidemic proportions during the last twelve months. This pest was the subject of considerable study by Mr. Weddell and Miss Temperley, and the manuscript dealing with their investigations is now available for publication.

DECIDUOUS FRUIT AND OTHER PESTS AT STANTHORPE.

The codling moth (*Cydia pomonella* Linn.) received a considerable amount of attention in the Stanthorpe district, and Messrs. Jarvis and Watson carried out a series of trials testing the relative efficiency of dusting versus spraying with arsenate of lead. Although the infestation of codling moth was exceptionally light during the year under review, the experiment, nevertheless, yielded some very interesting information. The dusting, under the conditions then prevailing, was very slightly cheaper than the spraying, and there was little to choose in the matter of infestation as between the spray and the dust. It is hoped that circumstances will permit of the repetition of this preliminary trial. The results obtained in the preliminary trial were published in the May number of the "Agricultural Journal."

It is pleasant to be able to record the fact that losses from the Queensland fruit fly (*Chato-dacus tryoni* Frogg.) were again comparatively unimportant in the Stanthorpe district, and Mr. Jarvis expressed the opinion that the percentage of loss from fruit fly for the months of March and April, 1928, was the lowest for six years.

Mr. Jarvis demonstrated in 1925 the fact that fruit fly maggots can over-winter in the Stanthorpe district, the flies emerging in spring. An endeavour was made to repeat the previous success, but although a large quantity of fruit was placed in a field cage in April, 1927, no flies emerged from the material. The field cage in question has been once more stocked with maggot-infested fruit, and it will be interesting to see whether or not flies emerge in that cage in the spring of this year.

Some attention has recently been devoted to the question of native hosts of the Queensland fruit fly, but nothing new has been revealed to date.

The woolly aphis parasite (*Aphelinus mali* Hald.) has once more given great satisfaction in the district, and its establishment therein has very materially assisted in the control of this serious pest of the apple.

A somewhat elaborate field experiment for the control of the diamond-back moth (*Plutella cruciferarum* Zell.) absorbed a considerable amount of time, but it was unfortunately brought to an abrupt conclusion in January by a very severe hailstorm cutting the cabbage plants to pieces.

Fortunately, there was no reappearance of the Rutherglen bug (*Nysius* sp.), which made its presence felt in such a disastrous manner in the orchards in the previous year.

The brown vegetable weevil (*Listroderes nociva* Lea.) has recently been found attacking carrots and other vegetables in the Stanthorpe district.

A review of the insect pests of the deciduous fruitgrowing areas would be incomplete without some reference to the introduction of the codling moth egg parasite (*Trichogramma minutum* Riley). A colony of this parasite was received in September, 1927, through the courtesy of Mr. Ranger, manager of the Committee of Direction of Fruit Marketing. Mr. Ranger was then in the United States, and in the course of his investigations into fruit problems he saw the work being done by Mr. Flanders, Entomologist to the Walnut Growers' Association. Mr. Ranger was decidedly impressed by that work, and a colony of *Trichogramma* was very generously made available.

The parasite has been bred at head office since its arrival in Queensland, and colonies have been liberated at Stanthorpe, in North Queensland, and in the vicinity of Brisbane. These colonies are estimated to have contained about 12,200 individual parasites. So far no evidence of their establishment has been obtained.

The breeding work in the laboratory, which has been in the hands of Mr. Weddell, has been carried on entirely with eggs of a species of *Ephestia* obtained from the local flour mills. Experimentally the parasite has been bred from the eggs of *Plutella cruciferarum* Zell., *Hellula undalis* F., and *Heliothis obsoleta* F.

Apart from their entomological duties, Messrs. Jarvis and Watson, who are located at the Stanthorpe field station, have also been associated with certain pathological investigations. Mr. Jarvis, in association with Messrs. Simmonds and Pratt, carried out tests with wilt resistant varieties of tomatoes in the Broadwater district. Messrs. Jarvis and Watson also carried out tests of dusts and wet sprays in connection with the control of tomato diseases, along lines indicated by Mr. Simmonds. These two field trials are further discussed in the review of the activities of the Pathological Branch of the Division. Spraying trials for the control of prune rust were also carried out by an orchardist at The Summit in association with Mr. Jarvis.

CITRUS PESTS.

During the present year numerous inquiries have been received with respect to the Coreid bug (*Leptoglossus bidentatus* Montr.) attacking citrus. The outbreak was investigated by Mr. Summerville at Byfield, Howard, Burnett Heads, and West Bundaberg. Mr. Summerville found that the damage was being done by the bug feeding chiefly on the petioles, but also to a large extent by feeding on the fruit. As a result of the presence of these bugs, large quantities of fruit were falling prematurely. It was found that the damage was being caused by the adult bugs, but that these were not breeding on the citrus. They had bred on other host plants and then migrated to the citrus. Certain appropriate control measures were recommended to the growers chiefly concerned in the epidemic.

A field investigation intended to add to our knowledge of the spiny orange bug (*Biprorulus bibax* Bredd.) was carried out by Mr. Girault in the Gayndah district, and considerable additional information of value was obtained. This will probably be published at an early date.

There was no recurrence of the previous year's epidemic of orange-piercing moths, and hence the intention of further investigating this serious pest had to be abandoned.

COTTON PESTS.

During the past year Mr. Currie's energies have been almost entirely devoted to a very detailed study of the cutworm (*Euxoa radians* Guen.). This is an extremely important pest, not only of cotton but also of many other economic plants, and hence it was thought desirable to give it the almost exclusive attention of one officer. Mr. Currie is now engaged on the task of assembling the information that he has obtained and preparing it for publication.

Miss Evans, the other officer engaged on cotton entomology, has also been fortunate in that she has been able to concentrate on a single problem—namely, the cotton stainer (*Dysdercus sidae* Montr.). The work on this pest has dealt with four different aspects—firstly, migration movements; secondly, parasites; thirdly, food plants; and fourthly, poison baits and traps. Very satisfactory progress has been made.

OTHER INSECT PESTS.

Army worms and cutworms were much less in evidence this year than during the previous twelve months, and no widespread epidemic of these pests came under the notice of the entomologists, although here and there local outbreaks of some severity occurred.

The leaf-eating ladybird (*Epilachna 28-punctata* F.) was, however, much in evidence in late spring and early summer, and numerous inquiries were received from growers who had sustained severe losses in potatoes, tomatoes, pumpkins, cucumbers, and rock melons. The opportunity was taken to make a brief study of the life history of this pest, in view of its importance and bearing in mind the fact that but little could be found in entomological literature dealing with its life history. This work was entrusted to Miss Temperley, and her observations were incorporated in a manuscript that was handed in for publication towards the end of June. Therein the life history is dealt with, and appropriate control measures are discussed.

Another subject of investigation was the mealy bug associated with a very unsatisfactory condition of growth in paspalum grass in the Cooroy district. This work was carried out by Mr. Summerville, and has just been completed, the manuscript being now ready for publication.

Mr. Summerville's notes review the whole position as disclosed by his investigations, and he discusses the manner in which a repetition of the recent unsatisfactory state of affairs may be avoided.

The same officer also continued his work on the nut grass coccid (*Antonina australis* Green), and in the course thereof he accumulated much valuable information. This project has not, however, reached completion, and will still require some further attention in order to definitely settle the economic status of this much-discussed insect.

During the months of January and February Mr. J. Harold Smith conducted an investigation of the cabbage pest (*Hellula undalis* F.). Much useful information was accumulated in the neighbourhood of Brisbane, but work has ceased on this problem as a consequence of Mr. Smith's transfer to the Cairns field station.

Mr. Smith also gave considerable attention to the strawberry thrips problem, but for the same reason as that given in connection with the *Hellula undalis* investigation there is at present no prospect of finalising this research project.

Reports were again received in August to the effect that cattle fatalities in pastoral areas were associated with the presence of larvæ of the iron-bark sawfly (*Pterygophorus analis* Costa), but circumstances did not permit of a field study of the problem. It does not appear probable, however, that further investigation from the entomological aspect would be likely to add to the precautionary measures already recommended by this Division.

As in previous years, much additional information was obtained with respect to many other important insect pests, but as that information consisted largely of a mass of odd notes picked up here and there, no discussion of such information is called for at present.

CAIRNS FIELD STATION.

As mentioned at the beginning of this review of the year's activities, a new field station was recently opened at Cairns. Mr. J. Harold Smith was transferred to Cairns, and commenced duty there early in May. He has since been engaged mainly in a survey of the entomological requirements of the far North. As a result of that survey it has been decided to carry out further field experiments in connection with banana thrips control, and also to investigate the problem of white grubs attacking potatoes on the Evelyn Tableland.

AGRICULTURAL SURVEY OF QUEENSLAND.

The entomological representative on this survey did no further field work during the past twelve months, but some little time was devoted to working over the material previously obtained.

NEMATODES.

The question of nematode infestation was rather freely discussed in recent months, and Departmental records with respect to the incidence of these pests are being augmented, and it is hoped to publish something thereon during the current year. The question of field control experiments in connection with these pests presents some considerable degree of difficulty, for outside seedbeds and glass houses it has so far been found extremely difficult to handle nematode infestation in such a manner as to render the recommendations financially practicable.

TAXONOMIC WORK.

Mr. Girault again devoted a large part of his time to taxonomic work, handling such difficult and important groups as the parasitic Hymenoptera and Thysanoptera. During the year he contributed two articles to the "Queensland Agricultural Journal."

PATHOLOGICAL INVESTIGATIONS.

As in the previous twelve months, Messrs. Simmonds and Morwood carried on the general pathological work of the Division, while Mr. Tryon continued his special investigations of the pathology of the pineapple plant. In connection with the latter, mention may be made of the fact that a progress report by Mr. Tryon was in the hands of the printer at the close of the financial year, and has since been published in the July number of the Journal.

Mr. Simmonds has reviewed the general pathological activities for the past twelve months, and his notes thereon are attached as Appendix A.

ILLUSTRATIONS AND EXHIBITION CASES.

Mr. Helmsing continued his duties as illustrator, and in the course of the twelve months he prepared ninety-four colour figures, thirty-six pen and ink figures, thirty-nine pencil figures, and two charcoal figures.

A large proportion of the figures just mentioned were required in connection with the preparation of new exhibition cases, while many of the others were called for in connection with the extensive publication now being prepared by Mr. Simmonds and myself to deal with fruit and vegetable pests and diseases.

Mr. Helmsing also coloured sixty-nine figures on photographic reproductions of exhibition cases previously prepared by himself. It is hoped that eventually a series of such coloured reproductions will be available at each entomological field station for educational and advisory work.

In addition to the preparation of new exhibition cases, requiring a large series of water-colour drawings, Mr. Helmsing also assembled six cases in which no such illustrations were required.

The duty of maintaining all the exhibition material in satisfactory condition also devolved on Mr. Helmsing.

EXHIBITS AT SHOWS.

As is usual, the Division staged an entomological and pathological exhibit in the Departmental Court at the National Exhibition. It was also represented by an entomological exhibit at the Stanthorpe and Gympie shows. It would appear that the educational value of such exhibits is very considerable, and it is hoped that the number of shows at which these displays are given will gradually increase.

COLLECTIONS.

The collections of the Entomological Branch were maintained in satisfactory condition, and a considerable number of accessions were incorporated. A little rearrangement of material was possible, but the pressure of field work is so great that insufficient attention can at present be given to this important but less urgent phase of entomological work.

I must once more record my appreciation of the assistance given by the Imperial Bureau of Entomology and the Queensland Museum in identifying material forwarded by this Division.

The whole of the spirit collection of the branch was carefully gone over and placed in a satisfactory condition. The bird collection also required a considerable amount of attention.

Mr. Summerville, as previously, was in charge of the entomological collections.

VISITS TO COUNTRY DISTRICTS.

A very considerable number of visits to country districts were required in connection with the advisory and research work of the Division, and during the year under review these totalled 109. These visits serve, not only to supply invaluable information in connection with research activities, but they also enable the Head Office staff to maintain a very desirable degree of contact with primary producers.

ADVISORY WORK.

As usual, a large amount of time was absorbed in handling routine inquiries seeking information with respect to the identification and control of various pests and diseases. Time devoted to such inquiries is, of course, time well spent, because it is one of the chief means whereby we can hope to extend the adoption of the recommendations based on our investigational work. The volume of inquiries, both by letter and personal interview, is, I am glad to say, apparently steadily increasing.

LIBRARY.

There has been quite a welcome accession of bulletins, leaflets, and serial publications received by way of exchange for our own literature. A few publications have also been purchased.

The card catalogue of Australian economic literature appearing in the Departmental publications of Queensland, New South Wales, and Victoria has been kept up to date.

The card catalogue of bulletins, leaflets, and other similar publications received from overseas has been completed by Miss Temperley, and all that requires to be done in this matter is to have the cards typed. It is hoped that during this year the catalogue of Australian literature will be extended to include the official agricultural publications of the States that have not yet been dealt with.

The extremely fine Ornithological work, "The Birds of Australia," has at last reached completion, and the Departmental copy has been bound.

CLERICAL.

Mr. Brimblecombe has again discharged the duties of clerical assistant. He has handled all the typing of the Entomological Branch, and has also been associated with the preparation of the card catalogue of the entomological literature.

PUBLICATIONS.

The following were published during the twelve months ended 30th June, 1928:—

1. Spotted Wilt of Tomatoes, by J. H. Simmonds.
2. Some Hawaiian Experiments in the Biological Control of Insect Pests, by Robert Veitch.
3. The Cutworm Menace.
4. Records of Australian Thysanoptera (Thrips), Part II., by A. A. Girault.
5. Notes on the Breeding of Certain Fruit Flies in Captivity, by Hubert Jarvis.
6. Irish Blight of Tomatoes, by J. H. Simmonds.

7. Root Knot or Nematode Root Gall, by Robert Veitch.
8. The Corn Ear Worm on Tomatoes, by Robert Veitch.
9. Notes on Banana Insect Pests, by J. L. Froggatt.
10. Notes on the Blue Oat Mite, by J. Harold Smith.
11. Cutworms and Armyworms, by Robert Veitch.
12. Baiting for Banana Weevil Borer Control, by J. L. Froggatt.
13. Dusting *versus* Spraying as a Control for Codling Moth in the Stanthorpe District, by Hubert Jarvis and S. M. Watson.
14. Records of Australian Thysanoptera (Thrips), Part III., by A. A. Girault.

All the abovementioned items appeared in the "Queensland Agricultural Journal," and Nos. 1, 6, 7, 8, and 11 were reprinted in the leaflet series.

A considerable amount of time was also devoted to the preparation of an extensive bulletin dealing with entomological and plant pathological problems of fruits and vegetables. The manuscript of this bulletin is now ready for revision prior to publication, and the whole series of plates for its illustrations are now available.

In addition to the abovementioned contributions from officers of the Division, Mr. Ballard, the Commonwealth Cotton Entomologist, also contributed an article to the "Queensland Agricultural Journal," entitled "Some Notes on Cutworms in Cotton." He was also responsible for the preparation of the entomological section of the bulletin entitled, "Cotton Growing in Queensland."

ROBERT VEITCH, Chief Entomologist.

APPENDIX A.

EXTRACTS FROM A REPORT OF THE ACTIVITIES OF THE PATHOLOGICAL BRANCH
OF THE DIVISION OF ENTOMOLOGY AND PLANT PATHOLOGY.

During the year under review over 400 specimens were received for examination as the accompaniment of inquiries or as the result of field work. In the majority of cases it has been possible to tender advice to the growers concerned. Many of these specimens have resulted in the acquisition of much useful data regarding pathological diseases in Queensland. So far as can be ascertained from available literature, the following constitute new records for this State. None of these are, however, necessarily of recent introduction:—

- Grape, bitter rot (*Melanconium fuligineum* (Scrib. and Viala) Cav.).
- Apple, fruit rot (*Myrosporium corticolum* Edg.).
- Strawberry, leaf scorch (*Diplocarpon earliana* (Ell. and Ev.) (Wolf.)).
- Watermelon, anthracnose (*Colletotrichum lagenarium* (Pass) Ell. and Hals.).
- Tomato, Verticillium wilt (*Verticillium albo-atrum* Reinke and Berth.).
- Tomato, Phoma spot (*Phoma destructiva* Plowr.).
- Crown Rot of various plants (*Sclerotium rolfsii* Sacc.).

Several new records made during the 1926-27 year and omitted from the last annual report may be mentioned here:—

- Apple, stem canker (*Dothiorella mali* Ell. and Ev.).
- Celery, early blight (*Cercospora apii* Fresen.).
- Cabbage, blackleg (*Phoma lingam* (Tode) Desm.).
- Silver Beet, leaf spot (*Cercospora beticola* Sacc.).
- Cucumber, bacterial leaf spot (*Bacterium lachrymans* EFS and Bryan).
- Peanut, leaf spot (*Cercospora personata* (Berk. and Curt.) Ell. and Ev.).
- Bean, leaf blotch (*Cercospora cruenta* Sacc.).
- Pea, leaf spot (*Ascochyta pisi* Lib.).
- Sweet Pea, mosaic (*Virus*).
- Tomato, spotted wilt (*Virus*).

The abnormally wet summer and autumn has been responsible for considerable loss from disease in crops grown during this period. The more important occurrences coming under notice and the progress of pathological investigation into these and other troubles may be summarised as follows:—

Banana.

Leaf spot (*Cercospora* sp.): No doubt largely as a result of the seasonal conditions this disease has assumed an epidemic form of serious proportions in most localities, and can certainly be considered one of the major diseases of the banana in this State. The groundwork of the passion vine disease investigation having been

completed, it has been possible to give banana leaf spot more concentrated attention. The general symptoms, mode of attack, dependence on soil conditions, and other banana parasites, &c., have been investigated by a survey of various local conditions. Preliminary laboratory work has been commenced to determine the temperature reactions of the fungus in an attempt to arrive at an explanation for the definite seasonal occurrence of the disease.

Field trials of certain control measures have been carried out this year, and will be continued during next growing season, when definite results of a positive or negative character should be available.

Other banana diseases have not come under notice to any extent during the year.

Citrus.

The continuous wet season has been specially favourable to citrus diseases in general.

Melanose has been very prevalent, especially on the Blackall Range. It is usually the older orchards, which have been somewhat neglected and are showing a fair amount of dead wood, that are most severely affected by this disease.

Black spot (*Phoma citricarpa*) has also shown up early in the season, and may be expected to be the cause of considerable fruit disfigurement in late marketed fruit. It is essential that some field experiments for the control of this and the previously mentioned disease under Queensland conditions be made next season. It is, however, difficult to obtain the necessary combination of suitable trees and a grower who is willing and able to efficiently co-operate.

Common scab was prevalent in many of the coastal lemon and mandarin groves, causing deformity of both foliage and fruit. A regular spraying programme will have to be carried out for the control of this disease in those orchards where scab has become well established.

The excessive rainfall has made itself especially felt in some of the coastal districts where pink disease (*Corticium? salmonicolor*) in some instances has resulted in considerable loss owing to the girdling of large limbs. As this disease is unfamiliar to most growers, a summary of the symptoms of the disease and the control measures involved is in course of preparation for publication.

A trouble which was causing some alarm to Gayndah growers was shown on investigation to be the condition known as mottle leaf; a malady of physiological origin which should quickly yield to cultural treatment. Soil analyses are being carried out by the Agricultural Chemist with a view to determining the most efficient means of dealing with this disease.

There has been one advantage arising from the conditions favouring fungus development in that entomogenous fungi have been particularly active in their destruction of the various scale insects, particularly the red and mussel scales.

Mr. Morwood found those most prevalent to be *Sphaerostilbe coccophila* and a species of *Podonectria*.

Deciduous.

Rather heavy loss in stone fruit on the market was occasioned by brown rot (*Sclerotinia* sp.) and black mould rot (*Rhizopus nigricans*), the latter probably being the most serious owing to the rapidity with which it spreads through a case. The loss was to a certain extent due to carelessness in picking and packing, and to the carrying out of these operations in showery weather. It appears that a number of growers would be well advised to carry out a spraying programme for brown rot, a procedure which is largely neglected at present.

Grape.

Under the seasonal conditions prevailing, downy mildew (*Plasmopara viticola*) was naturally abundant in vineyards where spraying was not efficiently practised.

Anthraxnose (*Maginia ampelina*) was present to a noticeable extent in certain areas. Owing to previous dry seasons this disease has become almost forgotten by many growers, but should next year be again wet serious outbreaks of Anthraxnose may be expected unless steps are taken for control.

Bitter rot (*Melanconium fuligineum*) has been responsible for loss of fruit in some areas.

Passion Vine.

The diseases of this plant and their control have been the chief line of investigation carried out during the year. Field observations at more or less regular intervals have been made so far as practicable in order to determine seasonal phases. A study of the temperature relations of the fungus grown in pure culture has also been undertaken with a view to correlating the results obtained with the seasonal epidemics of the disease. The experiments for control have been continued throughout the year, and there would appear to be definite evidence of success, along the lines practised. It is hoped in the near future to make the results so far obtained available to the growers by publication in the Journal.

Strawberry.

Leaf Scorch (*Diplocarpon earliana*) has been the cause of much concern in some localities, more especially in damp situations, as it is not usual for a leaf disease to assume serious proportions during the fruiting season in this State. A disease of a somewhat obscure nature has recently come under notice, and it would appear to bear certain resemblances to the American disease known as strawberry yellows. If opportunity permits, experiments will be carried out to determine this point.

Papaw.

The disease of the papaw to which the name of yellow crinkle has been given still remains of undetermined origin though a mildew (*Sphaerotheca* sp.) found associated may be etiologically related.

Tomato.

Wilt (*Fusarium lycopersici*) is probably the most unsatisfactory disease with which growers have to contend, and accordingly an experimental plot for the testing out of wilt resistant varieties was conducted last season in the Stanthorpe district, the work being supervised by Messrs. Pratt and Jarvis. The problem is further complicated at times by the occurrence also of verticillium and bacterial wilts.

A severe outbreak of Irish blight (*Phytophthora infestans*) at Bowen in July-August, 1927, was investigated by Mr. Morwood, who showed that this was made possible by the entirely abnormal rainfall during June and July accompanied by a sudden drop in temperature at the time of the final epidemic attack.

Septoria leaf spot (*Septoria lycopersici*) and target spot (*Alternaria solani*) were also prevalent on many farms. It is remarkable that, in spite of the fact that spraying has been found an effective control of leaf disease, many growers still prefer to risk the season being favourable to their development.

At the instigation of Mr. Jarvis, details were laid down for an experimental plot to test the efficiency of various dusts and wet sprays for the control of tomato leaf diseases. The experiments were carried out in the Stanthorpe district under the direction of Mr. Jarvis.

Only an occasional record of spotted wilt was obtained during the season, and it will be interesting to note whether our climatic conditions will prove unfavourable to the development of the severe epidemics common in Southern States.

Vegetables.

Cucurbits were severely affected by downy mildew (*Pseudoperonospora cubensis*). In one instance a field of rockmelons in full bearing was rendered practically leafless in less than a fortnight.

Cabbage and cauliflowers grown during the summer months suffered heavy loss from black rot (*Pseudomonas campestris*) and black leg (*Phoma lingam*). Downy mildew greatly reduced the production of seedlings for the winter crop.

Maize.

A visit was paid to Atherton during August of last year to investigate the cob rot prevalent in that district. As a result of this visit it would appear that other organisms besides the fungus (*Diplodia zea*) mentioned by Mr. Tryon may be of some account. There are two outstanding lines of attack which may be advocated from a general consideration of the situation. These are—(1) the practice of field rotation and the destruction of maize refuse by fire; and (2) the establishment of an isolated plot for the production of seed maize which may be guaranteed free from infection. It is hoped to finish off the necessary laboratory work in the near future, when more definite recommendations can be made.

Cultivated Flowers.

In the flower garden gerberas have suffered heavily from leaf spot (*Septoria* sp.), which in many cases has resulted in the complete loss of the plants. This disease can be effectively controlled by spraying with Bordeaux mixture. During the wet season loss was also occasioned in respect to gerberas, delphiniums, and carnations by a crown rot (*Sclerotium rolfsii*).

Library.

The indexing of those Journals and serial publications previously completed has been kept up to date, and the range has been extended by the completion of the back files of the "Agricultural Gazette" of Tasmania, "New Zealand Journal of Agriculture," and "Tropical Agriculturist." All reprints have also been indexed under their respective hosts. All library books, including reprints, have been catalogued under

a system whereby a check may be kept on the receipt of desired publications and on their subsequent indexing. Mr. Morwood has been responsible for most of this undertaking.

Collection.

The slide and herbarium collections have been gradually augmented during the year. Typical pickled material has been accumulated during the year, and we are now in a position to give a fairly comprehensive display of the characteristic symptoms of Queensland diseases at the forthcoming national show.

Mr. Morwood has rendered efficient assistance during the year in both investigational and routine matters. The majority of the work connected with the library and collection has been undertaken by him.

J. H. SIMMONDS, Plant Pathologist.

REPORT OF THE AGRICULTURAL CHEMIST.

As anticipated, the analytical work carried out in our laboratory was greatly increased, as shown by the table below. At the end of the year we had 16 soils and 18 stockfoods on hand.

	1925-6.	1926-7.	1927-8.
Ashes	76	4	1
Butters	794	752	1,078
Cheeses	12	136	91
Condensed milk and milk products	11	14	14
Dipping fluids and concentrates	435	406	460
Fertilisers	161	300	212
Fruits, fresh	13	11	6
Jams, preserves, canned fruit	9	..	..
Leathers	81	79	44
Limestones, lime, &c. ..	13	9	12
Margarin and vegetable fats	..	1	1
Milk and cream	130	85	103
Miscellaneous	44	48	35
Parchment papers	45	4	23
Pest destroyers	135	198	152
Road materials	150	270	469
Rocks	5	4	2
Salts and licks	3	8	3
Seeds, grasses, and plants ..	335	119	255
Soils	228	217	242
Soil moistures	144	..	1,152
Stock foods	144	229	210
Sugar-cane, molasses, honey, &c.	15	2	3
Viscera	34	49	46
Waters	88	112	42
Total	3,105	3,057	4,656
Glassware, &c, tested ..	5,336	4,184	4,976

We again worked short-handed, as Mr. G. R. Patten was granted long service leave in March, Mr. C. R. v. Stieglitz was away for two months at the Sugar Experiment Station, and Mr. W. R. Winks on soil survey work. During the year Mr. L. E. Vidler was transferred to us as cadet. The whole of the staff did excellent work during the year.

DIPPING FLUIDS.

Four hundred and fifty-nine samples of dipping fluids were analysed, of which 119 were found of effective strength, as containing from 7.5 to 8.5 lb. of active arsenic per 400 gallons; 45 samples of the fluids showed more or less oxidation. The use of skim milk or butter milk recommended as a cure for oxidation was again found successful in all cases.

Analyses of cattle and sheep dipping fluids prepared from registered commercial concentrates are published in Table X.

VISCERA.

Forty-six samples of viscera, stomach contents, &c., were analysed, and in 17 cases the presence of poison, chiefly arsenic, was ascertained.

DAIRY PRODUCTS, &C.

In accordance with the Dairy Produce Act the following glassware, &c., was tested:—

	Tested.	Approved.	Condemned.	Broken.	Per Cent. Condemned.
Cream bottles	2,664	2,654	..	10	..
Milk bottles	876	873	1	2	0.1
Cream pipettes	288	288	..	..	..
Milk pipettes	144	144	..	..	..
Thermometers	990	940	48	2	4.8
Hydrometers	14	14	..	..	..
Total	4,976	4,913	49	14	1.0

We also prepared 160 bottles of n/10 alkali, 96 pints standard iodine solution.

For the Commonwealth Dairy Produce Inspection Branch we analysed 582 samples of export butter, and only in 26 cases we found an excess of moisture, and in one case an excess of boric acid. Our State Inspectors submitted 290 samples, and in 13 cases we found an excess of moisture. Twenty-five cheeses for export and 64 samples imported were analysed, and only in one case of potted cheese an excess of sulphites (SO₂) was found.

STOCK FOODS.

The number of grasses, seeds, stock foods, &c., was greatly increased, more particularly as in many cases complete analyses were made including the principal mineral constituents.

Good results following the use of licks for stock, particularly sheep, are being reported, and

I have no doubt that, by a more general use of the licks recommended, the carrying capacity of our pastures will be increased by at least 50 per cent. As the sale of licks is increasing rapidly, it becomes necessary to protect the buyers by including the licks under the Stock Food Act, as in many cases licks sold at a high price are practically only salt.

The first edition of my pamphlet "Stock Foods" was quickly exhausted, and therefore a second edition was published in April, in which particular reference is made to stock licks. In the majority of cases the licks recommended will be found satisfactory, and several merchants are preparing and selling licks now based on these formulæ, but of course it is quite possible that in isolated cases the licks may have to be altered to suit local conditions.

As it is possible to use various seeds as stock foods, when the usual foods like bran and pollard are scarce or too expensive, Mr. Coleman obtained various commercial samples of grains, which we analysed in the form of meals. The results are given in Table VIII.

It is of interest to note the greatly improved quality, with regard to protein contents, of bran and pollard from this year's wheat, as compared with last year's crop. The high quality of a sample of "Duke of York" wheat and its by-products should also be noted.

Further samples of shrubs, herbs, and grasses collected by Mr. J. E. Thomas, an officer of the Council of Scientific Industrial Research, and samples of leguminous herbs collected by Mr. Pollock, are reported on Table VII. A sample of "Wild Lucerne" (*Stylosanthes mucronata*), very common in the Townsville district, and esteemed as a valuable fodder plant, was again submitted by Mr. Pollock, but does not nearly show such a good analysis as previously reported. This leguminous plant, a common tropical weed, was first submitted by the late veterinary officer, G. Tucker, from Townsville, and the analysis was given in my annual report for 1914, when I drew attention to the high feeding value, which was borne out by several subsequent analyses. As far as I am aware, no steps have been taken to try the plant out in other districts.

Whitewood, or Cattle Bush (*Atalaya hemiglauca*), was first reported on in 1916 as a suspected poisonous shrub, when I stated that feeding with this shrub is reported to cause blindness to horses, and even blindness to men on eating mutton from sheep fed on whitewood leaves. At the time we could not find any cyanogenetic glucoside, alkaloid, or saponin in the leaves. Several subsequent analyses showed it to possess a fair feeding value, and the plant is largely used as a fodder in dry periods. Research lately made under the auspices of the Council of Scientific and Industrial Research proved this plant to be the cause of the Kimberley horse disease or "walk about" disease in Western Australia, and of a similar disease existing in North Queensland. The toxic principle, which, as far as I know, has not been isolated yet, must be very slow in its action, as it takes a long time, sometimes even years, to produce fatal effects.

PASTURE IMPROVEMENT.

The experiments instigated for the improvement of old paspalum pasture, reported on last year, at Runcorn showed clearly the advantage derived by cultivating old pastures, but the results of the application of fertilisers, with the exception of fine bonemeal, were not conclusive enough.

The Runcorn experiments were carefully planned and well laid out, but the supervision and carrying out of the subsequent work left much room for improvement, as the cuttings of the grass were made by different persons and were not made in short enough intervals. I recommended therefore the appointment of an officer who should devote all his time to carry out this work, which I considered to be of

greatest importance and likely to have far-reaching results. This appointment, however, could not be made, and therefore the experiments had to be unfortunately discontinued.

In the neighbourhood of these original experiments private venture carried out, at Sunnyside, under suggestions made by Mr. F. F. Coleman, similar trials on a modified scale but on rather larger areas.

A paddock, with rather a poor class of soil, under paspalum for eighteen years, and continually grazed off, was chosen for the experiment. At the time when the work was started, on the 24th January, 1928, the grass was closely eaten off, after having a good rainfall of 6.31 inches between the 1st and 24th January, so that the ground was in a good moist condition. The land was laid out in 1-acre plots, on four of which fertilisers were broadcast. Two plots (1 and 2) received 400 lb. of a complete fertiliser, another plot (4) an increased amount of 600 lb. per acre, and a further plot (3) was fertilised with 400 lb. of a phosphates fertiliser alone. The experiments were under close supervision of Mr. F. F. Coleman, who carried out all the cutting, collecting, and weighing of the grass, and also made the remarks on the condition of the grass when cut. The influence of the complete fertilisers could be noticed almost immediately, and became more and more apparent, more particularly in the heavily fertilised plot 4, which in a short time looked rather like a cultivated crop than ordinary pasture.

After cutting the grass of the various plots for weight and analysis, cattle were allowed to graze for six hours in the paddock, and a close observation made to ascertain which of the plots were preferred for grazing. Within ten minutes after the animals began to graze thirteen of the nineteen head of cattle were on plots 1, 2, and 4, and in a very short time the number increased to sixteen. The average of the counts made from time to time during the six hours of grazing showed fifteen head on the fertilised plots 1, 2, and 4, as against four head on the remainder of the paddock.

The grass appeared at its best when about forty-four days old. Between the cuttings made at that time and the last cutting made at the age of twenty-eight days cattle broke in one day and grazed off a considerable amount of grass on the fertilised plots, particularly the heavily fertilised one, so that the weight of grass from these plots at the date of the last cutting does not represent a true average of the total yield for the period.

The results obtained and given in full on Tables II. and III. show clearly—

- (1) Nitrogen in the form of sulphate of ammonia gave a considerable increase in the weight of grass per acre.
- (2) Nitrogen gave a very large increase in the food value of the grass, by the much increased amounts of protein, more particularly on the heavily manured plot 4.
- (3) Phosphatic fertilisers alone in the form of a Nauru phosphate superphosphate mixture did not give any increase in either yield or food value.

- (4) The protein content of the grass decreased rapidly with age, and were found at the time when the grass was beginning to flower to be practically the same on all the plots.
- (5) The protein content also showed a considerable falling off in the second and third cuts made on the portions previously cut, except on the unmanured and phosphatic plot.
- (6) The amount of lime and phosphoric acid found in the ash of the grass was not increased by the application of fertilisers.

It is quite apparent that *paspalum* is a grass which does not lend itself to repeated close cutting at short intervals, and it was also found that the actual cutting was made rather too close to the ground, thereby adversely affecting subsequent growth, so that the yield of repeated cuts does not come up to the yield of one cut of the same age. This is strikingly shown in a diagram illustrating the yield of the various cuts, and one cut of grass forty-four days old on plot 4 gave practically double the amount of grass then produced by the plot cut three times.

The statement made by Professor J. Alan Murray, of the University College at Reading, in England, that heavy dressings with soluble nitrogenous fertilisers accelerates the formation of fibre, and that phosphatic manures have a contrary effect, is clearly shown by our results to be correct. His statement that the nutritive value of hay was depressed by the application of ammonium sulphate must be modified as applying to the final stages of growth only, as the first cuts of grass show, as already stated, an enormous increase of protein.

If we take the results of the cuttings at the age of forty-four days, we find the following yields of protein in the grass in lb. per acre:—

Plots	0	1	2	3	4
Lbs.	63	123	107	45	37.5

After the final cuttings, all the grass was mowed with a mowing machine, raked off, preparing the plots for winter. In the beginning of June the grass made some fresh growth, 100 lb. of sulphate of ammonia were applied on 20th May as a top dressing to portions of plots 1 and 2, and further samples were cut and submitted for analysis, which are reported on Table III. as winter growth. It must be clearly understood that all these results were obtained from a pasture which has never been cultivated, and it is quite possible that the results with regard to the application of fertilisers, more particularly phosphatic fertilisers, would have been modified if the land would have been ploughed and harrowed prior to fertilising. If we compare the present results with the results obtained in previous years at Maleny and Cooroy, the difference with regard to the effects of phosphatic fertilisers is particularly striking, as in all the previous experiments application of the Nauru superphosphate mixture gave in all instances a greatly increased yield, both on cultivated and uncultivated blocks.

The experiments on the *paspalum* pasture at Sunnyside will be continued the coming year, and, if possible, supplemented with similar trials made on ordinary forest land pasture in another locality.

FEEDING OF DAIRY HERDS.

In our coastal areas the dairy farmers depend almost entirely on the natural pasture, which is available in succulent form practically throughout the year, and only in periods of scarcity artificial feeding may be required.

In the semi-coastal area, below the dividing range, for at least six months good natural pasture is suitable for grazing, and the feeding is supplemented by growing of fodder crops, which are grazed off when required.

In the inland area, above the range, with a much smaller rainfall, fodder crops must be grown throughout the season, and frequently crops grown for grain are fed off once or twice in the younger stages of growth before being allowed to mature.

Although the great value of silage is well recognised by dairy farmers, only in rare cases the making of silage is practised, as the cost of labour makes the practice prohibitive. Green fodders are, when opportunities arise, made into hay. Chopped up green fodder is but rarely used.

In order to ascertain what dairy cows really get as food throughout the year under the system of grazing off, arrangements were made to have the grass and fodders taken once a month on several typical dairy farms. Dairy Inspectors Caven, Henderson, and Munro were asked to carry out this work on dairy farms in their districts, which involved a considerable amount of work. Inspector Munro deserves particular praise for the large amount of detailed information collected, and the manner in which the samples were taken. The great difficulty, particularly in certain seasons, was to collect a sufficient amount of the grass actually eaten by the stock, and not to cut and collect coarse stalks, &c., left by the cattle after grazing and eating out the young short grass at the bottom of such tufts of coarse grass. Unfortunately, it is impossible to make even a rough estimate of the quantity of food actually consumed, so as to know if the animals really received a fair ration for maintenance and milk production. During the year samples of grasses, crops, &c., were obtained from one farm in the inland area, near Warwick, on the Darling Downs (Table IV.), two farms near Toowoomba (Tables V. and VI.), and one farm in the semi-coastal area, near Gatton (Table VI.).

On my recommendation it is intended to make a similar investigation this coming year on farms in the coastal area.

The farm near Warwick had an area of 166 acres, of which 95 acres are under cultivation, 55 head of cattle are kept, and on average 27 were in milk.

The farm near Gatton had an area of 369 acres, 72 acres under cultivation, stock 10 horses and 50 cattle, of which on average 30 in profit.

The results of the investigation, although perhaps not as complete as could be wished for, are very interesting, and demonstrate the high value of the fodders on the Darling Downs, and also show clearly that the stock raised in this district cannot suffer from want of lime or phosphoric acid. Looking at the figures on Table IV. it will be observed that again a great variation in the food value of some grasses and crops exists.

Green oats, for instance, varied from 11.2 to 30.1 per cent. of protein in the dry material. Sudan grass from 13.1 to 21.1 per cent. protein according to age. A sample of green maize contained only 6.5 per cent. of protein in the dry material, and was evidently used in too young a stage of growth to be a profitable fodder. Lucerne was of fairly uniform composition throughout the

year, with high protein content and large amount of lime, therefore the ideal fodder for milk cows.

The actual food value of lucerne in the three districts showed but little variation, and the composition of the mineral ash is practically the same.

This is also confirmed by the analyses of monthly samples of milk from the whole herds.

Date.	Total Solids.	Fat.	S. N. F.	Ash.	Lime.	Phosphoric Acid.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
WARWICK.						
11th November, 1927	13.1	4.2	8.9	.77	.15	.21
29th December, 1927	12.9	3.8	9.1	.76	.18	.18
31st January, 1928	12.7	4.0	8.8	.73	.16	.20
21st March, 1928	13.5	4.5	9.0	.81	.19	.21
16th April, 1928	12.7	4.7	8.0	.74	.20	.19
12th May, 1928	12.8	4.2	8.6	.74	.17	.20
TOOWOOMBA.						
17th January, 1927	14.2	5.0	9.2	.76	.17	.22
28th November, 1927	13.2	4.0	9.2	.76	.18	.19
4th January, 1928	14.3	5.2	9.1	.74	.20	.18
28th January, 1928	13.1	4.0	9.1	.75	.18	.22
21st February, 1928	15.7	6.6	9.1	.78	.20	.20
22nd March, 1928	15.3	5.8	9.5	.82	.18	.23
25th April, 1928	14.1	4.9	9.2	.76	.14	.22
13th June, 1928	11.8	3.1	8.7	.78	.20	.16
GATTON.						
23rd November, 1927	13.1	4.3	8.8	.72	.17	.19
21st December, 1927	13.1	4.1	9.0	.71	.17	.19
25th January, 1928	13.7	4.6	9.1	.76	.20	.21
21st March, 1928	13.8	4.9	8.9	.79	.18	.21
16th April, 1928	13.5	4.8	8.7	.78	.17	.20
13th June, 1928	15.6	6.4	9.2	.82	.21	.19

Statements have been made that failures in cheese-making, occasionally experienced in these districts, should be attributed to want of lime in the milk, but above results show this statement to be absolutely without foundation, as the composition of the milks is absolutely normal.

If we compare the results of the analyses of the feeds, particularly the grasses, with the analyses obtained from all the important grazing areas reported in 1914, we find them to be very much over the average quality with regard to percentage of protein and mineral constituents.

The great feeding value of young grass, in its earliest stages of growth, has become recognised everywhere, and has led to the adoption of a new system of grass land management. How far such a system could be applied to Queensland is very problematic, and could only be ascertained by practical experiments. In order to understand the principles of this system, I will herewith give a short summary.

The NEW SYSTEM OF GRASS LAND MANAGEMENT is based on a combination of the following factors:—

- (1.) Liberal use of intensive and balanced fertilisers, followed by successive top dressing with nitrogenous fertilisers.
- (2.) Close rational grazing off by stock, under a carefully planned complete control.
- (3.) Systematic cultural treatment.

Grass and herbage kept short contains greater amounts of digestible protein than grass grown under the old methods of grazing. Young shoots of grass contain as much protein as many valued concentrates, grains, and legumes.

Such young rich grass can only be secured by a continual rational system of grazing, and applications of suitable fertilisers. As soon as the grass reaches a height of 4 to 5 inches sufficient stock must be pastured, that it is completely grazed down in a short period of a week or so. This necessitates a number of relatively small paddocks. Pastures require a similar treatment as other fodder crops, cultivation and application of complete fertilisers supplying nitrogen, phosphoric acid, and potash.

To ensure good uniform growth, the land, after grazing off, must be harrowed to spread the droppings, and remove dead growth, break up any mat of dead herbage, aerate the soil, &c., and only after the pasture has been cleaned up the fertilisers are applied.

If at any time the growth gets out of hand a mowing machine must be used, and a mowing machine is absolutely indispensable in efficient grass land management.

HYDROCYANIC ACID IN PLANTS.

A good deal of attention is paid to examine plants, particularly such used as fodder plants, for the presence of hydrocyanic acid yielding glucoside. In all cases the plants are tested with and without addition of emulsion, which causes the splitting up of the glucoside and yields free hydrocyanic acid. It frequently happens that the poison is only found at certain periods, different seasons, and various conditions of growth.

Of particular interest is the test of Sudan grass. We know that generally traces of poison are present, but so far, after testing the grass for several years, and from various localities, at

all stages of growth, we never found the poison present in appreciable amount. There are several varieties of seed on the market, and Mr. F. F. Coleman had three distinct commercial varieties tested, and the result of the test of the young and older growth is given on Table IX. Plot A was grown from blackglumed seed, which is frequently rejected by Southern buyers. Plot C is a sample of seed, canary seed like in colour, without traces of black or dark glumed seeds. Plot E was grown from a sample of light glumed seeds.

A careful examination of all the three plots was made, and it was found that each plot consisted of plants of *Sorghum Sudaneuse* only, free from *Sorghum vulgare*, the sorghum of commerce. Traces of poison were found only in the three weeks' old cut, whereas the older cuts, about eight weeks old, were quite free from poison, just like the white panicum grown alongside and between the plots of Sudan grass.

PEST DESTROYERS.

A great deal of time was devoted to the examination and analyses of the many products used under "The Pest Destroyers Act of 1923," including fungicides, insecticides, vermin destroyers, and weed destroyers.

The analyses alone of such heterogeneous products are not always conclusive with regard to their value. Physical and other tests may be necessary, and for this purpose data are gradually collected and compiled in our laboratory at present and for some time back, so that they may be embodied in any amendments to the Act, which sooner or later will become necessary. Analyses of dipping fluids for sheep and cattle are given on Table X., analyses of sulphur, copper dusts, and lead arsenates on Table XI. In all the dusts lead arsenate, Paris green, and similar compounds fineness plays an important part, and standards for such will have to be fixed. In many cases the volume in cubic inches filled by 1 lb. of the powder may be of value, just like the Chancel number of sulphur, where, strange to say, only in one sample out of a dozen the standard prescribed by regulation was reached.

Of interest is the settling rate of lead arsenate powders or paste when suspended in water, as strikingly shown by the diagram given at the end of this report, and one make, "Arsinette," which contains some sticker to keep the lead arsenate in suspension, stands out on its own. Practical experiments alone can decide on the advantages of such a preparation.

J. C. BRÜNNICH,
Agricultural Chemist.

2840	Ditto ..	d. gr. f. s. L.	2-15	5-12	-050	-126	-10	1-30	-58	-16	77-23	-0056	-0930	-0350	0107	3,813	3,100	39,370	4,960	171	2,812	322	..	Med.	121	4	117
2841	Ditto ..	d. gr. L.	2-30	9-09	-011	-216	-07	1-14	-31	-11	71-32	-0018	-1632	-0557	-0036	6,474	2,189	34,090	3,440	54	4,885	107	..	SI	110	1	109
2842	Ditto ..	d. gr. L.	1-75	7-10	-017	-202	-06	1-20	-20	-06	78-42	-0012	-0928	-0325	-0047	6,076	1,860	36,270	1,860	37	2,796	243	..	Med.	98	2	96
2843	Ditto ..	gr. L.	2-00	6-03	-014	-144	-07	-35	-19	-01	79-66	-0036	-0397	-0258	-0009	4,340	2,170	10,540	310	109	1,197	28	..	Str.	121	20	101
2844	Ditto ..	d. gr. L.	2-89	7-78	-024	-191	-08	-35	-09	-10	76-96	-0031	-0647	-0318	-0125	5,282	2,284	9,708	2,856	86	1,790	346	..	Med.	138	6	132
2845	Ditto ..	gr. cl. L.	1-18	10-97	-017	-187	-05	-99	-35	-04	68-86	-0009	-2308	-0813	-0008	5,772	1,659	30,528	1,327	30	7,132	27	..	V. sl.	47	1	46
2846	Ditto ..	d. gr. L.	2-07	6-12	-009	-162	-07	-64	-20	-24	81-13	-0019	-1534	-0313	-0018	4,824	2,152	19,050	7,068	55	4,560	52	..	SI	83	1	82
2847	Ditto ..	bl. L.	4-41	16-14	-010	-462	-10	1-27	-38	-30	58-76	-0023	-3287	-0654	-0025	11,595	2,521	31,930	7,562	59	8,251	64	..	SI	134	1	133
NORTH GREGORY—																											
2685	Vindex Stn.	g. s. Cl.	3-32	4-15	-014	-024	-07	1-23	1-32	-33	77-94	-0195	-2476	-1804	-0109	724	2,303	37,840	10,208	599	7,610	336	..	NIH	..	..	..
..	Ss. of S. 2685	ditto	2-21	5-38	-012	-030	-07	1-55	1-32	-40	75-53	..	..	..	..	929	2,323	48,440	12,605	..	..	..	..	NIH	..	..	..
2686	Vindex Stn.	r. br. L.	4-47	7-01	-023	-047	-14	2-31	1-34	-50	65-76	-0014	-2914	-0886	-0087	1,497	4,320	73,105	15,950	43	9,210	275	..	NIH	..	..	..
..	Ss. of S. 2686	ditto	3-32	8-45	-236	-030	-12	4-23	1-29	-30	62-99	..	..	..	..	904	3,552	129,490	9,043	..	..	..	..	NIH	..	..	..
2623	Blairmoor	y. Cl.	3-31	4-22	-037	-029	-04	-86	-71	-47	81-65	-0026	-1938	-0384	-0103	1,096	1,566	32,895	18,010	98	7,412	395	V. Sl.	V. Sl.	..	..	..
MITCHELL—																											
2695	Rivoli Downs	br. Cl.	5-58	5-30	-021	-041	-05	1-99	-97	-25	75-31	-0034	-5516	-0649	-0105	1,347	1,727	64,920	8,288	110	17,990	342	..	NIH	..	..	..
PORT CURTIS—																											
2709	Bouldercombe Settlement	d. gr. cl. L.	1-04	4-98	-069	-088	-06	-50	-85	-09	81-23	-0027	-0641	-0217	-0054	2,969	2,121	16,969	3,182	92	2,178	184	Neut.	NIH	..	..	..
2710	Ditto ..	d. gr. L.	1-03	3-97	-047	-098	-03	-83	-60	-04	84-66	-0039	-2411	-0163	-0030	3,229	1,019	27,532	1,359	129	7,958	99	Alk.	NIH	..	..	..
2711	Ditto ..	ch. L.	1-08	5-04	-009	-075	-03	-53	-29	-03	75-87	-0009	-1323	-0425	-0034	2,679	1,101	19,089	1,101	33	4,728	121	S.	V. Sl.	..	..	..
..	Ditto (Ss. of S. 2711)	..	3-31	3-02	-044	-011	-06	-73	1-18	-26	82-79	..	..	..	..	416	2,268	26,835	9,450	..	..	..	Neut.	NIH	..	..	..
2712	Ditto ..	br. s. L.	8-2	4-68	-008	-063	-03	-33	-07	-20	81-64	-0005	-0851	-0248	-0034	2,124	1,028	10,962	5,852	17	2,844	113	Sl.	Sl.	..	..	..
2713	Ditto ..	ch. L.	1-71	7-08	-005	-157	-01	-84	-19	-56	73-69	-0016	-0920	-0239	-0084	4,763	315	25,551	17,035	47	2,791	256	Neut.	V. Sl.	..	..	..
2714	Ditto ..	d. gr. L.	1-32	2-64	-005	-059	-03	-64	-62	-26	87-75	-0021	-1040	-0118	-0100	1,849	1,109	23,298	9,616	77	3,791	366	Sl.	Med.	..	..	..
2715	Ditto ..	br. grv. L.	9-9	4-97	-006	-076	-03	-40	-48	-01	81-21	-0008	-0499	-0193	-0034	2,521	1,036	13,466	345	28	1,661	114	Med.	V. Sl.	..	..	..
2716	Ditto ..	gr. s.	6-0	9-8	-004	-028	-01	-15	-10	-03	95-52	-0014	-0331	-0058	-0058	1,134	405	6,077	1,215	57	1,337	225	Med.	Sl.	..	..	..
2717	Ditto ..	ch. s. L.	1-22	2-52	-004	-063	-07	1-02	-93	1-29	84-49	-0131	-2006	-0163	-0057	2,225	2,512	35,898	10,051	463	7,074	201	Neut.	NIH	..	..	..
2718	Ditto ..	bl. s. L.	1-88	4-24	-003	-125	-11	1-11	1-14	-37	80-93	-0215	-1693	-0176	-0080	4,281	3,864	37,940	12,530	734	5,788	275	Sl.	NIH	..	..	..
2719	Ditto ..	bl. L.	3-32	5-56	-005	-168	-20	1-14	1-38	1-57	74-65	-0454	-2316	-0746	-0269	4,757	5,579	32,305	16,150	1,286	6,561	764	Sl.	Sl.	..	..	..

2748	Wilson's Pocket ..	r. br. L. ..	1.43	7.56	.003	.229	.26	.23	.21	.52	73.20	.0122	.0591	.0899	.0062	6,700	7,478	6,580	15,253	356	1,756	182	..	Str.	81	9	72
2749	Ditto ..	ditto ..	2.00	7.96	.003	.272	.27	.28	.15	.56	73.90	.0159	.0708	.0326	.0048	8,418	8,484	8,810	17,295	493	2,193	150	..	Str.
2756	Kin Kin ..	y. gr. L. ..	3.20	10.75	.006	.382	.08	.48	.49	.40	69.61	.0035	.1331	.0405	.0155	9,658	2,088	12,008	10,180	89	3,362	392	Med.	83	1	82	
2813	Gooburum ..	r. L. ..	.77	4.15	.037	.087	.05	.23	.12	.04	82.30	.0016	.0825	.0683	.0110	3,244	1,931	8,495	1,545	62	3,093	413	..	V. Sl.	..	..
2814	Ditto ..	ditto ..	1.18	4.63	.014	.086	.07	.35	.06	.05	81.31	.0076	.1357	.0372	.0175	3,175	2,646	12,850	1,890	280	4,997	646	..	V. Sl.	..	..
2819	Kalkie ..	br. grv. Cl. ..	1.69	9.81	.015	.189	.35	.49	.32	.01	55.24	.0040	.1415	.1122	.0021	6,328	11,666	16,261	353	134	4,730	71	..	V. Sl.	..	..
2820	Ditto ..	br. L. ..	1.86	11.46	.013	.221	.28	.28	.20	.02	52.10	.0023	.0927	.0500	.0045	6,311	8,767	8,767	674	71	2,852	138	..	Sl.	..	..
2821	Ditto ..	r. br. L. ..	1.97	12.89	.009	.214	.31	.40	.15	.02	45.68	.0014	.1797	.1095	.0044	6,396	9,137	12,073	653	42	5,371	130	Neut.	..	..	..
2901	Ditto ..	r. L. ..	1.92	14.85	.005	.371	.33	.76	.42	.08	41.66	.0021	.2911	.1694	.0147	10,668	9,365	21,739	2,341	60	8,358	421	..	V. Sl.	..	..
2850	Cedar Pocket ..	br. L. ..	4.27	11.58	.008	.347	.21	.61	.42	.50	68.26	.0146	.2354	.0675	.0144	7,745	4,702	13,610	11,135	327	5,251	322	..	Sl.	..	..
2791	Mount Cooroy ..	gr. s. S. ..	1.66	2.42	.010	.050	.02	.08	.05	.05	92.81	.0016	.0219	trace	.0042	1,781	712	2,850	1,781	57	777	150	..	Med.	68	..	
2792	Ditto ..	r. s. S. ..	1.59	2.71	.008	.080	.03	.06	.04	.03	88.69	.0007	.0040	.0012	.0026	2,800	1,077	2,154	1,077	25	140	90	..	Str.	81	..	
2793	Ditto ..	gr. s. S. ..	1.18	2.99	.010	.086	.03	.08	.07	.09	92.09	.0016	.0132	.0082	.0067	3,038	723	2,894	3,255	58	467	235	..	Str.	72	..	
2794	Ditto ..	gr. s. S. ..	.81	1.98	.009	.051	.02	.08	.06	.11	94.12	.0013	.0170	.0086	.0061	1,876	751	3,002	4,128	49	630	225	..	Med.	51	..	
2859	Sharon ..	gr. cl. L. ..	1.53	7.16	.057	.136	.17	.95	.95	.56	73.95	.0273	.2050	.0546	.0133	4,209	5,221	29,370	17,295	841	6,321	411	..	Sl.	..	..
2860	Ditto ..	gr. cl. L. ..	1.40	5.31	.021	.128	.16	.95	.94	.49	77.81	.0208	.2101	.0573	.0164	4,114	5,017	30,437	15,719	866	6,723	525	..	Sl.	..	..
2861	Ditto ..	ditto ..	1.37	6.63	.008	.121	.10	1.02	1.04	.54	74.14	.0139	.1921	.0622	.0104	3,752	3,263	31,651	16,607	430	5,955	323	..	Sl.	..	..
2862	Ditto ..	d. gr. s. ..	0.76	2.14	.007	.056	.04	.28	.11	.11	92.70	.0046	.0901	.0230	.0055	2,101	1,501	10,505	4,128	172	3,362	206	..	Sl.	..	..
2677	Nambour ..	d. gr. s. ..	1.36	2.06	.006	.056	.01	.06	.03	.02	95.22	.0011	.0163	.0069	.0029	1,919	343	2,056	685	38	555	99	..	Str.	72	18	
2682	Ditto ..	gr. s. ..	.20	1.19	.010	.022	.02	.06	.03	.06	96.66	.0008	.0219	.0057	.0083	915	832	2,496	2,496	33	907	345	..	Med.	30	1	
2683	Ditto ..	br. s. L. ..	.81	2.74	.017	.051	.03	.10	.10	.09	91.53	.0014	.0380	.0142	.0168	1,808	1,085	3,617	3,255	50	1,356	600	..	Med.	45	1	
2742	Ditto ..	br. L. ..	2.18	9.72	.006	.315	.12	.63	1.13	.17	69.15	.0066	.1551	.0508	.0070	8,935	3,320	17,808	4,829	187	4,395	199	..	Sl.	..	..
2743	Ditto ..	blu. gr. cl. L. ..	1.80	10.55	.006	.266	.14	.56	.85	.24	66.67	.0221	.1238	.0569	.0077	7,195	3,712	15,132	6,567	5,968	3,343	208	..	Sl.	..	..
2684	Tambourine ..	r. L. ..	2.70	18.65	.005	.359	.41	.64	.14	.09	27.39	.0011	.1739	.0822	.0105	8,138	9,422	14,561	1,998	25	3,949	240	..	Sl.	..	..
2706	Cabooculture ..	bl. s. L. ..	3.39	7.46	.006	.241	.08	.21	.27	.23	75.34	.0025	.0285	.0230	.0068	6,081	1,998	5,424	1,998	63	3,949	171	..	Str.	123	22	
2720	Rosevale ..	d. gr. Cl. ..	1.18	10.03	.010	.138	.34	1.62	1.56	.13	64.81	.0162	.2127	.1251	.0049	4,350	10,790	50,920	4,047	509	6,704	155	..	Sl.	..	..
2750	St. Helena ..	r. L. ..	1.11	12.51	.008	.200	.24	.63	.18	.05	47.88	.0093	.3536	.0778	.0053	6,200	7,505	19,579	1,631	287	10,963	163	..	Alk.	..	..
..	Ss. of S. 2750 ..	ditto ..	.53	11.26	.005	.101	.16	.29	.13	.03	44.85	..	..	..	2,867	4,527	8,149	905	..	..	..	..	Alk.	..	..
2753	Buderim ..	d. gr. s. L. ..	1.58	3.70	.006	.126	.01	.10	.12	.08	90.03	.0010	.0137	.0142	.0028	4,248	345	3,453	2,762	35	463	93	..	Str.	112	57	
2757	Nerang ..	r. cl. L. ..	2.07	9.72	.007	.213	.38	.52	.39	.39	57.75	.0038	.1383	.0588	.0136	5,685	10,140	13,828	10,448	101	3,700	363	..	Neut.	..	..
2822	Ditto ..	yl. br. cl. L. ..	2.04	9.30	.005	.308	.19	2.11	.93	.79	57.75	.0034	.2151	.0592	.0022	6,479	4,078	44,401	16,536	73	4,529	45	..	Sl.	..	..
2790	Tallebudgera ..	d. br. L. ..	2.61	8.37	.006	.188	.01	.45	.22	.49	70.99	.0005	.1117	.0210	.0073	5,268	305	12,475	13,705	15	3,121	204	..	V. Sl.	..	..
2854	Cleveland ..	br. r. L. ..	1.90	11.35	.006	.148	.06	.43	.35	.04	50.42	.0025	.1268	.0598	.0098	4,302	1,844	12,598	1,229	74	3,682	286	..	Med.	68	68	
2870	Rochdale ..	r. br. s. S.	0.61	2.54	.006	.029	.07	.13	.09	.01	91.20	.0187	.0487	.0067	.0029	1,020	2,551	4,737	364	667	1,734	102	..	Med.	32	..	

Table II.—PASPALUM PASTURE.

GRASS CUT ONCE AT VARIOUS AGES OF GROWTH.

Date of Cutting.	Grass—Days since 24/1/28.	Condition of Grass When Cut.	No. of Plot and Cut.	Weight of Water-free Material.	Moisture in Grass When Cut.	COMPOSITION OF WATER-FREE MATERIAL.						RAINFALL.		Remarks.		
						Crude Protein.	Crude Fat.	Carbohydrates.	Crude Fibre.	Crude Ash.	Lime, CaO.	Phosphoric Acid, P ₂ O ₅ .	Chlorine, Cl.		Potash, K ₂ O.	In Inches.	Between Dates.
				Lb.	%	%	%	%	%	%	%	%				
PLOT 0.—WITHOUT FERTILISER.																
2 Feb., 1928	9	Harsh, coarse, and dry	0A1	247	63.7	8.2	1.6	52.1	25.4	12.7	.72	.55		1.20	6.30	1 Jan. to 24 Jan.
13 Feb., 1928	20	Harsh, coarse, and dry; much brown grass	0B1	360	66.0	8.7	1.4	52.6	25.6	11.7	.72	.36		1.39	2.46	24 Jan. to 1 Feb.
8 Mar., 1928	44	Slightly harsh; yellow; fair flowering	0C1	930	69.6	6.8	1.7	49.8	29.8	11.9	1.15	.37	.55	1.44	4.50	2 Feb. to 12 Feb.
11 Apr., 1928	78	Green, soft, and succulent; fair seed heads; patchy	0D1	579	60.9	7.9	2.1	47.5	30.1	12.4	.78	.34	1.04	1.70	8.52	13 Feb. to 7 March
PLOT 1.—FERTILISED WITH 400 LB. PER ACRE OF 5-20-5.																
2 Feb., 1928	9	Dark-green, soft, and succulent	1A1	335	70.3	12.6	1.9	46.7	26.4	12.4	.65	.64		1.50	2.46	24 Jan. to 1 Feb.
13 Feb., 1928	20	Dark-green, soft, and succulent	1B1	842	73.1	10.3	1.8	47.9	27.8	12.2	.72	.50		1.79	4.50	2 Feb. to 12 Feb.
8 Mar., 1928	44	Dark-green, soft, and succulent; flowering	1C1	1,919	71.8	6.4	1.7	50.2	31.5	10.2	1.26	.40	.52	1.77	8.52	13 Feb. to 7 March
11 Apr., 1928	78	Leaves green, succulent; seed heads and stems dry	1D1	2,474	61.9	4.9	1.4	49.3	34.1	10.3	.58	.29	.83	1.53	5.03	8 March to 10 April
PLOT 2.—FERTILISED WITH 400 LB. PER ACRE OF 5-20-5.																
2 Feb., 1928	9	Dark-green, soft, and succulent	2A1	260	70.1	12.8	1.7	48.4	24.7	12.4	.73	.65		1.66	2.46	24 Jan. to 1 Feb.
13 Feb., 1928	20	Dark-green, soft, and succulent	2B1	1,003	72.3	9.7	1.5	47.1	29.9	11.8	1.00	.43	.62	1.77	4.50	2 Feb. to 12 Feb.
8 Mar., 1928	44	Dark-green, soft, and succulent; flowering	2C1	1,504	68.9	7.1	2.0	45.8	33.4	11.7	.80	.37	.47	1.57	8.52	13 Feb. to 7 March
11 Apr., 1928	78	Leaves green, soft, and succulent; seed heads and stems dry; patchy	2D1	2,208	63.0	5.0	1.6	47.6	36.0	9.8	.51	.24	.69	1.67	5.03	8 March to 10 April
PLOT 3.—FERTILISED WITH 400 LB. PER ACRE OF 0-29-0.																
2 Feb., 1928	9	Harsh, coarse, and dry	3A1	252	58.3	7.8	1.8	52.3	24.4	13.7	.92	.58		.88	2.46	24 Jan. to 1 Feb.
13 Feb., 1928	20	Harsh, coarse, and dry; much brown grass	3B1	488	62.0	8.0	1.5	52.0	25.3	13.2	1.47	.37	.38	.95	4.50	2 Feb. to 12 Feb.
8 Mar., 1928	44	Slightly harsh and yellow; fair flowering heads	3C1	673	69.3	6.7	2.0	45.9	34.2	11.2	.70	.29	.36	1.40	8.52	13 Feb. to 7 March
11 Apr., 1928	78	Leaves green, soft, and succulent; very few seed heads in clumps; heads and stems dry	3D1	517	54.7	7.1	1.7	48.9	31.1	11.2	.77	.28	.79	1.34	5.03	8 March to 10 April
PLOT 4.—FERTILISED WITH 600 LB. PER ACRE OF 5-20-5.																
2 Feb., 1928	9	Dark-green, soft, and succulent	4A1	609	77.6	15.5	1.6	45.5	24.1	13.3	.50	.66		1.68	2.46	24 Jan. to 1 Feb.
13 Feb., 1928	20	Dark-green, soft, and succulent	4B1	1,261	77.0	13.4	1.7	45.5	27.9	11.5	1.22	.63	.80	1.82	4.50	2 Feb. to 12 Feb.
8 Mar., 1928	44	Dark-green, soft, and succulent; flowering	4C1	5,068	71.3	7.4	1.5	45.0	35.9	10.2	.63	.40	.71	1.85	8.52	13 Feb. to 7 March
Apr., 1928	78	Leaves green, soft, and succulent; seed heads and stems dry	4D1	2,878	64.4	4.5	1.1	49.5	35.2	9.7	.60	.26	1.06	1.40	5.03	8 March to 10 April

Fertiliser used per acre and applied 24 Jan., 1928—100 lb. ammonium sulphate, 100 lb. superphosphate, 159 lb. Nauru phosphate, and 41 lb. potassium chloride.

Fertiliser used per acre and applied 24 Jan., 1928—100 lb. ammonium sulphate, 259 lb. Nauru phosphate, and 41 lb. potassium chloride.

Fertiliser used per acre and applied 24 Jan., 1928—200 lb. superphosphate and 200 lb. Nauru phosphate.

Fertiliser used per acre and applied 24 Jan., 1928—150 lb. ammonium sulphate, 150 lb. superphosphate, 237½ lb. Nauru phosphate, and 61½ lb. potassium chloride.

Table III.
PASPALUM PASTURE.

GRASS CUT REPEATEDLY, AT SHORT INTERVALS, ON THE SAME AREA.

Date of Cutting	Grass—Days Old.	Condition of Grass when Cut.	No. of Plot and Cuts.	Weight Per Acre of Water-free Material.	Moisture in Grass When Cut.	COMPOSITION OF WATER-FREE MATERIAL.							RAINFALL.		Remarks.		
						Crude Protein.	Crude Fat.	Carbohydrates.	Crude Fibre.	Crude Ash.	Lime, CaO.	Phosphoric Acid, P ₂ O ₅ .	Chlorine, Cl.	Potash, K ₂ O.		In Inches.	Between Dates.
PLOT 0.—WITHOUT FERTILISER.																	
2 Feb., 1928	9	Harsh, coarse, and dry . . .	0A1	247	63.7	8.2	1.6	52.1	25.4	12.7	.72	.55	. .	1.20	6.30	1 Jan. to 24 Jan.	
13 Feb., 1928	11	Harsh, coarse, and dry; much brown grass	0A2	263	61.3	9.2	1.7	51.7	23.7	13.7	.82	.56	. .	1.29	2.46	24 Jan. to 1 Feb.	
8 Mar., 1928	24	Green, soft, and succulent; fair flowering heads	0A3	195	71.3	9.7	2.1	47.6	27.4	13.2	1.28	.43	.60	1.66	4.50	2 Feb. to 12 Feb.	
13 Feb., 1928	20	Very harsh, coarse, and dry; much brown grass	0B1	360	66.0	8.7	1.4	52.6	25.6	11.7	.72	.36	. .	1.39	8.52	13 Feb. to 7 March	
11 Apr., 1928	58	Green, soft, and succulent; very few seed heads and stems, which are dry	0B2	358	64.8	7.6	2.1	50.0	29.2	11.1	.73	.25	.82	.97	6.96	24 Jan. to 12 Feb.	
19 June, 1928	30	Much harsh grass; very little soft and succulent; winter growth	0	410	47.1	5.5	1.1	50.7	28.3	14.4	.77	.26	.33	.47	13.55	13 Feb. to 11 April	Winter growth.

PLOT 1.—FERTILISED WITH 400 LB. PER ACRE OF 5-20-5.

2 Feb., 1928	9	Dark-green, soft, and succulent	1A1	335	70.3	12.6	1.9	46.7	26.4	12.4	.65	.64	. .	1.50	2.46	24 Jan. to 1 Feb.	
13 Feb., 1928	11	Dark-green, soft, and succulent	1A2	247	72.5	12.0	1.4	50.3	23.7	12.6	.67	.44	. .	1.97	4.50	2 Feb. to 12 Feb.	
8 Mar., 1928	24	Dark-green, soft, and succulent; flowering	1A3	348	73.7	9.0	1.8	47.7	31.4	10.1	1.22	.46	.54	1.59	8.52	13 Feb. to 7 March	
13 Feb., 1928	20	Dark-green, soft, and succulent	1B1	842	73.1	10.3	1.8	47.9	27.8	12.2	.72	.50	. .	1.79	6.96	24 Jan. to 12 Feb.	
11 Apr., 1928	58	Dark-green, soft, and succulent; seed heads and stems dry	1B2	410	58.6	6.0	0.6	50.6	32.6	10.2	.89	.26	.65	1.21	13.55	13 Feb. to 11 April	Winter growth.
19 June, 1928	30	Harsh grass; some green and succulent	1	428	46.5	5.0	1.5	50.7	30.7	12.1	.71	.26	.25	.62	. .	. .
19 June, 1928	30	Harsh grass; much green, soft, and succulent	1S	604	50.7	6.7	1.6	50.3	29.5	11.9	.83	.31	.30	.64	. .	. .	Top-dressed with 1 cwt. ammonium sulphate on 20 May, 1928.

Plot 2.—FERTILISED WITH 400 LB. PER ACRE OF 5-20-5.

2 Feb., 1928	9	Dark-green, soft, and succulent	2A1	260	70.1	12.8	1.7	48.4	24.7	12.4	.73	.65	..	1.66	2.46	24 Jan. to 1 Feb.	
13 Feb., 1928	11	Dark-green, soft, and succulent	2A2	196	72.6	12.3	1.9	49.3	24.0	12.5	.66	.52	..	1.90	4.50	2 Feb. to 12 Feb.	
8 Mar., 1928	24	Dark-green, soft, and succulent; flowering	2A3	265	73.0	7.9	1.9	49.2	32.0	9.0	1.24	.41	.55	1.64	8.52	13 Feb. to 7 March	
13 Feb., 1928	20	Dark-green, soft, and succulent	2B1	1,003	72.3	9.7	1.5	47.1	29.9	11.8	1.00	.43	.62	1.77	6.96	24 Jan. to 12 Feb.	
11 Apr., 1928	58	Dark-green, soft, and succulent; seed heads and stems dry	2B2	576	60.9	5.3	1.5	50.4	33.0	9.8	.83	.24	.58	1.28	13.55	13 Feb. to 11 April	
19 June, 1928	30	Harsh grass; some green, soft, and succulent	2	644	44.0	5.7	1.1	50.1	30.2	12.9	1.12	.23	.28	.55	Winter growth.
19 June, 1928	30	Harsh grass; some green, soft, and succulent	2S	343	50.9	7.2	1.5	49.3	27.8	14.2	.88	.26	.34	.42	Top-dressed with 1 cwt. ammonium sulphate on 20 May, 1928.

Plot 3.—FERTILISED WITH 400 LB. PER ACRE OF 0-29-0.

2 Feb., 1928	9	Harsh, coarse, and dry ..	3A1	252	58.3	7.8	1.8	52.3	24.4	13.7	.92	.58	..	.88	2.46	24 Jan. to 1 Feb.	
13 Feb., 1928	11	Harsh, coarse, and dry; much brown grass	3A2	134	49.2	9.3	1.7	51.8	23.0	14.2	.93	.48	..	1.14	4.50	2 Feb. to 12 Feb.	
8 Mar., 1928	24	Green, soft, and succulent; few flowering heads	3A3	48	68.2	9.5	?	49.6	28.8	12.1	.92	.52	..	1.05	8.52	13 Feb. to 7 March	
13 Feb., 1928	20	Harsh, coarse, and dry; much brown grass	3B1	488	62.0	8.0	1.5	52.0	25.3	13.2	1.47	.37	.38	0.95	6.96	24 Jan. to 12 Feb.	
11 Apr., 1928	58	Leaves green, soft, and succulent; heads and stems dry	3B2	128	57.4	7.4	2.1	51.4	26.7	12.4	.80	.34	..	1.07	13.55	13 Feb. to 11 April	
19 June, 1928	30	Much harsh grass; very little soft and succulent	3	221	48.0	5.5	1.1	51.3	28.3	13.8	.83	.19	.27	.59	Winter growth.

Plot 4.—FERTILISED WITH 600 LB. PER ACRE OF 5-20-5.

2 Feb., 1928	9	Dark-green, soft, and succulent	4A1	609	77.6	15.5	1.6	45.5	24.1	13.3	.50	.66	..	1.68	2.46	24 Jan. to 1 Feb.
13 Feb., 1928	11	Dark-green, soft, and succulent	4A2	385	74.5	14.7	1.8	45.7	23.4	14.4	.75	.70	..	2.02	4.50	2 Feb. to 12 Feb.
8 Mar., 1928	24	Dark-green, soft, and succulent; flowering	4A3	671	73.9	7.9	1.7	50.6	29.8	10.0	.75	.49	.62	2.11	8.52	13 Feb. to 7 March

Table IV.
DARLING DOWNS (WARWICK DISTRICT).

Date Cut.	Weather and Rainfall.	Description.	ANALYSIS OF WATER-FREE MATERIAL.								Remarks.
			Crude Protein.	Crude Fat.	Carbohydrate.	Crude Fibre.	Crude Ash.	Time, CaO.	Phosphoric Acid, P ₂ O ₅ .	Chlorine, Cl ₂ .	
7 July, 1927	June, 283 points	Oats	26.8	3.1	38.5	20.3	11.3	.51	.58	1.09	Average height of oats before feeding, 6 in.; fed down to 2 in.; sample taken after oats had been eaten off for second time; cows feed in oats field from 6 a.m. till 8 a.m.
Ditto ..	Heavy ground, frosts during June	Lucerne	32.5	2.3	39.9	14.8	10.5	2.48	.96	.77	Average height of lucerne before feeding, 3 in.; fed down to 1 in.; cows graze in lucerne field from 8 a.m. to 1.30 p.m.
Ditto ..	.. .. .	Lucerne Chaff	22.5	1.2	43.0	24.1	9.2	2.32	.56	.66	At 3.30 p.m. cows given two kerosene tins full of lucerne chaff each.
Ditto ..	.. .. .	Grass	15.0	1.8	47.6	22.5	13.1	.67	.43	1.74	After the lucerne chaff has been consumed the cattle are turned into a grass paddock until 5 a.m. the following morning. There is very little grass or herbage of any sort in this paddock, but what there is would average 1½ in. in height.
15 Aug., 1927	July, 46 points	Barley	27.7	2.8	40.9	15.3	13.3	.83	.45	.34	Average height of barley before feeding, 6 in.; fed down to 2 in.; sample taken after barley had been eaten off for second time; cows feed in barley paddock from 6 a.m. till 8 a.m.
Ditto ..	Heavy ground frosts during July	Lucerne	30.0	1.7	42.2	13.6	12.5	2.68	.53	.31	Average height of lucerne before feeding, 3 in.; fed down to about 1 in.; cows allowed in lucerne paddock from 8 a.m. to 1.30 p.m.
Ditto ..	.. .. .	Grass	7.9	.9	52.9	31.6	6.7	.65	.31	1.48	Cattle turned into grass paddock at 3.30 p.m. and remain till 5 a.m. next morning. Very little grass or herbage; what there is averages about 1½ in. in height.
13 Sept., 1927	August, 19 points	Oats	30.1	3.1	35.6	16.6	14.6	2.84	.81	1.25	Average height of oats before feeding, 6 in.; fed down to 2 in.; sample taken after oats had been eaten off for third time; cows feed in oats field from 6 a.m. to 8 a.m.
Ditto ..	.. .. .	Lucerne	33.7	1.6	46.2	9.3	9.2	1.03	.73	.58	Average height of lucerne before feeding, 6 in.; fed down to 2 in.; cows graze in lucerne field from 8 a.m. till 1.30 p.m.
Ditto ..	.. .. .	Lucerne Chaff	20.4	1.3	44.1	24.0	10.2	3.24	.48	1.27	At 3.30 p.m. cows given two kerosene tins full of lucerne chaff each.
Ditto ..	.. .. .	Grass	13.9	1.2	50.8	21.4	12.7	1.23	.76	.64	After lucerne chaff has been consumed cows are turned into the grass paddock. This paddock contains very little grass or herbage; what there is averaging 1½ in. in height. They remain in this grass paddock till 5 a.m. next morning.
14 Oct., 1927	September, 61 points	Green Wheat	11.4	1.5	51.0	27.8	8.3	.42	.27	.36	Average height of wheat, 6 in. to 18 in.; eaten off for the first time; cows feed in the wheat paddock from 6 a.m. till 8 a.m.
Ditto ..	Few light frosts	Green Lucerne	29.7	1.2	46.7	15.6	6.8	2.34	.70	.53	Average height of lucerne, 6 in.; eaten off on five different occasions; cows allowed on lucerne from 8 a.m. till 1.30 p.m. and then yarded for milking.
Ditto ..	.. .. .	Lucerne Chaff	21.0	1.4	38.4	25.5	13.7	2.40	.80	1.20	At 3.30 p.m. cows given two kerosene tins full of lucerne chaff each.
Ditto ..	.. .. .	Grass	12.6	1.7	47.6	20.9	17.2	1.04	.48	.62	After lucerne chaff has been consumed cows are turned into grass paddock containing a mixture of grass and weeds (grass and weeds very short) till 5 a.m. next morning.
7 Nov., 1927	October, 299 points	Wheat	16.8	2.4	42.0	30.0	8.8	.64	.66	1.05	Cows put in a paddock of oats and wheat from 6 a.m. till 9 a.m.; average height of wheat and oats, 18 in.; fed off once previously.
Ditto ..	.. .. .	Lucerne	26.6	2.6	39.8	16.9	14.1	2.01	1.03	.76	.. .. .

7 Nov., 1927	October, 299 points	Oats	11.2	2.6	45.8	32.2	8.2	.73	.77	.96	At 9 a.m. cows put into a paddock of barley and oats, of average height 12 in., till about 12 noon; barley and oats eaten off for third time.
Ditto ..	..	Barley	21.9	2.7	45.0	19.6	10.8	.92	.92	.72	At 3.30 p.m. cows turned into grass paddock containing very short grass and herbage and allowed to remain in this paddock till 5 a.m. next morning.
14 Dec., 1927	November, 466 points	Sudan Grass	13.1	1.3	42.6	32.5	10.5	.92	.56	..	Cows turned into Sudan grass paddock at 6 a.m. and remain till 10 a.m.; average height of Sudan grass, 2 to 3 ft. This is the first time it has been eaten off.
Ditto ..	..	Oats and Barley	24.3	1.8	34.3	25.4	14.2	2.03	.85	.71	At 10 a.m. cows turned into paddock of oats and barley and remain till 1.30 p.m., when they are milked; average height of oats and barley, 2 in. to 3 in.; oats and barley have been eaten off on six different occasions.
Ditto ..	..	Grass and Weeds	15.5	1.3	40.3	33.2	9.7	.97	.56	.91	At 3.30 p.m. cows put into a paddock containing a mixture of grass and weeds, and remain there till 5 a.m. next morning.
28 Jan., 1928	December, 262 points	Lucerne	24.1	1.5	43.1	22.9	8.4	2.24	.55	.94	Cows put into lucerne field from 6 a.m. till 8 a.m.; height of lucerne, 6 in. to 1 ft.; first time lucerne has been eaten off.
Ditto ..	January, 290 points	Sudan Grass	21.1	2.3	39.2	25.3	12.1	.77	.74	1.00	At 8 a.m. cows turned into a paddock of Sudan grass till 1.30 p.m.; average height of Sudan grass, 12 in. to 18 in.; third time Sudan grass has been eaten off.
Ditto ..	..	Grass	10.9	1.6	49.3	28.6	9.6	.73	.53	.85	At 3.30 p.m. cows turned into paddock containing a mixture of grass and weeds, and they remain in this paddock till next morning.
29 Feb., 1928	February, 865 points	Lucerne	24.4	1.6	37.2	26.2	10.6	2.39	.93	.89	Cows put into lucerne paddock from 6 a.m. till 8 a.m.; average height of lucerne about 9 in., and it has been fed down three times.
Ditto ..	..	Couch Grass	10.8	1.3	52.6	29.0	6.3	1.11	.41	.50	At 8 a.m. cows are put into a paddock containing so-called swamp couch, but which probably consists of <i>Cynodon dactylon</i> (couch grass) and <i>Eragrostis leptostachya</i> (a love grass). The cows remain in this paddock till 1.30 p.m. The grass is now about 1 ft. in height, and the cows have been feeding on it for months, but the grass has only grown to this height since the January rains.
Ditto ..	..	Summer Grass.. .. . (<i>Panicum sanguinale</i>)	13.1	1.4	48.6	29.6	17.3	.99	.57	.78	At about 1.30 p.m. the cows are yarded and milked and then put into a paddock containing a mixture of grass herbage and weeds about 1 ft. in height. The cows have always been kept in this paddock overnight.
27 Mar., 1928	March, 119 points	Lucerne	23.2	1.4	42.3	24.6	8.5	..	..	..	Cows put into lucerne paddock from 6 a.m. till 10 a.m.; average height of lucerne 14 in.; lucerne has been eaten off four times.
Ditto ..	..	Corn	6.5	1.9	64.2	22.2	5.2	..	..	..	At about 10 a.m. the cows are fed on corn that has been cut green and carted for them, until they leave same.
Ditto ..	..	Grass	12.9	1.9	43.5	31.2	10.5	..	..	..	At 1.30 p.m. cows are yarded and milked out and then put into grass paddock till 4.30 a.m. next morning; average height of grass, 10 in.
3 May, 1928	April, 470 points	Lucerne	25.4	1.2	27.3	27.4	8.4	..	..	..	Cows put in lucerne paddock from 6 a.m. till 8 a.m.; average height of lucerne, 14 in.; lucerne has been eaten off on four occasions.
Ditto ..	..	Oats and Swamp Couch	14.4	1.5	37.6	28.0	7.8	..	..	..	At 8 a.m. cows put in paddock containing oats and swamp couch; average height of oats, 10 in.; eaten off for the first time; remain till 1.30 p.m.
Ditto ..	..	Grass	7.4	0.8	43.2	29.9	8.9	..	..	..	Cows put into grass paddock till 5 a.m. next morning; height of grass about 9 in.
1 June, 1928	May, 95 points	Oats	31.8	2.4	26.1	19.4	11.0	..	..	..	Cows put into paddock of oats at 6 a.m. for about six hours; average height of oats, 10 in. to 12 in.; eaten off for the second time.
Ditto ..	..	Lucerne	30.6	1.2	33.9	18.9	9.2	..	..	..	Milked at 1.30 p.m. After milking, cows put into lucerne paddock, where they remain for two hours. Average height of lucerne, 6 to 9 in.; lucerne has been eaten off on six occasions.
Ditto ..	..	Grass	13.8	1.3	45.3	25.0	8.9	..	..	..	At 5 p.m., cows put in paddock containing grass and weeds, where they remain till 4.30 a.m. next morning; average height of grass and weeds, 9 in.

Table V.
TOOWOOMBA (MERRITT'S CREEK).

Date Cut.	Weather and Rainfall.	Description.	ANALYSIS OF WATER-FREE MATERIAL.							Remarks.	
			Crude Proteins, %	Crude Fat, %	Carbohydrate, %	Crude Fibre, %	Crude Ash, %	Lime, CaO, %	Phosphoric Acid, P ₂ O ₅ , %		Chlorine, Cl ₂ , %
3 Aug., 1927	June, 412 points	Oats	12.7	2.6	47.2	25.2	12.3	.36	.53	1.55	Crop short, cut close to ground, hence more stalk than leaf; grown on red scrub soil.
Ditto	July, 52 points	Lucerne	28.7	2.0	37.4	22.2	9.7	2.06	.88	.71	Sample taken from paddock in which cows will be allowed to graze a week from date sample was cut.
Ditto	August, 45 points	Cornstalks, &c.	8.6	0.9	49.6	33.0	7.9	.73	.18	.39	Cultivation practically bare of herbage. Small patches of couch grass with old corn-stalks formed principal cattle food in this cultivation; sandy forest soil.
Ditto	September, 149 points	Lucerne Hay	27.2	0.7	37.4	23.1	11.6	2.54	.72	.61	Lucerne hay obtained from inside of stack. Cows only fed on it on cold or wet days. Dairy herd in fair condition.
Ditto	October, 316 points	Forest Grass	8.6	0.3	47.7	34.8	8.6	.61	.28	.33	Herd spends very little time in the paddock containing this grass, which was mostly short and frosted.
Ditto		Paspalum, Trefoil, and Prairie Grass	14.8	0.3	47.2	27.7	10.0	1.27	.45	.55	Sample obtained in a laneway in which cows will be allowed to graze.
Ditto		Wild Mint and Stagger Weed	5.4	0.7	70.8	12.3	10.8	1.75	.41	.15	Cattle eat both the roots and tops of the stagger weed.
15 Nov., 1927	November, 485 points	Oats	10.3	2.8	49.6	27.5	9.8	.47	.55	1.53	Cattle preferred the oats to other foods, and had not eaten much of the grass on the headlands, although the oats had been nearly eaten out.
Ditto		Lucerne	22.3	2.8	45.3	22.4	7.2	2.14	.57	.58	Cattle turned into oats every morning after milking, and then into lucerne for one hour before dinner, after which they are put in grass paddock.
Ditto		Prairie Grass	21.0	2.7	59.9	24.6	10.7	.83	.65	1.36	The samples of prairie grass, paspalum dilatatum, and couch grasses were obtained from untouched patches among the weeds of the headlands.
Ditto		Paspalum dilatatum	11.0	2.0	47.9	31.5	7.6	.48	.49	.62	..
Ditto		Couch Grass	18.2	2.1	43.3	25.7	10.7	1.01	.63	.53	..
Ditto		Grass	10.2	1.7	49.5	30.9	7.7	.54	.34	.51	This seems to be an average sample of grass and weeds from the headlands.
22 Dec., 1927	December, 592 points	Lucerne	29.1	1.5	39.9	18.3	11.2	2.34	.78	.53	Lucerne grown on red scrub soil was over 2 ft. high, and had been grown for three years, and was regularly grazed during this period.
Ditto		Oats and Grass	16.6	2.0	46.6	25.4	9.4	.49	.60	1.39	Paddock nearly eaten out. Oats grown on good red scrub soil.
Ditto		Grass	16.0	1.7	42.9	28.4	11.0	.71	.72	.78	This grass was grazed very close by cattle and horses, and very little was available.

24 Jan., 1928	January, 415 points	Grass	9.4	0.8	50.2	31.0	8.6	.38	.35	.67	Grown on medium to inferior forest soil. Part of sample collected on a dark soil flat and part on a sandy ridge.
Ditto ..	..	Grass	11.6	0.9	40.3	29.3	7.9	.63	.38	.62	Grasses grown on good red soil. The dairy herd does most of its grazing on these grasses, which are kept very short.
Ditto ..	..	Lucerne	30.6	1.6	40.8	15.0	12.0	2.28	.88	.99	Lucerne grown on dark-chocolate scrub soil.
12 Mar., 1928	February, 1,517 points	Lucerne	27.3	2.3	37.4	23.3	9.7	1.98	.72	.77	Lucerne about 2 ft. 3 in. in height; bastard scrub chocolate soil.
Ditto ..	..	Paspalum	9.8	1.3	48.6	30.7	9.6	.62	.45	.63	This sample is from the day paddock; sandy chocolate soil of medium quality.
Ditto ..	..	Grass	20.2	1.3	37.1	32.5	8.9	.78	.43	.65	Paddock from which this sample was taken was used as a night paddock.
22 Mar., 1928	March, 161 points	Lucerne	27.1	3.3	37.9	21.6	10.1	..	..	..	This lucerne forms a large portion of the food of the cows; very fine lucerne in full flower.
Ditto ..	..	Forest Grass	10.4	2.0	45.9	33.4	8.3	..	..	..	The herd spends most of the day in this paddock, when not in the lucerne.
Ditto ..	..	Scrub Grass	7.6	1.6	46.7	36.0	8.1	..	..	..	This paddock is used as a night paddock; red scrub soil.
23 May, 1928	April, 958 points	Lucerne	33.9	1.0	30.7	17.4	10.3	..	..	..	Lucerne grown on semi-scrub red soil and, with oats, forms the bulk of the food of the cows.
Ditto ..	May, 179 points	Oats	24.4	1.5	30.9	23.9	12.3	..	..	..	Grown on good red scrub soil.
Ditto ..	..	Grass	7.5	1.1	39.2	32.8	10.0	..	..	..	Grown on sandy loam. The cattle eat quite a quantity of this coarse grass.

Table VI,
TOOWOOMBA (WESTBROOK).

Date Cut.	Rainfall.	Description	ANALYSIS OF WATER-FREE MATERIAL.							Remarks.	
			Crude Protein.	Crude Fat.	Carbohydrates.	Crude Fibre.	Crude Ash.	Lime, CaO.	Phosphoric Acid, P ₂ O ₅ .		Chlorine, Cl ₂ .
15 Nov., 1927	June, 412 points	Oats	9.9	4.8	54.6	24.1	6.6	.26	.39	.49	Oats and lucerne form the greater portion of the cows' food. They are grown on good quality red soils. The cows are shepherded on the crops, confining them to a certain portion and eating that bare, before they are allowed further up the field to the next portion. The samples were taken from the part adjoining that on which the cows were grazing, and were cut from the tops similar to those which the cows were eating. The paddock was very bare except for a little of this grass (<i>Rhagodia Nutaras</i>). Highly scented weeds, such as penny royal, and prickly weeds, such as roley poley, were eaten level with the ground.
Ditto	July, 52 points; August, 45 points	Lucerne	22.1	2.8	50.3	15.6	9.2	2.26	.56	.44	
Ditto	September, 149 points; October, 316 points	Grass	18.4	1.8	44.7	20.5	14.6	2.11	.38	.81	
21 Dec., 1927	November, 485 points	Millet	16.4	1.7	42.5	25.2	14.2	.88	.70	.38	Principal food of cows is millet, which was in the green, succulent stage. Cows allowed on one portion of the field till that is grazed down, and then on to the next portion. Millet, about 2 ft. 6 in. high, grown on good red forest soil. Oats also grown on good red forest soil. Lucerne crop about 18 in. high, and was grown on dark-chocolate forest soil. No lucerne or oats had been consumed by cattle for several days before this sample was taken. This is a sample of the herbage growing in the night paddock on a fairly good red forest soil. Herbage from day paddock in which cattle spend most of their time. Khaki weed in this paddock was also eaten by the cows. Medium quality red soil. Swamp couch collected on the flat of a paddock not used for six months, but into which the cattle were going in a week from when sample was taken. Forest grasses collected from the ridges of the same paddock as the swamp couch. Couch grass collected on the flat near swamp couch; flat made up of wash and silt.
Ditto	December, 592 points	Oats	18.7	1.2	41.6	28.0	10.5	.64	.71	.96	
Ditto	January, 415 points	Lucerne	27.0	2.1	39.5	20.6	10.8	1.92	.74	.46	
Ditto	..	Herbage	27.6	1.9	35.1	17.4	18.0	2.43	.76	.71	
Ditto	..	ditto	28.0	1.8	36.0	15.4	18.8	2.57	.77	.65	
Ditto	..	Swamp Couch	17.0	.7	42.9	27.8	11.6	.67	.73	1.26	
Ditto	..	Grass	13.7	1.3	42.6	31.4	11.0	.67	.64	.92	
Ditto	..	Couch Grass	12.4	1.3	50.1	26.6	9.6	.73	.59	.55	
13 Feb., 1928	February, 1,517 points	Grass	9.2	1.3	50.6	27.9	11.0	1.54	.61	.65	
Ditto	..	Lucerne	18.8	1.3	44.3	26.3	9.3	2.3	.57	1.06	Sample taken from millet paddock in which millet was practically eaten out. The cattle graze at will in this paddock for part of the day. Lucerne was grassy and the cows were shepherded on it for a short time each day. The herd spends most of its time day and night in this paddock. Soil medium quality red soil changing to a lighter sandy soil.
Ditto	..	Grass	14.6	1.1	44.3	27.0	13.0	2.74	.44	.97	

13 Mar., 1928	March, 161 points ..	Lucerne ..	21.9	1.7	42.3	24.5	9.6	..	..	..	Lucerne and grass, old and rather poor. Herd spends most of the day in this lucerne paddock; red forest soil.
	April, 958 points ..	Grass ..	10.1	1.7	47.3	30.4	10.5	..	..	..	This grass was taken from the night paddock, which is of good red soil, heavily timbered with ironbark.
	May, 179 points ..	ditto ..	10.6	2.3	46.8	28.0	12.1	..	..	..	This sample was taken from a cultivation where the oats and millet had run out.

GATTON (LOCKYER DISTRICT).

12 July, 1927	June, 273 points ..	Grass ..	3.2	0.7	54.4	33.9	7.8	.42	.43	.32	Sample taken from grass paddock where dry stock and a few milch cows are running.
	July, 36 points ..	ditto ..	11.7	1.2	47.0	26.7	13.4	1.79	.62	1.42	Sample taken from a cultivation paddock that has become over-run with weeds and grass during the wet weather of January, and not cultivated since.
15 Aug., 1927	Weather dry and frosty; August, 27 points ..	Roughage ..	6.1	0.9	48.5	32.3	12.2	.94	.39	1.38	Grass from cultivation paddock contained <i>Panicum flavidum</i> , <i>Eragrostis pilosa</i> , <i>Eleusine indica</i> , <i>Lepidium ruderale</i> , and <i>Gnaphalium luteo-album</i> .
Ditto ..	..	Lucerne ..	22.3	2.6	46.8	18.1	10.2	2.63	.52	.88	Sample taken from an old cultivation paddock that has been lying idle during the season and on which stock are running during part of the day and at night. Roughage consists of <i>Eriochloa punctata</i> (dairy grass), <i>Eleusine indica</i> (crowfoot grass), <i>Eragrostis pilosa</i> , <i>Panicum sp.</i> (a native panic grass), <i>Stachys arvensis</i> (stagger weed), and <i>Verbena bonariensis</i> (purple top).
17 Sept., 1927	September, 120 points ..	Green Wheat ..	6.0	1.3	59.8	23.8	9.1	.34	.49	.67	Milch cows allowed in lucerne paddock two hours each day.
20 Oct., 1927	October, 236 points ..	Grass ..	10.5	1.3	48.3	28.2	11.7	.89	.47	.44	Owing to the dry weather this constitutes almost the entire food of the stock.
23 Nov., 1927	November, 410 points ..	Grass ..	4.9	1.9	48.4	31.3	13.5	.39	.44	..	Stock nip the tops off this grass and even nip <i>Sida Retusa</i> . The stock are depending almost entirely on grass for food since recent rains.
Ditto ..	..	White panicum ..	7.4	1.4	57.0	18.2	16.0	.86	.82	.60	Grass very short, owing to dry weather.
19 Dec., 1927	December, 680 points ..	Grass ..	9.8	1.3	46.3	31.9	10.7	.72	.68	.76	White panicum from cultivated area, young and very short, but owing to the shortage of green food had to be fed off. Cows to be moved to Redbank Creek.
23 Jan., 1928	January, 414 points ..	Grass ..	9.1	1.3	47.2	29.7	12.7	.43	.54	.91	Grass mostly young and soft, and at this time was the only food for dairy stock.
Ditto ..	February, 1,378 points ..	White panicum ..	12.8	0.9	40.3	29.5	16.5	.51	.59	1.98	White panicum was about to come into ear when dairy stock were turned in to graze it off.
13 Mar., 1928	March, 86 points; April, 729 points ..	Grass ..	9.5	1.7	45.5	30.6	12.7	1.17	.77	.62	This grass has reached maturity and cattle have had to live on it entirely, as they could not obtain access to cultivation paddocks owing to the flooded state of the creeks.

Table VII.

ANALYSES OF GRASSES AND SHRUBS.

Analysis No.	Description.	ANALYSIS OF WATER-FREE MATERIAL.								Remarks.
		Protein.	Carbo- hydrate.	Fat.	Fibre.	Ash.	Lime (CaO.)	Phosphoric Acid (P ₂ O ₅ .)	Chlorine (Cl ₂ .)	
8	Mitchell Grass	6.3	44.6	2.6	31.8	14.7	.64	.42	.42	Green.
9	Mitchell Grass	5.5	50.6	1.9	31.3	10.7	.44	.38	.30	Semi-green.
10	Mitchell Grass	5.4	52.4	1.6	30.1	10.5	.47	.31	.31	Drier stage.
11	Mixed (Button Grass, <i>Eleusine cegyptiaca</i> ; Flinders Grass, <i>Isielpma Mitchellii</i>)	6.4	50.2	0.8	34.4	8.2	.89	.22	.63	Leached by rain.
23	Vinewood or Supple-jack (<i>Ventilago Viminalis</i>)	13.5	63.0	2.0	16.1	5.4	2.69	.24	.11	Relished by stock. One of the best.
24	Bauhinia (<i>Bauhinia carronii</i>)	11.0	65.2	1.6	15.0	7.2	4.07	.19	.05	Old leaves fairly well liked by stock.
25	Beefwood (<i>Grevillea striata</i>)	6.3	51.6	1.4	38.2	3.5	.52	.09	.37	Eaten by stock with fair relish.
26	Emu-apple (<i>Oreocarya acidula</i>)	16.2	55.2	1.0	15.6	12.0	3.78	.23	1.30	Excellent. Supply limited.
27	Gidgee, narrow-leaved (<i>Acacia Cambayei</i>)	15.3	50.9	3.6	19.6	10.6	3.27	.17	.46	Liable to form fibre-balls after prolonged feeding.
28	Gidgee, broad-leaved (<i>Acacia Cambayei</i>)	16.1	52.3	2.6	17.7	11.3	4.68	.24	.89	Rarely touched by stock.
29	Whitewood (<i>Atalaya hemiglauca</i>)	15.8	55.2	3.3	18.7	7.0	2.08	.28	.44	Excellent shrub. Very palatable. Regenerates quickly after cutting.
30	Cork-wood (<i>Acacia Sutherlandii</i>)	15.1	46.0	6.1	19.2	13.6	3.35	.20	.50	Good palatability.
31	Rosewood (<i>Heterodendron olecefolium</i>)	14.6	52.8	3.5	22.5	6.6	2.21	.22	.30	Small distribution. Excellent shrub.
32	Turkey Bush (<i>Cassia desolata</i>)	14.3	66.5	1.2	9.5	8.5	3.64	.18	.58	Small edible shrub, apparently much relished.
33	Young Bauhinia Leaves (<i>Bauhinia Carronii</i>)	16.5	64.5	1.5	12.1	5.4	1.23	.41	.06	Represents annual crop of new leaves June to September.
34	Mimosa Leaves (<i>Acacia farnesiana</i>)	19.3	42.0	6.7	22.1	9.9	3.51	.28	.40	Much relished prickly bush, widely distributed.
103	Mitchell Grass No. 1	12.4	45.6	1.5	30.5	10.0	.79	.41	.71	Green; just in the seeding stage.
104	Mitchell Grass No. 2	7.7	49.7	0.9	33.3	8.4	.60	.33	.53	Green, but more mature than No. 1.
149	Boree (<i>Acacia homolophylla</i>)	9.4	56.8	2.0	24.0	7.8	2.82	.18	.68	In reverse order of palatability.
150	Dead Finish (<i>Albizia basaltica</i>)	15.0	52.6	4.9	19.7	7.8	2.77	.23	.36	ditto
151	Leopard Wood (<i>Flindersia maculosa</i>)	14.1	60.1	4.7	14.1	7.0	1.56	.20	.56	ditto.
228	Mitchell Grass (curly)	5.2	48.1	1.1	34.0	11.6	.50	.53	.40	Seeding stage.
229	Blue Grass	3.4	46.5	1.3	39.5	9.3	.39	.36	.57	Excellent quality.
230	Mitchell Grass (hoop)	6.1	45.9	1.4	37.5	9.1	.51	.36	.83	Little flag present.
231	Blue Grass	3.0	46.8	1.3	37.0	11.9	.38	.47	.27	Later stage than Analysis 229.
232	Blue Grass	2.5	47.8	1.2	39.0	9.5	.45	.27	.19	Later stage than Analysis 231.
233	Shot Grass (<i>Panicum globoideum</i>)	5.3	41.2	1.4	39.5	12.6	.49	.54	1.13	In seed.
280	Mulga (<i>Acacia aneura</i>)	11.1	55.9	3.2	25.4	4.4	1.29	.14	.35	Young.
281	Mulga (<i>Acacia aneura</i>)	10.2	55.7	3.4	25.8	4.9	2.00	.15	.31	Later stage.
1531	Bush Hay (from North Queensland)	9.1	41.2	1.8	27.9	20.0	1.31	.40	.63	A good average sample, collected by N. A. R. Pollock.
1532	Legume (<i>Psoralea cinerea</i>)	24.4	44.9	8.2	11.2	11.3	2.6	.56	.17	Submitted by Mr. Pollock.
2815	Native Lucerne (<i>Stylosanthes mucronata</i>)	14.6	49.7	2.5	26.3	6.9	..	..	..	ditto.
2816	Bean (<i>Phaseolus mungi</i>)	13.7	46.6	2.3	27.2	10.2	..	..	..	ditto.
2853	Legume (<i>Rhynchosia australis</i> var. <i>minima</i>)	14.8	46.2	3.7	28.7	6.6	..	..	..	ditto.
2983	Legume (<i>Rhynchosia australis</i>)	10.0	53.5	1.8	27.5	7.2	..	..	..	ditto.
2984	Legume (<i>Glycine</i> sp.)	10.0	44.0	1.2	36.9	7.9	..	..	..	ditto.

Table VIII.

ANALYSES OF MEALS FROM VARIOUS SEEDS AND BY-PRODUCTS.

Name.	Moisture.	Crude Protein.	Crude Fat.	Carbohydrate.	Crude Fibre.	Crude Ash.	Remarks.
	%	%	%	%	%	%	
Sorghum var. Imphee	12.7	9.9	3.2	69.9	2.7	1.6	
Sorghum var. Saccaline	12.6	8.8	3.0	70.9	2.6	2.1	
Sorghum var. with black glumes (Amber Cane)	12.9	8.4	2.8	69.5	4.1	2.3	
<i>Setaria italica</i> (Foxtail Millet)	11.7	12.8	4.6	58.3	9.5	3.1	
Japanese Millet	11.2	12.9	4.8	58.4	9.1	3.6	
Oats, Algerian	11.4	8.8	5.8	59.6	10.5	3.9	
Oats, Tartarian	11.3	8.4	6.4	61.3	9.9	2.7	
Barley, Cape	12.9	8.8	1.6	69.0	5.6	2.1	
Barley, Malting	12.1	9.7	1.8	70.1	4.3	2.0	
Barley, Skinless	12.2	12.5	1.4	69.6	2.6	1.7	
Maize, Average	11.8	10.0	4.6	68.7	3.4	1.5	
Rye, Victorian	12.1	11.0	1.3	71.7	2.2	1.7	
Pea (Blue), Tasmanian	14.2	19.7	1.0	58.5	4.3	2.3	
Pea (Grey), Tasmanian	12.3	20.5	1.0	60.1	4.2	1.9	
Horse Beans, Tasmanian	12.2	23.7	0.9	55.4	5.7	2.1	
Soya Bean (mammoth yellow), imported	8.7	41.4	15.6	21.7	8.5	4.1	
Soya Bean (Laredo), imported	9.0	37.5	15.3	21.3	11.9	5.0	
Soya Bean Meal (commercial)	8.2	45.9	5.2	28.2	6.1	6.4	
Peanuts (kernels)	4.5	25.0	44.5	19.2	4.7	2.1	From unfertilised plots, 1, 6, and 10.
Peanuts (shells)	8.0	5.3	0.1	16.2	66.7	3.7	ditto.
Peanuts (kernels)	4.9	27.6	45.9	14.3	5.0	2.3	From fertilised plots, 2, 3, 4, 7, 8, and 9.
Peanuts (shells)	7.4	5.1	0.1	18.9	65.1	3.4	ditto.
Broom Millet (commercial)	10.8	11.2	3.6	64.9	7.3	2.2	
Cottonseed Meal ("Baccal")	8.9	36.9	6.4	27.2	12.7	7.9	
Milling Wheat (average, 1927)	11.8	10.7	1.3	72.5	2.3	1.4	
Bran (average, 1927)	10.8	14.9	2.5	57.3	9.6	4.9	
Pollard (average, 1927)	10.5	14.7	3.3	62.3	6.0	3.2	
Milling Wheat (average, 1928)	11.4	14.0	1.5	68.6	2.8	1.7	
Bran (average, 1928)	10.3	16.8	2.8	54.3	10.9	4.9	
Pollard (average, 1928)	10.1	16.0	3.7	60.1	6.5	3.6	
Wheat (Duke of York)	12.8	14.8	1.3	67.5	2.0	1.6	
Bran (Duke of York)	14.6	17.3	2.2	51.6	9.0	5.3	Our own milling.
Pollard (Duke of York)	13.6	18.1	3.2	58.3	3.7	3.1	ditto.

Table IX.

HYDROCYANIC ACID IN PLANTS.

Date Received.	Plant.	Reaction.	Grains per Pound in Green Plant.	Remarks.
18 May, 1928 ..	<i>Andrachne Decaisnei</i>	+	..	Townsville
23 May, 1928 ..	<i>Eremophila</i> sp.	-	..	Quilpie
Ditto ..	<i>Eremophila Latrobei</i>	-	..	ditto
Ditto ..	<i>Eremophila polyclada</i>	-	..	ditto
Ditto ..	<i>Eremophila maculata</i>	+++	..	ditto
Ditto ..	<i>Eremophila bignoniaceflora</i>	-	..	ditto
Ditto ..	<i>Euphorbia Drummondii</i>	*-	..	ditto
Ditto ..	<i>Chenopodium carinatum</i>	++	..	ditto
Ditto ..	<i>Chenopodium auricomum</i>	-	..	ditto
Ditto ..	<i>Dysphania plantaginella</i>	+	..	ditto
Ditto ..	<i>Heterodendron olecefolium</i>	++	..	ditto
Ditto ..	<i>Myoporum acuminatum</i> (Ellangowan Poison Bush)	-	..	ditto
Ditto ..	<i>Chloris</i> sp.	-	..	ditto
Ditto ..	<i>Threlkeldia diffusa</i>	-	..	ditto
Ditto ..	<i>Sarcostemma australe</i>	-	..	ditto
27 June, 1928 ..	<i>Indigofera australis</i>	*-	..	Palmwoods
Ditto ..	<i>Polygonum hydropiper</i>	-	..	ditto
Ditto ..	<i>Polygonum strigosum</i>	-	..	ditto
14 December, 1927..	Sudan Grass A	+	0.145	Runcorn about
Ditto ..	White Panicum	-	..	Three weeks old
Ditto ..	Sudan Grass C	+	0.116	ditto
Ditto ..	White Panicum	-	..	ditto
Ditto ..	Sudan Grass E	+	0.072	ditto
24 January, 1928 ..	Sudan Grass A	-	..	Runcorn about
Ditto ..	Sudan Grass C	-	..	4 ft. 6 in. high
Ditto ..	Sudan Grass E	-	..	ditto
14 November, 1927	Sudan Grass	+	..	Koondai

* Reported to contain HCN by others.

+ Traces and small amounts of HCN.

++ Fair amount of HCN.

+++ Large amount of HCN.

- Negative test.

Table X.

ANALYSES OF SHEEP DIPPING FLUIDS PREPARED FROM COMMERCIAL DIP CONCENTRATES.

Name.	Dilution Recommended by Maker.	ANALYSES OF DILUTED FLUIDS MADE UP IN ACCORDANCE TO RECOMMENDED DILUTION.										Wetting Power at Recommended Dilution.	Remarks.			
		Total Solids, %	Arsenious Oxide, As ₂ O ₃ , %	Alkali, Na ₂ O, %	Phenol Homologues, %	Fatty Acids, &c., %	Sulphur, %	Total Solids, Lb. per 400 gallons.	Arsenious Oxide, As ₂ O ₃ , Lb. per 400 gallons.	Alkali, Na ₂ O, Lb. per 400 gallons.	Phenol Homologues, Lb. per 400 gallons.			Fatty Acids, &c., Lb. per 400 gallons.	Sulphur, Lb. per 400 gallons.	
Cooper's Sheep Dipping Powder	1 ÷ 100	.92	.206	.044	Nil	Nil	.67	36.6	8.2	1.8	Nil	Nil	Nil	26.6	123	
Crutchelene (Average)	1 ÷ 100	.79	.206	.079	Nil	.50	Nil	31.4	8.2	3.2	Nil	20.0	Nil	277		
Edwards' Sheep Dipping Powder	1 ÷ 100	.97	.235	.027	Nil	Nil	.71	38.8	9.4	1.1	Nil	Nil	28.3	112		
Kiltic Sheep Dip (bar form)	1 ÷ 200	.40	.205	.067	Nil	.107	Nil	16.0	8.2	2.7	Nil	4.3	Nil	210		Tarry matter, .019 per cent. equivalent to .8 lb. per 400 gallons.
Little's Powder Sheep Dip	1 ÷ 100	.91	.248	.044	Nil	Nil	.62	36.5	9.9	1.8	Nil	Nil	24.8	126		
Quibell's Sheep Dip Powder	1 ÷ 89	1.125	.25	.062	Nil	..	.812	45.0	10.0	2.5	Nil	..	32.5	..		
Vallo Powder Sheep Dip	1 ÷ 100	.95	.206	.035	Nil	Nil	.71	38.0	8.2	1.4	Nil	Nil	28.4	113		
ANALYSES OF CATTLE DIPPING FLUIDS PREPARED FROM COMMERCIAL DIP CONCENTRATES.																
Australian Liquid Dip	1 ÷ 160	.39	.188	.093	.053	.061	Nil	15.6	7.5	3.7	2.1	2.4	Nil	750		
Catillac (Paste)	1 ÷ 175	.41	.215	.057	.081	.056	Nil	16.4	8.6	2.3	3.2	2.2	Nil	190		
Cooper's Improved Cattle Dip	1 ÷ 125	.44	.207	.106	Nil	.125	Nil	17.6	8.3	4.2	Nil	5.0	Nil	375		Alkali chiefly K ₂ O.
Kiltic Cattle Dip (bar form)	1 ÷ 200	.40	.217	.071	Nil	.092	Nil	15.8	8.7	2.8	Nil	3.7	Nil	230		Stockholm tar .015 per cent., equivalent to .6 lb. per 400 gallons.
Kiltic Liquid Cattle Dip	1 ÷ 160	.34	.205	.099	.054	.018	Nil	13.5	8.2	4.0	2.2	.7	Nil	400		
Non-Ox Liquid Cattle Dip	1 ÷ 160	..	.172	.093	.050	..	Nil	..	6.9	3.7	2.0	..	Nil	500		
Queensland Cattle Dip	1 ÷ 160	.41	.199	.112	.064	.022	Nil	16.4	8.0	4.5	2.6	.9	Nil	933		
Royal Cattle Dip	1 ÷ 160	.44	.209	.121	.098	.014	Nil	17.6	8.4	4.8	3.9	.6	Nil	983		
Thomas's Carbolised Cattle Wash (Paste)	1 ÷ 172	.46	.192	.055	.067	.144	Nil	18.3	7.7	2.2	2.7	5.8	Nil	180		
Vallo Brand Powder Cattle Dip	1 ÷ 200	.45	.214	.138	Nil	.096	Nil	17.9	8.6	5.5	Nil	3.8	Nil	184		
Vallo Brand Fluid Cattle Dip	1 ÷ 170	.36	.225	.082	Nil	.084	Nil	14.4	9.0	3.3	Nil	3.4	Nil	377		

Table XI.

SULPHURS.

Name.	Moisture.	Ash.	Acidity as H_2SO_4 .	Arsenic.	Sulphur.	Chancel No.	Remarks.
	%	%	%	%	%		
Sulphur, Sublimed Flowers of	0.10	0.01	.20	Nil	99.6	65	
Sulphur, Sublimed Flowers of	0.20	0.06	.25	Nil	99.5	60	
Sulphur (Sub)	0.01	0.06	Nil	Nil	99.9	63	
Sulphur, Sublimed Flowers of	0.32	0.09	Nil	Nil	99.6	58	
Sulphur	0.05	0.07	Nil	Nil	99.9	47	
Sulphur, Powdered (Vallo)	0.03	0.34	Nil	Nil	99.6	51	
Sulphur, Powdered (Australian)	0.05	0.06	Nil	Nil	99.9	42	
Sulphur	0.04	0.27	Nil	Nil	99.7	34	
Sulphur, Sublimed (Neptune)	2.03	0.01	Nil	Nil	98.0	44	
Sulphur, Sicilian (Neptune)	0.06	0.55	Nil	Nil	99.4	36	
Sulphur, Atomic	0.90	4.10	Nil	Nil	95.0	49	Ash gives Al and Ca, lumpy material.

COPPER DUSTS.

Name.	Moisture.	TOTAL.		CALCULATED AS		Through 200-mesh Sieve.	Remarks.
		Carbon Dioxide (CO_2).	Copper, Cu.	Copper Carbonate, $CuCO_3$.	Copper Hydrate, $Cu(OH)_2$.		
	%	%	%	%	%	%	
Antibunt (Vallo)	4.0	17.5	53.6	49.2	43.6	96.8	*Withdrawn.
Antibunt .. ..	..	20.6	46.5	57.7	25.9	98.8	*Withdrawn.
Antibunt	2.9	21.0	52.7	58.9	22.7	97.0	Accepted.
Bunticide .. ..	..	17.4	41.0	48.9	24.3	97.5	*
Copper Carbonate	9.0	17.6	52.4	49.5	40.8	..	*
Copper Carbonate (Basic) .. ..	..	3.1	53.7	8.7	75.6	98.0	Accepted.
Copper Carbonate	3.4	21.9	47.0	61.5	9.8	97.2	*
Copper Carbonate	3.0	19.4	48.2	54.5	20.1	98.8	*
Copper Carbonate	2.2	11.0	50.9	30.9	47.6	98.7	*

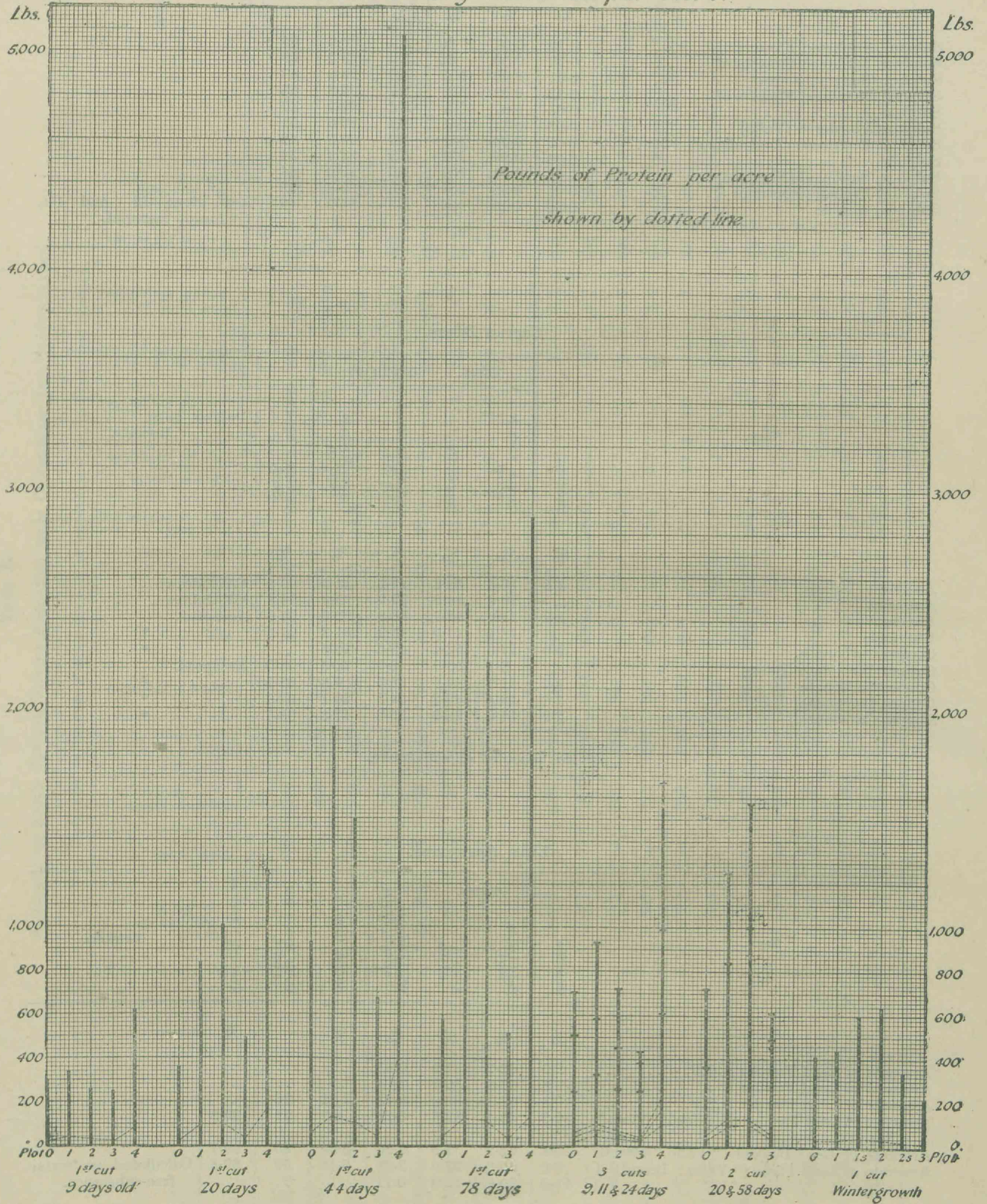
* Not accepted or withdrawn.

LEAD ARSENATES.

Name.	Moisture.	TOTAL.		Water Soluble Arsenic, As_2O_5 .	Specific Gravity.	Cubic Inches per Pound.	Through 100-mesh Sieve.	Remarks.
		Lead Oxide, PbO .	Arsenic, As_2O_5 .					
	%	%	%	%	%		%	
Arsenate of Lead Powder A.C.F.	2.0	62.7	31.9	0.35	..	..	..
Arsenate of Lead Powder	0.8	63.8	30.7	0.14	..	..	..
Arsenate of Lead Powder A.C.F.	0.8	63.3	32.0	0.28	5.04	76	..	
Arsenate of Lead Powder (Bickford's "Aero" Brand)	0.3	63.4	32.5	0.23	4.7	71	99.8	
Arsenate of Lead Powder ("Vallo" Brand)	0.4	62.2	31.5	0.20	5.25	85	99.7	
Arsenate of Lead Paste ("Vallo" Brand) {	0.0	63.6	33.0	0.23	5.48	54	99.8	Calculated on water-free substance.
	51.6	30.8	16.0	0.11	..	..	..
Arsenate of Lead (Berger's "Mercury" Brand) {	0.0	62.3	32.3	0.30	5.83	55	99.2	Calculated on water-free substance.
	48.0	32.4	16.8	0.16	..	..	..
Arsenate of Lead Powder "Orchard" Brand	0.4	64.0	31.2	0.20	5.62	62	99.5	
Arsenate of Lead Powder (Berger's "Mercury" Brand)	0.9	62.7	32.2	0.30	4.73	94	99.7	
Arsenate of Lead Powder	0.6	62.0	31.8	0.30	4.72	66	99.5	

Table XII.

Pounds of Dry Material per Acre.



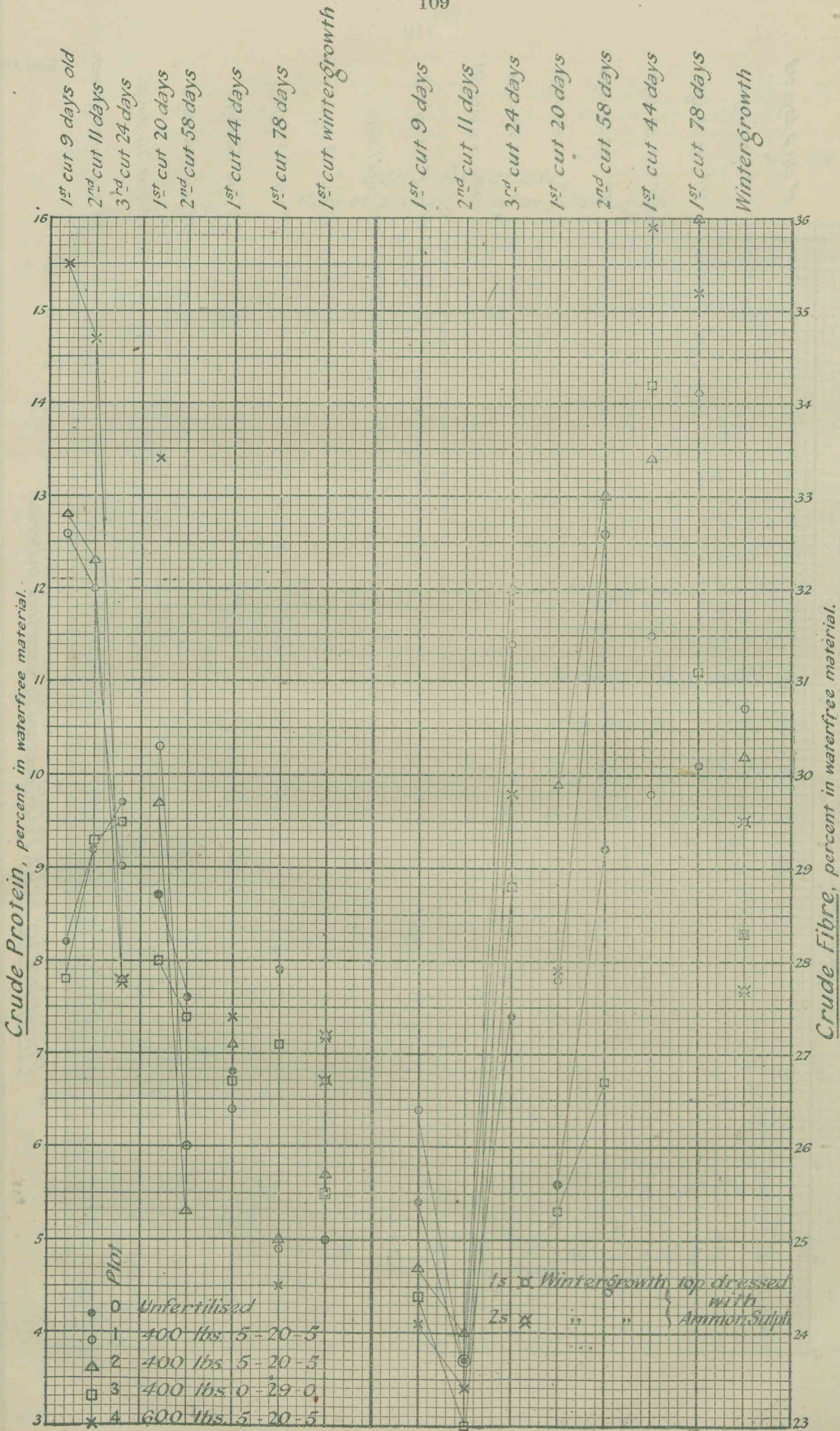


Table XIII

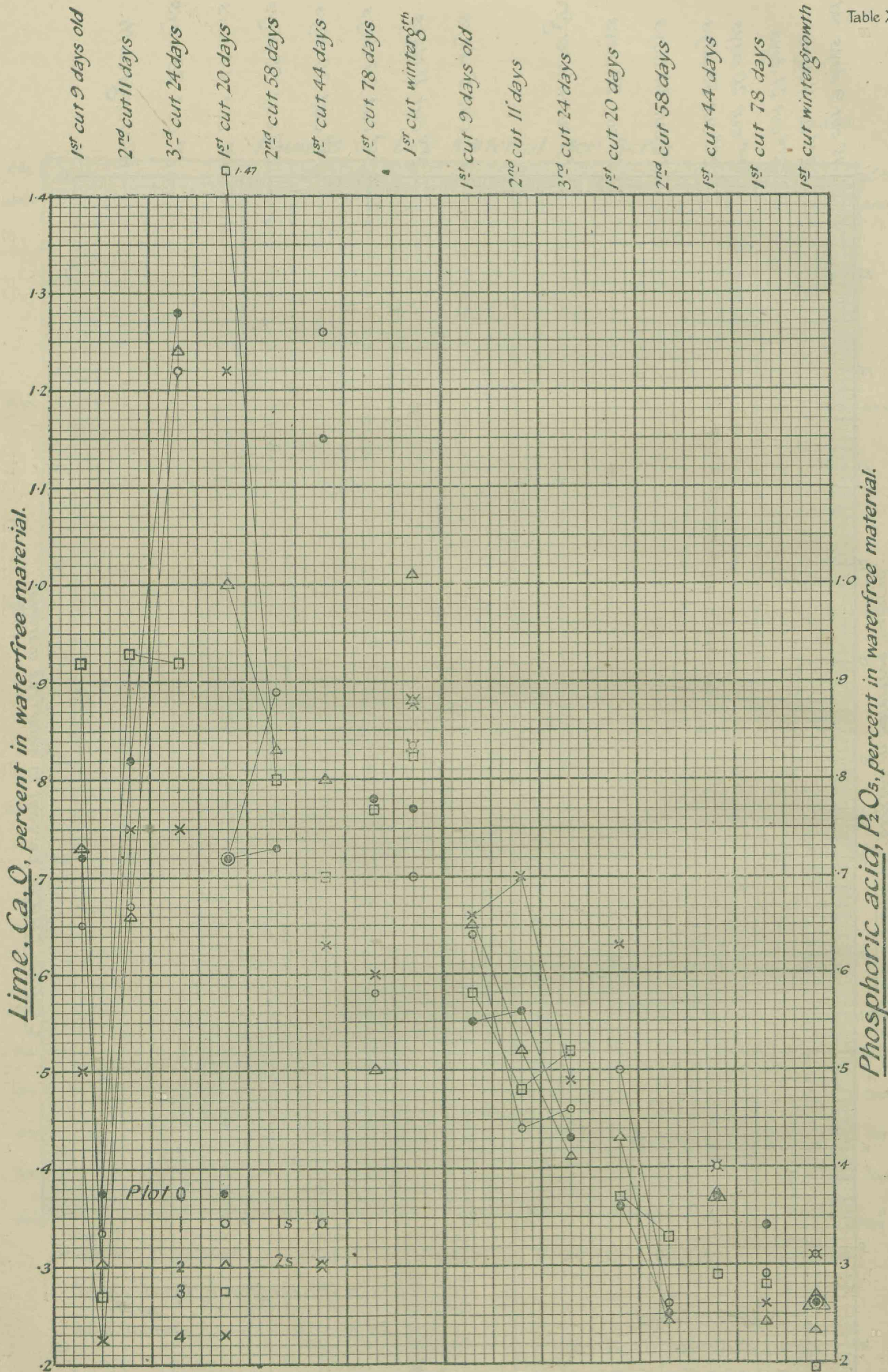
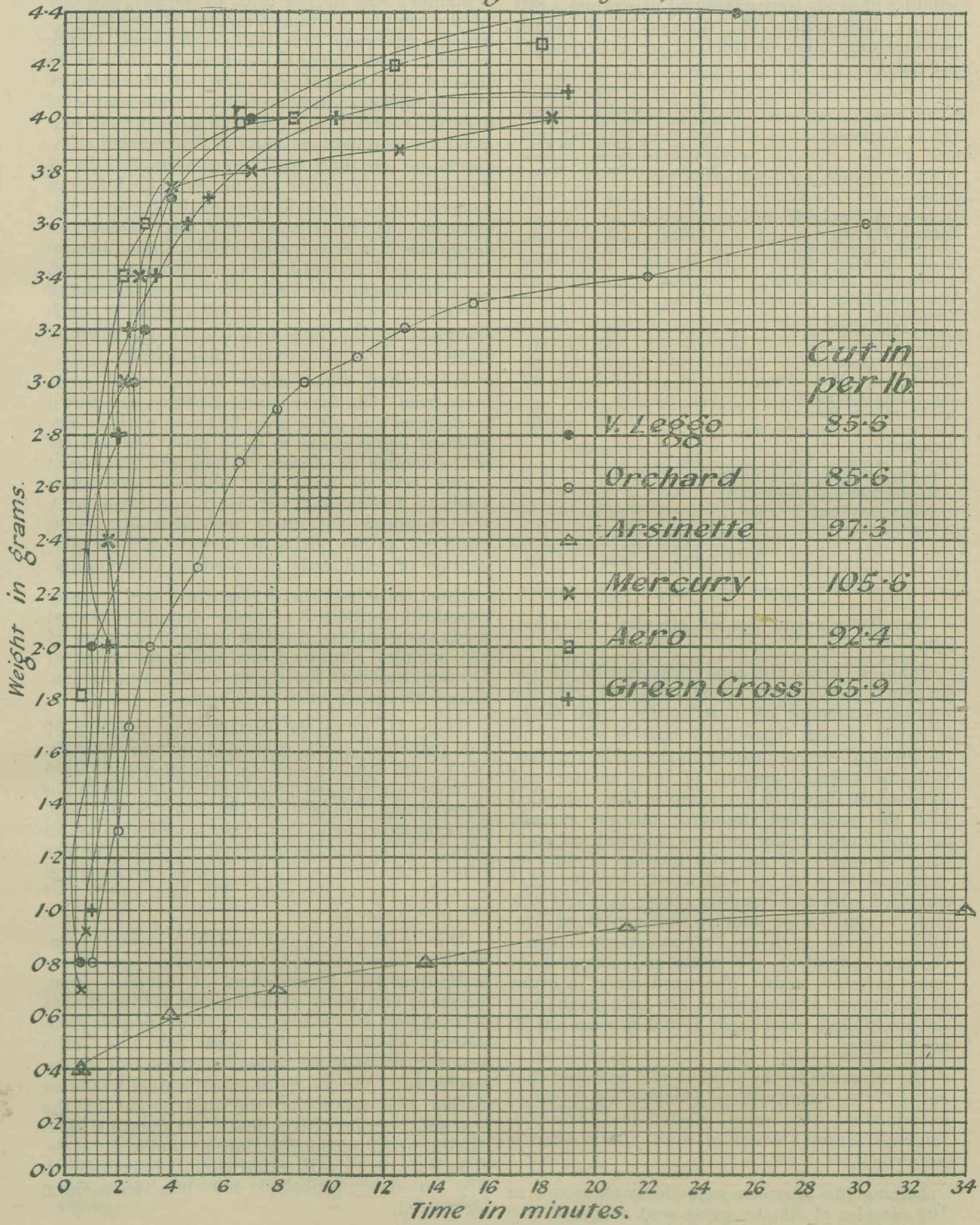


Table XIV.

Lead Arsenate
Rate of settling in Watery Suspension.



REPORT OF SEEDS, STOCK FOODS, FERTILISERS, AND PEST DESTROYERS INVESTIGATION BRANCH.

SEEDS, 1927-1928.

During the year ended 30th June 2,846 samples of seeds were examined as against 1,809 during 1926-1927. The districts from which samples were taken or received are as hereunder set out:—

Districts.	Official Samples Taken by Officers of this Branch.	Samples Received from Vendors for Examination.	Samples Sent in by Users for Free Examination.
Brisbane	926	88	6
Beaudesert-Beenleigh	14	..	..
Ipswich-Boonah	25	1	1
Lowood-Toogoolawah .. .. .	..	2	..
Rosewood-Forest Hill	25	1	..
Toowoomba-Pittsworth	273	51	3
Warwick-Clifton	32	3	..
Stanthorpe .. .. .	..	..	..
Oakey-Mitchell	44	14	..
Caboolture-Gympie	56	23	1
Kingaroy Line	79	44	5
Maryborough-Mundubbera	61	18	1
Bundaberg-Gladstone .. .. .	..	..	..
Rockhampton-Mackay .. .. .	..	3	2
Districts not elsewhere included	..	..	2
Official samples taken at Brisbane by Officers of this Branch for purposes of the Commerce (Trade Descriptions) Act	792	..	..
	2,327	248	22

Miscellaneous samples not elsewhere included, 249.

Table I. gives the analytical purity of the principal agricultural seeds examined, also the maximum amount of inert matter, weed seeds, or other foreign ingredients that is allowed in the kinds of seed appearing in the table, together with the average amount of inert matter and weed seeds found in the samples that complied with the prescribed standard, and the average amount found in the samples that did not comply. In each case the total number of samples examined is given as well as the number that complied with the standard, those that did not, and the number of samples that contained prohibited seeds, such as *Datura* (thorn apple), *Cuscuta* (dodder), or contained diseased or insect-infested seeds. The weed seeds in order of frequency of occurrence are also given, and the prohibited weed seeds found are set out in heavy type.

On reference to the table it will be noted that out of the twenty-three samples of cowpeas examined six were insect-infested, and three contained a larger amount of inert matter than is prescribed.

During the previous year thirty-three out of 103 samples of Rhodes grass seed averaged 16.8 per cent. of inert matter and 2.1 per cent. of weed seeds. In the year under review, out of 114 samples examined twenty-five were not up to the prescribed standard of analytical purity, and averaged 13.9 per cent. of inert matter and 2.8 per cent. of weed seeds.

Out of sixty-four samples of lucerne seed only forty-seven were up to the prescribed standard of purity. The average weed seed content of the remainder was 1.9 per cent. by weight, and one of the samples contained dodder (*Cuscuta* sp.). During the year 1926-1927, 6 per cent. of the lucerne seed samples contained dodder as against less than 1 per cent. of the samples during the year under review. One sample of lucerne, representing seed sold by a farmer to a produce merchant as suitable for sowing, contained no less than 79,092 weed seeds in 1 lb. of the sample. Another sample contained over 6 per cent. by weight of weed seeds, the approximate number in 1 lb. being 30,460. These two instances give some idea of the impurities in lucerne seed forwarded to produce merchants. A merchant equipped with efficient seed-cleaning machinery would not be interested in such samples, as the loss and trouble of cleaning would not be a commercial undertaking.

It is often asked where do the weed seeds come from. The fact remains that they are grown by farmers and often sown by them, without any attempt being made to have them removed by seed-cleaning machinery. Cases are on record where farmers have sent lucerne and other seeds to Toowoomba merchants and taken back the cleanings for their own sowing. Such cleanings would obviously contain a large percentage of weed seeds, and seeds of poor quality.

Practically half the Sudan grass seed samples examined contained a larger amount of weed seeds than is allowed. Just under 6 per cent. of the samples contained the poisonous seeds of *Datura*; last year 8 per cent. of the samples contained this prohibited weed seed.

Table II. gives the germinating capacity of the principal seeds examined during 1927-28. With each kind of seed the highest germination recorded during the year is given, the minimum germination required by the Pure Seeds Acts, the average germination of the samples up to the standard, the average germination of the samples below standard, and the lowest germination recorded during the year. The total number of samples is also given.

During March, April, and May several complaints were received from market gardeners regarding the germination of carrot, onion, parsnip, and peas, with the result that it was necessary to take a large number of samples from several seedsmen. To work out this large number of samples, other matters had to be neglected. As soon as the results were available action was taken for the destruction of the vegetable seeds with a lower germination than that allowed by the Regulations under the Acts. The work in this direction is not yet completed. Up to date probably 400 lots have been destroyed.

Oversea or Imported Seeds.

Table III. gives the germinating capacity of the principal seeds imported from overseas during 1927-28, also the country from which the goods were imported.

The Regulations under the Commerce (Trade Descriptions) Act, 1905, require the trade description to state the seeds' condition as to soundness, cleanness, and newness, "soundness" being described as freedom from disease and from damage or decay, "cleanness" as freedom from seeds other than those named in the trade description and from other foreign substances such as chaff, stalks, soil, &c., and "newness" that the seed has been gathered during the immediately preceding harvest time in the country or place named in the trade description.

In the absence of definite standards other than that for lucerne, the minimum percentage of germination required by the Queensland Seeds Acts has been the basis of examination.

On reference to the table it will be noted that a considerable number of samples examined were not up to the requirements of the Regulations under the Pure Seeds Acts. The necessary action was therefore taken to prevent the goods being offered for sale within this State, and in most cases, at the importers' request, the seeds have been destroyed.

Each year shows an increase in the number of small consignments. Taking them on the whole, they are not up to purity and germination of bulk lots. Owing to the poor quality of many small lots, a more rigorous examination of quantities under 28 lb. will in future be made. This will double the work with seeds from overseas.

Seeds Suitable for Market Growers.

In previous reports attention has been directed to the necessity of buying only strains of vegetable seeds suitable for Queensland climatic conditions and general market requirements. New seeds of beet, cabbage, cauliflower, cucumber, melon, and turnip should have a high germination when imported, and if stored in a cool, dry place will usually retain their germinative faculty over one year. Market gardeners would therefore be well advised to obtain their requirements of such seeds and put in a row alongside their main crop. If the seed proves to be of the strain best suited for their market requirements, they have enough on hand for the next year's main crop. Should, however, it prove unsatisfactory, their loss is little more than the cost of the seed.

Seeds Examined Free of Cost to Buyers.

It is to be regretted that both farmers and market gardeners do not avail themselves of the facilities for getting seeds tested free of charge. During the year under review 22 such samples were received, and in nearly every instance they were sent in because the seed had failed to grow. It is obvious that samples of the goods bought for the buyers' own sowing should be sent for examination as soon as purchased. If this were done many complaints in particular regarding Rhodes grass, paspalum, and other farm seeds bought by farmers from farmers would never occur.

Loss of Germination.

Many samples of seeds recently examined represented goods imported from overseas during 1927, and found when imported to be just up to the minimum requirement of the Seeds Act.

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Such seeds when submitted to the hot, humid conditions of a Queensland summer rapidly deteriorate. It is our usual practice to keep samples for at least six months. Owing to a rush of work, we recently had samples dating back to January, 1927. From these it was possible to find samples representing goods now offered for sale by retail seedsmen, and found to be far below the prescribed standard. On the old samples being retested a great difference was found between them, and the bulks from which they were originally drawn. A careful investigation of these differences was made, with the result that I am of opinion that the excessive heat and humidity of the average nurseryman's and florist's shop was the primary cause of the loss. Many bags of beet, mangel, carrot, and other seeds were standing on a damp flooring, shut off from fresh air, sunshine, and drying winds. In many cases the bags were mouldy, and the seeds at the bottom of the containers absolutely useless. The difference in germination between samples kept in the laboratory sample room, and those recently obtained from retail seedsmen in many instances amounted to over 25 per cent. Seeds must be kept dry, and should, under Queensland conditions, not only be sifted or machine-cleaned at least twice in the year, but a germination test made of the cleaned seed.

Arrangements have been made for a representative of each of the leading agricultural seed merchants to take a short course of seed testing at the laboratory. This will no doubt improve their present methods. The firms to whom the previous paragraph applies would also be well advised to attend and get a better idea of the materials in which they deal.

STOCK FOODS, 1927-28.

The 381 samples of stock foods examined for purposes of the Stock Foods Act were derived from the following sources:—

Districts.	Samples Received under Section 3 of Stock Foods Act.	Samples Taken by Officers of this Branch.	Samples Sent in by Sellers.	Samples Received from Users.
Brisbane	100	85	20	3
Beaudesert-Beenleigh .. .. .	..	..	..	..
Ipswich-Boonah	1	2	..	..
Lowood-Toogoolawah .. .. .	..	..	..	..
Toowoomba-Pittsworth	4	7	..	..
Warwick	4	15	..	..
Stanthorpe	2	..	..	..
Oakey-Mitchell .. .. .	..	3	..	..
Caboolture-Gympie .. .. .	..	6	..	..
Kingaroy Line .. .. .	..	25	..	..
Maryborough	3	2	..	..
Bundaberg-Gladstone .. .. .	..	..	..	..
Rockhampton-Mackay	14	..	2	..
Townsville	12	..	1	..
Cairns	4	..	..	..
	144	145	23	3

Miscellaneous samples not elsewhere included, 66.

Tables V. and VI. give particulars of the chemical analyses of bran and pollard, also the foreign ingredients in the samples examined. It is of interest to note that, in the case of both bran and pollard, the average percentage of crude

protein exceeds that of the previous year. Dividing the samples into material the produce of Queensland mills against that purchased by various dealers from the Southern States, the Queensland millers appear to be putting a better by-product on the market. The matter is best explained by the following small table:—

	Bran.		Pollard.	
	Queensland Mills.	Southern Mills.	Queensland Mills.	Southern Mills.
Crude protein ..	17.2	16.3	16.7	15.1
Crude fat ..	2.8	2.8	3.7	3.7
Crude fibre ..	10.6	11.2	6.2	7.0

Buyers frequently ask as to the relative value of wheatmeal and flour as compared with the wheat by-products—bran and pollard.

During the year fifteen samples of commercial wheatmeals were analysed, with the following average results:—

	Wheatmeal.	Household Flour.
Crude protein	14.1	13.3
Crude fat	1.8	1.4
Crude fibre	2.7	..

From the above it will be seen that both bran and pollard have a higher protein and fat content than wheatmeal and household flour.

MISCELLANEOUS STOCK FOODS.

Table VII gives particulars of the miscellaneous stock foods examined during the year. It should be noted that the composition of several includes a percentage of salt, bonemeal, charcoal, lime, sulphur, Epsom salts, &c., which materials can be accepted as an addition to ordinary mixed, concentrated, or prepared stock foods.

In the case of stock foods containing salt, the Regulations require the seller to declare on the label attached to the food and on the invoice given to the buyer the percentage of such added salt when in quantities greater than one-half of 1 per cent.

In the case of stock licks or mixed mineral feeds recommended as useful to supply any mineral constituent lacking in the feed, it would be to the buyer's advantage if the seller declared on a printed label attached to such preparation, not only the maximum amount of salt that the preparation contained but the minimum of lime, sulphur, iron, iodine, magnesia, &c., and in the case of bonemeal or rock phosphate the percentage of phosphoric acid (P_2O_5). Bonemeal used in such preparations should be made only from bones obtained from animals slaughtered for human consumption. In all cases bones should be subjected to an efficient process of sterilisation, the resulting product being finely ground.

The growing demand for mixed stock foods has induced one of the large firms of Brisbane merchants to reconstruct their plant with the view to the installation of machinery specially designed for the purpose of making uniform mixtures. In any efficient plant the first

essential is the command of bulks of more than average quality, secondly suitable machinery under the direction of a competent staff.

Hay, Chaff, Grain.

During the early part of the year many complaints were received from buyers in different parts of the State regarding the quality of large consignments forwarded to drought areas. Arising out of these complaints it was found necessary to take a series of samples representing material sold at Roma street, and at other centres. The samples were examined, and in many cases found to justify the buyers' complaint.

Briefly, the findings were—

- (1) Excessive weight of battens on bales of hay.
- (2) Excessive moisture in both hay and chaff.
- (3) Poisonous weed seeds, such as *Datura* sp. (thorn apple), *Ricinus communis* (castor oil plant), and in some cases leaves of prickly-pear that had been killed by some arsenical solution.
- (4) An excessive amount of soil, Bathurst burr, Noogoora burr, stagger weed, khaki weed, and other foreign ingredients.
- (5) Bags of mixed chaff and straw chaff, not marked in the prescribed form with the letters M.S. or S.C.

In some cases it was found that material invoiced as hay, principally consisted of straw, of little nutritive value. Some samples of so-called lucerne chaff consisted principally of weeds, which evidently had been chaffed to hide their identity. The serious attention of producers and dealers was directed to the matter, and a leaflet printed for distribution by produce dealers to their suppliers.

Owing to our many duties in other directions, it was impossible to make a thorough microscopical examination of many of the mixed stock foods. It is, however, known that in some cases the mixed, concentrated, and prepared stock foods do not contain the exact proportions set out in the statutory declarations. This paragraph may therefore be considered as a warning that more care and exactness is required in the assembling of the various ingredients.

Maize.

For the information and future guidance of merchants handling maize in large quantities, a series of samples representing new crop Kingaroy maize were recently examined, with the results set out in the following small table.

As some of the samples were soft and out of condition when received, another moisture and volume weight determination was made after the maize had been stored at Brisbane for a month. The results are given at the bottom of the table, from which it will be noted that loss of moisture is usually associated with a slight increase in volume weight.

Assuming the actual volume weight of an Imperial bushel of maize to be 56 lb., the litre weight in grammes would be 700; in other words, 12½ grammes in a litre measure is equivalent to 1 lb. in an Imperial bushel.

Sample No. Sample Marked.	552 Early King.	553 Early Leaming.	554 Red Hogan.	555 Golden Beauty.	556 Balderman.	557 Lady Finger.	558 Soft.
Moisture (8th June, 1928) ..	15.0%	14.5%	13.8%	15.0%	15.9%	14.7%	20.2 %
Weight of 1 litre in grammes ..	702	702	708	715	669	667	696
Colour	Red	Yellow	Red	Yellow	Mixed	Yellow	Yellow
Maize (per cent. by weight) ..	99.61%	94.22%	99.74%	99.97%	94.33%	98.49%	99.60%
Mouldy grain .. .. .	.37%	5.72%	.25%	.02%	5.36%	1.35%	.39%
Material that has passed a $\frac{1}{8}$ sieve and all material other than maize remaining on such sieve	.02%	.06%	.01%	.01%	.31%	.16%	.01%
Live insects in sample examined ..	Trace	Nil	Nil	Nil	Nil	Nil	Trace
Number of insects in developmental stages found (by dissection) inside 100 maize kernels	5	1	Nil	10	5	1	4
Chemical analysis—							
Crude protein	10.0%	9.8%	9.7%	10.3%	9.0%	8.6%	10.0%
Crude fat	4.2%	4.1%	4.3%	4.3%	3.6%	3.6%	4.5%
Crude fibre	3.3%	3.8%	3.7%	3.6%	3.5%	4.0%	2.5%
Moisture (12th July, 1928) ..	13.4%	13.2%	13.6%	13.4%	13.6%	13.7%	14.6%
Weight of 1 litre in grammes ..	701	707	716	722	679	672	709

FERTILISERS, 1927-1928.

Since 1st January 112 dealers in fertilisers obtained licenses. During the same period 608 certificates of registration of fertilisers were received from licensed dealers, also 142 returns in the form of Schedule B from producers (wholesale dealers) within the meaning of the Regulations.

The following small table sets out the districts in which the licensed dealers carry on business, also the districts from which samples were obtained:—

Districts.	Licensed Dealers.	Official Samples Taken by Inspectors of this Branch.	Samples Sent in by Dealers.	Samples Received from Users.
Brisbane	40	61	18	2
Beaudesert-Beenleigh ..	3	4	..	..
Ipswich-Boonah	4	..	..	..
Lowood-Toogoolawah ..	1	..	..	..
Rosewood-Forest Hill ..	..	..	..	..
Toowoomba	3	14	..	..
Warwick	2	9	..	..
Stanthorpe	6	..	..	..
Caboolture-Gympie	13	65	1	..
Maryborough	6	37	..	1
Bundaberg-Gladstone ..	6	..	..	..
Rockhampton-Mackay ..	7	..	4	..
Bowen-Ayr	2	..	..	2
Townsville-Ingham	8	..	..	..
Cairns-Innisfail	11	..	..	3
	112	190	23	8

A fertiliser within the meaning of the Fertilisers Act is—"Any substance or compound containing, in appreciable quantity, nitrogen, phosphoric acid, potash, or lime, manufactured, produced, or prepared in any manner for fertilising the soil or supplying nutriment to plants; also, any excrement of animals or any natural substance or natural product which is used for fertilising the soil or supplying nutriment to plants: Provided that the term does not include farmyard manure, stable manure, seaweed, or crude nightsoil."

During the year several samples of so-called fertiliser were received from persons interested in the sale of lime and crushed coral. One of such samples alleged to be a fertiliser was found on analysis by the Agricultural Chemist to contain—

Nitrogen	0.03 per cent.
Phosphoric acid (P_2O_5)	0.09 per cent.
Potash	0.1 per cent.

less of these constituents than would be present in a good soil.

Another sample of obviously crushed coral contained 50.3 per cent. of lime (CaO).

Last year attention was directed to several samples of so-called fertiliser containing less than one-half of 1 per cent. of nitrogen and a mere trace of phosphoric acid and potash. Such materials cannot be considered as containing any appreciable quantity of any one of the fertilising ingredients, and should not therefore be sold as a fertiliser. A good sample of limestone would contain just over 55 per cent. of lime (CaO), equal to 99 per cent. of lime carbonate.

The fertilisers registered by producers (wholesale dealers) have, for convenience of reference, been divided into—

Nitrogen only	Table VIII.
Phosphoric acid only	Table IX.
Potash only	Table X.
Fertilisers the products of bone mills, meatworks, and bacon factories	Table XI.
Mixed fertilisers	Table XII.

In each case the wholesale dealers' (producers) guarantee is given, and where samples have been taken the average findings of the Agricultural Chemist.

Table VIII. includes sulphate of ammonia produced in Australia, nitrate of soda imported from South America, and Urea, a German product now offered for sale in small quantities under the name of Floranid, also Calcium cyanamide, which has a nitrogen content of about 19 per cent., this material being imported from Europe.

The fertilisers set out in Table IX. include ground Nauru or Ocean Island phosphate, imported from Nauru and Ocean Islands, also superphosphate and basic super, manufactured in the Southern States from imported phosphates.

On reference to the table it will be noted that the amount of phosphoric acid in Nauru or Ocean Island rock phosphate averages about 37 per cent. which is slightly below that usually claimed for these raw materials.

Both sulphate and muriate of potash (Table X.) are imported from France and Germany. On account of high cost of freight the low-grade potash salts, such as kainit, are not sold in Queensland.

A sample of sulphate of potash recently examined contained 20 per cent. that would not pass a 1 mm. sieve. It is to the buyers' advantage for at least 98 per cent. to pass through a sieve perforated with round holes 1 mm. in diameter.

Table XI. sets out the fertilisers mostly manufactured in Queensland from raw material produced within our State. Buyers would do well to remember that the wholesale dealers appearing in this table have works in Queensland. The raw materials used being by-products of animals produced and slaughtered in this State. As the demand for such materials exceeds the supply, several dealers other than producers have purchased their requirements in the Southern States.

Mixed fertilisers or mechanical mixtures of the various fertilisers are set out in Table XII., from which it will be seen that the percentage of nitrogen, phosphoric acid, and potash are given, also the form in which they occur, and in the case of fertilisers with a meatworks base the percentage of fine and coarse material.

Table XII. also includes two synthetic fertilisers, both from Germany, Diammonphos, containing 20 per cent. of nitrogen and 52 per cent. of water soluble phosphoric acid, and Nitrophoska, claimed by the sellers to contain 16.5 per cent. of nitrogen, 16.5 per cent. of phosphoric acid, and 20 per cent. of potash.

To meet the ever-growing demand for fertilisers within the State of Queensland, it is pleasing to record that one of the large fertiliser companies has recently installed an efficient mixing plant and machinery, which will not only ensure more uniformity in output, but a considerable saving of labour in the handling of raw materials. Only those with an intimate knowledge of the fertiliser trade can fully appreciate the amount of capital involved in the up-to-date and efficient works similar to those erected in Queensland during the last two years.

The tables fully set out the dealers' guarantees and the analyses of official samples taken during the year. In cases where any deficiency greater than that allowed by the Act was found or any other matter not in accordance with the requirements of the Act and Regulations thereunder suitable action has been taken.

After a careful perusal of the various findings, it will be noted that in nearly every instance the dealers' guarantees have been substantially met.

PEST DESTROYERS, 1927-28.

During the year ended 30th June, 1928, 311 samples of pest destroyers were obtained from the following sources:—

	Samples Received under Section 3 of Pest Destroyers Act.	Samples Taken by the Inspector under Pest Destroyers Act.	Samples Sent in by Dealers.	Samples Received from Users.
Brisbane	269	7	16	..
Toowoomba .. ..	..	3	..	..
Stanthorpe	2	..	..	..
Roma .. ..	..	2	..	..
Maryborough	6	3	..	..
Rockhampton	3	..	..	..
	280	15	16	..

In addition to the samples, statutory declarations, registration forms, and specimen invoices received from wholesale dealers, 256 retail dealers sent in Schedules I. and II., setting out the names of the pest destroyers that they are at present selling, and the name and address of the wholesale dealer from whom such pest destroyers were obtained.

A "wholesale dealer" within the meaning of the Act is any person who, whether as manufacturer, importer, or wholesale seller, is primarily responsible for the putting on the market in Queensland any pest destroyer.

In cases where the manufacturer or merchant putting the material on the market is not resident in the State of Queensland, the requirements of section 3 of the Act may be complied with by a duly authorised agent resident in Queensland; and such agent is, for the purposes of the Act, deemed to be the wholesale dealer.

When a wholesale dealer in any pest destroyer has complied with the provisions of section 3 of the Act relating to the registration, and such pest destroyer has been duly registered within the current year, it is permissible for any other dealer to sell such registered pest destroyer without payment of any fee. The retail dealer is nevertheless bound to comply with all other provisions relating to the sale of pest destroyers.

For the information of both wholesale and retail dealers, a leaflet of instructions was posted to every known seller of these articles last January.

Although 256 retail dealers (last year 228) sent in Schedules 1 and 2, it is questionable if this number represents much more than half of such dealers within the State. Both wholesale and retail dealers should not overlook the fact that failure to give notice in writing in the prescribed forms within thirty days of commencing business, and thereafter in each year on or before the thirty-first day of January, renders them liable to proceedings.

Registered Pest Destroyers.

Table XIII. sets out the principal pest destroyers registered since the 1st January, 1928. For convenience of reference, the kind of pest destroyer is given, together with the standards prescribed for the principal kinds, the trade name under which the various preparations are

sold, the active constituents as declared on the label affixed by the wholesale dealer, and the name and address of the dealer putting the material on the Queensland market.

Many of the samples have been analysed by the Agricultural Chemist, with the results as set out in the table.

Cattle Dips.

Particular attention is directed to the definition of "cattle dip" as "any preparation in liquid, paste, or powder form containing a soluble arsenious compound, and represented as useful for making a dipping fluid."

A liquid cattle dip must be of such consistency that it does not separate into layers on standing, but remains a homogeneous mixture.

The standard prescribed for cattle dip is fully set out in Table XIII., and any dealer selling or offering for sale a dipping fluid not in accordance with the Regulations is open to prosecution.

Protection of Purchaser.

In the interest of the purchaser, the Act provides that the buyer need not accept delivery of any pest destroyer unless it is labelled and invoiced in accordance with sections 4 and 5. Buyers, unfortunately, do not appear to fully appreciate the difference between materials sold from bulk by a country storekeeper and those sold in the manufacturer's original package. Both in the public interest and for the protection of the user, it is essential that the goods be packed by competent people, particularly in the case of cattle dips.

During every week statutory declarations or other papers are submitted by callers making application for registration. In some cases the proposed labels do not set out the active constituents, and many documents purporting to be statutory declarations fail to give the required particulars. The amount of work involved in such applications is quite out of proportion to that necessary for articles that can be registered. Since last year's Annual Report, the registration of twenty-four articles has been refused on account of the materials not being in accordance with the prescribed standards.

Advertisements appearing in both the metropolitan and country press of articles not registered under the Act has necessitated visits to Mitchell, Roma, Dalby, Warwick, Toowoomba, and Rockhampton, with the result that many so-called pest destroyers have been withdrawn from sale.

As these investigations are not yet completed, further comment cannot be made.

Addition to Regulations.

In February last a standard was prescribed for copper dusts sold for the treatment of wheat against bunt. As a result of the new Regulation several preparations found not to be in accordance with the prescribed standard were withdrawn from sale.

With the exception of the above addition, the Regulations now in force were drawn up in December, 1923, since when the Act has come into active operation, and the information gained is such that, in my opinion, consideration might well be given to a general amendment of the Regulations, in particular with the so-called "Bordeaux Mixture," phenolic germicides or disinfectants, and a clear definition as to what may be sold under the name of sheep dip.

At present for trade purposes the term "sheep dip" is often used to cover any *weak phenolic preparation* purchased as hair wash. In this particular the general public are to blame more than the seller, who merely supplies the demand. Both seller and buyer are fully aware that the material will not be used for dipping sheep, or even if sold in large quantities would not be useful for that purpose.

Although Table XIII. is substantially complete for the year ending December, 1928, it is to be noted that the actual work under this Act (or under the Stock Foods and Fertilisers Acts) cannot be fully shown, as the pest destroyer year is from January to 31st December, and this report is written before some of the analyses have been made, the results of which determine future action.

ACTIVITIES OF BRANCH.

As the activities of this branch can best be described as work in connection with the Acts regulating the sale of seeds, stock foods, fertilisers, and pest destroyers within the State of Queensland, it follows that our large and increasing correspondence is with merchants and others dealing in these commodities.

During the year under review over one thousand persons called at this branch, 95 per cent. of whom were merchants or dealers in the articles above referred to. In the early part of each calendar year, when a large number of statutory declarations, certificates of registration, and specimens of printed labels are received under the Stock Foods, Fertilisers, and Pest Destroyers Acts, it is practically impossible to do any outside work for over two months.

In the various small tables the districts from which official samples were taken during 1927-28 are set out, from which it will be noted that a large portion of Queensland was not covered during the period under review.

FRED F. COLEMAN, Officer in Charge.

Table I.
ANALYTICAL PURITY OF THE PRINCIPAL AGRICULTURAL SEEDS EXAMINED DURING 1927-28 FOR PURPOSES OF THE PURE SEEDS ACTS.

Kind of Seed.	PRESCRIBED STANDARD.		SAMPLES THAT COMPLIED WITH STANDARD CONTAINED.		SAMPLES THAT DID NOT COMPLY WITH STANDARD CONTAINED.		Number of Samples that Complied with Standard.	Number of Samples that contained a larger portion of Inert Matter and/or Weed Seeds than is allowed.	Number of Samples that contained Prohibited Weed Seeds or Diseased or Insect-Infested Seeds.	Total Number of Samples Examined.	Weed Seeds in Order of Frequency of Occurrence. Prohibited Weed Seeds in Heavy Type.
	Inert Matter.	Seeds of weeds or seeds of any kind other than that to which the sample purports to belong.	Seeds of <i>Cuscuta</i> spp. (Dodder), <i>Datura</i> spp. (Thorn apple), <i>Ricinus communis</i> (Castor oil plant), and diseased or insect-infested seeds.	Average Amount of Weed Seeds.	Average Amount of Inert Matter.	Average Amount of Weed Seeds.					
Cowpeas	% 2	% 1	% 1.0	% 6.6	% ..	% ..	14	3	6	23	Inert matter only.
Grasses— Canary	2	1	0.8	2.9	0.1	0.5	2	1	..	3	<i>Chnicus lanceolatus</i> , <i>Rumex</i> sp., <i>Lithospermum arvense</i> , <i>Melilotus parviflora</i> , <i>Verbena</i> sp., <i>Polygonum convolvulus</i> .
<i>Paspalum dilatatum</i>	4	1	1.7	6.9	0.3	0.5	33	8	..	41	<i>Panicum sanguinale</i> , <i>Verbena</i> sp., <i>Andropogon</i> sp., <i>Eriochloa</i> sp., <i>Fimbristylis diphylla</i> , <i>Rumex</i> sp., <i>Eleusine indica</i> , <i>Chloris divaricata</i> , <i>Sida rhombifolia</i> , <i>Kyllinga</i> sp., <i>Rhagodia nutans</i> , <i>Aristida</i> sp., <i>Setaria glauca</i> , <i>Eragrostis</i> sp., <i>Paspalum scrobiculatum</i> .
Prairie	5	1	1.2	7.6	0.3	4.8	6	1	1	8	<i>Lepidium</i> sp., <i>Marrubium vulgare</i> , <i>Sonchus</i> sp., <i>Malva parviflora</i> , <i>Medicago denticulata</i> , <i>Avena fatua</i> , <i>Stachys arvensis</i> , <i>Melilotus parviflora</i> , <i>Daucus</i> sp., <i>Sisymbrium orientale</i> , <i>Datura</i> sp.
Rhodes	6	1	3.7	13.9	0.2	2.8	89	25	..	114	<i>Chloris divaricata</i> , <i>Panicum sanguinale</i> , <i>Chloris virgata</i> , <i>Eriogon</i> sp., <i>Eragrostis</i> sp., <i>Andropogon</i> sp., <i>Eriochloa</i> sp., <i>Chenopodium</i> sp., <i>Chloris truncata</i> , <i>Salsola Kali</i> , <i>Verbena</i> sp., <i>Setaria</i> sp., <i>Lepidium</i> sp., <i>Malvastrum tricuspidatum</i> , <i>Chnicus lanceolatus</i> , <i>Aristida</i> sp., <i>Siegesbeckia orientalis</i> , <i>Diplachne parviflora</i> , <i>Sida rhombifolia</i> , <i>Tragus racemosus</i> , <i>Boerhaavia diffusa</i> , <i>Ageratum conyzoides</i> , <i>Portulaca oleracea</i> , <i>Sonchus</i> sp., <i>Cerastium</i> sp., <i>Hibiscus trionum</i> , <i>Stipa</i> sp., <i>Tricholaena Teneriffæ</i> , <i>Eleusine</i> sp., <i>Solanum</i> sp., <i>Atriplex</i> sp.
Millet— <i>Setaria italica</i> (Foxtail Millet)	2	1	0.6	2.8	0.1	1.3	24	4	1	29	<i>Amarantus</i> sp., <i>Hibiscus trionum</i> , <i>Panicum sanguinale</i> , <i>Setaria glauca</i> , <i>Chenopodium</i> sp., <i>Ipomœa</i> sp., <i>Sida rhombifolia</i> , <i>Malvastrum spicatum</i> , <i>Stachys arvensis</i> , <i>Polygonum aviculare</i> , <i>Malva parviflora</i> , <i>Datura</i> sp., <i>Tribulus terrestris</i> .
<i>Panicum crus-galli</i> (Japanese Millet)	2	1	0.6	0.8	0.2	2.1	33	4	2	39	<i>Amarantus</i> sp., <i>Panicum sanguinale</i> , <i>Tribulus terrestris</i> , <i>Stachys arvensis</i> , <i>Chenopodium</i> sp., <i>Sonchus</i> sp., <i>Hibiscus trionum</i> , <i>Portulaca oleracea</i> , <i>Eriochloa</i> sp., <i>Rumex</i> sp., <i>Xanthium spinosum</i> , <i>Polygonum convolvulus</i> , <i>Chloris divaricata</i> , <i>Tragus racemosus</i> , <i>Setaria</i> sp., <i>Avena fatua</i> , <i>Bromus</i> sp., <i>Phalaris</i> sp., <i>Ipomœa</i> sp., <i>Boerhaavia diffusa</i> , <i>Eleusine</i> sp., <i>Eragrostis</i> sp.
<i>Panicum frumentaceum</i> (White Panicum)	2	1	0.7	2.8	0.1	6.6	27	10	..	37	<i>Panicum sanguinale</i> , <i>Eriochloa</i> sp., <i>Eleusine</i> sp., <i>Sida rhombifolia</i> , <i>Amarantus</i> sp., <i>Chenopodium</i> sp., <i>Rumex</i> sp., <i>Eragrostis</i> sp., <i>Stachys arvensis</i> , <i>Chloris divaricata</i> , <i>Siegesbeckia orientalis</i> , <i>Setaria</i> sp., <i>Verbena</i> sp., <i>Portulaca oleracea</i> , <i>Hibiscus trionum</i> , <i>Geranium dissectum</i> , <i>Anagallis arvensis</i> , <i>Ipomœa</i> sp., <i>Atriplex</i> sp., <i>Fimbristylis diphylla</i> , <i>Tragus racemosus</i> .

Table II.

GERMINATING CAPACITY OF THE PRINCIPAL SEEDS EXAMINED DURING 1927-28 FOR PURPOSES OF THE PURE SEEDS ACTS.

Kind of Seed.	A†.	B.	C.	D.	E.	OK.	BS.	P.	T.
	%	%	%	%	%				
Broad Beans	94	75	90	47	46	6	2	..	8
French Beans	99	75	95	28	0	42	11	2	55
Lima Beans	98	75	90	..	80	12	..	..	12
Mauritius Beans	88	60	81	..	72	5	..	..	5
Beet	86	*55	66	36	15	38	17	..	55
Cabbage	99	65	79	28	0	47	44	..	91
Carrot	87	55	67	23	0	25	24	..	49
Cauliflower	96	60	77	24	0	24	21	..	45
Celery	67	50	62	6	5	3	6	..	9
Chicory	58	50	58	8	0	1	6	..	7
Clover, Subterranean	97	50	86	..	79	4	..	..	4
Clover, White Dutch	84	50	80	23	5	2	3	..	5
Cotton	87	70	75	62	36	90	40	..	130
Corn Salad	65	50	65	5	0	1	9	..	10
Cowpeas	98	65	82	..	65	17	..	6	23
Cowpeas (average percentage of hard seeds not included in germination)	..	..	8	..	..	..	..	..	..
Cucumber	99	65	80	18	0	23	28	..	51
Grasses—									
Canary	87	70	85	..	83	3	..	..	3
Couch	47	30	43	20	14	3	2	..	5
Paspalum dilatatum	55	20	32	7	0	23	18	..	41
Prairie	78	50	71	18	2	5	2	1	8
Rhodes	68	30	43	18	6	57	57	..	114
Kale	90	50	67	29	14	9	4	..	13
Kohl Rabi	93	50	71	17	0	7	4	..	11
Leek	91	50	76	28	0	7	8	..	15
Lettuce	98	65	89	30	0	35	8	..	43
Lucerne	92	65	76	57	36	52	11	1	64
Lucerne (average percentage of hard seeds not included in germination)	..	..	6	13	..	..	..	..	..
Maize	99	85	94	75	72	26	2	..	28
Mangel	90	*55	66	31	1	32	18	..	50
Marrow	96	65	82	26	0	21	19	..	40
Rock Melon	98	65	84	36	0	19	10	..	29
Water Melon	95	60	80	29	0	29	18	..	47
Millets—									
<i>Setaria italica</i> (Foxtail Millet)	98	70	92	48	26	22	6	1	29
<i>Panicum crus-galli</i> (Japanese Millet)	99	70	87	43	28	30	7	2	39
<i>Panicum frumentaceum</i> (White Panicum)	97	70	87	39	28	32	5	..	37
Mustard	91	70	83	31	0	4	3	..	7
Onion	94	60	77	19	0	29	29	..	58
Parsnip	64	25	48	4	0	7	8	..	15
Parsley	56	50	56	15	0	3	2	..	5
Peanuts	99	50	91	45	31	56	2	..	58
Peas	99	75	91	44	0	73	16	2	91
Pumpkin	99	65	82	19	0	22	21	..	43
Radish	96	65	85	37	0	29	17	..	46
Rape	98	70	88	43	23	13	2	..	15
Rhubarb	78	50	73	..	65	6	..	..	6
Spinach	84	50	63	15	0	6	7	..	13
Sorghum	99	70	88	41	7	52	8	1	61
Sudan (<i>Sorghum Sudanense</i>)	91	70	79	51	4	40	45	6	91
Swede	87	65	76	40	0	22	17	..	39
Tares	99	75	98	..	98	12	..	..	12
Tomato	97	65	79	28	0	81	22	..	103
Turnip	97	65	83	12	0	38	29	..	67
Barley, Cape and Malting	99	85	96	79	79	18	1	..	19
Barley, Skinless	98	85	93	71	71	14	1	..	15
Oats	99	80	91	63	63	56	1	..	57
Rye	96	80	91	47	33	6	2	..	8
Wheat	99	85	94	..	91	23	..	..	23
Miscellaneous samples .. .. .	..	..	..	..	..	..	..	..	27
									2,054
	A†.	B.	C.	D.	E.	OK.	BS.	P.	T.

* Germinable clusters.

A†. Highest germination recorded during 1927-28.
 B. Minimum percentage of germination required by Act.
 C. Average germination of samples up to standard.
 D. Average germination of samples below standard.
 E. Lowest germination recorded during 1927-28.

OK. Number of samples up to standard.
 BS. Number of samples below standard.
 P. Number of samples that contained prohibited weed seeds or diseased or insect-infested seeds.
 T. Total number of samples examined.

Table III.

GERMINATING CAPACITY OF THE PRINCIPAL SEEDS FOR SOWING IMPORTED INTO QUEENSLAND (PORT OF BRISBANE) DURING 1927-28. SAMPLES EXAMINED FOR THE PURPOSES OF THE COMMERCE (TRADE DESCRIPTIONS) ACT, 1905.

Kind of Seed.	Imported from—	Highest Germination recorded during 1927-28.	Minimum percentage of Germination required by Queensland Seed Acts.	Average Germination of Samples up to Queensland Standard.	Average Germination of Samples below Queensland Standard.	Lowest Germination recorded during 1927-28.	Number of Samples up to Queensland Standard.	Number of Samples below Queensland Standard.	Total number of Samples examined.
		%	%	%	%	%			
Beans, Broad ..	New Zealand, England, Germany ..	99	75	83	46	46	4	1	5
Beans, French ..	U.S.A., New Zealand, Holland, Germany	99	75	94	37	36	29	3	32
Beans, Lima ..	U.S.A. ..	99	75	95	..	78	12	..	12
Beet ..	England, New Zealand, U.S.A., Germany	90	55	70	34	22	33	3	36
Cabbage ..	U.S.A., England, Germany ..	98	65	83	36	22	48	2	50
Carrot ..	England, U.S.A., New Zealand, Germany	90	55	68	32	11	26	3	29
Cauliflower ..	England, Italy, Holland, Germany ..	88	60	71	48	48	13	1	14
Cucumber ..	U.S.A., England, Germany ..	99	65	93	..	87	21	..	21
Lettuce ..	U.S.A., England, New Zealand, Germany	99	65	93	..	66	35	..	35
Mangel ..	England, U.S.A., Germany ..	84	55	73	51	51	5	1	6
Marrow ..	U.S.A., England, Germany ..	94	65	83	51	51	13	2	15
Rock Melon ..	U.S.A. ..	98	65	93	44	44	8	1	9
Water Melon ..	U.S.A., Germany ..	90	60	79	42	35	25	2	27
Onion ..	England, New Zealand, Germany ..	86	60	72	34	23	4	3	7
Parsnip ..	England, New Zealand, Germany ..	70	25	61	..	55	4	..	4
Parsley ..	England, Germany ..	61	50	61	42	40	1	2	3
Peas ..	New Zealand, U.S.A. ..	99	75	94	..	83	44	..	44
Radish ..	England, U.S.A., Germany, Holland ..	97	65	86	45	33	32	3	35
Swede ..	England, U.S.A., Germany ..	94	65	88	..	83	7	..	7
Sweet Corn ..	U.S.A. ..	93	75	88	..	75	5	..	5
Tomato ..	U.S.A. ..	97	65	88	..	75	30	..	30
Turnip ..	England, U.S.A., Germany ..	97	65	88	57	57	23	1	24
Miscellaneous small consignments examined	U.S.A., England, Holland, France, New Zealand, Germany	..	..	..	..	..	..	..	450 342 792

Table V.

STOCK FOODS, 1928.

SAMPLES EXAMINED FOR PURPOSES OF THE STOCK FOODS ACT. Bran, A BY-PRODUCT OF MILLING WHEAT.

Queensland Wholesale Seller.	Manufactured in—	Guaranteed by Seller or found on Analysis by Agricultural Chemist.	Number of Samples Analysed.	Moisture.	Crude Protein.	Crude Fat.	Crude Fibre.	Crude Ash.
				%	%	%	%	%
Barnes and Co., Ltd., Stanley street, South Brisbane	Queensland	Guarantee ..	..	..	15.5	3.0	9.0	..
Barnes and Co., Ltd., Warwick	ditto ..	Found (average)	2	11.8	16.8	3.4	9.4	5.0
The Brisbane Milling Co., Ltd., Stanley street, South Brisbane	ditto ..	Guarantee ..	..	..	13.5	2.3	12.0	..
Dalby Milling Co., Ltd., Dalby	ditto ..	Found (average)	2	9.6	17.5	3.1	12.4	6.1
The Defiance Milling Co., Toowoomba	ditto ..	Guarantee ..	..	..	14.5	2.5	10.0	..
The Dominion Milling Co., Ltd., Stanley Street, South Brisbane	ditto ..	Found (average)	2	10.5	18.3	2.8	10.5	5.0
Warwick Farmers' Milling Co., Ltd., Warwick ..	ditto ..	Guarantee ..	..	..	16.0	2.5	11.0	..
Warrys, Ltd., Maryborough	ditto ..	Found (average)	2	10.3	17.4	2.6	10.6	5.7
Bolton and Co., Ltd., Rockhampton	ditto ..	Guarantee ..	..	..	15.0	2.0	11.0	..
Marsh and Webster, Ltd., Mackay	ditto ..	Found (average)	2	10.5	17.3	2.1	10.5	5.0
Lamberts, Ltd., Mackay	ditto ..	Guarantee ..	..	..	14.7	2.7	11.0	..
W. H. Paxton and Co., Ltd., Mackay	ditto ..	Found (average)	3	10.8	15.7	2.9	11.0	5.0
Joseph Pease, Ltd., Townsville	ditto ..	Guarantee ..	..	..	16.0	3.5	10.0	..
Samuel Allen and Sons, Ltd., Townsville ..	ditto ..	Found (average)	2	11.6	17.3	3.1	10.1	5.1
New Zealand Loan and Mercantile Agency Co., Ltd., Townsville	New South Wales (Gillespie Bros., Ltd., Sydney)	Guarantee ..	..	..	14.5	2.5	10.0	..
Cummins and Campbell, Ltd., Townsville ..		Found (average)	14	10.0	15.6	2.7	11.5	4.8
Bartlams, Ltd., Townsville								
Thomas Brown and Sons, Ltd., Townsville								
Armstrong, Ledlie, and Stillman, Ltd., Cairns								
Burns, Philp, and Co., Ltd., Cairns								
Norman Evans, Roma street, Brisbane	New South Wales (New South Wales Flour Millers' Produce Co., Ltd., Sydney)	Guarantee ..	..	..	14.0	2.5	10.0	..
Orchard Supply Agency, Stanthorpe	New South Wales	Found ..	..	10.0	15.2	2.7	11.7	5.3
Jas. F. McKenzie and Co. Pty., Ltd., 448-450 Ann street, Brisbane	New South Wales (Brunton and Co., Sydney)	Guarantee ..	..	..	14.0	2.5	10.0	..
Denham Bros. (Rockhampton), Ltd., Rockhampton	Southern States ..	Found ..	..	9.8	18.5	3.3	11.4	4.0
		Guarantee ..	..	..	15.0	2.5	10.0	..
		Found (average)	5	10.3	16.8	2.2	11.1	4.6
		Guarantee ..	..	..	14.4	2.0	12.4	..
		Found ..	..	9.1	15.2	2.8	10.6	3.2

Foreign Ingredients.

Thirty-seven samples of Bran were examined. With few exceptions they contained a trace of Oats and Barley. None were entirely free from bits of chaff or other extraneous matter. The weed seeds found were:—

Avena fatua, Wild Oats.*Brassica* sp.*Carthamus lanatus*, Saffron Thistle.*Centaurea melitensis*, Star Thistle.*Chenopodium* sp.*Lepidium* sp.*Polygonum Convolvulus*.*Sisymbrium orientale*, Oriental Rocket.*Sonchus oleraceus*, Sow Thistle.

A few of the samples contained from 0.1 to 0.4 per cent. of whole or partly crushed wheat.

SUMMARY OF ANALYSES FROM 1923 TO 1928.

Year.	Number of Analyses.	Average Moisture.	Average Crude Protein.	Average Crude Fat.	Average Crude Fibre.	Average Crude Ash.
		%	%	%	%	%
1923	49	9.9	15.9	2.6	10.0	4.8
1924	61	10.0	15.6	2.8	10.0	4.3
1925	25	11.8	15.8	2.4	9.5	5.7
1926	28	11.5	15.5	2.3	10.0	4.8
1927	55	10.8	14.9	2.5	9.6	4.9
1928	37	10.3	16.8	2.8	10.9	4.9

Table VI.

STOCK FOODS, 1928.

SAMPLES EXAMINED FOR PURPOSES OF THE STOCK FOODS ACT. Pollard, A BY-PRODUCT OF MILLING WHEAT.

Queensland Wholesale Seller.	Manufactured in—	Guaranteed by Seller or found on Analysis by Agricultural Chemist.	Number of Samples Analysed.	Moisture.	Crude Protein.	Crude Fat.	Crude Fibre.	Crude Ash.
				%	%	%	%	%
Barnes and Co., Ltd., Stanley street, South Brisbane	Queensland	Guarantee ..	..	..	14.3	3.2	7.0	..
		Found ..	..	13.9	17.0	4.1	5.2	3.6
Barnes and Co., Ltd., Warwick	ditto	Guarantee ..	..	..	14.0	3.2	4.5	..
		Found (average)	2	9.3	17.4	3.3	6.0	7.4
The Brisbane Milling Co., Ltd., Stanley street, South Brisbane	ditto	Guarantee ..	..	..	14.5	3.3	8.0	..
		Found (average)	5	10.0	15.8	3.3	6.6	3.1
Dalby Milling Co., Ltd., Dalby	ditto	Guarantee ..	..	..	17.0	3.5	7.0	..
		Found (average)	2	10.0	17.3	4.0	6.1	3.7
The Defiance Milling Co., Toowoomba	ditto	Guarantee ..	..	..	15.0	3.0	6.0	..
		Found (average)	3	9.4	16.4	4.2	7.2	3.7
The Dominion Milling Co., Ltd., Stanley street, South Brisbane	ditto	Guarantee ..	..	..	14.5	3.3	8.0	..
		Found (average)	4	10.5	15.8	3.6	7.2	3.0
Warwick Farmers' Milling Co., Ltd., Warwick ..	ditto	Guarantee ..	..	..	15.0	2.5	7.0	..
		Found (average)	2	11.5	17.1	3.6	5.4	3.4
Warrys, Ltd., Maryborough	New South Wales (Gillespie Bros., Ltd., Sydney)	Guarantee ..	..	..	14.3	3.0	8.0	..
Bolton and Co., Ltd., Rockhampton		Found (average)	14	9.3	14.8	3.7	7.6	3.0
Marsh and Webster, Ltd., Mackay								
Lamberts, Ltd., Mackay								
W. H. Paxton and Co., Ltd., Mackay								
Samuel Allen and Sons, Ltd., Townsville ..								
Bartlams, Ltd., Townsville								
Thomas Brown and Sons, Ltd., Townsville								
Cummings and Campbell, Ltd., Townsville								
Joseph Pease, Ltd., Townsville								
New Zealand Loan and Mercantile Agency Co., Ltd., Townsville	New South Wales (New South Wales Flour Millers' Produce Co., Ltd., Sydney)	Guarantee ..	..	..	14.0	3.0	7.0	..
Armstrong, Ledlie, and Stillman, Ltd., Cairns		Found ..	..	9.0	13.6	3.7	7.6	3.2
Burns, Philp, and Co., Ltd., Cairns								
Norman Evans, Roma street, Brisbane								
Jas. F. McKenzie and Co., Ltd., 448-450 Ann Street, Brisbane	New South Wales (Brunton and Co., Sydney)	Guarantee ..	..	..	14.5	2.8	8.0	..
		Found (average)	6	10.0	16.3	3.7	7.0	3.1
Orchard Supply Agency, Stanthorpe	New South Wales	Guarantee ..	..	..	14.0	3.0	7.0	..
		Found ..	..	9.7	15.0	4.1	7.2	2.9
Denham Bros. (Rockhampton), Ltd., Rockhampton	Southern States ..	Guarantee ..	..	..	14.3	2.7	9.3	..
		Found ..	..	9.0	15.8	3.6	5.6	3.6

Foreign Ingredients.

Forty-two samples of Pollard were examined. With few exceptions they contained a trace of extraneous matter as well as Oats and Barley. On macroscopical examination the principal weed seeds found were:—

Avena fatua, Wild Oats.*Chenopodium* sp.*Lepidium* sp.*Sisymbrium orientale*, Oriental Rocket.*Sonchus oleraceus*, Sow Thistle.*Verbena* sp.

Five samples contained over 1 per cent. of Wheat by-products that would not pass through a sieve perforated with round holes $1\frac{1}{2}$ mm. in diameter. The actual amounts ranged from 0.8 to 2.6 per cent. over the percentage allowed.

SUMMARY OF ANALYSES FROM 1923 TO 1928.

Year.	Number of Analyses.	Average Moisture.	Average Crude Protein.	Average Crude Fat.	Average Crude Fibre.	Average Crude Ash.
		%	%	%	%	%
1923	51	9.8	15.5	3.8	6.6	2.9
1924	69	9.9	15.4	3.5	5.8	2.8
1925	21	11.4	16.3	3.4	4.9	3.5
1926	26	11.0	15.7	3.3	5.4	3.0
1927	61	10.5	14.7	3.3	6.0	3.2
1928	42	10.1	16.0	3.7	6.5	3.6

Table VII.
STOCK FOODS, 1928.
MISCELLANEOUS STOCK FOODS EXAMINED FOR PURPOSES OF "THE STOCK FOODS ACT OF 1919."

Kind of Stock Food.	Sold Under the Name of—	Guaranteed by Seller or found on Analysis by Agricultural Chemist.	Number of Samples Analysed.	Moisture.	Crude Protein.	Crude Fat.	Crude Fibre.	Crude Ash.	Salt.	Composed of or Manufactured from—	Queensland Wholesale Seller.
Barley Meal	Barley Meal	Guarantee	..	..	11.0	1.0	6.0	..	..	Barley	Denhams, Ltd., Roma street, Brisbane
Ditto	ditto	Found ..	..	11.7	9.8	1.8	5.3	3.5	..	..	..
Blood Meal	Dried Blood..	Guarantee	..	..	75.0	0.3	..	..	2.0	Blood	Swift Australian Co., Ltd., 181 Eagle street, Brisbane
Ditto	ditto	Found ..	..	9.3	81.6	0.3	..	5.7	..	..	..
Ditto	ditto	Guarantee	..	..	75.0	..	..	..	..	Blood	Len Lose, Roma street, Brisbane
Ditto	ditto	Found ..	..	14.6	77.2	..	..	4.2	..	..	..
Ditto	Borthwick's Moreton Dried Blood	Guarantee	..	..	75.0	..	..	..	..	Blood	Borthwick and Sons (Australasia) Ltd., Wharf street, Brisbane
Ditto	ditto	Found ..	..	9.0	79.0	..	..	5.2	..	..	..
Ditto	Taylor's Champion Dried Blood	Guarantee	..	..	76.0	..	..	..	..	Blood	Charles Taylor and Co., Roma street, Brisbane
Ditto	ditto	Found ..	..	11.2	79.2	..	..	6.3	..	..	..
Bone Meal (Sterilised)	Borthwick's Moreton Bone Meal	Guarantee	..	..	24.0	2.0	..	..	..	Sterilised Bone	Borthwick and Sons (Australasia) Ltd., Wharf street, Brisbane
Ditto	ditto	Found ..	..	6.3	26.1	1.2	..	65.0	..	..	..
Ditto	A.C.F. Sterilised Bone Meal	Guarantee	..	..	24.0	1.0	..	..	..	Sterilised Bone	Australian Co-operative Fertilisers Ltd., Little Roma street, Brisbane
Ditto	ditto	Found ..	..	..	24.8	1.1	..	..	..	..	..
Bone Meal	Bone Meal	Guarantee	..	..	21.5	1.5	..	..	1.2	Bone	Swift Australian Co., Ltd., 181 Eagle street, Brisbane
Ditto	ditto	Found ..	..	7.1	26.0	2.2	..	60.5	..	..	..
Ditto	Taylor's Champion Green Bone	Guarantee	..	..	20.0	..	..	..	..	Bone	Charles Taylor and Co., Roma street, Brisbane
Ditto	ditto	Found ..	..	6.3	25.3	2.2	..	62.2	..	..	..
Cotton Seed Meal	Bacal Cotton Seed Meal	Guarantee	..	..	30.0	5.0	20.0	..	..	Cotton Seed	British Australian Cotton Association, Ltd., Whinstanes, Brisbane
Ditto	ditto	Found ..	..	8.9	36.9	6.4	12.7	7.9	..	..	..
Linseed Meal	Linseed Meal	Guarantee	..	..	18.0	32.0	14.0	..	..	Whole Linseed	W. Siemon and Sons, Ltd., Roma street, Brisbane
Ditto	ditto	Found ..	..	7.1	26.5	31.8	10.5	4.9	..	..	..
Ditto	ditto	Guarantee	..	..	19.0	36.0	11.5	..	..	Whole Linseed	R. W. Thurlow and Co., Ltd., Wharf street, Brisbane
Ditto	ditto	Found ..	..	6.4	21.8	39.2	8.1	2.4	..	..	..
Linseed Oil Meal (Old Process)	Meggitt's Linseed Oil Meal	Guarantee	..	..	25.0	6.0	13.0	..	..	By-product of Linseed	Denhams, Ltd., Roma street, Brisbane
Ditto	ditto	Found ..	..	10.1	28.5	8.5	12.1	6.5	..	..	..
Ditto	ditto	Guarantee	..	..	25.0	6.0	13.0	..	..	By-product of Linseed	Denham Bros. (Rockhampton), Ltd., Rockhampton
Ditto	ditto	Found ..	..	9.6	29.0	6.2	8.7	6.1	..	..	..
Ditto	ditto	Guarantee	..	..	27.0	6.0	13.0	..	..	By-product of Linseed	Corser and Co., Ltd., Ellena street, Maryborough
Ditto	ditto	Found (average)	2	9.2	28.9	7.2	9.3	7.5	..	..	..
Ditto	Barnes Linseed Meal	Guarantee	..	..	26.0	8.0	12.0	..	..	By-product of Linseed	E. J. Lewis, Ryan House, Eagle street, Brisbane
Ditto	ditto	Found ..	..	9.4	27.9	9.5	11.2	5.9	..	..	..
Ditto	Thorpes Old Process Linseed Oil Meal	Guarantee	..	..	25.0	8.0	10.0	..	..	By-product of Linseed	E. C. Chambers and Co., Edward street, Brisbane
Ditto	ditto	Found ..	..	10.1	28.1	11.9	9.3	8.7	..	..	..
Ditto	ditto	Guarantee	..	..	27.0	7.0	12.0	..	..	By-product of Linseed	J. Kitchen and Sons Pty., Ltd., Newstead, Brisbane
Ditto	ditto	Found ..	..	10.2	27.3	11.6	12.4	6.6	..	..	..

Lucerne Meal	..	Thorpes Lucerne Meal	..	13.5	12.0	2.0	30.0	8.2	..	Lucerne Hay	..	E. C. Chambers and Co., Edward street, Brisbane
Ditto	..	ditto	..	..	15.8	1.4	25.5	..	..	..	..	..
Wheat Meal	..	Wheat Meal	..	..	12.0	1.5	5.0	2.2	..	Wheat	..	Henry Dean and Sons, Ltd., Roma street, Brisbane
Ditto	..	ditto	..	2	13.7	1.4	3.6	..	..	..	..	..
Maize Meal	..	Maize Meal	..	..	9.5	3.8	3.0	..	..	Maize	..	Henry Dean and Sons, Ltd., Roma street, Brisbane
Ditto	..	ditto	..	..	10.6	4.4	3.9	2.0	..	..	..	..
Ditto	..	ditto	..	..	9.5	4.0	3.0	..	..	..	..	W. Siemon and Sons, Ltd., Roma street, Brisbane
Ditto	..	ditto	..	..	9.2	3.0	3.5	5.0	..	..	..	..
Ditto	..	ditto	..	..	11.0	4.5	5.0	..	..	..	..	Denhams, Ltd., Roma street, Brisbane
Ditto	..	ditto	..	..	11.2	3.4	1.3	5.3	..	..	..	..
Meat and Bone Meal	..	Borthwick's Moreton Protein Meal	..	..	52.0	10.0	..	..	..	Meat and Bone	..	..
Ditto	..	ditto	..	2	52.2	12.3	..	24.1	..	..	..	Borthwick and Sons (Australasia), Wharf street, Brisbane
Ditto	..	Borthwick's Moreton Mebo Meal	..	..	52.0	10.0	..	..	..	..	..	..
Ditto	..	ditto	..	4	49.5	17.0	..	22.0	..	..	..	..
Meat Meal	..	M.I.B. Protein Meal	..	..	72.0	1.0	..	..	..	Extract and Residue of Meat	..	Poultry Farmers' Co-operative Society, Ltd., Garrick street, Brisbane
Ditto	..	ditto	..	..	69.5	3.4	..	12.1	..	..	..	..
Oil Cake	..	Velvet Oilcake	..	..	17.0	6.5	10.0	..	..	Copra	..	J. Kitchen and Sons Pty., Ltd., Newstead, Brisbane
Ditto	..	ditto	..	..	19.8	6.2	10.9	5.1	..	..	..	..
Ditto	..	Sunlight Oil Cake	..	..	16.5	9.0	11.0	..	..	..	..	Lever Brothers, Ltd., Charlotte street, Brisbane
Ditto	..	ditto	..	3	17.5	11.4	9.9	5.0	..	..	..	..
Peanut Meal	..	Eta Brand Peanut Meal (Decorticated)	..	..	43.0	9.0	5.0	..	..	Decorticated Peanuts	..	Harding, Anderson, and Co., Ltd., Ryan House, Market street, Brisbane
Ditto	..	ditto	..	..	46.2	11.3	4.9	4.6	..	..	..	..
Rice Meal	..	Harper's Star Rice Meal	..	..	11.0	11.0	8.0	..	..	By-product of Rice	..	Robert Harper and Co., Ltd., Albert street, Brisbane
Ditto	..	ditto	..	..	12.6	13.9	8.9	8.8	..	..	..	..
Calf Food	..	Farmers' Calf Food	..	..	22.6	5.2	3.0	..	..	Milk Solids, Pollard, Linseed Meal, Aniseed, Whiting	..	The Queensland Farmers' Co-operative Co., Ltd., Booval
Ditto	..	ditto	..	..	22.6	4.6	3.6	5.8	..	..	..	..
Ditto	..	Nooma Calf Food	..	..	13.4	5.4	3.8	..	0.5	Linseed, Wheat, Maize, Coconut Oil Cake, Pollard, Whiting, Fine Salt, Cinnamon, Aniseed Oil	..	W. Siemon and Sons, Ltd., Roma Street, Brisbane
Ditto	..	ditto	..	..	14.4	7.8	4.7	2.9	0.5	..	..	..
Ditto	..	Parsons Calf Food	..	..	11.0	9.0	3.0	..	..	Rice, Oat and Barley Pollard, Corn Gluten and Germ Meal, Wheat Meal, and Crushed Linseed	..	Parsons Bros. and Co. Pty., Ltd., Elizabeth street, Brisbane
Ditto	..	ditto	..	..	12.3	10.6	5.3	3.4	..	..	..	..
Ditto	..	Star Brand Calf Food	..	..	12.5	10.0	7.5	..	..	Oat, Rice, Linseed, Maize, Barley Meals, Condiments	..	Robert Harper and Co., Ltd., Albert street, Brisbane
Ditto	..	ditto	..	..	13.2	10.9	10.4	6.1	..	..	..	..
Ditto	..	Calf Food	..	..	15.0	5.0	7.0	..	..	Wheat Meal, Pollard, Oat Meal, Barley Meal, Maize Meal, Linseed Meal, Meat, Blood and Bone Meal, Cod Oil	..	Denhams, Ltd., Roma street, Brisbane
Ditto	..	ditto	..	..	15.0	4.6	3.8	4.6	..	..	..	..
Ditto	..	Skimmers (Cod Oil) Calf Meal	..	..	17.0	6.5	6.0	..	1.0	Milled Wheat, Linseed, Cod Oil, Lime, Charcoal, Salt	..	Waugh and Josephson, Ltd., Melbourne street, South Brisbane
Ditto	..	ditto	..	..	18.6	7.5	7.3	5.3	..	..	..	..

Table VII.—continued.
 STOCK FOODS, 1928.
 MISCELLANEOUS STOCK FOODS EXAMINED FOR PURPOSES OF "THE STOCK FOODS ACT OF 1919."

Kind of Stock Food.	Sold Under the Name of—	Guaranteed by Seller or found on Analysis by Agricultural Chemist.	Number of Samples Analysed.	Moisture.	Crude Protein.	Crude Fat.	Crude Fibre.	Crude Ash.	Salt.	Composed of or Manufactured from—	Queensland Wholesale Seller.
Dairy Cattle Food	Thorpes O.K. Dairy Feed	Guarantee	..	12.6	13.5	3.0	10.0	..	1.0	Bran, Gluten, Linseed, Barley, Maize, Oat, Lucerne Meal, Meat and Bone Meals, Tapioca By-product, Calcium Carbonate, Sulphur, Molasses, Salt	E. C. Chambers and Co., Edward street, Brisbane
Ditto	ditto	Found	..	14.6	3.4	9.3	6.5	1.7			
Sheep Food	Thorpes Special Sheep Meal	Guarantee	..	..	13.0	3.0	10.0	..	2.0	Gluten Feed, Linseed Oil Meal, Bran, Rice Meal, Pollard, Meat and Bone Meals, Calcium Carbonate, Tapioca By-product, Sulphur, Molasses and Lucerne Meal, Salt	E. C. Chambers and Co., Edward street, Brisbane
Ditto	ditto	Found	..	11.8	3.6	8.3	8.5	1.4			
Sheep Food	Thorpes Kubettes for Sheep	Guarantee	..	..	13.0	3.0	10.0	..	2.0	Gluten Feed, Linseed Oil Meal, Barley, Wheat, and Maize Meals, Bran, Rice Meal, Pollard, Meat and Bone Meals, Calcium Carbonate, Tapioca By-product, Sulphur, Molasses and Lucerne Meal, Salt	E. C. Chambers and Co., Edward street, Brisbane
Ditto	ditto	Found	..	11.5	4.5	8.2	5.8	1.0			
Ditto	Bacal Sheep Cubes	Guarantee	..	13.4	24.0	4.0	30.0	..	5.0	Cotton Seed Meal, Molasses 10 per cent., Salt	British Australian Cotton Association, Ltd., Whinstanes, Brisbane
Ditto	ditto	Found	..	..	23.2	4.6	6.5	10.6	5.3		
Ditto	Meggitt's Linseed Sheep Nuts	Guarantee	..	9.7	27.0	6.0	13.0	..	..	By-product of Linseed	Denham Bros. (Rockhampton), Ltd., Rockhampton
Ditto	ditto	Found	..	..	30.0	5.2	14.6	6.1	..		
Pig Food	Thorpes Standard Pig Feed	Guarantee	..	12.1	13.0	4.0	8.5	..	1.0	Linseed Oil Meal, Bran, Rice Meal, Pollard, Oat Pollard, Wheat, Maize, Barley, and Lucerne Meals, Gluten, Meat, Blood and Bone Meals, Sulphur, Calcium Carbonate, Molasses, Tapioca By-product, Salt	E. C. Chambers and Co., Edward street, Brisbane
Ditto	ditto	Found	..	..	14.1	3.0	9.4	10.5	1.2		
Miscellaneous Meals	Bacal Feed Meal	Guarantee	..	..	26.0	3.0	10.0	..	..	Soya Beans and Maize	..
Ditto	ditto	Found	..	10.1	32.0	5.9	4.4	5.1	..	Cotton Seed Meal, Soya Beans, Maize, Peanuts, and Wheat	British Australian Cotton Association, Ltd., Whinstanes, Brisbane
Ditto	ditto	Guarantee	..	..	30.0	3.0	10.0	..	..
Ditto	ditto	Found (average)	2	9.7	32.8	5.1	10.2	5.8	..	Cotton seed Meal, 10 per cent. Molasses	..
Ditto	Bacal Treacle Meal	Guarantee	..	10.1	24.0	3.0	30.0	..	..
Ditto	ditto	Found	..	..	25.7	5.1	15.1	5.9	..	..	..

Table VII.—continued.
STOCK FOODS, 1928.

MISCELLANEOUS STOCK FOODS EXAMINED FOR PURPOSES OF "THE STOCK FOODS ACT OF 1919."

Kind of Stock Food.	Sold Under the Name of—	Guaranteed by Seller or found on Analysis by Agricultural Chemist.	Number of Samples Analysed.	Moisture.	Crude Protein.	Crude Fat.	Crude Fibre.	Crude Ash.	Salt.	Composed of or Manufactured from—	Queensland Wholesale Seller.
Laying and Growing Mash	Laying Mash	Guarantee	..	%	%	%	%	%	%	Bran, Pollard, Maize, Wheat, Linseed Meal, Meat Meal, Sulphur, Salt	W. Siemon and Sons, Ltd., Roma street, Brisbane
Ditto	ditto	Found ..	..	9.5	18.9	4.5	5.8	8.1	2.3		
Ditto	Taylor's Champion Laying Mash Mixture	Guarantee	..	..	21.0	3.0	6.0	..	..	Bran, Pollard, Green Bone, Dried Blood, Linseed, Maize Meal, Pea Meal, and Rice Meal	Charles Taylor and Co., Roma street, Brisbane
Ditto	ditto	Found ..	..	10.4	25.7	3.5	5.8	10.7	..		
Ditto	Laying Mash	Guarantee	..	..	20.0	6.0	9.0	..	..	Wheat Meal, Bran, Pollard, Barley Meal, Rice Meal, Maize Meal, Linseed Meal, Lucerne Meal, Meat, Bone and Blood Meal, Salt, Sulphur	Denhams, Ltd., Roma street, Brisbane
Ditto	ditto	Found (average)	4	10.2	18.2	5.1	9.8	7.0	..		
Ditto	Thorpes Laying Mash	Guarantee	..	..	14.0	4.0	9.0	..	1.0	Bran, Pollard, Linseed, Rice, Wheat, Maize, Barley, Lucerne, Blood, Meat and Bone Meals, Sulphur, Calcium Carbonate, Salt	E. C. Chambers and Co., Edward street, Brisbane
Ditto	ditto	Found ..	..	10.3	18.3	4.3	9.4	10.5	0.5		
Ditto	Thorpes Eggle (Protein Food)	Guarantee	..	..	40.0	7.5	5.0	..	5.0	Meat, Linseed, Blood and Bone Meals, Calcium Carbonate, Sulphur, Salt.	
Ditto	ditto	Found ..	..	7.1	36.2	11.2	4.5	27.5	6.0		
Ditto	Red Comb Laying Mash	Guarantee	..	..	17.0	4.0	9.0	..	0.5	Bran, Pollard, Maize, Barley, Linseed, Lucerne, Meat and Bone Meals, Cod Liver Oil, Charcoal, Salt	The Poultry Farmers' Co-operative Society, Ltd., Garrick street, Brisbane
Ditto	ditto	Found ..	..	11.2	20.0	3.7	9.0	5.1	0.3		
Ditto	Skinnners Allegg	Guarantee	..	..	38.0	8.0	7.0	..	5.0	Meat, Bone, Blood, Cod Oil, Linseed Meal, Charcoal, Salt	
Ditto	ditto	Found ..	..	8.5	46.8	8.1	8.3	16.9	5.0		
Ditto	Growing Mash	Guarantee	..	..	15.0	4.0	4.0	..	..	Wheat Meal, Bran, Pollard, Barley Meal, Rice Meal, Maize Meal, Linseed Meal, Meat, Bone and Blood Meal, Salt, Sulphur	Denhams, Ltd., Roma street, Brisbane
Ditto	ditto	Found (average)	2	9.8	18.5	7.1	8.1	6.4	..		
Ditto	ditto	Guarantee	..	..	15.0	4.5	5.0	..	0.5	Wheat, Maize, Oilcake, Bran, Pollard, Meat Meal, Sulphur, Salt	W. Siemon and Sons, Ltd., Roma street, Brisbane
Ditto	ditto	Found ..	..	10.6	14.5	4.6	8.7	9.4	1.0		
Ditto	Thorpes Growing Mash	Guarantee	..	..	15.0	4.0	9.0	..	1.0	Bran, Pollard, Linseed, Rice, Barley, Wheat, Maize, Lucerne, Blood, Meat and Bone Meals, Calcium Carbonate, Sulphur, Salt	E. C. Chambers and Co., Edward street, Brisbane
Ditto	ditto	Found ..	..	10.3	18.9	4.0	7.8	8.5	0.4		

Table VIII.—FERTILISERS CONTAINING NITROGEN ONLY.

Producer (Wholesale Dealer).	Name of Fertiliser.	Guaranteed by Producer or found on Analysis by Agricultural Chemist.	Number of Samples Analysed.	NITROGEN AS	
				Sodium Nitrate.	Ammonium Sulphate.
Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane	Nitrate of Soda ..	Guarantee ..	..	% 15.6	% ..
Shirley's Fertilizers Pty., Ltd., Little Roma Street, Brisbane	ditto	Guarantee ..	..	15.5	..
Webster and Co., Ltd., Mary street, Brisbane	ditto	Found (average)	2	15.9	..
	ditto	Guarantee ..	..	15.5	..
Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane	Sulphate of Ammonia	Guarantee ..	..	..	20.0
Australian Co-operative Fertilisers, Ltd., Bridge street, Townsville	ditto	Found (average)	2	..	20.6
	ditto	Guarantee ..	..	..	20.0
Gibbs, Bright, and Co., Wharf street, Brisbane	ditto	Guarantee ..	..	..	20.0
Shirley's Fertilizers Pty., Ltd., Little Roma street, Brisbane	ditto	Guarantee ..	..	..	20.5
	ditto	Found (average)	2	..	20.8
Webster and Co., Ltd., Mary street, Brisbane	ditto	Guarantee ..	..	..	20.0
Abel Lemon and Co., Pty., Ltd., Market street, Brisbane ..	Floranid	Guarantee ..	46.0%	Nitrogen as Urea	ditto
	ditto	Found	46.3%		
Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane	Calcium Cyanide ..	Guarantee ..	19.0%	Nitrogen	ditto
	ditto	Found	18.9%		

Table IX.—FERTILISERS CONTAINING PHOSPHORIC ACID ONLY.

Producer (Wholesale Dealer).	Name of Fertiliser.	Guaranteed by Producer or found on Analysis by Agricultural Chemist.	Number of Samples Analysed.	PHOSPHORIC ACID.				FINENESS.	
				Water Soluble.	Citrate Soluble.	Citrate Insoluble.	From Nauru and Ocean Island Phosphate.	Fine Material.	Coarse Material.
Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane	A.C.F. High Grade Superphosphate	Guarantee ..	..	% 21.0	% 0.5	% 1.0	% ..	% ..	% ..
Gibbs, Bright, and Co., Wharf street, Brisbane	ditto	Found (average)	5	20.6	..	..	..	..	..
	Sulphide Super High Grade	Guarantee ..	..	20.5	0.5	1.0	..	..	..
Shirley's Fertilizers Pty., Ltd., Little Roma street, Brisbane	ditto	Found .. ..	..	20.8	..	..	..	..	..
	Shirley's Superphosphate, 22 per cent.	Guarantee ..	..	20.5	0.5	1.0	..	..	..
Webster and Co., Ltd., Mary street, Brisbane	ditto	Found (average)	10	20.5	..	..	..	..	..
	Crown Brand Superphosphate	Guarantee ..	..	21.0	..	..	..	..	..
Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane	A.C.F. Basic Superphosphate	Guarantee ..	..	4.0	14.0	2.0	..	..	..
	ditto	Found .. ..	..	5.6	12.3	..	..	..	..
Gibbs, Bright, and Co., Wharf street, Brisbane	Sulphide Basic Super	Guarantee ..	..	3.0	15.0	2.0	..	..	..
Shirley's Fertilizers Pty., Ltd., Little Roma street, Brisbane	Shirley's Basic Super ..	Guarantee ..	..	..	17.0	..	..	..	..
	ditto	Found (average)	5	..	17.9	..	..	..	..
Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane	A.C.F. Ground Nauru Phosphate Rock	Guarantee ..	..	..	..	..	38.0	92.0	8.0
	ditto	Found .. ..	..	..	..	..	37.0	89.0	11.0
Gibbs, Bright, and Co., Wharf street, Brisbane	Ground Rock Phosphate	Guarantee ..	..	..	..	..	38.5	100.0	..
	ditto	Found .. ..	..	..	..	..	36.9	97.5	2.5
Shirley's Fertilizers Pty., Ltd., Little Roma street, Brisbane	Shirley's Ground Rock Phosphate	Guarantee ..	..	..	..	..	38.0	65.0	35.0

Table X.—FERTILISERS CONTAINING POTASH ONLY.

Producer (Wholesale Dealer).	Name of Fertiliser.	Guaranteed by Producer or found on Analysis by Agricultural Chemist.	Number of Samples Analysed.	Potash as—	
				Potassium Sulphate.	Potassium Chloride.
Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane	Sulphate of Potash ..	Guarantee ..	..	% 48.0	% ..
	ditto	Found (average) ..	2	48.5	..
Australian Co-operative Fertilisers, Ltd., Bridge street, Townsville	ditto	Guarantee ..	..	48.0	..
	ditto	Guarantee ..	..	50.0	..
Shirley's Fertilizers Pty., Ltd., Little Roma street, Brisbane	ditto	Found (average) ..	2	48.9	..
	ditto	Guarantee ..	..	50.0	..
Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane	Muriate of Potash ..	Guarantee ..	..	..	50.0
	ditto	Found .. ..	..	..	52.9
Shirley's Fertilizers Pty., Ltd., Little Roma street, Brisbane	ditto	Guarantee ..	..	..	52.0

Table XII.
MIXED FERTILISERS (MECHANICAL MIXTURES).

Producer (Wholesale Dealer).	Name of Fertiliser.	Guaranteed by Producer or found on Analysis by Agricultural Chemist.	Number of Samples Analysed.	NITROGEN AS—			PHOSPHORIC ACID.			POTASH AS—		FINENESS.				
				Sodium Nitrate.	Ammonium Sulphate.	Blood, Bone, and Offal.	Water Soluble.	Citrate Soluble.	From Bone.	Potassium Sulphate.	Potassium Chloride.	Fine Material.	Coarse Material.	Unspecifed Material.		
				%	%	%	%	%	%	%	%	%	%	%	%	%
Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane	A.C.F. No. 1	Guaranteee	6	..	2.0	3.0	..	13.0	8.0	..	60.0	40.0	..	2.3	..	..
	ditto	Found (average)	..	..	2.9	2.8	..	13.9	9.2	..	78.2	19.5	..	..	..	..
	A.C.F. No. 2	Guaranteee	..	..	3.0	..	..	..	10.0	..	..	..	..	..	..	..
	A.C.F. No. 3	Guaranteee	..	..	3.5	1.5	..	10.0	..	..	..	..	..	..	..	..
	ditto	Found (average)	..	..	3.8	1.5	..	11.0	..	..	..	..	..	..	..	..
	A.C.F. No. 4	Guaranteee	..	..	2.0	2.0	..	9.0	12.0	..	60.0	40.0	..	..	..	..
	ditto	Found (average)	..	2	..	2.5	1.7	..	11.6	13.4	..	68.5	29.5	..	2.0	..
	A.C.F. No. 5	Guaranteee	..	..	2.0	1.5	..	7.0	..	..	12.0	60.0	40.0	..	..	..
	ditto	Found (average)	..	6	..	2.2	1.4	..	9.3	..	13.0	69.5	25.2	..	5.3	..
	A.C.F. No. 6	Guaranteee	..	..	5.0	..	..	10.0	..	8.0	..	..	..	..	..	..
	ditto	Found (average)	..	..	3.7	1.3	..	5.0	..	4.0	3.0	60.0	40.0	..	..	..
	A.C.F. Three 6	Guaranteee	..	..	3.5	1.9	..	4.8	..	3.8	5.3	72.0	23.5	..	4.5	..
	ditto	Found (average)	..	4	..	2.0	..	5.0	..	9.0	..	60.0	40.0	..	..	..
	A.C.F. No. 8	Guaranteee	..	..	..	2.3	..	3.6	..	11.3	..	71.5	25.0	..	3.5	..
	ditto	Found (average)	..	4	..	..	..	..	..	..	8.0	60.0	40.0	..	..	..
	A.C.F. No. 10	Guaranteee	..	..	4.0	1.5	..	7.0	..	18.0	..	60.0	40.0	..	..	..
	A.C.F. No. 12	Guaranteee	..	..	7.0	..	..	7.0	..	7.0	..	..	..	..	..	..
	Three Sevens	Guaranteee	..	..	4.6	2.4	..	..	..	..	..	60.0	40.0	..	..	..
	7 7 7	Guaranteee	..	..	5.5	2.5	..	..	..	8.0	..	60.0	40.0	..	..	..
	Threights 8 8 8	Guaranteee	..	..	7.6	1.4	..	..	..	9.0	..	60.0	40.0	..	..	..
	Trinine 9 9 9	Guaranteee	..	..	4.5	2.5	..	..	..	..	10.0	60.0	40.0	..	..	..
	B3	Guaranteee	..	..	4.6	2.4	..	..	..	..	10.6	75.5	22.5	..	2.0	..
	ditto	Found (average)	..	2	..	4.5	2.5	..	10.8	..	..	60.0	40.0	..	..	..
	B3 Extra	Guaranteee	..	..	4.8	2.5	..	..	10.0	10.0	..	60.0	40.0	..	..	..
	ditto	Found	..	..	6.5	2.5	..	11.0	..	11.0	..	77.0	19.0	..	4.0	..
	Howe's Mixture	Guaranteee	..	..	..	1.7	..	..	10.0	..	..	60.0	40.0	..	..	..
	Bone and Super	Guaranteee	..	..	..	2.0	..	..	12.1	7.0	..	43.0	44.0	..	13.0	..
ditto	Found	..	..	..	2.5	..	..	14.0	7.0	..	90.0	10.0	..	..	..
Kwikgro	Guaranteee	..	..	2.0	1.5	..	..	9.5	12.0	..	60.0	40.0	..	..	..
A.C.F. Badgen Mixture	Guaranteee	..	..	2.4	2.4	..	3.0	..	12.9	..	60.0	40.0	..	..	..
ditto	Found	..	..	..	2.4	..	3.5	..	..	..	73.0	22.0	..	5.0	..	
Australian Co-operative Fertilisers, Ltd., Bridge street, Townsville	B3 Extra	Guaranteee	..	5.5	1.5	..	..	10.0	10.0	..	65.0	35.0	..	..	..	..
	B3	Guaranteee	..	5.5	1.5	..	..	10.0	..	10.0	65.0	35.0	..	..	..	..
	Howe's Mixture	Guaranteee	..	6.5	2.5	..	..	7.0	11.0	..	65.0	35.0	..	..	..	..
	Trinine 9 9 9	Guaranteee	..	7.4	1.6	..	..	9.0	9.0	..	65.0	35.0	..	..	..	..
	Moreton Fertiliser No. 1	Guaranteee	..	..	4.6	..	..	14.4	9.6	..	72.0	24.0	..	2.3	..	..
	ditto	Found (average)	..	4	..	4.3	..	13.4	11.3	..	80.0	17.7	..	..	..	..
	Moreton Fertiliser No. 2	Guaranteee	..	..	5.3	..	..	16.2	4.8	..	81.0	15.0	..	..	..	..
	ditto	Found (average)	..	5	..	4.8	..	15.8	5.1	..	76.0	21.6	..	2.4	..	..
Moreton Fertiliser No. 3	Guaranteee	..	..	2.0	3.4	..	3.3	7.6	..	80.0	17.0	..	..	..	..
ditto	Found (average)	..	5	..	3.0	..	11.1	9.2	..	75.2	20.8	..	4.0	..	..
Moreton Fertiliser No. 4	Guaranteee	..	..	5.0	3.5	..	2.6	12.0	..	88.0	11.0	..	..	..	..
ditto	Found (average)	..	2	..	5.1	..	7.1	12.8	..	83.5	15.0	..	1.5	..	..
Moreton Fertiliser No. 6	Guaranteee	..	..	3.0	4.3	..	..	11.7	7.2	..	87.0	11.0	..	..	..
Moreton Fertiliser No. 7	Guaranteee	..	..	2.0	4.0	..	..	12.6	9.6	..	75.0	20.0	..	..	..
Moreton Fertiliser No. 8	Guaranteee	..	..	3.0	2.9	..	..	7.2	14.4	..	79.0	19.0	..	..	..
ditto	Found (average)	..	2	..	3.1	..	8.5	16.0	..	82.0	16.0	..	2.0	..	..

Borthwick and Sons (Australasia), Ltd.,
Wharf street, Brisbane

Cattle Dips	Active Constituents and Rate of Dilution as Declared on Label.	Homogeneous. When diluted in accordance with instructions on label gave a fluid of standard strength	Source
Australian Liquid Dip	Arsenic and Cresols .. (1 part concentrate to 160 parts water)	..	Australian Disinfectant Co., 341 Queen street, Brisbane
Cooper's Improved Cattle Dip	Arsenic .. (1 gal. concentrate to 125 gals. water)	..	New Zealand Loan and Mercantile Agency Co., Ltd., Eagle street, Brisbane
"Kiltic" Liquid Cattle Dip	Arsenic .. (1 gal. concentrate to 160 gals. water)	..	Surgical Supplies, Ltd., Queen street, Brisbane
"Non Ox" Liquid Cattle Dip	Arsenic and Cresols .. (1 part concentrate to 160 parts water)	..	Australian Chemical Co., Grey street, South Brisbane
Queensland Cattle Dip	Arsenic and Cresols .. (1 gal. concentrate to 160 gals. water)	..	Australian Machinery Co., Ltd., 371 Adelaide street, Brisbane
Royal Cattle Dip	Arsenic and Cresols .. (1 gal. concentrate to 160 gals. water)	..	ditto
Royal Cattle Dip (No. 2 Homogeneous)	Arsenic and Cresols .. (1 gal. concentrate to 160 gals. water)	..	ditto
"Vallo" Brand Fluid Cattle Dip	Arsenic and Phenols .. (1 gal. concentrate to 170 gals. water)	..	A. Victor Leggo and Co., 72 Albert street, Brisbane
"Catillac" (Paste)	Arsenic and Phenols .. (10 lb. concentrate to 175 gals. water)	When diluted in accordance with instructions on label gave a fluid of standard strength	Goldsbrough Mort and Co., Ltd., Eagle street, Brisbane
"Kiltic" Cattle Dip (bar form)	Arsenic .. (1 bar concentrate to 51 gals. water)	..	Surgical Supplies, Ltd., Queen street, Brisbane
Thomas' Carbolised Cattle Wash (Paste)	Arsenic .. (10 lb. concentrate to 175 gals. water)	..	James Campbell and Sons, Ltd., Creek street, Brisbane
"Vallo" Powder Cattle Dip	Arsenic As ₂ O ₃ .. (5 lb. concentrate to 100 gals. water)	..	A. Victor Leggo and Co., 72 Albert street, Brisbane
Copper Dusts	Active Constituents as Declared on Label.		
"Aero" Brand Copper Carbonate	Copper in form of basic compound of 50% copper (chiefly carbonate)	53.7% Copper (Cu) 98% passed through a 200-mesh sieve	A. M. Bickford and Sons, Ltd., Tank street, Brisbane
"Vallo" Brand Anti-Bunt	Copper as Cu	52.7% Copper (Cu) 97% passed through a 200-mesh sieve	A. Victor Leggo and Co., 72 Albert street, Brisbane
Bluestone	Copper sulphate	98.7% Copper Sulphate	Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane
Bluestone	Sulphate of Copper	98.4% ditto	R. W. Thurlow and Co., Ltd., Wharf street, Brisbane
E.S.A. Bluestone	Sulphate of Copper	98.2% ditto	Elder, Smith, and Co., Ltd., 334 Queen street, Brisbane
E.S.A. Bluestone	Sulphate of Copper	98.4% ditto	Shirley's Fertilizers Pty., Ltd., Little Roma street, Brisbane
Copper Sulphate	Copper sulphate	98.4% ditto	Taylor's and Elliotts, Ltd., Charlotte street, Brisbane

Cattle Dips

Standard.—Cattle Dip shall contain an amount of soluble arsenious compound such that when the cattle dip is diluted with water in accordance with the label attached to the container or package the resulting fluid shall contain not less than two-tenths of 1 per cent. of Arsenious trioxide (As₂O₃), not less than five-hundredths of 1 per cent. of soap or its equivalent of tallow or saponifiable oil; and not less than five-hundredths of 1 per cent., and not more than one-tenth of 1 per cent., of Caustic soda or its equivalent of Sodium carbonate, and not more than one-fourth of 1 per cent. of Stockholm Tar or saponifiable tar or Phenolic compounds.

A liquid cattle dip shall be of such consistency that it shall not separate into layers on standing, but shall remain a homogeneous mixture.

Copper Dusts

Standard.—It shall contain not less than 50 per cent. of metallic copper, and be of such fineness as to permit of 95 per cent. passing through a sieve of 200 meshes to the linear inch.

Copper Sulphate

Standard.—It shall not contain less than 98 per cent. of Copper Sulphate (CuSO₄·5H₂O).

Table XIII—continued.

PEST DESTROYERS, 1928—continued.

REGISTERED UNDER SECTION 3 OF THE PEST DESTROYERS ACT—continued.

Name of Pest Destroyer and Standards Prescribed for some of the Principal Kinds.	Sold Under the Name of—	Active Constituents as Declared on Label.	Found on Analysis by the Agricultural Chemist.	Queensland Wholesale Dealer.
Copper Sulphate—continued.	Macclesfield's Bluestone ..	Bluestone ..	98.4 % Copper Sulphate ..	Neptune Oil Co., Ltd., Apollo road, Bulimba, Brisbane
	Macclesfield's Sulphate of Copper ..	Sulphate of Copper ..	97.5 % ditto ..	Burns, Philp, and Co., Ltd., Mary street, Brisbane
	Macclesfield's Copper Sulphate ..	Copper Sulphate ..	98.4 % ditto ..	G. Horsburgh and Co., Ltd., Maryborough
Cyanide	Cyanide ..	Cyanide ..	Equivalent to 96.3% Potassium Cyanide ..	Noyes Bros. (Sydney), Ltd., Elizabeth street, Brisbane
	Cyanide of Potash ..	Cyanide of Potash ..	95 %	Taylor and Elliotts, Ltd., Charlotte street, Brisbane
	Sodium Cyanide ..	Sodium Cyanide ..		G. Horsburgh and Co., Ltd., Maryborough
Dusting Mixtures	Azurine No. 1 ..	Copper Carbonate ..	7.4 % Copper Carbonate ..	Southern Queensland Fruitgrowers' Society, Ltd., Cleveland
	Azurine No. 2 ..	Sulphur ..	47.0 % Sulphur ..	ditto
	Azurine No. 3 ..	Copper Carbonate ..	9.8 % Copper Carbonate ..	ditto
	A.P. No. 1 ..	Sulphur ..	37.0 % Sulphur ..	ditto
	A.P. No. 2 ..	Arsenate of Lead ..	53.0 % Arsenate of Lead ..	ditto
	A.P. No. 3 ..	Arsenate of Lead ..	14.3 % Arsenate of Lead ..	ditto
		Arsenate of Lead ..	16.0 % Arsenate of Lead ..	ditto
		Sulphur ..	30.0 % Sulphur ..	ditto
		Arsenate of Lead ..	15.6 % Arsenate of Lead ..	ditto
		Copper Carbonate ..	5.0 % Copper Carbonate ..	ditto
	Citro No. 1 ..	Sulphur ..	22.0 % Sulphur ..	ditto
	(Citro No. 2 ..	Copper Carbonate ..	5.0 % Copper Carbonate ..	ditto
		Sulphur ..	37.0 % Sulphur ..	ditto
		Copper Carbonate ..	5.6 % Copper Carbonate ..	ditto
		Sulphur ..	25.8 % Sulphur ..	ditto
		Nicotine ..	0.8 % Nicotine ..	ditto
		Copper Carbonate ..	12.5 % Copper Carbonate ..	ditto
	Cloudform Potato Dust ..	Copper Carbonate ..	1.9 % Nicotine ..	ditto
	Cloudform Sulphur Dust ..	Sulphur ..	53.4 % Arsenate of Lead ..	ditto
	Cloudform Tobacco No. 2 ..	Nicotine ..	5.0 % Copper Carbonate ..	ditto
	Cloudform Tomato No. 1 ..	Arsenate of Lead ..	36.0 % Sulphur ..	ditto
		Copper Carbonate ..	29.6 % Arsenate of Lead ..	ditto
	Cloudform Tomato No. 2 ..	Arsenate of Lead ..	4.5 % Copper Carbonate ..	ditto
		Copper Carbonate ..	35.0 % Sulphur ..	ditto
	Cul-cal ..	Copper Sulphate ..	28.1 % Copper Sulphate ..	Australian Co-operative Fertilisers Ltd., Little Roma street, Brisbane
	"Supreme" Brand Kil-Dust ..	Copper Sulphate ..	5H ₂ O ..	ditto
		Copper Sulphate ..	17.7 % Copper Sulphate ..	ditto
		Arsenic Oxide As ₂ O ₃ ..	3.2 % As ₂ O ₃ as Arsenate of Lead ..	
	"Supreme" Dusting Compound ..	Copper Sulphate ..	7.6 % Copper Sulphate ..	ditto
		Arsenic Oxide As ₂ O ₃ ..	5H ₂ O ..	
		Sulphur ..	2.6 % As ₂ O ₃ as Arsenate of Lead ..	
		Formalin ..	43.0 % Sulphur ..	
Formalin or Formol	Bickfords' Formalin ..	Formalin ..		A. M. Bickford and Sons, Ltd., Tank street, Brisbane

Standard.—The active constituents of the preparation and the percentage of such active constituents present in the preparation shall be stated on the label.

Standard.—Formalin or Formol shall contain not less than 38 per cent. of Formaldehyde (HCHO) by volume or 35 per cent. by weight.

Iron Sulphate	.. .. .	Howard's Ferri Sulph. pur	.. .. .	Ferri Sulph. pur	.. .. .	99.2 % Iron Sulphate	.. .. .	Taylor and Elliotts, Ltd., Charlotte street, Brisbane Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane
<i>Standard.</i> —It shall contain not less than 95 per cent. of Ferrous sulphate or Sulphate of iron ($\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$).		Sulphate of Iron	.. .. .	Sulphate of Iron	.. .. .		
Lime Burnt	.. .. .	Burnt Lime	.. .. .	Calcium oxide	.. .. .	85 %	ditto	
<i>Standard.</i> —Lime shall contain not less than 85 per cent. uncombined Calcium Oxide (CaO) and not more than 5 per cent. of Calcium Carbonate (CaCO_3), and not more than 2 per cent. of Magnesium Compounds, calculated as Magnesium Oxide (MgO). It shall be "fat" lime and readily slake with water.								
Lime Sulphur	.. .. .	A.C.F. Lime Sulphur Solution	.. .. .	Sulphur	.. .. .	25 %	27.9 % Sulphur	Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane
<i>Standard.</i> —Lime Sulphur shall be wholly soluble in water and shall contain in solution at least 20 per cent. of Sulphur free, or combined, or both.		Harola	.. .. .	Sulphur	.. .. .	25 %	23.7 % ditto	Buzacotts (Q'land), Ltd., 373A Adelaide street, Brisbane
		"Neptune" Lime Sulphur Spraying Solution	.. .. .	Sulphur	.. .. .	25 %	24.9 % ditto	Neptune Oil Co., Ltd., Apollo road Bulimba, Brisbane
		"Vallo Giraffe" Brand Lime Sulphur Wash	.. .. .	Sulphur	.. .. .	20 %	26.1 % ditto	A. Victor Leggo and Co., 72 Albert street, Brisbane
Nicotine or Nicotine Compounds	.. .. .	"Black Leaf 40"	.. .. .	Nicotine	.. .. .	40 %	40.5 % Nicotine	Neptune Oil Co., Ltd., Apollo road, Bulimba, Brisbane
<i>Standard.</i> —Nicotine and Nicotine Compounds shall contain not less than 20 per cent. of Nicotine ($\text{C}_{10}\text{H}_{14}\text{N}_2$), free and (or) combined.		"Vallo" Brand Nicotine Sulphate	.. .. .	Nicotine	.. .. .	40 %	39.1 % ditto	A. Victor Leggo and Co., 72 Albert street, Brisbane
Paris Green	.. .. .	Paris Green	.. .. .	Arsenic Trioxide As_2O_3	.. .. .	55 %	55.6 % Arsenic Trioxide (As_2O_3)	Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane
		Paris Green Powder	.. .. .	Arsenic Trioxide	.. .. .	55 %	1.0 % Water Soluble As_2O_3	Buzacotts (Q'land), Ltd., 373A Adelaide street, Brisbane
<i>Standard.</i> —Paris Green shall contain not less than 55 per cent. Arsenic Trioxide (As_2O_3), and not more Arsenic in water soluble form than is equivalent to $3\frac{1}{2}$ per cent. Arsenic Trioxide (As_2O_3).		Paris Green	.. .. .		.. .. .		0.9 % Water Soluble As_2O_3	Taylor and Elliotts, Ltd., Charlotte street, Brisbane
Petroleum Emulsion and (or) Kerosene Emulsion	.. .. .	Irving's Prepared Soluble Kerosene Emulsion	.. .. .	Kerosene	.. .. .		39.4 % Mineral Oil	John Irving and Sons, London Works, Mayne, Brisbane
<i>Standard.</i> —A substance capable of making an emulsion with distilled water, and containing Petroleum and (or) Kerosene. It shall contain not less than 25 per cent. of Petroleum and (or) Kerosene.								
Phosphorus Pest Destroyers	.. .. .	Rat Doom	.. .. .	Phosphorus	.. .. .			Taylor and Elliotts, Ltd., Charlotte street, Brisbane
		Rat Poison	.. .. .	Phosphorus	.. .. .	1.3 %		Wm. Street and Son, Ann street, Brisbane
		S.A.P.	.. .. .	Phosphorus	.. .. .			New Zealand Loan and Mercantile Agency Co., Ltd., Eagle street, Brisbane

Preparation	Active Constituents as Declared on Label.	Percentage	Supplier
"Vallo" Powder Sheep Dip	Arsenic and Sulphur Compounds (10 lb. concentrate to 100 gals. water)	..	A. Victor Leggo and Co., 72 Albert street, Brisbane
"Cubba" Sheep Dip (Liquid)	Arsenic (1 part concentrate to 38 parts water)	..	Gibbs, Bright, and Co., Wharf street, Brisbane
Cooper's Milk Oil Fluid	Phenols and Cresols	.. 18 %	New Zealand Loan and Mercantile Agency Co., Ltd., Eagle street, Brisbane
"Hibiscus" Phenolic Sheep Dip	Tar Acid	.. 20 %	Queensland Pastoral Supplies, Ltd., Bowen street, off Ann street, Brisbane
"Kreola" Sheep Dip	Tar Acids	.. 20 %	Australian Chemical Co., Ltd., Grey street, South Brisbane
Little's Improved Fluid Dip	Tar Acids	.. 17½ %	Hayne and Carson, Griffiths House, Queen street, Brisbane
Little's Improved Fluid Dip	Tar Acids	.. 17½ %	Goldsbrough, Mort, and Co., Ltd., Rockhampton
Mallinson's Oil Sheep Dip	Cresols and/or Phenols	.. 18 %	J. H. Cormack, Grey street, South Brisbane
Morrison's Phenolic Sheep Dip	Tar Acids	.. 15 %	H. Deakin, Ryan House, Charlotte street, Brisbane
Quibell's Liquid Sheep Dip	Tar Acids	.. 18 %	Dalgety and Co., Ltd., Elizabeth street, Brisbane
Quibell's Liquid Sheep Dip	Tar Acids	.. 18 %	A. M. Bickford and Sons, Ltd., Tank street, Brisbane
Royal Sheep Dip Liquid (Improved)	Cresols	.. 18 %	Australian Machinery Co., Ltd., 371 Charlotte street, Brisbane
Cooper's (Improved) Worm Tablets	Each tablet contains 0.4 grains soluble Arsenic and 1.8 grains soluble Copper	..	New Zealand Loan and Mercantile Agency Co., Ltd., Eagle street, Brisbane
Deignan's Blowfly Destroyer	Perchloride Mercury	.. 0.01 %	E. J. Deignan, Stafford road, Kedron, Brisbane
Eastman's "Policeman Fly" Sheep Spraying Soap	Tar Acids	.. 4.0 %	H. R. Eastman, Cunnamulla
Eucacene Fly Oil	Arsenic Trioxide	..	R. B. Lawson and Co., Stanthorpe
Flynnox	Eucalyptus Oil	.. 10 %	Dalgety and Co., Ltd., Elizabeth street, Brisbane
Kleenflox	Eucalyptus Residual Oil	.. 40 %	Taubman (Qld.), Ltd., 95 Edward street, Brisbane
"Knoblo" Brand Blowfly Oil	Mineral Oil	.. 50 %	Moreheads, Ltd., Mary street, Brisbane
Morrison's Fly-blown Sheep Oil	Phenolic Compounds	.. 7 %	H. Deakin, Ryan House, Charlotte street, Brisbane
"Policeman Fly" Oil	Mineral Oil	.. 47 %	H. R. Eastman, Cunnamulla
Sumatra Fly Oil	Eucalypti oleum	.. 4 %	Sumatra Fly Oil Co., Ltd., 330 Wickham street, Valley, Brisbane
"Squatter" Fly-blown Sheep Oil	Half-pound Arsenic As ₂ O ₃ per gal. (Phenol and Copper)	..	Neptune Oil Co., Ltd., Apollo road, Bulimba, Brisbane
"Woollo" Fly-blow Dressing	Tar Acid	.. 5 %	Australian Chemical Co., Grey street, South Brisbane
Pure Strychnine (Carnegie Bros.)	Phenols	.. 8 %	Queensland Pastoral Supplies, Ltd., Bowen street, off Ann street, Brisbane
Pure Strychnine (Jacob Hulle)	Tar Acid	.. 13 %	Thomas Brown and Sons, Ltd., Eagle street, Brisbane
Pure Strychnine (Jacob Hulle)	Cresylic Acid	.. 3 %	Burns, Philp, and Co., Ltd., Mary street, Brisbane
Pure Strychnine (Jacob Hulle)	Carbolic Acid or its homologues	.. 4.8 %	
Pure Strychnine (Jacob Hulle)	Tar Oils	.. 80 %	
Pure Strychnine (Jacob Hulle)	Pure Strychnine	..	
Pure Strychnine (Jacob Hulle)	Pure Strychnine	..	
Pure Strychnine (Jacob Hulle)	Pure Strychnine	..	

Standard.—The active constituents of the preparation and the percentage of such active constituents present in the preparation shall be stated on the label.

Standard.—The active constituents of the preparation and the percentage of such active constituents present in the preparation shall be stated on the label.

Standard.—Strychnine sold as Pest Destroyer must be artificially coloured in accordance with the Poisons Regulations.

Table XIII—continued.

PEST DESTROYERS, 1928—continued.

REGISTERED UNDER SECTION 3 OF THE PEST DESTROYERS ACT—continued.

Name of Pest Destroyer and Standards Prescribed for some of the Principal Kinds.	Sold under the Name of—	Active Constituents as Declared on Label.	Found on Analysis by the Agricultural Chemist.	Queensland Wholesale Dealer.
Strychnine—continued.	Pure Strychnine (Jacob Hulle)	Pure Strychnine	Sample of standard strength and colored to comply with Regulations	Elder Smith and Co., Ltd., 334 Queen street, Brisbane
	Pure Strychnine (Jacob Hulle)	Pure Strychnine	ditto	S. Hoffnung and Co., Ltd., Charlotte street, Brisbane
	Pure Strychnine (Jacob Hulle)	Pure Strychnine	ditto	A. Victor Leggo and Co., 72 Albert street, Brisbane
	Pure Strychnine (Jacob Hulle)	Pure Strychnine	ditto	New Zealand Loan and Mercantile Agency Co., Ltd., Eagle street, Brisbane
	Pure Strychnine	Pure Strychnine	Not coloured as required by Regulations	Taylor and Elliotts, Ltd., Charlotte street, Brisbane
	"Neptune" Sublimed Sulphur	Sublimed Sulphur	97.9 % Sublimed Flowers of Sulphur. 44° Chancel	Neptune Oil Co., Ltd., Apollo road, Bulimba, Brisbane
	Sublimed Flowers of Sulphur	Sublimed Flowers of Sulphur	99.5 % Sublimed Flowers of Sulphur. 58° Chancel	Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane
	Sulphur Sub.	Sulphur Sub.	99.9 % Sublimed Flowers of Sulphur. 63° Chancel	Taylor and Elliotts, Ltd., Charlotte street, Brisbane
<i>Standard.</i> —Sulphur shall contain not less than 98 per cent. of Sulphur. Fineness estimated by means of a Chancel's Sulphurimeter.	Australian Sulphur Powdered	Sulphur	99.8 % Ground Sulphur 42° Chancel	Burns, Philp, and Co., Ltd., Mary street, Brisbane
	"Neptune" Sicilian Sulphur	Sulphur	99.3 % Ground Sulphur 36° Chancel	Neptune Oil Co., Ltd., Apollo road, Bulimba, Brisbane
	Sulphur	Sulphur	99.6 % Ground Sulphur 34° Chancel	G. Horsburgh and Co., Ltd., Maryborough
	Sulphur	Pure Sulphur	99.8 % Ground sulphur 47° Chancel	Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane
	"Vallo" Powdered Sulphur	Sulphur	99.6 % Ground Sulphur 51° Chancel	A. Victor Leggo and Co., 72 Albert street, Brisbane
	Pestend (Tobacco Dust)	Nicotine	1.1 % Nicotine	W. D. and H. O. Wills, Ltd., Edward street, Brisbane
	Tobacco Dust	Nicotine	0.9 % ditto	Petersen Bros. and Craig, Ltd., George street, Brisbane
	"Arzeen" (in powder form)	As ₂ O ₃	79.0 % Arsenic Trioxide As ₂ O ₃	A. Victor Leggo and Co., 72 Albert street, Brisbane
	"Arzeen" (in liquid form)	As ₂ O ₃	61.7 % Arsenic Trioxide As ₂ O ₃	ditto
	Chlorocide "A"	Chlorocide		Shirley's Fertilizers, Pty. Ltd., Little Roma street, Brisbane
	Chlorocide "B"	Chlorocide		ditto
	Cyanogas, "Fumo" Brand	Calcium cyanide CaCN ₂		Buzacotts (Q'land), Ltd., 373A Adelaide street, Brisbane
	Paradichlorobenzene	Paradichlorobenzene		ditto
	"Vallo" Brand Arsenate of Soda	As ₂ O ₅	58.5 % Arsenic Pentoxide As ₂ O ₅	A. Victor Leggo and Co., 72 Albert street, Brisbane
	"Blighty"	Copper Sulphate Carbonate of Soda		Buzacotts (Q'land), Ltd., 373A Adelaide street, Brisbane
Tobacco Dust, Tobacco Powder				
<i>Standard.</i> —It shall not contain less than 1 per cent. of Nicotine, and in the case of tobacco dust or powder containing less than 1 per cent. of Nicotine the actual percentage shall be declared on the label.				
Miscellaneous				
<i>Standard.</i> —The active constituents of the preparation and the percentage of such active constituents present in the preparation shall be stated on the label.				

Preparation	Active Constituent	Percentage	Supplier
D. and S. Tomato Spray	Sulphur	8 %	Norman S. Pixley, Mary Street, Brisbane
	Potash	8 %	
	Soda	10 %	
Katakilla	Nitrogen	5.5 %	
	Derris	33.3 %	E. F. Broad (Q'land), Ltd., Edward street, Brisbane
	Soap	66.7 %	ditto
McDougall's No. 2 Fruit Tree Wash	Ext. of Derris	1 %	
	Sulphur	3 %	
	Soap	35 %	
	Potash	7½ %	
Qua-Sul	Carbon	3 %	
	Sulphur (in solution with Sodium and other elements)	4 %	
Solomia	Fatty Anhydride	16.21 %	Australian Co-operative Fertilisers, Ltd., Little Roma street, Brisbane
	Combined Alkali	3.16 %	
	Free Alkali	0.17 %	Buzacotts (Q'land), Ltd., 373A Adelaide street, Brisbane
	Free Fat	0.11 %	
	Phenols	0.27 %	
	Chlorine	0.13 %	
	Glycerine	1.42 %	
	Arsenious Oxide	35 %	
Bickford's Ant and Vermin Destroyer	Arsenic As ₂ O ₃	60 %	A. M. Bickford and Sons, Tank street, Brisbane
Street's White Ant Cure	Arsenic As ₂ O ₃	5.5 %	Wm. Street and Son, Ann street, Brisbane
Street's Cure for Ants, Bugs, Borers, Cockroaches, Flies, Ticks, &c.	Arsenic	0.03 %	
Ausoline Rat and Mice Exterminator	Phosphorus	0.004 %	
"Ce Be" Liquid Weed Killer	Phenols	40 %	W. Lowe, Federation street, Bowen Bridge, Brisbane
D and C Liquid Weed Killer	Phenols	40 %	Campbell Bros., Ltd., Bowen Bridge, Brisbane
Sharpley's Weed and Grass Destroyer	Phenyle	2 %	D. and C. Distributing Agency, Adelaide street, Brisbane
"Blue Triangle" Sheep Dip	Tar Acids	2.75 %	J. B. Sharpley, Gordon street, Coorparoo
"Neptune" Phenolic Sheep Dip	Carbolic Acid or its homologues	2.5 %	Queensland and Southern Agencies, Little Roma street, Brisbane
"Ce Be" Phenyle	Phenols	2 %	Neptune Oil Co., Ltd., Apollo road, Bulimba, Brisbane
C.N. "Crown" Disinfectant	Phenol	27 %	Campbell Bros., Ltd., Bowen Bridge, Brisbane
C.N. Disinfectant	Cresols	25 %	Australian Disinfectant Co., 341 Queen street, Brisbane
C.N. Disinfectant	Cresols	2.5 %	Norris Agencies, Ltd., 639 Ann street, Brisbane
Irving's Soluble Phenyle	Phenols	5.0 %	John Irving and Sons, London Works, Mayne, Brisbane
Irving's Soluble Phenyle	Phenols	2 %	ditto
Kerol	Tar Acids	31 %	Dalgety and Co., Ltd., Elizabeth street, Brisbane
Kreola 1	Tar Acids	20 %	Australian Chemical Co., Grey street, South Brisbane
Morrison's Soluble Phenyle	Tar Acid	15 %	H. Deakin, Ryan House, Charlotte street, Brisbane
Pesticide	Tar Acids	13 %	Sumatra Fly Oil Co., George street, Brisbane
Safonia	Cresylic Acid	5 %	Australian Disinfectant Co., 341 Queen street, Brisbane
Sapocarb	Cresylic Acid	50 %	Surgical Supplies, Ltd., Queen street, Brisbane

Various Phenolic Preparations
Standard.—The active constituents of the preparation and the percentage of such active constituents present in the preparation shall be stated on the label.

Table XIII—continued.

PEST DESTROYERS, 1928—continued.

REGISTERED UNDER SECTION 3 OF THE PEST DESTROYERS ACT—continued.

Name of Pest Destroyer and Standards Prescribed for some of the Principal Kinds.	Sold under the Name of—	Active Constituents as Declared on Label.	Found on Analysis by the Agricultural Chemist.	Queensland Wholesale Dealer.	
Various Phenolic Preparations—continued.	Saponol	Cresols	..	Queensland Disinfectant Co., 20 Denham street, Rockhampton	
	Savol	Phenols	..	Australian Chemical Co., Grey street, South Brisbane	
	Sidolia	Cresols	..	(Norris Agencies, Ltd., 639 Ann street, Brisbane	
	Soluble Phenyle	Tar Acids	..	A. M. Bickford and Sons, Tank street, Brisbane	
	"Taycol" Disinfectant	Carbolic and Cresylic Acids	..	Taylors and Elliotts, Ltd., Charlotte street, Brisbane	
	Vaceyle A	Phenoloid Compounds	..	Vacuum Oil Co. Pty., Ltd., Parbury House, Queen street, Brisbane	
	Vaceyle No. 2	Phenoloid Compounds	..	ditto	
	"Vetade" Disinfectant	Phenoloids	..	Taylors and Elliotts, Ltd., Charlotte street, Brisbane	
	Pyrethrum Powder (under whatever name sold)	Cocksec Powder	Pyrethrum Flowers	..	Harrisons Ramsay Pty., Ltd., Adelaide street, Brisbane
		Cocksec Powder	Pyrethrum Flowers	..	T. Kashiwagi, Wickham street, Brisbane
		Insectibane	Pyrethrum Cinerariæfolium	..	Nobles, Ltd., Eagle street, Brisbane
		Mortein	Pyrethrum Cinerariæfolium	..	A. G. Bignold and Co., 169 Elizabeth street, Brisbane
		Peacock Anmin Powder	Pure Pyrethrum Powder	..	S. Hoffmung and Co., Ltd., Charlotte street, Brisbane
		Queen Insect Powder..	Pyrethrum Powder Boron Compounds	Taylors and Elliotts, Ltd., Charlotte street, Brisbane
		Flit	Petroleum soluble resin of Pyrethri Florum	..	Potter and Birks, Ltd., Charlotte street, Brisbane
Fly Tox		Ether soluble resin of Pyrethri Flores	..	Frazer and Best, Ltd., Adelaide street, Brisbane	
Lotol		Aether soluble resins of Pyrethrum Flores	..	L. A. Drewe, Victory Chambers, Queen street, Brisbane	
Mortein Liquid Spray		Ether soluble resin of Pyrethrum Flores	..	A. G. Bignold, 169 Elizabeth street, Brisbane	

REPORT OF THE CHIEF INSPECTOR OF STOCK.

STOCK STATISTICS.

The following preliminary figures supplied by the Government Statistician show a decrease in the number of horses, cattle, and sheep:—

Year.	Horses.	Cattle.	Sheep.
1927	571,622	5,464,845	16,860,772
1928	542,140	5,234,420	16,501,913
Decrease ..	29,482	230,425	358,859

As pointed out last year, the decreases above referred to were inevitable, as it is not the actual, but the potential losses that have to be reckoned with. At the present time approximately one-third of our stock-carrying country in the far south-west and central-west has received no beneficial relief rains. In districts where relief has been experienced the live stock industry has considerably improved, store cattle being in great demand, and prices good. Notwithstanding the bad seasons, good supplies of cattle have been treated at the various meat works. The health of stock generally has been good, but, as was expected when rain did appear after the extended dry periods, the cattle tick became very active, causing considerable numbers of mortalities.

The farmers' wool scheme is still growing, some 89,118 lb. having been received at the Departmental wool rooms, which amount is about 17,500 lb. in excess of the previous year.

The recent visit of Sir Arnold Theiler, K.C.M.G., the celebrated veterinary scientist, should be of immense benefit to the pastoralists in Australia. He has pointed out that science cannot avert droughts, but its aid is required to anticipate them. Scientific research can discover means of arresting or repairing the deterioration of pastures or of supplying to stock in some other way what has become deficient in natural feed.

Appendices A and B show particulars of work carried out at the Stock Experiment Stations, Yeerongpilly and Townsville, respectively; C, report of the Acting Instructor in Sheep and Wool; D, report of the Deputy Registrar of Brands.

Helidon Cleansing Area.

During the year the total inspections were as follows:—

No. of Holdings Examined.	Stock Inspected.	Holdings found Tick Infested.	Stock Dipped.	Districts.
143	3,780	15	490	Various
620	18,109	100	6,430	Helidon
718	23,805	101	3,331	North Helidon
630	18,923	277	9,171	Helidon and Ma Ma Creek
240	10,961	69	6,140	East Haldon and Ma Ma Creek
743	29,649	104	12,839	Hampton
324	9,291	14	2,704	Ravensbourne
3,418	114,518	680	41,105	

PROSECUTIONS.

	Number of Prosecutions.	Number of Convictions.
Diseases in Stock Act ..	101	101
Slaughtering Act	61	59
Brands Act	1	1

ANALYTICAL EXAMINATIONS.

Forty-nine samples of viscera and contents were submitted to the Agricultural Chemist for analysis, and in seventeen cases the poison present was detected. In North Queensland samples were analysed, of which contained poison.

HORSES EXPORTED OVERSEAS.

544 horses.

TUBERCULIN TEST.

The test was applied to 283 animals, the number of positive reactions being 39.

DIPS.

The total number of registered cattle dips is 4,432, distributed throughout the State as follows:—

District.	Dips.	District.	Dips.
Barcaldine ..	3	Normanton ..	36
Bowen	226	Rockhampton ..	452
Brisbane ..	1,102	Roma	61
Cairns	207	Springsure ..	74
Clermont ..	127	Toowoomba ..	104
Cloncurry ..	47	Townsville ..	225
Cooktown ..	39	Warwick	35
Gladstone ..	323	Winton	4
Hughenden ..	34		
Longreach ..	2	Total ..	4,432
Maryborough ..	1,331		

DIPPING FLUIDS.

Four hundred and fifty-nine samples of dipping fluids were analysed from dips in Southern and Central Queensland, of which number only 26 per cent. were of standard strength. Ten per cent. samples showed oxidation in varying amounts up to 14.38 lb. of oxidised arsenic.

In addition to the above, the following travelling stock were dealt with:—

Stock dipped—

Horses	..	..	..	516
Cattle	..	..	..	5,081

The early part, from June to October, was fairly dry, and cleansing operations were relaxed somewhat on account of the state of the country, and low condition of the stock. Later, from November onwards, good rains fell, stock improved in condition, and cleansing again became regular. Very heavy flood rains fell early in 1928, and cleansing was again retarded owing to floods. Ticks then made some headway, and ground was lost for a period. Later, conditions improved, dipping became regular, and all infested stock were cleansed.

Helidon Division.

Ticks became active all along the main creek after the floods. All ticky holdings have now been dipped regularly, and the whole of this section is being gradually cleaned-up, and cleansing operations therein are very satisfactory.

Helidon and Ma Ma Creek Divisions.

This section comprises portion of Helidon and Ma Ma Creek divisions. All holdings have been regularly visited and all infested stock cleansed.

East Haldon and Ma Ma Creek Divisions.

Cleansing work at East Haldon was quite held up by floods in January and February, and ticks obtained a good start on some of the infested holdings. These, however, have been dipped regularly since the season improved, and all lost ground has been regained. This section is now fairly clean.

Hampton Division.

Very good work has been done in this section during the year, and it is being gradually cleaned up.

Ravensbourne Division.

Ticks have been kept in check in this section, and no ground has been lost. Now that a permanent officer has been appointed, good results are anticipated in the coming year.

The whole of the cleansing area is now being regularly worked, with the exception of the Seventeen-mile, in the north Helidon section, and operations are satisfactory. Late in January ticks appeared on eleven holdings in the declared clean area. Details are as follows:—Declared clean area, Helidon section, three holdings reinfested—infestation due to a bull straying from near Dinner Corner to these three farms. Declared clean area, Flagstone section, one holding reinfested—infestation due to a bull which had been sold returning to the home farm. Declared clean area, Ma Ma Creek section, one holding reinfested—infestation thought to be due to some young stock sold to a person near Gatton, returning to the home farm. Declared clean area, North Helidon section, six holdings

reinfested—infestation due partly to young stock straying back to home farms, and to flood waters, as some of the reinfested farms are on the main creek.

The whole of the reinfested holdings have been kept under strict supervision, and all stock thereon cleansed regularly. No ticks have been found on any of these farms for a considerable time, and Inspector McNeill is of the opinion they have been cleaned right up, and that there will not be any further trouble. It will, however, be necessary to keep a close watch on all the holdings until after the summer.

SOUTH BURNETT CLEANSING AREA.

It is regretted that Mr. A. E. Grimley, Officer in Charge of this area, died suddenly on the 18th June. The services of Mr. Grimley will be greatly missed, as he was a most capable, energetic, and reliable officer.

The period under review has been a most favourable one to tick life, and in cleansing operations dippings have had to be carried out at shorter intervals and over a more extended period than has been the case during the dry seasons.

In the old area there have been a few infestations, some traceable, and others not readily accounted for.

In all cases these infestations have been speedily detected and promptly dealt with, and due precautions taken with regard to movements from infested or suspected paddocks.

In the Boondooma-Burrandowan extension, which was very hopeful country when cleansing operations were commenced, inasmuch as ticks had not been seen in many of the paddocks for two or three years, many reinfestations have taken place, particularly in the parishes of Ballogie, Peroone, and Jua, probably due to straying stock, the majority of holdings being used as relief paddocks, which are only visited at irregular intervals by the owners, consequently stock are constantly in and out of the paddocks and on the roads. The infestations have in most cases been light, and dipping has been carried out promptly, but a lot of attention will have to be given to these parts in future to regain the former freedom from infestation.

Holdings inspected	..	..	1,203
Stock inspected	..	..	59,686
Stock dipped	..	..	87,901
Infested holdings (original area)	..	..	23
Infested holdings (new area)	..	..	278

Crow's Nest Cleansing Area.

Holdings inspected	..	..	753
Stock inspected—			
Horses	..	..	2,092
Cattle	..	..	33,197
Stock dipped—			
Horses	..	..	234
Cattle	..	..	10,747
Holdings infested	..	..	38

OUTBREAKS OF PLEURO-PNEUMONIA.

The total number of outbreaks was 107, as compared with 51 in the previous year.

District.	1927.						1928.						Total.
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	
Brisbane	2	..	..	2	3	1	6	3	2	5	5	1	30
Bowen .. ..	..	..	1	..	..	..	..	..	1	..	1	..	3
Clermont .. ..	..	..	1	..	1	..	..	..	..	..	1	..	3
Cloncurry	1	..	..	..	..	..	..	..	..	..	..	..	1
Hughenden	2	..	..	..	..	..	1	..	..	..	..	..	3
Longreach .. ..	..	..	..	..	..	..	..	..	..	..	..	6	6
Maryborough .. ..	..	..	..	1	..	1	1	2	1	1	2	..	9
Rockhampton	1	1	..	..	..	4	4	4	5	..	4	1	24
Roma .. ..	..	..	..	..	..	..	..	3	..	..	..	..	3
South Burnett	1	..	..	..	1	..	..	..	1	..	..	..	3
Toowoomba	1	..	..	1	..	..	..	..	..	..	..	..	2
Townsville	1	..	2	2	2	..	1	3	3	..	1	3	18
Warwick	1	..	..	..	..	..	..	..	..	1	..	..	2
Totals	10	1	4	6	7	6	13	15	13	7	14	11	107

QUARANTINE ACT.

The following animals passed through the quarantine period at Colmslie Quarantine Station, viz.:—9 dogs (4 males, 5 females).

The number of hides and skins imported and disinfected under supervision was:—

Country of Origin.	Ox Hides.	Calf Skins.	Goat Skins.
Oporto	1,170	..	..
England	700	..	..
Italy	25	..	..
New Zealand .. ..	..	1,968	..
India .. ..	..	24	69,000
Totals	1,895	1,992	69,000

Other imported articles disinfected in accordance with quarantine regulations were:—

- 2 bear skins.
- 2 fox skins.
- 1 hyena skin.
- 1 lion skin.
- 3 leopard skins.
- 3 panther skins.
- 1 tiger skin.
- 1 wild-dog skin.
- 19 used riding saddles.
- 3 used mule collars.
- 4 sets used miscellaneous harness and horse effects.

TABLE SHOWING STOCK MOVEMENTS IN THE SEVERAL STOCK DISTRICTS FOR THE YEAR ENDING 30TH JUNE, 1928.

District.	ENTERED DISTRICT.			REMOVED FROM DISTRICT.			MOVEMENTS IN DISTRICT.			STOCK DIPPED.		STOCK SPRAYED.	
	Horses.	Cattle.	Sheep.	Horses.	Cattle.	Sheep.	Horses.	Cattle.	Sheep.	Horses.	Cattle.	Horses.	Cattle.
Barcaldine ..	2,809	47,437	245,683	6,501	49,529	414,327	5,176	23,359	852,151	..	10,262	152	..
Bowen	709	6,670	1,790	873	24,676	..	2,877	27,217	..	..	18	..	..
Brisbane ..	3,528	254,586	415,096	4,036	53,739	47,307	6,348	229,767	62,144	520	84,010	843	238
Cairns	731	9,237	1,000	1,592	34,638	25	3,767	33,573	200	..	32,963	..	..
Charleville ..	1,843	39,610	103,421	2,751	41,929	132,067	2,910	25,637	382,843	..	..	..	..
Clermont ..	1,466	27,192	141,643	3,734	73,301	274,277	2,893	37,976	201,491	478	35,566	..	2,934
Cloncurry ..	2,918	61,381	185,259	7,630	164,360	254,603	11,033	76,385	781,236	610	56,137	13	..
Coolangatta ..	250	980	392	275	1,192	173	127	2,052	291	87	412	24	..
Gladstone ..	1,466	35,147	517	2,048	35,524	..	695	20,296	..	..	1,229	1,165	..
Helidon	702	10,020	5,043	898	18,986	..	1,087	48,710	2	516	45,740	43	392
Hughenden ..	3,366	52,594	327,672	4,774	61,635	420,432	5,213	22,489	374,276	109	26,278	5	..
Longreach ..	3,639	2,555	283,636	8,811	30,488	709,596	5,333	3,921	783,071	..	..	..	..
Maryborough ..	1,582	38,736	12,109	4,132	110,550	155	2,346	73,820	95	532	60,212	719	..
Normanton ..	695	5,520	14,178	4,713	103,114	6,300	1,590	13,695	68	..	90,459	..	..
Rockhampton ..	769	33,884	35,177	1,797	55,159	15,578	2,813	140,996	20,218	49	666	25	14
Roma	1,367	21,558	122,479	4,751	150,337	310,181	8,679	108,217	569,479	450	18,587	140	..
South Burnett ..	674	19,407	37,822	1,318	35,880	13,141	4,955	134,887	2,175	911	61,402	145	4,155
Springsure ..	1,226	16,360	35,542	4,732	47,053	246,626	2,653	27,685	227,175	79	21,478	..	19,763
Toowoomba ..	3,675	105,131	159,703	8,476	189,316	503,924	18,239	503,556	1,736,226	115	44,614	107	31
Townsville ..	2,238	94,102	42,221	8,451	27,708	26,927	9,034	75,503	8,386	506	7,271	35	3
Warwick	2,990	173,404	596,827	3,194	98,525	337,578	7,572	221,700	1,259,097	..	43,834	117	18
Winton	1,487	6,914	276,915	4,531	13,110	712,225	1,327	654	225,890	..	..	..	..

STOCK SALES.

The following are the particulars of stock sold through the Newmarket yards at Brisbane during the year:—

Date.	Cattle.	Sheep.	Pigs.
1927.			
July	9,880	36,740	1,410
August	8,347	37,700	930
September	12,082	41,890	816
October	9,845	27,780	740
November	12,241	32,630	950
December	10,085	34,145	890
1928.			
January	12,843	31,954	480
February	10,330	24,960	345
March	13,790	36,140	675
April	8,080	30,000	835
May	11,786	42,555	1,215
June	7,540	25,140	1,590
Totals	126,849	401,634	10,876

Average value per cental—

Bullocks 30s.; per head, £8 14s.

Cows 28s.; per head, £5 12s.

Average value per lb.—

Sheep 3½d.; per head, £1 2s. 6d.

Lambs 8d.; per head, £1 1s.

Average value per lb.—

Porkers and baconers 6d.; per head, £2 10s.

Average value for suckers, slips, and store pigs, £1.

Average value for vealers up to 80 lb., 17s. 6d.

“THE SLAUGHTERING ACT OF 1898.”

During the period under review the Senior Slaughtering Inspector visited the following centres:—Beenleigh, Beaudesert, Logan Reserve, Ipswich, Harrisville, Gatton, Laidley, Helidon, Lake Clarendon, Warwick, Stanthorpe, Wallangarra, Chinchilla, Miles, Wandoan, Taroom, Lowood, Esk, Toogoolawah, Moore, Kilcoy, Woodford, Caboolture, Maleny, Nambour, Mapleton, Gympie, Goomeri, Kilkivan, Childers, Gladstone, Rockhampton, Longreach, Winton, and many other towns on the various main and branch lines.

General improvement in the condition of the country shops and slaughter-yards, &c., has been well maintained. Each year sees more progressive changes from the old order of things—older buildings being superseded by new ones in accordance with requirements of the Regulations. Nevertheless, it is still found that any laxity in supervision is quickly followed by carelessness and inattention to cleanliness, &c.

The inspection of meat in country centres is practically negligible; the police at such places act as inspectors, but the multifarious duties of their office render it impossible to exercise strict supervision other than to receive the usual notice of intention to slaughter, &c.

The reports submitted from permanent inspectors of the Department show that the majority of the shops and slaughter-houses in the towns and cities are being maintained fairly satisfactorily, but, as in all other things, there is the exception, some requiring more supervision than others. Usually in such cases extreme measures have to be adopted to combat their dilatoriness, which accounts for the number of orders issued and prosecutions that have followed.

New Slaughter-houses.

Thirty new buildings have been erected in various parts of the State, in some instances to replace old and otherwise unsanitary structures. There are also a number of others under construction.

New Shops.

Forty-four new premises have been erected in various parts of the State, many of which were costly structures; in addition, improvements ranging from minor work to extensive renovations have been effected. Quite a number of other very fine up-to-date premises under construction are well forward.

Meat Conveyances.

Throughout the year inspectors have paid considerable attention to their condition and improvement. The motor has now become an economic factor in the transport of meat, the horse-drawn vehicle having become almost extinct. It is also noted that the “cash” or “cutting” cart is on the increase in the metropolitan area. This, of course, is not to be wondered at, especially when one considers the fact that these perambulating butchers ply their trade in the street regardless of a butcher shop being in the vicinity. Naturally, the matter is a very vexed one, and certainly calls for radical changes, more especially as the ramifications of this class of butcher cannot be properly supervised.

Slaughter-house Piggeries.

The importance of Regulation 33—viz., “How swine shall be kept”—has been fully appreciated, and responded to by many owners of slaughter-house piggeries, but in a few cases it has been found necessary to proceed against offenders for having resorted to the objectionable practice of feeding their animals contrary to the law provided.

Appointments.

Recent appointment of several inspectors to supervise the meat supply in the Northern part of the State has been made.

Health of Stock, &c.

In this division, it would appear from the tabulated statement (condemnations) that the health of stock treated was approximately on a par with previous years, excepting swine, which show a considerable decrease in the number condemned.

There has been no shortage of stock for killing purposes.

Metropolitan Killings.

There was an increase in the number of cattle killed, but a small decrease in all other classes of animals treated excepting lambs, which showed an increase.

	1926.	1927.
Cattle	69,693	70,552
Calves	40,941	34,921
Sheep	262,786	221,596
Lambs	18,236	23,607
Swine	23,215	21,518

In addition to the above, the quantity of meat supplied by the various export companies is as under:—

	Cattle.	Calves.	Sheep.	Swine.	Meat Sundries.
Totals	5,027	..	3,112	1,053	263,395 lb.

In determining the average number of cattle by weight, the maximum of 620 lb. per head is allowed.

Central Inspection Depot.

There was a small increase in the number of carcasses of veal and a decrease in carcasses of pork submitted for examination, viz.:—

	1926-27.	1927-28.
Veal	12,114	12,117
Pork	5,443	4,571

Condemnations from the above are as follow:—

Carcasses of veal	189 immature
Carcasses of pork	38 tuberculosis
Number of heads	347 tuberculosis

The return of stock slaughtered under supervision of police acting inspectors is as follows:—

Bullocks	49,423
Cows	58,751
Calves	2,292
Sheep	70,599
Swine	15,694

Bacon Factories.

It will be observed that there is a considerable increase in the number of pigs treated at the various factories. Comparatively, the condemnations are considerably less than in the previous year:—

	1926-27	1927-28.
Pigs	205,886	237,118

Condemnations from the above:—

	1926-27.	1927-28.	
Carcasses	1,339	1,079	Tuberculosis
Heads	9,000	9,095	Tuberculosis

Export Meat Trade.

According to official statistics, there has been an increase in the number of cattle, sheep, and pigs slaughtered, but a decline in the number of calves treated.

	1926.	1927.
Cattle	234,716	262,190
Calves	1,000	517
Sheep	2,928	5,317
Lambs	Nil	50
Swine	3,103	2,860

The following tabulated list shows stock slaughtered and condemned in the course of the period under review, and is compiled from returns furnished by permanent officers of the Department performing slaughtering duties at the following centres:—Brisbane, Toowoomba, Ipswich, Gympie, Maryborough, Bundaberg, Rockhampton, Townsville, Cairns, Warwick, Charleville, Bowen, Roma, Dalby, Clermont, Barcardine, Cloncurry, Springsure, Gladstone, Mareeba, Longreach, Normanton, Charters Towers, Mackay, Gayndah, Coolangatta, and Beaudesert.

The return of swine slaughtered is exclusive of those treated at bacon factories, and those examined at the Brisbane Central Depot, a list of which is shown separately. It will be observed that there is a preponderance of cows slaughtered as compared to bullocks.

Description of Stock.	Number Slaughtered.	Carcasses and Portions Condemned.	Disease.	Percentage.
Bullocks	78,037	165 carcasses	Tuberculosis .. ..	.211
		82 forequarters	Tuberculosis .. ..	.105
		10 hindquarters	Tuberculosis .. ..	.012
		212 heads	Tuberculosis .. ..	.271
		31 carcasses	Bruised .. ..	.039
		14 forequarters	Bruised .. ..	.017
		11 carcasses	Emaciation .. ..	.014
		15 carcasses	Redwater .. ..	.019
		97 carcasses	Actinomycosis .. ..	.124
		4 carcasses	Jaundice .. ..	.005
		4 carcasses	Lantana poisoning .. ..	.005
		1 carcass	Gangrene .. ..	.001
		1 carcass	Pleuro .. ..	.001
		1 carcass	Peritonitis .. ..	.001
		1 carcass	Septic wounds .. ..	.001
		Cows	91,890	405 carcasses .. ..	Tuberculosis .. ..	.44
188 forequarters	Tuberculosis .. ..			.204
6 hindquarters	Tuberculosis .. ..			.006
228 heads	Tuberculosis .. ..			.313
66 carcasses	Bruised .. ..			.071
59 forequarters	Bruised .. ..			.064
31 carcasses	Emaciation .. ..			.033
19 carcasses	Redwater .. ..			.026
34 carcasses	Actinomycosis .. ..			.036
20 carcasses	Advanced pregnancy .. ..			.021
2 carcasses	Jaundice .. ..			.002
1 carcass	Gangrene .. ..			.001
3 forequarters	Septic wounds .. ..			.003
1 carcass	Septicæmia .. ..			.001
2 carcasses	Peritonitis .. ..			.002
5 carcasses	Poverty .. ..			.005
1 carcass	Abscesses .. ..	.001		
2 hindquarters	Abscesses .. ..	.002		
Calves	38,091	933 carcasses	Under weight	2.449
		9 carcasses	Emaciation .. ..	.023
Sheep	450,146	864 carcasses	Emaciation .. ..	.191
		23 carcasses	Bruised .. ..	.005
		2 carcasses	Abscesses .. ..	.0004
		5 carcasses	Caseous lymph ademitis .. ..	.001
		2 carcasses	Fevered .. ..	.0004
Swine	46,830	328 carcasses	Tuberculosis .. ..	.7004
		1,180 heads	Tuberculosis	2.52
		5 carcasses	Abscesses .. ..	.0001
		41 heads	Abscesses .. ..	.087

ARTHUR H. CORY, M.R.C.V.S.,
Chief Inspector of Stock.

APPENDIX A.

REPORT OF THE GOVERNMENT BACTERIOLOGIST.

FEES AND MONEYS RECEIVED.

The services rendered and work performed included the bacteriological (qualitative and quantitative) examination of samples of water, milk, cream, butter, cheese, butter paper wrappers, blood, lymph, &c., and the microscopical examination of various morbid specimens; also the supplying of pleuro virus, blackleg vaccin, blood for tick fever inoculation, autogenous vaccin for contagious mammitis, and other laboratory products.

SPECIMENS SUBMITTED FOR BACTERIOLOGICAL AND OTHER EXAMINATION.

The specimens received for examination were as follows:—

Pathological specimens, including tubercle, actinomycosis, blackleg, lungs, and lymphatic glands	51
Blood for contagious abortion tests ..	14
Blood and blood films for tick fever organisms	48
Pleuro virus examinations	182
Milk for contagious mammitis tests ..	191
Water from butter and cheese factories	30
Cream for bacterial contamination ..	2
Butter paper	3
Brine	3
Fowls	19
Urine	2
Native bears	4
Sheep	2
Birds	3
Churn (butter)	2
Kangaroo	1
Eggs	6
Cow	1
Pig	1
Total	565

IMMUNISATION OF STUD CATTLE FOR TICK FEVER.

During the past year the following 65 stud cattle were received and stalled for inoculation:—

Jersey bulls	1
Shorthorn bulls	14
Hereford bulls	12
Aberdeen-Angus bulls	15
Devon bulls	5
I.M.S. bulls	8
Guernsey bulls	1
Ayrshire bulls	2
Shorthorn heifers	3
Aberdeen Angus heifer	1
I.M.S. heifers	6
Total	65

All these animals survived the treatment, this making the third year in succession that there has been no deaths among the cattle during the inoculation fever period.

SUPPLY OF TESTED BLEEDERS.

Thirty-one tested bleeders have been supplied to stockowners. Blood drawn from these animals can be guaranteed to produce reactions when injected into susceptible cattle; further, each of these animals before disposal has passed the tuberculin test, vaccinated against blackleg, and inoculated for pleuro-pneumonia.

OBSERVATIONS ON BLEEDERS WHOSE BLOOD HAD PRESUMABLY LOST SOME OF ITS INFECTIVITY.

I am often requested to examine the blood of animals that were supplied as bleeders, sometimes as long as three and four years previous. During the first and sometimes the second year, their blood was freely used with success—but latterly their blood was used very intermittently or not at all.

In such cases advice was sought by sending blood smears for microscopical examination, which resulted in detecting the presence, although in comparatively small numbers, of the piroplasma organisms usually in the form known as rings and rods, which, as a rule, are more frequently present in the blood of recovered animals. The owners are accordingly notified of the result and also that the blood is suitable for inoculation purposes, for during my very long and wide experience on the subject, I have always, no matter how long an animal has recovered from tick fever or how long after recovery it has been living in clean country, found that such blood always proves infective when injected into susceptible animals.

In one special case, in the Central district, this information was not accepted, for the owner said that, with regard to a certain bleeder which had been supplied by the Department, the animal's blood that had originally proved successful was now useless for inoculation purposes and the animal was returned to Yeerongpilly where, on arrival, the blood was examined and, as was expected, the piroplasm organisms were readily demonstrated in the freshly stained blood smears; moreover, this animal's blood was injected into a number of clean stalled animals and positive reactions resulted.

This bleeder, which is now six years old, was sold to a stockowner who required, as he said, "a big bullock from which to take large quantities of blood." This new owner has since written me that the animal's blood has proved eminently satisfactory.

PLEURO-PNEUMONIA AND THE SUPPLY OF PLEURO VIRUS.

In consequence of the numerous outbreaks of pleuro-pneumonia over a widespread area of the coastal watershed, there has been a corresponding demand for pleuro virus for protective inoculation. The amount of natural virus

supplied to stockowners has been sufficient to inoculate 169,611 head of cattle, and also 57,933 sterilised setons were supplied.

Some idea of the wide distribution of the supplies of pleuro virus can be gathered from the following list of districts. With regard to

outlying districts, such as those of the Northern Territory, the journey occupied over a month from Brisbane, while in and around Camooweal the virus was despatched per aerial mail from Charleville, the total time in transit occupying just over four days.

TABLE SHOWING DISTRIBUTION OF PLEURO-PNEUMONIA VIRUS AND SETONS TO VARIOUS DISTRICTS.

Town.	Pleuro Virus.	Setons.	Town.	Pleuro Virus.	Setons.
Alpha	2,700	1,400	Forward	83,986	29,012
Aramac	400	..	Grantham	150	150
Archer	2,050	..	Gympie	1,000	1,800
Barmundu	350	220	Injune	2,756	1,556
Beaudésert	4,319	3,075	Josephville	1,025	1,025
Bell	300	..	Kilcoy	1,900	900
Benarkin	1,000	..	Kingaroy	650	..
Biloela	1,050	..	Kinbombi	1,000	..
Builyan	400	..	Laravale	350	350
Blackwater	500	500	Linville	1,910	750
Bogantungan	1,400	..	Lowmead	1,200	..
Boompa	360	400	Marlborough	2,100	..
Boonah	125	..	Miriam Vale	750	450
Bororen	150	..	Mitchell	4,900	2,100
Boyland	22	22	Moolboolaman	2,370	..
Brisbane	7,739	3,900	Moore	300	..
Brooloo	150	..	Morven	1,100	1,100
Brooweena .. .. .	..	500	Mt. Perry	100	..
Byee	75	75	Mt. Tyson	1,000	..
Camooweal	22,750	7,550	Mungallala	2,850	1,200
Cloncurry	6,425	3,400	Nagoorin	1,025	..
Cunnamulla	400	400	Nanango	2,550	350
Dalby	1,760	800	Nebo	1,400	1,400
Dappil	500	..	Northern Territory	8,000	..
Dingo	1,150	550	Oakey	10	10
Duaringa	7,545	1,060	Quilpie	50	..
Eidsvold	300	100	Richmond .. .. .	..	1,500
Esk	2,015	1,450	Rockhampton	11,985	2,000
Fernvale	200	..	Roma	6,550	10,750
Gatton	290	240	St. Lawrence	2,700	..
Gayndah	2,050	1,000	Toogoolawah	250	50
Gilliat	2,000	..	Taragoola	160	160
Gin Gin	2,550	..	Thargomindah	2,500	..
Gladstone	330	280	Tingoor	300	..
Glamorganvale	40	..	Toowoomba	200	..
Gogango	300	..	Torrens Creek	4,500	..
Goomeri	2,250	700	Townsville	50	..
Goondiwindi	5,365	1,150	Wagga Wagga (N. S. Wales)	260	300
Gracemere	1,000	..	Warwick	9,850	..
Grandchester	670	240	Wondai	6,880	1,020
Forward	83,986	29,012	Total	169,611	57,933

INOCULATION FOR TICK FEVER.

There is still a demand for immune blood for inoculation for tick fever. 3,961 doses of blood were supplied, principally for clean store cattle intended for ticky country, while 1,435 head were inoculated by Departmental officers.

CONTAGIOUS MAMMITIS AND TREATMENT WITH AUTOGENOUS VACCIN.

Contagious mammitis has been very prevalent and wide-spread. Of 191 specimens of suspected milk submitted for bacteriological examination, 57 gave negative results, while in 134 cases the streptococci of mammitis were detected. These positive cases came from all dairying centres, from the Tweed to as far north as Atherton.

Immediately on arrival of each positive specimen, the specific micro-organism is isolated and cultivated artificially in sterile broth culture media. After incubation for forty-eight hours the cultures are treated to make the material

sterile, standardised, and preserved from future contamination by the addition of a special disinfectant. This finished product now becomes the autogenous vaccin, and is at once despatched to the farmer who forwarded the infected milk, with full instructions as to how the vaccin treatment is carried out. A leaflet accompanies each lot of vaccin, describing the nature and symptoms of contagious mammitis, the various ways in which the disease is transmitted from one animal to another, and how it may be prevented. The absolute necessity for disinfection of the hands of the milker before and after milking each animal, also the necessity of milking by hand all suspected animals last, and other precautionary measures are fully stressed.

In every case where the instructions are carefully carried out, the departmental method of autogenous vaccin treatment has proved an unqualified success, while in many of those cases where, by force of circumstances a stock vaccin has been used, a number of failures have been recorded.

TABLE SHOWING DISTRIBUTION OF CONTAGIOUS MAMMITIS VACCINE.

Town.					Number of Cows.	Town.					Number of Cows.
Atherton					40	Forward					2,906
Bajool					24	Mackay					14
Beaudesert					1	Maclagan					250
Bell					320	Malanda					103
Benaraby					8	Maleny					1,264
Boodua					42	Millaa Millaa					11
Brigalow					40	Monto					1
Brisbane					76	Mt. Mee					126
Cairns					82	Murgon					34
Canaga					25	Nambour					5
Currumbin					1	Oakey					274
Clifton					51	Ormeau					12
Cooroy					26	Oxenford					29
Cressbrook					10	Peramon					265
Crow's Nest					548	Pittsworth					35
Dalby					54	Proston					50
Dallarnil					50	Rywang					20
Djuan					50	Rathdownie					820
Esk					180	Rockhampton					20
Eumundi					20	Rosedale					5
Goombi					5	Shepperd					100
Goomeri					15	Southbrook					45
Gordonvale					10	Strathpine					10
Greenmount					25	Stuart Creek					60
Haden					50	Tingooora					82
Hampton					1	Toogoolawah					20
Hawkhead					31	Wellcamp					10
Helidon					40	Wondai					50
Inglewood					140	Wonga					18
Jandowae					261	Woodford					66
Jimbour					100	Wooroolin					320
Kaimkillenbun					165	Yalangur					57
Kalbar					88	Yargullen					25
Killarney					22	Yeppoon					9
Kingsthorpe					30	Yungaburra					20
Kinleymore					250	Total					7,136
Kowguran					25						
Forward					2,906						

BLACKLEG VACCIN.

There has been an increased demand for this reliable laboratory product, which, when used properly, has proved successful in preventing outbreaks of blackleg in those localities where the disease is endemic.

Altogether 4,520 doses of vaccin were forwarded to various districts as per following table:—

District.					Number of Doses.	District.					Number of Doses.
Barmundu					310	Forward					2,320
Barrimoon					400	Gladstone					50
Bell					30	Humphrey					20
Boonah					250	Jandowae					200
Brisbane					20	Kenilworth					20
Caboolture					100	Kingaroy					500
Calliope					200	Miriam Vale					50
Camboon					400	Morayfield					50
Crawford					150	Rosewood					140
Eidsvold					450	Taroom					1,150
Gatton					10	Woodford					20
Forward					2,320	Total					4,520

LACTIC CULTURES.

Two hundred and nine bottles of pure lactic cultures were supplied to various cheese factories as per accompanying table. As all the factories have practically no facilities for keeping their starters in a pure state, they must necessarily become contaminated with extraneous and sometimes deleterious micro-organisms. It is therefore advisable that, in order to obtain the best results, a pure lactic culture be used in the preparation of each lot of starter.

District.					Number of Cultures.	District.					Number of Cultures.
Biggenden					1	Forward					62
Boodua					27	Maclagan					25
Brisbane					8	Meringandan					8
Coorunga					2	Oakey					98
Kingsthorpe					15	Wildash					1
Kulpi					9	Woodford					2
Forward					62	Yargullen					13
						Total					209

EXHIBITS AT ROYAL NATIONAL SHOW.

Of the two displays from this institution, the one in the Agricultural Court was of a purely educational character, viz., the importance of bacteriology to all phases of the dairying industry.

Tubes, plate culture, and specimens were shown illustrating bacterial contamination from improperly cleaned cream cans, milk cans, and other dairying utensils.

Specimens were exhibited showing that milk may be drawn from a cow in a perfectly sterile condition and how it becomes contaminated by such common methods as neglecting to wash the teats and udder, wet milking, through the agency of flies, dust, and inefficiently cleaned vessels, including buckets, cans, parts of milking machine, and the separator.

BEEF INDUSTRY EXHIBIT.

The Royal National Association erected and fitted out a building adjoining the main beef industry exhibit to be specially devoted to the bacteriological aspect of the problems concerned in the different methods of preservation of meat and various meat products. Among the important processes dealt with were freezing and chilling and their relative merits as demonstrated by actual portions of frozen and chilled meat.

The arrest of bacterial growth by processes of canning, drying, salting, smoking, &c., were fully demonstrated by specimens and detailed descriptions. In addition, an almost continuous series of explanatory lecturettes and demonstrations were given each day to large and interested audiences. Arrangements and special facilities were made on the Saturday and Monday by the Department of Public Instruction for the senior scholars from the various schools within the metropolitan area, and the students from secondary schools, to view the beef industry and our technical exhibit. Opportunity was also afforded them to attend lecturettes. Special prizes were donated for the best essay on the subjects dealt with in the exhibit. Of the many essays submitted, several were highly meritorious, and showed that a very keen interest was taken by the competitors.

LECTURES AND DEMONSTRATIONS.

During the past year I have visited the following places, mostly dairying centres:—Ravensbourne, Mt. Tyson, Kingsthorpe, Broxburn, Hampton, Maleny, Boonah, Boodua, Crow's Nest, Colinton, Moore, Welleamp, Mooloolah—and given numbers of demonstrations and lantern lectures on various subjects, dealing more particularly with—Contagious mammitis, its nature, cause, symptoms, methods of transmission and prevention, and the vaccin treatment; tuberculosis in cattle and pigs, how the disease is spread, and how it can be diagnosed and prevented; the proper application of disinfectant on the farm; the necessity for cleansing and sterilisation of the separator, the milking machine, the cream can, and other dairying utensils.

SPECIAL LECTURES.

In May last I visited the Agricultural High School, Gatton, during the course of instructions to butter and cheese factory employees, and delivered an illustrated lecture on "Bacteriology in relation to Butter and Cheese Manufacture," dealing particularly with the various problems that must be overcome in order to raise the standard of our dairy products for export and local consumption.

The adoption of this plan would well repay any extra labour involved, as in a very short time there would be a marked diminution in the number of pigs condemned at the bacon factories.

INSTRUCTIONAL WORK.

Apart from voluminous advice supplied by letter, this Laboratory is visited by a large number of stock breeders, dairy farmers, and others interested, to seek information on a wide variety of subjects, including pleuro-pneumonia, tuberculosis, tick fever, contagious mammitis, contagious abortion, internal parasites of stock and poultry, values and merits of different disinfectants, methods of inoculation and vaccination, &c.

NECESSITY FOR STERILISING CREAM CANS.

Notwithstanding that many butter factories are equipped with a perfect mechanical plant for washing, sterilising, and drying cream cans, in reality very few of these cans are returned to the farmer with their interior in a sterile condition. This is not the fault of the machine, but entirely due to the method employed, *i.e.*, the cans are not subjected to live steam for a sufficiently long period to destroy resistant micro-organisms. The procedure in the factory amounts to putting the cans through the machine at a pace which is governed by the number of cans received and by the working time at the disposal of the employee engaged on the work, but without proper regard to the actual time required to ensure efficient sterilisation.

If similar methods were adopted in a bacteriological laboratory in attempting to cleanse and sterilise glass vessels, instruments, &c., no research or satisfactory routine work could possibly be accomplished.

It must be remembered that most machines have four compartments, one used for washing, one for rinsing, another for steaming, and the last one for drying. As a rule, the machine is set to make a complete rotation in two minutes, and in some cases only about one minute. It will therefore be readily apparent that each can is actually only exposed to live steam for considerably less than one minute. Factory managers have assured me that, if the machine were set at a lower speed, the work of treating all the cans received each day could not be accomplished, and further, the supply of live steam for the purpose would be inadequate. Most likely it is on account of the difficulty that an adequate supply of steam is wanting that some of the factories have so far not installed a rotary can washer and steriliser.

During the past year I have made repeated experiments which demonstrate clearly that cream cans cannot be rendered germ-free unless subjected to a live steam temperature for at

least three minutes. It is therefore evident that any extra care taken in adequately cleansing and sterilising cream cans would be more than repaid by the improvement in the quality of the butter.

It therefore behoves the factory management to devise some means whereby the cans remain in the machine for sufficient time to render them sterile. If this cannot be done, I suggest that each factory have a small room of suitable capacity with walls, ceiling, and floor constructed of concrete, the floor having a gradual slope to one corner to draw off the condensed water. This room should be fitted with a comparatively close fitting galvanised door, a steam inlet pipe from the boiler, also a tube aperture in the wall in which a thermometer can be inserted for registering the temperature. This room should have a capacity for 50 or more cans and be fitted with suitable racks. When subjected to a

temperature of live steam for one hour all cans, covers, &c., in this chamber would be rendered *completely sterile*.

TICK DIP INVESTIGATION.

As a member of the committee acting under the direction of the Council for Scientific and Industrial Research, I had charge and supervised the preliminary field experiments that have recently been conducted at Samford in order to determine the relative values of dipping cattle.

When these and other experiments in progress are completed the results will be published in due course.

C. J. POUND, Government Bacteriologist.

APPENDIX B.

REPORT OF THE GOVERNMENT VETERINARY SURGEON, TOWNSVILLE.

Seasonal.—The season has been patchy. On the coast and throughout the Gulf country the rainfall has been very fair, but towards the border of the Northern Territory the country is still held in the grip of drought. Several stations in the area around Camooweal and Urandangie have been cleared of stock. The main stock route from the Northern Territory, through Lake Nash and down the Georgina River, has been closed as an outlet for Territory cattle, many of which have been diverted and have been only able to get out by using the stock routes much further east.

Many sheep from the southern portions of the Hughenden and Cloncurry stock districts have gone northward for agistment purposes towards the Gulf area.

Stock values are considerably better and the market is very much improved since my last Annual Report. Fat cattle are being bought by the meatworks at 23s. 6d. per 100 lb., whereas the prices offering last meatworks season were at the rate of 17s. 6d. per 100 lb. Apart from the increased price offering for fat cattle, there has been a decided increase in the demand for store bullocks, and large numbers of these have been bought and sent to Southern Queensland. There is no doubt that as more and more land is thrown open for closer settlement in the Southern States, and the number of Southern properties now producing and supplying beef to the markets becomes less and less, so the Northern areas must become the source of supply, both of fat and store cattle. Fat cattle are to-day being bought in North Queensland to supply the Brisbane trade. A few years ago such sales were unknown.

The only stock routes open to the south have been those which lie east of Hughenden. Thousands of store cattle have this year travelled down the Tower Hill, Torrens Creek, and Pentland-Clermont stock routes.

Stock Experiment Station.—A total of 126 bulls and 27 heifers have been received at the Experiment Station for the year. Only a small percentage of these have been inoculated for redwater, the remainder simply detrainning and "spelling" before passing on to their destination. One death from redwater following inoculation in a Devon bull has to be recorded.

Diseases in Stock Act.—Contagious bovine pleuro-pneumonia has been very common throughout North Queensland during the year under review. Outbreaks have been common amongst travelling stock. It is a complaint which unfortunately is not always easy of diagnosis, and there is no doubt that many chronic "carriers" exist in North Queensland. These cattle when placed on the road frequently develop into acute cases, and are liable to spread the disease amongst others in the same mob which happen to be more susceptible to the complaint.

Owing to the appearance of the complaint in travelling stock, it causes much economic loss and considerable inconvenience. Cattle should be invariably inoculated before travelling. This procedure would undoubtedly reduce the number of outbreaks of the disease.

JOHN LEGG, B.Sc., B.V.Sc., M.R.C.V.S.,
Government Veterinary Surgeon.

APPENDIX C.

REPORT OF THE INSTRUCTOR IN SHEEP AND WOOL.

The work in connection with this branch was carried on by Mr. W. G. Brown, to whom I was assistant, until the 31st December, 1927. At that time he was retired under the provisions of the age limit. All who were associated with him in his work in the Department regret his retirement and wish him the best.

In the eastern portion of the State considerable quantities of rain have fallen, in many places being well over the average rainfall. The conditions were suitable for the hatching out of worms, and in all worm-infested pastures the sheep suffered badly with stomach worms (*Strongylus contortus*).

Tape worms (*Toenia expansa*) were also in evidence. Those realising the presence of stomach worms in the early stages of infestation who drenched with the arsenic and Epsom salts drench, as recommended by the Department, or other good drenches, were successful in bringing the sheep through. Those who neglected to drench until the sheep were dying, had difficulty in again getting control, as the pastures were contaminated with worms, and the sheep were taking in fresh supplies after each drenching.

On the Darling Downs and Maranoa a big increase in sheep has taken place during the year, owing largely to the influx from dry areas in the Central West, which place is still held in the grip of drought.

The number of farmers in the coastal areas embracing sheep as a side line has increased during the year, and many in the inland areas have increased their flocks.

In several instances small sheepowners were growing and availing themselves of the opportunity of the good rains, conserving fodder as a standby for times of scarcity. This I regard as a step in the right direction, and one that should be encouraged.

The Farmers' Wool Scheme has been well supported during the year, the following table showing the amounts as received and despatched to the selling brokers during the season, as indicated in lb. :—

Month.	Amount of Wool Received.	Amount of Wool Despatched.
	Lb.	Lb.
1927.		
July	2,447	..
August	1,707	..
September	10,902	1,832
October	14,422	4,146
November	18,021	10,006
December	12,531	11,788
1928.		
January	5,669	5,774
February	4,206	4,185
March	4,752	5,474
April	5,171	9,681
May	7,588	11,947
June	1,702	24,285
Total	89,118	89,118

The prices obtained have been very satisfactory on the whole, but comeback, crossbred, and skirtings received strongest support, while good lines of merino fleece wools sold at disappointing prices.

This season a greater amount of wool was produced in Queensland than the season previous. This increase amounted to over 8,000,000 lb. The average price for the whole season was in advance of the previous season, although the prices ruling at the last sale of the season were lower than at any other sale during the season; still, the clearances were very satisfactory, leaving approximately 2,000 bales in store, as against 5,350 bales the previous season.

The number of bales shipped without being catalogued was 25,142, while 2,458 bales were shipped after being passed in at the sales. The value of the wool sold in Queensland during the year was £9,148,171 3s. 1d. The value of the unsold wool, as taking greasy price per bale, 27,600 at £26 5s. per bale, is equal to £704,500.

Several holdings were inspected during the year, both by Mr. Brown and myself, and lectures were delivered to meetings arranged in the different districts by the Local Producers' Associations, and many lectorettes were given over the radio.

Many interested persons called at the office regarding sheep and wool matters, and letters of inquiry were answered.

J. CAREW,
Acting Instructor in Sheep and Wool.

APPENDIX D.

REPORT OF THE DEPUTY REGISTRAR OF BRANDS.

THE DETAILS OF REGISTRATIONS, TRANSFERS, &C.,
YEAR 1927-1928.

	Number.	Fees Received.			Number Since Inception of Legislation.
		£	s.	d.	
Three-piece brands registered	643	321	10	0	79,723
Cancelled brands re-allotted	96	144	0	0	6,543
Transfers	1,084	271	0	0	38,430
Brands cancelled	25				
Earmarks cancelled	113				
Alteration of address	265				
Symbols registered	48	240	0	0	1,377
Cattle marks registered	482	241	0	0	24,022
Distinctive brands registered	14				
Sheep brands and marks registered	409	138	5	0	10,040
Sheep brands and marks transferred	148	18	10	0	4,201
Total		1,374	5	0	

For the period under review, all registrations, with the exception of distinctive (check) brands

for cattle, show an increase over the figures for the previous year, and the fees received were £220 in excess of those for 1926-1927. This may be taken as an indication that conditions in the pastoral industry are showing signs of improvement, and further increases in the registrations may be looked for.

Cases frequently occur where calves sent into saleyards are earmarked but not branded. This practice is contrary to the provisions of the Brands Act. If owners are desirous of using a means of identification for their unbranded calves, there is no objection to any paint or tar brand being used for the purpose; but the use of their registered brand marks is advisable. However, if fire branded the owner's registered brand must be imprinted on the animals, and no earmark other than that registered in his name may be used by an owner upon his branded calves.

H. S. ILIFF,
Deputy Registrar of Brands.

REPORT OF THE REGISTRAR OF CO-OPERATIVE ASSOCIATIONS.

“THE PRIMARY PRODUCERS’ CO-OPERATIVE ASSOCIATIONS ACTS, 1923 TO 1926.”

In accordance with Rule 52 of Part II. of the Schedule to the abovenamed Acts, I have the honour to submit, for transmission to the Governor in Council, my report for the year ended 30th June, 1928.

Since my last report eleven additional associations have been registered, making a total of 123 associations registered under the Acts.

The eleven associations registered for the year under review are comprised as follows:—

Peanut Growers’ Association having a capital divided into shares and with limited liability	1
Stock and Produce Association—Having a capital divided into shares and with limited liability	1
Dairy, Butter, and Cheese Associations—	
Having a capital divided into shares and with limited liability	4
Without any share capital and with liability limited to the assets of the Association	1
Farmers’ Association—Without any share capital and with liability limited to the assets of the Association	1
Fruitgrowers’ Association—Having a capital divided into shares and with limited liability	1
Chicken Hatchery Association—Having a capital divided into shares and with limited liability	1
Farmers’ Distributing Association—Having a capital divided into shares and with limited liability	1
	—
	11

The total registrations under the Acts to 30th June, 1928, are as enumerated below:—

Dairy, Butter, and Cheese Associations—	
Having a capital divided into shares and with limited liability	45
Without any share capital and with liability limited to the assets of the Association	2
Bacon Association—Having a capital divided into shares and with limited liability	1
Producers’ Associations—Having a capital divided into shares and with limited liability	2
Packing Associations—Having a capital divided into shares and with limited liability	2
Canning, Jam, and Preserving Association—	
Having a capital divided into shares and with limited liability	1

Publication Association—Having a capital divided into shares and with limited liability	1
Stock and Produce Association—Having a capital divided into shares and with limited liability	2
Sugar Associations—	
Having a capital divided into shares and with limited liability	6
Without any share capital and with liability limited to the assets of the Association	1
Fruitgrowers’ Associations—	
Having a capital divided into shares and with limited liability	5
Without any share capital and with liability limited to the assets of the Association	50
Fat Pig Selling Association—Without any share capital and with liability limited to the assets of the Association	1
Chicken Hatchery Association—Having a capital divided into shares and with limited liability	1
Farmers’ Association—Without any share capital and with liability limited to the assets of the Association	1
Farmers’ Distributing Association—Having a capital divided into shares and with limited liability	1
Peanut Growers’ Association—Having a capital divided into shares and with limited liability	1
Associations without any share capital and with unlimited liability	Nil
	—
	123

In the course of the year the Goombungee Co-operative Dairy Association, Limited, amalgamated with the Downs Co-operative Dairy Association, Limited, and the Wyreema Dairy Products Co-operative Association, Limited, was cancelled. Thus at the present juncture there are actually 121 associations registered under the Acts.

Several associations have amended their rules to meet the growing circumstances, and there are other associations contemplating amalgamation with a view to further co-operation in order to attain the more economical working of such associations.

Some exemptions (including co-operative dipping companies) have been granted, and eighty-seven auditors have been licensed under the Acts.

JAMES P. ORR, Registrar.

REPORT OF THE REGISTRAR-GENERAL ON AGRICULTURAL PRODUCTION FOR THE YEAR 1927.

INDEX.

—	Table No.	Page.
Agricultural Crops—		
Area under each Description of Crop (Districts)	LXIV.	182-184
Area under each Description of Crop (Return for Ten Years)	LXVI.	188
Average Produce per Acre, each Division of State	LXXII.	192
Average Produce per Acre State (Return for Ten Years)	LXVIII.	189
Average Produce per Acre (Return for Twenty Years)	LXVIII.	189
Gross Produce of Principal Crop (Districts)	LXV.	185-187
Gross Produce of Principal Crop Districts (Return for Ten Years)	LXVII.	188
Value of	X.	162
Value of each Distinctive Crop	LXXIII.	193
Area Cultivated—		
And Number of Owners	XI.	163
Progress of Holdings (Return for Ten Years)	VII.	161
Area Treated for Cultivation, &c.	IX.	162
Apiaries, Particulars of, Principal Petty Sessions Districts	VI.	161
Apples, Details in Principal Districts	LV.	177
Arrowroot—		
Details of Manufacture	XLI.	172
Districts where Cultivated and Produce	XL.	172
Bananas—		
Details in Principal Districts (Return for Two Years)	XLIX.	175
Yield per Acre in Principal Districts	L.	175
Barley—		
Result of Grain Crop (Return for Two Years)	XIX.	166
Result of Crop, Distinguishing between Malting and Other Varieties	XX.	166
Result Showing how Crop was Dealt with (Return for Two Years)	XVIII.	165
Bee-keeping—Honey Produced, &c., Principal Petty Sessions Districts	VI.	161
Butter—		
Production of, since 1890	I.	159
Produced, Principal Dairying Divisions of State	II.	159
Produced in the Principal Petty Sessions District of State	LXIII.	180, 181
Quantity and Value Exported Oversea (Return for Five Years)	III.	159
Capital Invested in Farming Machinery, &c.	VIII.	162
Cheese, Production of—		
Principal Petty Sessions Districts of State	LXIII.	180, 181
Principal Dairying Divisions of State	II.	159
Since 1890	I.	159
Quantity Exported Oversea (Return for Five Years)	III.	159
Coffee, Districts where Cultivated (Return for Two Years)	XLIII.	173
Condensed Milk Manufactured (Return for Five Years)	IV.	160
Quantity Exported Oversea (Return for Five Years)	III.	159
Cotton, Result for past Two Years, in Certain Petty Sessions Districts	XXIX.	168
Dairying—		
Details and Production of Principal Petty Sessions Districts	LXIII.	180, 181
Details of Principal Dairying Divisions of State	II.	159
Labour Employed	VIII.	162
Number of Dairy Cattle	II.	159
Number of Dairy Establishments	II.	159
Progress of Dairying Industry since 1909	I.	159
Quantity of Milk Obtained	II.	159
Ensilage Produced (Return for Two Years)	LXII.	179
Farming Machinery, Capital Invested	VIII.	162
Fruits—		
Other, Area and Produce	LVI.	177
Other, Area and Produce of each Division of State	LXIX.	190
Grapes—		
Area Under, and Produce (Return for Two Years)	XLV.	173
Average, Principal Districts (Return for Five Years)	XLVI.	174
Summary, Area and Yield (Return for Two Years)	XLIV.	173
Green Fodder Crops, Principal Petty Sessions Districts	LXXI.	191
Hay—		
Area Cultivated, Yield, and Average Yield per Acre in certain Petty Sessions Districts	LXX.	191
Area Cultivated, Yield (Return for Two Years)	LX.	178
Value of Crop (Return for Two Years)	X.	162

	Table No.	Page.
Irrigation—		
Area and Crops Irrigated, Number of Irrigators in Certain Petty Sessions Districts of State	XIII.	164
Acres Irrigated (Return for Ten Years)	XII.	163
Labour Employed and Capital Invested in Farming Machinery, &c.	VIII.	162
Land—Treated for Cultivation, &c. (Return for Two Years)	IX.	162
Machinery and Implements, Value of, Petty Sessions Districts	VIII.	162
Maize—		
Area and Produce in each Principal District (Return for Two Years)	XXIV.	167
Area and Produce in each Division of State	XXIII.	167
Area and Produce (Summary for Five Years)	XXII.	166
Malt, Quantity Made (Return for Ten Years)	XXI.	166
Mangoes, Area and Production in each Principal District (Return for Two Years)	LIII.	176
Oats—		
Area and Produce (Return for Two Years)	XXVI.	168
Area Under and How Crop was Dealt with (Return for Five Years)	XXV.	167
Oranges, Area and Production in each Principal District (Return for Two Years)	LII.	176
Other Crops—		
Area and Produce (Return for Two Years)	LVIII.	178
Area and Produce, each Division of State	LXIX.	190
Fruit, Area and Produce	LVI.	177
Vegetables, Area and Produce (Return for Two Years)	LVII.	178
Pasturage—		
Area Under (Return for Five Years)	LIX.	178
Artificially Grown (Return for Two Years)	LXI.	179
Artificially Grown, Petty Sessions Districts	LXIV.	182-184
Pineapples, Area and Production in each Principal District (Return for Two Years)	LI.	175
Potatoes (English) Area, Yield and Value (Return for Five Years)	XXVIII.	168
Poultry—Details Respecting Principal Districts	V.	160
Rye, Area and Produce of Grain Crop (Return for Five Years)	XXVII.	168
Strawberries, Area and Produce in Principal Districts	LIV.	177
Sugar—		
Advances, &c., to Sugar Mills	XXXIX.	171
Area and Cane Produced and Sugar made in each Division of State	XXXIII.	169
Area and Cane Produced and Sugar made in each Division (Return for Two Years)	XXXV.	170
Average per Acre, &c., in each Division	XXXIV.	170
Average per Acre, &c., in each Division (Return for Two Years)	XXXVI.	170
Average per Acre, &c., (Return for Five Years)	XXXII.	169
Mills in Operation, Hands Employed, Machinery, &c.	XXXVIII.	171
Number of Plantations, Area and Average to each Planter	XXX.	169
Production of in Australia	XXXVII.	170
Summary for State for Five Years	XXXI.	169
Tobacco, Area and Produce in Principal Districts (Return for Two Years)	XLII.	172
Vegetables—		
Area and Produce of (Return for Two Years)	LVII.	178
Other, Area and Produce of each Division of State	LXIX.	190
Vines—		
Area and Produce in each Principal District (Return for Two Years)	XLV.	173
Average Principal Districts (Return for Five Years)	XLVI.	174
Summary of Area and Yield (Return for Two Years)	XLIV.	173
Wheat (Grain)—		
Area, Produce and Average Yield each Principal District (Return for Two Years)	XVI.	165
Area, Produce and Acreage for State (Return for Ten Years)	XIV.	164
Average Yield per Acre Australia (Return for Ten Years)	XV.	164
Quantity of Wheat Treated in Grain Mills in Queensland	XVII.	165
Wine—		
Quantity and Number of Makers in Principal Districts	XLVIII.	174
Quantity and Number of Makers (Return for Five Years)	XLVII.	174

REPORT OF THE REGISTRAR-GENERAL ON AGRICULTURAL PRODUCTION FOR THE YEAR 1927.

DAIRYING. Table No. I.

RETURN SHOWING THE PROGRESS OF THE DAIRYING INDUSTRY SINCE THE YEAR 1909.

Year.	Dairying Establishments, Exclusive of Factories.	DAIRY COWS.				—	Production of Butter.	Production of Cheese.
		In Milk.	Dry.	Heifers within three months of milking.	Total.			
						Lb.	Lb.	
						*2,000,000	*170,240	
						1890 ...	1895 ...	
						1895 ...	1900 ...	
						1900 ...	1905 ...	
1909 ...	15,279	228,497	105,342	...	333,839	20,319,976	2,682,089	
1910 ...	16,079	262,788	102,656	...	365,444	31,258,333	4,146,661	
1911 ...	16,225	237,997	119,098	...	357,095	27,858,535	3,718,257	
1912 ...	16,579	267,847	107,813	...	375,660	30,307,339	3,947,615	
1913 ...	17,866	285,403	106,036	...	391,439	35,199,387	5,395,050	
1914 ...	18,029	288,334	98,977	...	387,311	37,230,240	7,931,869	
1915 ...	17,876	218,511	116,732	...	335,243	25,456,714	4,383,410	
1916 ...	18,410	247,855	95,456	...	343,311	28,967,279	8,495,825	
1917 ...	19,404	303,133	96,375	...	399,508	38,930,690	11,142,114	
1918 ...	19,313	255,039	126,466	...	381,505	32,371,575	8,636,700	
1919 ...	18,952	211,331	161,815	...	373,146	26,213,514	8,296,318	
1920 ...	20,457	335,026	113,608	...	448,634	40,751,373	11,512,262	
1921 ...	21,695	423,251	130,957	...	554,208	60,923,194	15,200,527	
1922 ...	21,931	418,351	145,332	...	563,683	53,785,599	10,560,316	
1923 ...	22,019	357,203	155,326	...	512,529	40,659,634	7,221,355	
1924 ...	22,599	433,531	151,355	...	584,886	58,187,954	11,093,886	
1925 ...	22,581	463,436	147,990	...	611,426	70,748,646	14,242,721	
1926 ...	22,451	397,606	157,913	55,708	611,227	50,991,985	8,740,355	
1927 ...	22,547	436,337	139,970	69,009	645,316	62,552,917	12,233,520	

* Estimated.

Table No. II.

RETURN SHOWING DETAILS OF THE PRINCIPAL DAIRYING DIVISIONS FOR THE YEAR 1927.

District.	Total Milk Obtained.	HOW UTILISED.						
		For Butter on Farms.	For Cheese on Farms.	For Domestic Purposes by Producer.	Separated for Sale.	Sold for Consumption as Milk.	Sold to Condensed Milk Factories.	Sold to Cheese Factories.
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.
Moreton ...	55,689,402	1,874,312	5,060	1,979,390	45,305,817	4,856,849	1,399,516	268,658
Wide Bay ...	49,491,582	1,728,911	4,000	1,400,990	45,396,507	429,918	...	531,226
Port Curtis ...	6,893,229	565,077	...	316,529	5,638,971	372,652	...	...
Rockingham ...	5,383,996	152,047	...	293,462	4,351,974	225,097	...	361,416
Maranoa ...	1,510,045	114,373	...	91,717	1,274,083	29,872	...	...
Downs ...	37,258,103	1,249,045	35	1,536,139	22,877,999	441,960	...	11,152,925
Other Districts ...	1,585,045	431,554	...	484,383	179,241	489,867	...	...
Total, 1927 ...	^a 157,811,402	6,115,319	9,095	6,102,610	125,024,592	6,846,045	1,399,516	12,314,225
Total, 1926 ...	^b 132,144,165	5,726,647	17,763	5,846,084	103,314,026	6,352,517	1,662,755	9,224,373
Increase, 1927 ...	25,667,237	388,672	...	256,526	21,710,566	493,528	...	3,089,852
Decrease, 1927 ...	...	...	8,668	...	...	...	263,239	...

District.	ESTABLISHMENTS.			DAIRY CATTLE.		BUTTER MADE.			CHEESE MADE.		
	Dairying.	Butter Factories.	Cheese Factories.	In Milk.	Dry.	At Factories.	By Farmers.	Total.	At Factories.	By Farmers.	Total.
	No.	No.	No.	No.	No.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.
Moreton ...	7,655	15	4	167,920	42,010	20,873,010	824,194	21,697,204	199,868	4,265	204,133
Wide Bay ...	5,648	13	4	132,717	46,279	20,865,399	764,585	21,629,984	517,046	3,291	520,337
Port Curtis ...	1,361	4	...	25,522	13,260	3,534,180	206,867	3,741,047	...	...	...
Rockingham ...	1,022	3	2	15,662	6,225	2,615,514	55,157	2,670,671	165,733	...	165,733
Maranoa ...	347	1	...	4,963	2,128	564,884	41,556	606,440	...	...	...
Downs ...	4,896	12	62	81,937	23,520	11,436,427	549,143	11,985,570	11,343,282	35	11,343,317
Other Districts ...	1,618	1	...	7,616	6,548	88,767	133,234	222,001	...	...	...
Total, 1927 ...	22,547	49	72	*436,337	*139,970	59,978,181	2,574,736	62,552,917	12,225,929	7,591	12,233,520
Total, 1926 ...	22,451	51	76	+397,606	+157,913	48,644,199	2,347,786	50,991,985	8,723,591	16,764	8,740,355
Increase, 1927 ...	96	...	...	38,731	...	11,333,982	226,950	11,560,932	3,502,338	...	3,493,165
Decrease, 1927 ...	...	2	4	...	17,943	...	...	...	...	9,173	...

^a 1,453,272 gallons of this were sent from the Moreton Division to New South Wales.
^b 2,241,564 gallons of this were sent from the Moreton Division to New South Wales.
 * Exclusive of 69,009 Heifers intended for milking.
 † Exclusive of 55,708 Heifers intended for milking.

Table No. III. BUTTER, CHEESE, AND CONDENSED MILK.

RETURN SHOWING QUANTITY EXPORTED OVERSEA FOR FIVE YEARS (AUSTRALIAN PRODUCE ONLY).

Year.	BUTTER.			CHEESE.			CONDENSED MILK.		
	Quantity Exported Oversea.	Value.	Value per lb.	Quantity Exported Oversea.	Value.	Value per lb.	Quantity Exported Oversea.	Value.	Value per lb.
	lbs.	£	s. d.	lbs.	£	s. d.	lbs.	£	s. d.
1922-23 ..	21,060,593	1,588,123	1 6	4,387,192	187,045	0 10½	2,161,099	109,660	1 0½
1923-24 ..	16,657,633	1,131,481	1 4½	2,735,376	96,595	0 8½	267,364	13,287	1 0
1924-25 ..	44,127,410	2,808,598	1 3½	7,803,009	273,494	0 8½	1,096,802	52,920	0 11½
1925-26 ..	36,605,395	2,404,626	1 3½	6,463,120	250,683	0 9½	507,899	24,193	0 11½
1926-27 ..	22,825,542	1,502,957	1 3½	3,465,261	121,628	0 8½	3,401	168	0 11½

Table No. IV.

CONDENSED MILK MANUFACTURED—RETURN FOR FIVE YEARS.

Year	Lb.
1923	8,131,648
1924	11,549,064
1925	9,725,423
1926	6,533,966
1927	5,686,632

POULTRY.

Table No. V.

RETURN SHOWING THE NUMBERS OF POULTRY ON FARMS AND EGGS PRODUCED IN THE PRINCIPAL DISTRICTS OF THE STATE FOR THE YEAR 1927.

Petty Sessions District.	Fowls.	Ducks.	Geese.	Turkeys.	Other.	Eggs.	Total Poultry Sold or Killed for Food.		Value of Eggs Sold or Used.
	Number.	Number.	Number.	Number.	Number.	Dozen	Number.	£	£
Atherton	18,825	466	37	201	..	52,683	4,844	722	3,371
Ayr	12,150	1,074	47	355	36	33,365	1,408	212	3,147
Beaudesert	13,335	860	60	658	47	63,269	4,541	583	2,767
Biggenden	7,480	182	8	188	..	36,107	1,310	142	1,722
Brisbane (A)	68,401	1,002	2	2	..	430,403	37,353	3,529	30,723
Brisbane (B)	44,497	689	10	6	..	399,821	17,834	1,936	28,307
Bundaberg	17,688	144	..	166	6	76,208	2,447	234	3,847
Caboolture	10,256	103	..	..	..	75,307	4,231	365	4,553
Cairns	18,232	205	3	3	..	63,352	6,409	1,081	6,400
Cardwell	4,549	77	8	6	2	33,795	1,133	276	3,974
Cleveland	6,430	225	..	4	..	60,550	1,230	141	2,581
Clifton	17,930	298	17	337	..	61,101	7,186	872	3,072
Crow's Nest	11,218	252	70	12	..	56,723	4,306	413	2,731
Dalby	15,544	316	59	841	9	66,617	2,310	388	3,845
Dugandan	26,604	2,062	295	262	64	125,808	7,342	802	6,147
Eidsvold	5,135	102	..	66	..	35,253	1,865	113	1,817
Esk	10,908	336	7	303	29	36,628	2,289	355	1,907
Gatton	20,705	1,889	617	246	84	78,808	4,231	372	3,961
Gayndah	13,253	163	39	359	3	33,845	3,502	295	1,898
Gladstone	10,064	164	52	256	562	58,511	3,106	346	3,201
Gympie	20,533	640	84	220	478	116,550	7,676	1,109	5,893
Harrisville	22,709	653	161	214	13	112,354	5,666	640	5,516
Helidon	7,573	343	2	72	..	59,051	1,694	174	2,979
Highfields	8,350	90	24	33	..	33,357	2,724	291	1,662
Ipswich	7,497	254	54	21	503	42,272	1,679	189	2,200
Killarney	8,220	113	4	169	..	39,383	2,963	284	1,943
Laidley	12,747	997	380	93	172	87,303	4,373	687	2,568
Logan	12,227	357	60	24	12	60,091	1,859	211	2,767
Lowood	15,318	1,631	555	309	14	74,254	4,234	453	3,601
Mackay	31,159	1,105	60	134	62	123,250	7,969	1,065	9,117
Marburg	8,772	1,056	139	41	10	41,301	2,579	315	2,076
Maroochy	33,774	852	18	89	63	177,413	6,137	874	10,499
Maryborough	10,232	291	22	78	..	48,033	2,666	348	2,779
Nanango	26,062	1,458	109	422	42	104,503	7,066	642	5,964
Oakey	22,621	220	223	566	11	119,450	4,162	480	6,065
Pittsworth	15,986	45	30	254	60	88,202	2,654	373	4,432
Redcliffe	10,704	281	1	50	20	59,240	1,976	225	3,458
Rockhampton	27,828	483	67	423	87	144,512	12,287	1,391	9,384
Rosewood	12,572	837	95	140	14	82,373	5,557	526	3,920
Southport	10,864	447	279	113	610	49,226	5,164	736	2,848
Stanthorpe	8,706	16	4	42	..	50,076	608	98	2,862
Tiaro	8,303	248	44	269	14	40,011	2,584	268	1,974
Toowoomba	15,060	182	26	133	8	51,320	3,786	396	2,636
Warwick	23,978	274	39	887	31	77,706	4,802	523	4,014
Wienholt	31,370	1,131	120	429	12	153,983	4,754	602	7,515
Wynnum	25,943	609	1	..	2,235	212,699	18,638	1,387	16,354
All Other Districts	132,745	3,712	427	3,098	627	459,986	32,734	4,576	29,743
Totals, 1927	924,057	28,934	4,359	12,594	5,940	4,586,052	277,868	32,040	274,740
Totals, 1926	864,194	24,350	4,188	10,888	2,582	4,094,937	253,297	30,512	243,536
Increase, 1927	59,863	4,584	171	1,706	3,358	491,115	24,571	1,528	31,204
Decrease, 1927 .. .. .	..	..	..	..	..	..	..	..	..

NOTE.—Total value poultry and eggs—1926, £500,237; 1927, £598,467.

N.B.—Brisbane (B) refers to South Brisbane.

APIARIES.

Table No. VI.

RETURN SHOWING THE PARTICULARS OF THE BEE INDUSTRY FOR THE YEAR 1927.

Petty Sessions District.	Number of Hives.		Honey.	Average per Productive Hive.	Wax.
	Productive.	Non-Productive.			
Caboolture	696	497	Lb. 9,832	Lb. 14	Lb. 765
Dalby	348	97	29,720	85	210
Gatton	462	106	17,179	37	88
Highfields	200	200	12,000	60	200
Killarney	447	334	7,925	15	230
Maroochy	640	155	32,109	50	240
Maryborough	643	532	15,986	25	589
Pittsworth	205	32	9,944	49	140
Rockhampton	1,431	221	71,813	50	606
Warwick	889	148	36,176	41	617
All Other Districts	4,266	3,208	152,276	36	3,819
Totals, 1927	10,227	5,530	394,960	39	7,504
Totals, 1926	11,263	4,789	461,009	41	8,785
Increase, 1927 .. .. .	..	741	..	..	..
Decrease, 1927	1,036	..	66,049	2	1,281

NOTE.—Total value honey and wax—1926, £8,430; 1927, £7,563.

Table No. VII.

RETURN SHOWING PROGRESS OF HOLDINGS AND AREA CULTIVATED.—RETURN FOR 10 YEARS.

Year.	Number of Holdings Returned.	Increase per cent. on Previous Year.	Increase per cent. on Figures of 1904.	Area under Cultivation.	Increase per cent. on Previous Year.	Increase per cent. on Figures for 1904.
1904 ...	17,854	...	...	577,896	...	...
1918 ...	26,041	0·65	45·86	982,066	—1·60	69·94
1919 ...	26,713	2·58	49·62	988,541	0·66	71·06
1920 ...	26,921	0·78	50·78	1,018,444	3·02	76·23
1921 ...	28,122	4·46	57·51	1,045,342	2·64	80·89
1922 ...	29,390	4·51	64·61	1,090,816	4·35	88·76
1923 ...	31,464	7·06	76·23	1,198,166	9·84	107·33
1924 ...	32,359	2·84	81·24	1,275,039	6·42	120·63
1925 ...	33,533	3·63	87·82	1,241,118	—2·66	114·76
1926 ...	32,051	—4·42	79·52	1,288,518	3·82	122·97
1927 ...	27,749	—13·42	55·42	1,295,992	0·58	124·26

The minus sign (—) implies a decrease.

Table No. VIII.
RETURN SHOWING LABOUR EMPLOYED, INCLUDING OWNERS OR OCCUPIERS WORKING ON HOLDINGS, AND THE CAPITAL INVESTED IN FARMING MACHINERY, ETC., 1927.

PETTY SESSIONS DISTRICT.	LABOUR.				VALUE OF MACHINERY AND IMPLEMENTS.				
	Farming.		Dairying.		Farming.	Fairying.	Irrigation.	Travelling Machinery.	Total.
	Males.	Females.	Males.	Females.	£	£	£	£	£
Allora	402	6	185	240	119,791	5,960	770	1,080	127,601
Atherton	628	8	567	384	49,312	29,252	1,078	3,651	83,293
Ayr	1,464	2	8	3	157,202	179	375,295	73,532	606,208
Beaudesert	575	11	616	460	42,667	35,871	1,841	1,330	81,709
Biggenden	395	11	496	314	16,227	28,520	705	777	46,229
Bowen	351	9	8	9	17,831	461	25,718	7,662	51,672
Brisbane (A)	941	37	572	202	24,052	8,610	7,579	10,485	50,726
Bundaberg	1,810	3	320	222	130,075	12,778	12,090	29,418	184,271
Cairns	2,356	3	23	18	173,738	639	..	46,991	221,368
Childers	1,047	5	82	28	50,031	1,583	363	19,992	71,969
Clifton	757	8	134	269	213,120	9,738	650	13,814	237,322
Crow's Nest	529	..	500	358	26,232	21,482	..	..	47,714
Dalby	697	160	797	406	47,457	43,110	330	2,878	93,775
Douglas	291	2	24	6	38,970	1,610	..	200	40,780
Dugandan	888	20	612	445	76,756	14,778	3,034	4,590	99,158
Esk	533	53	580	315	39,782	16,224	5,188	2,164	63,358
Gatton	925	3	616	411	67,829	11,292	5,675	..	84,796
Gayndah	541	8	668	538	36,059	34,790	980	257	72,086
Gin Gin	432	3	36	63	32,599	3,598	10	7,285	43,492
Gladstone	836	30	538	391	39,274	28,588	430	2,113	70,405
Gympie	1,305	9	1,397	1,068	35,287	72,520	125	2,490	110,422
Harrisville	630	28	578	311	53,389	11,329	10	260	64,988
Ingham	1,256	5	7	5	174,831	479	150	44,882	220,342
Innisfail	1,665	3	8	2	212,083	6	..	..	212,089
Killarney	333	2	131	79	75,267	9,033	1,515	5,055	90,870
Laidley	646	16	336	438	59,723	6,974	400	1,208	68,305
Lowood	523	70	471	420	40,384	9,918	1,152	..	51,454
Mackay	2,916	15	31	25	299,401	4,165	55	18,095	321,716
Maroochy	1,715	83	621	370	48,655	26,013	190	5,727	80,585
Maryborough	707	12	281	175	39,948	5,979	200	3,054	49,181
Nanango	921	3	818	191	108,043	66,940	210	6,595	181,788
Oakey	777	7	667	480	105,869	42,172	330	4,880	153,251
Pittsworth	765	3	597	413	157,103	25,524	..	7,900	190,527
Proserpine	581	4	14	10	57,245	563	..	17,548	75,356
Rockhampton	935	134	521	311	45,586	22,585	17,764	10,723	96,658
Roma	557	27	305	176	47,387	7,626	..	4,943	59,956
Southport	351	8	704	383	11,233	25,880	980	2,465	40,558
Tiaro	559	..	433	103	28,819	12,329	80	150	41,378
Toowoomba	582	52	375	235	50,799	11,350	6,201	11,291	79,641
Warwick	977	6	386	240	157,928	17,345	400	7,234	182,907
Wienholt	1,296	15	1,254	992	127,541	73,022	70	10,962	211,525
All Other Districts	7,396	302	4,976	3,336	378,831	174,891	60,366	43,642	657,870
Total, 1927	43,791	1,185	22,293	14,845	3,714,356	935,706	531,914	437,323	5,619,299
Total, 1926	42,057	1,590	21,172	14,849	3,551,061	907,283	504,990	272,929	5,236,263
Increase, 1927	1,734	..	1,121	..	163,295	28,423	26,924	164,394	383,036
Decrease, 1926 .. .. .	..	405	..	4	..	..	..	..	..

Table No. IX.
RETURN SHOWING LAND TREATED FOR CULTIVATION, ETC., FOR THE YEAR 1927.

	1926.	1927.
	Acres.	Acres.
Under crop	941,783	1,066,612
In fallow	197,377	81,259
New ground broken up	12,081	11,597
Previously cropped, but not during 1926 and 1927 respectively	137,277	136,524
Under cultivation	1,288,518*	1,295,992*
Under permanent artificially sown grasses	543,528	546,575
Grand total	1,832,046	1,842,567

* See Table No. XI. for details of areas and owners.

Table No. X.
RETURN SHOWING THE VALUE OF AGRICULTURAL CROPS FOR THE YEAR 1927.

	1926.	1927.	Increase or - Decrease, 1927.
	£	£	£
Grain crops	1,011,408	2,885,901	1,874,493
Green forage	2,055,516	779,215	- 1,276,301
Hay and straw	423,356	615,034	191,678
Root crops	258,279	236,942	- 21,337
Sugar-cane	6,153,474	7,108,907	955,433
Fruit	1,442,410	1,852,115	409,705
All other	837,444	953,530	116,086
Total	12,181,917	14,431,644	2,249,727

The minus sign (-) indicates a decrease.

Table No. XI.

RETURN SHOWING AREA UNDER CULTIVATION AND SIZES OF FARMS FOR THE YEAR 1927.

Petty Sessions District.	Under 5 Acres.		5 and under 20 Acres.		20 and under 50 Acres.		50 Acres and Over.		Totals.	
	Owners.	Acres.	Owners.	Acres.	Owners.	Acres.	Owners.	Acres.	Owner.	Acres.
Allora .. ..	..	..	4	59	8	346	302	49,151	314	49,556
Atherton	92	218	151	1,588	125	3,941	203	16,750	571	22,506
Ayr	6	10	26	368	124	4,393	391	35,092	547	39,863
Beaudesert	19	55	181	2,237	185	5,334	41	3,044	426	10,670
Biggenden	46	138	134	1,335	65	1,842	11	742	256	4,057
Bowen	19	57	136	1,552	63	1,875	6	456	224	3,940
Brisbane (A)	178	495	409	4,180	79	2,262	2	134	668	7,071
Bundaberg	85	220	296	3,472	368	11,781	132	17,957	881	33,430
Cairns	36	62	93	1,064	205	6,999	328	32,106	662	40,231
Cardwell	10	25	40	474	165	5,492	18	1,115	233	7,106
Childers	21	53	65	739	73	2,474	128	13,761	287	17,027
Chinchilla	12	32	16	181	59	1,886	43	4,013	130	6,112
Clifton .. ..	..	..	6	60	13	452	476	91,288	495	91,800
Condamine	19	51	42	406	44	1,372	26	3,120	131	4,949
Cooyar	4	12	16	228	54	1,770	14	1,101	88	3,111
Crow's Nest	8	28	90	1,169	175	5,558	86	6,520	359	13,275
Dalby	8	21	88	1,001	130	3,982	154	14,926	380	19,930
Douglas	13	35	27	355	56	1,862	60	5,461	156	7,713
Dugandan	10	33	92	1,250	372	12,852	149	10,528	623	24,663
Eidsvold	12	41	66	785	58	1,698	20	1,638	156	4,162
Esk	21	51	97	1,185	50	4,879	80	6,705	248	12,820
Gatton	10	36	85	1,125	308	10,449	178	12,652	581	24,262
Gayndah	51	134	226	2,706	168	5,655	49	4,254	494	12,749
Gin Gin	34	85	69	771	122	4,112	75	5,738	200	10,706
Gladstone	105	268	274	3,006	145	4,400	56	5,177	580	12,851
Goombungee	1	2	5	57	35	1,273	114	11,991	155	13,323
Goondiwindi	5	17	10	109	13	373	33	3,846	61	4,345
Gympie	291	775	619	6,514	153	4,267	13	785	1,076	12,341
Harrisville	9	24	71	914	220	7,305	79	5,880	379	14,123
Helidon	9	32	44	548	97	3,043	83	5,960	233	9,589
Highfields	3	6	27	338	92	3,039	126	10,595	248	13,978
Ingham	11	30	71	862	110	3,852	351	34,237	543	38,981
Inglewood	6	21	19	221	25	807	43	5,365	93	6,414
Innisfail	20	49	76	893	267	9,127	306	24,508	669	34,577
Ipswich	4	7	71	855	51	1,440	24	1,530	150	3,832
Jondaryan .. ..	..	..	4	54	9	303	46	6,647	59	7,004
Killarney	3	8	16	186	20	684	190	29,683	229	30,561
Laidley .. ..	..	..	29	358	158	5,560	221	22,910	408	28,828
Logan	49	122	323	3,768	70	1,822	1	111	443	5,823
Lowood	6	15	41	523	190	6,602	100	6,869	337	14,009
Mackay	62	175	244	2,925	510	17,568	679	59,953	1,495	80,621
Marburg	7	16	21	284	123	4,013	35	2,323	186	6,636
Maroochy	304	842	832	8,117	123	3,293	7	457	1,266	12,709
Maryborough	67	175	258	3,048	167	4,811	42	2,921	534	10,955
Mitchell	2	5	3	25	4	133	21	2,988	30	3,151
Mount Morgan	33	85	103	1,235	141	4,540	74	6,651	351	12,511
Nanango	38	114	142	1,646	299	10,240	332	29,871	811	41,871
Oakey	14	38	39	514	137	4,554	395	52,780	585	57,886
Pittsworth .. ..	..	..	13	172	69	2,487	495	75,056	577	77,715
Proserpine	14	44	92	1,129	151	4,790	81	6,512	338	12,475
Redcliffe	38	125	208	2,344	59	1,662	4	250	309	4,381
Rockhampton	216	528	351	3,732	131	4,044	55	4,627	753	12,931
Roma	14	37	48	577	72	2,357	216	28,549	350	31,520
Rosewood	2	7	60	796	161	5,257	80	5,135	303	11,195
St. Lawrence	8	20	32	412	33	1,102	19	1,472	92	3,006
Stanthorpe	21	65	423	5,190	179	4,805	10	613	633	10,673
Tiaro	58	163	158	1,703	84	2,486	10	687	310	5,039
Toowoomba	52	139	102	1,141	80	2,746	189	30,260	423	34,286
Warwick	23	64	83	947	96	3,051	495	70,877	697	74,939
Wienholt	31	95	164	2,054	372	12,312	393	31,839	960	46,300
All Other Districts	615	1,579	968	9,889	232	6,615	58	5,136	1,973	22,904
Total, 1927	2,855	7,584	8,499	95,076	7,947	260,029	8,448	933,303	27,749	1,295,992
Total, 1926	2,939	7,675	8,869	98,802	8,129	260,010	8,311	922,031	28,248	1,288,518
Increase, 1927 .. ..	..	..	..	..	..	19	137	11,272	..	7,474
Decrease, 1926	84	91	370	3,726	182	..	..	..	499	..

See Table No. IX.

Table No. XII.

IRRIGATION.—RETURN FOR 10 YEARS.

Year.	Acres Irrigated.	Year.	Acres Irrigated.
1918	6,947	1923	18,417
1919	9,267	1924	18,235
1920	9,803	1925	21,669
1921	11,264	1926	24,250
1922	14,314	1927	21,411

Table No. XIII.

RETURN SHOWING THE AREA IRRIGATED AND THE PRINCIPAL CROPS TREATED FOR THE YEAR 1927.

Petty Sessions District.	Number of Irrigators.	Acres Irrigated.	Cost of Power, Water, &c., Used.	Original Source of Water Supply.	Means Employed for Procurement and Utilisation.	Principal Crops Treated.
Ayr	488	17,151	65,149	Wells, spears, rivers, and lagoons	Electricity, oil, gas, steam, gravitation, drains, pipes, flume, motors and tractors	Sugar-cane and vegetables
Brisbane (A) ..	61	286	1,360	Creeks, wells, and springs	Oil and windmill pumps, gravitation piping and spray	Market gardens and vegetables
Brisbane (B) ..	23	96	926	Springs and bores	Oil, petrol, windmill, pumps, pipes, and sprays	Market gardens and vegetables
Bowen	96	687	1,985	Wells, river, and creeks	Kerosene oil, windmill, gravitation and drains	Vegetables, cane, and fruit trees
Charters Towers..	40	149	657	Wells and creeks ..	Oil and petrol engines, windmills, pipes, and drains	Fruit trees and market gardens
Cleveland.. ..	107	342	1,349	Wells	Oil engines and sprinklers ..	Market crops
Cunnamulla ..	8	215	120	Bores and rivers..	Petrol and steam pumps, gravitation, bore drains, and pipes	Vegetables and fruit, grasses
Dugandan	27	94	575	Creeks and wells ..	Oil and steam engines, hoses, piping, and windmills	Potatoes and lucerne
Esk	5	46	511	River	Engines and sprays	Lucerne and maize
Gatton	20	255	1,554	Creeks	Oil and gas engines, petrol engines electric tractor, sprays, and flooding	Lucerne and vegetables
Gladstone ..	5	73	570	Well and river ..	Oil engines, pipes, spray, and floodings	Vegetables and lucerne
Harrisville ..	8	75	708	Creeks and well lagoon	Oil engines, suction gas pumps, flooding, and sprays	Lucerne, oats, wheat, and potatoes
Helidon	9	53	342	Creeks	Oil engines, sprays, and flooding	Lucerne
Hughenden ..	2	45	350	Wells and river ..	Horse, pump, oil engine, and drains	Market gardens and orchards
Redcliffe	16	60	180	River, creek, and well	Oil engines, pipes, pumps, and spray	Lucerne, potatoes, tomatoes, and cabbage
Rockhampton ..	96	548	2,063	Wells, creeks, river, lagoon, and bore	Horse, pump, gas, steam, oil engines, windmills, sprays, pipes	Fruit and vegetables
Townsville ..	35	280	422	Wells and open water, river	Horse, oil engine, pumps, windmills, gravitation, and pipes	Sugar-cane, market gardens, fruit, and cattle feed
Toowoomba ..	6	121	2,808	Bores and wells ..	Windmills, oil engines, sprays, and pipes	Fruit, vegetables, and lucerne
St. George ..	4	40	210	River	Steam, oil, hot-air pumps, flooding, drains, and pipes	Fruit and vegetables
All Other Districts	202	795	114,294	..	..	..
Total	1,258	21,411	196,133	..	..	..

N.B.—Brisbane (B) refers to South Brisbane.

* Exclusive of value of machinery shown in Table VIII.

Note.—The total acreages irrigated classified according to crops treated were:—Sugar-cane, 17,023 acres, grapes 18½ acres, maize 55 acres, oats 34 acres, wheat 46 acres, lucerne 445 acres, natural grasses 200 acres, broom millet 2 acres, and market gardens, orchards, and vegetable gardens 3,687 acres.

Table No. XIV.

WHEAT (GRAIN).

RETURN FOR TEN YEARS SHOWING THE AREA AND PRODUCE OF WHEAT FOR GRAIN.

Year.	Area.	Produce.	Average per Acre.	INCREASE OR — DECREASE ON THE PREVIOUS YEAR.		
				Area.	Produce.	Average per Acre.
1918	Acres.	Bushels.	Bushels.	Acres.	Bushels.	Bushels.
1919	21,637	104,509	4.83	- 106,178	- 930,759	- 3.27
1920	46,478	311,638	6.71	24,841	207,129	1.88
1921	177,320	3,707,357	20.91	130,842	3,395,719	14.20
1922	164,670	3,025,786	18.37	- 12,650	- 681,571	- 2.54
1923	145,492	1,877,836	12.91	- 19,178	- 1,147,950	- 5.46
1924	51,149	243,713	4.76	- 94,345	- 1,634,123	- 8.15
1925	189,145	2,779,829	14.70	137,996	2,536,116	9.94
1926	165,999	1,973,477	11.89	- 23,146	- 806,352	- 2.81
1927	57,084	379,339	6.65	- 108,915	- 1,594,138	- 5.24
1927	215,073	3,783,584	17.59	157,989	3,404,245	10.94
Average of Ten Years	123,405	1,818,707	14.74	...	...	...

Table No. XV.

WHEAT.

RETURN FOR TEN YEARS SHOWING AVERAGE YIELD PER ACRE IN EACH STATE.

States.	Average Produce per Acre—Bushels.										Mean for 10 Years ending 1927.
	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	
Queensland	4.83	6.71	20.91	18.37	12.91	4.76	14.70	11.89	6.65	17.59	11.93
New South Wales	7.60	2.96	17.79	13.39	9.74	11.26	16.83	11.56	14.13	9.07	11.43
Victoria	11.40	7.75	17.19	16.80	13.50	15.40	17.51	11.64	16.08	8.54	13.58
South Australia	10.49	7.77	15.80	10.46	11.73	14.29	12.21	11.60	12.84	8.18	11.54
Western Australia	7.72	10.77	9.60	10.41	8.92	11.42	12.79	9.69	11.68	12.30	10.53
Tasmania	15.66	18.58	20.01	20.62	22.56	21.07	17.86	20.72	23.15	24.00	20.42

Table No. XVI.
RETURN FOR TWO YEARS SHOWING THE AREA AND PRODUCE OF WHEAT FOR GRAIN IN THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE.

Divisions and Petty Sessions Districts.	1926.			1927.			INCREASE OR — DECREASE		
	Area.	Produce.	Average per Acre.	Area.	Produce.	Average per Acre.	Area.	Produce.	Average per Acre.
	Acres.	Bushels.	Bushels.	Acres.	Bushels.	Bushels.	Acres.	Bushels.	Bushels.
MORETON.									
Brisbane A	...	...	...	1	8	8'00	1	8	8'00
Cooyar	...	...	...	10	90	9'00	10	90	9'00
Crow's Nest	156	1,815	11'63	210	3,459	16'47	54	1,644	4'84
Dugandan	17	105	6'18	25	519	20'76	8	414	14'58
Esk	2	18	9'00	...	...	...	2	18	9'00
Gatton	10	60	6'00	...	...	...	10	60	6'00
Total, Moreton	185	1,998	10'80	246	4,076	16'57	61	2,078	5'77
WIDE BAY.									
Biggenden	...	...	...	6	30	5'00	6	30	5'00
Gayndah	61	670	10'98	75	1,395	18'60	14	725	7'62
Nanango	327	2,584	7'90	770	9,185	11'93	443	6,601	4'03
Wienholt	117	1,012	8'65	393	6,399	16'28	276	5,387	7'63
Total, Wide Bay	505	4,266	8'45	1,244	17,009	13'67	739	12,743	5'22
PORT CURTIS.									
Rockhampton	...	...	...	6	60	10'00	6	60	10'00
Total, Port Curtis	...	...	...	6	60	10'00	6	60	10'00
CENTRAL.									
Emerald	...	...	...	60	29	0'48	60	29	0'48
Total, Central	...	...	...	60	29	0'48	60	29	0'48
MARANOA.									
Mitchell	905	4,906	5'42	500	67	0'13	405	4,839	5'29
Roma	17,377	131,959	7'59	20,047	13,380	0'67	2,670	118,579	6'92
Yeulba	157	492	3'13	80	111	1'39	77	381	1'74
Total, Maranoa	18,439	137,357	7'45	20,627	13,558	0'66	2,188	123,799	6'79
DOWNS.									
Allora	5,376	36,119	6'72	24,496	480,156	19'60	19,120	444,037	12'38
Chinchilla	9	116	12'89	552	1,507	2'73	543	1,391	10'16
Clifton	6,246	35,333	5'66	46,612	968,911	20'79	40,366	933,578	15'13
Condamine	486	4,497	9'25	613	3,125	5'10	127	1,372	4'15
Dalby	1,958	15,469	7'90	7,108	82,411	11'59	5,150	66,942	3'69
Goombungee	464	3,335	7'19	1,817	35,279	19'42	1,353	31,944	12'23
Goondiwindi	569	3,646	6'41	1,698	4,083	2'40	1,129	437	4'01
Highfields	171	936	5'47	736	10,798	14'67	565	9,862	9'20
Inglewood	847	5,348	6'31	992	3,926	3'96	145	1,422	2'35
Jondaryan	15	90	6'00	1,727	29,912	17'32	1,712	29,822	11'32
Killarney	3,095	19,700	6'37	12,056	263,659	21'87	8,961	243,959	15'50
Oakey	3,599	23,696	6'58	18,536	360,120	19'43	14,937	336,424	12'85
Pittsworth	5,267	35,070	6'66	39,115	734,415	18'78	33,848	699,345	12'12
Texas	...	...	...	77	Nil.	...	77	...	...
Toowoomba	1,770	12,072	6'82	10,335	192,992	18'67	8,565	180,920	11'85
Warwick	8,083	40,291	4'98	26,420	577,558	21'86	18,337	537,267	16'88
Total, Downs	37,955	235,718	6'21	192,890	3,748,852	19'44	154,935	3,513,134	13'23
Total, State	57,084	379,339	6'65	215,073	3,783,584	17'59	157,989	3,404,245	10'94

NOTE.—Included in 1927 areas—53 acres in Wide Bay, 54 acres in Central, 12,602 acres in Maranoa, and 4,000 acres in Downs failed to bear a crop at all.

Table No. XVII.
RETURN SHOWING THE QUANTITY OF WHEAT TREATED IN QUEENSLAND DURING THE YEAR 1926-7.

District.	Number of Establishments.	Number of Hands Employed.	Pairs of Stones.	Sets of Rollers.	Wheat Treated.	FLOUR MADE.		MEAL MADE.		BRAN AND POLLARD.	
						Tons.	Value.	Tons.	Value.	Bushels.	Value.
			Pairs.	Sets.	Bushels.		£	£	£	£	
Metropolitan	3	294	7	121	2,528,498	52,959	800,200	862	12,723	2,082,538	231,561
Elsewhere	9										
Total, 1925-6	12	359	7	109	2,984,355	61,587	992,759	649	9,979	2,611,659	251,279

Table No. XVIII.
BARLEY.
RETURN FOR TWO YEARS SHOWING THE RESULT OF THE CROP.

Barley.						1926.	1927.
						Acres.	Acres.
Reaped for grain	...	...	...	...	...	399	3,220
Mown for hay	...	...	...	...	...	68	117
Used for green food	...	...	...	...	...	19,002	9,673
Totals	...	...	...	...	...	19,469	13,010

Table No. XIX.

BARLEY.

RETURN FOR TWO YEARS SHOWING RESULT OF GRAIN CROP.

Year.	Area for Grain.		Produce.	Average Produce per Acre.
	Acres.		Bushels.	Bushels.
1926	399		1,991	4.99
1927	3,220		72,400	22.48
Increase, 1927	2,821		70,409	17.49

Table No. XX.

BARLEY.

RETURN SHOWING RESULT OF CROP, DISTINGUISHING BETWEEN MALTING AND OTHER VARIETIES, FOR THE YEAR 1927.

Petty Sessions District.	Malting Grain.			Other Varieties Grain.		
	Acres.	Bushels.	Average per Acre, Bushels.	Acres.	Bushels.	Average per Acre, Bushels.
Allora	224	3,685	16.45	...	...	...
Chinchilla	10	90	9.00	10	180	18.00
Clifton	1,031	26,967	26.16	8	120	15.00
Crow's Nest...	10	300	30.00	4	100	25.00
Dalby	53	660	12.45	11	170	15.46
Dugandan	...	...	...	7	80	11.43
Goombungee	2	54	27.00	42	393	9.36
Highfields	43	960	22.33	8	168	21.00
Jondaryan	...	...	...	5	210	42.00
Killarney	...	...	...	155	2,849	18.38
Nanango	...	...	...	75	892	11.89
Oakey	137	2,296	16.76	23	315	13.70
Pittsworth	356	7,174	20.15	50	989	19.78
Toowoomba	322	10,763	33.32	22	507	23.05
Warwick	177	4,083	23.07	434	8,395	19.34
Total, 1927	2,366	57,032	24.10	854	15,368	18.00

Table No. XXI.

MALT.

RETURN FOR TEN YEARS SHOWING QUANTITY OF MALT MADE AND HOW DEALT WITH.

Year.	Made from Imported Barley.	Made from Queensland Barley.	Total Malt Made.	Beer (including Waste).	Malt used in Breweries as returned to Excise.
	Bushels.	Bushels.	Bushels.	Gallons.	Bushels.
1917	...	70,117	70,117	6,167,638	181,067
1918	...	58,139	58,139	6,889,707	206,992
1919	...	1,270	67,389	8,466,242	256,658
1920	66,119	24,898	68,298	9,063,791	261,992
1921	43,400	64,000	64,000	7,476,595	225,749
1922	...	58,958	58,958	6,887,772	201,436
1923	...	42,974	42,974	6,843,125	211,136
1924-25	...	58,333	38,333	6,488,405	209,995
1925-26	...	25,413	25,413	7,045,713	227,617
1926-27	...	13,919	13,919	6,675,966	215,818

Table No. XXII.

MAIZE.

RETURN FOR FIVE YEARS SHOWING THE AREA AND PRODUCE OF MAIZE.

Year.	Grain.		Average per Acre.
	Acres.	Bushels.	Bushels.
1923	120,092	2,024,902	16.86
1924	229,160	7,330,821	31.99
1925	154,252	3,384,172	21.94
1926	137,542	2,658,895	19.33
1927	234,013	6,703,518	28.65

Table No. XXIII.
MAIZE (GRAIN).

RETURN SHOWING THE AREA AND PRODUCTION IN EACH DIVISION OF THE STATE FOR THE YEAR 1927.

Division or Group.	Acres.	Produce.	Average.	Proportion of Divisional Area to Total Area of Maize for Grain.
Moreton	63,761	1,568,253	24.60	27.25
Wide Bay	50,491	1,462,397	28.96	21.58
Port Curtis	3,007	75,621	25.15	1.28
Edgecumbe	167	3,187	19.08	0.07
Rockingham	21,073	614,355	29.15	9.00
York Peninsula	69	1,935	28.04	0.03
Carpentaria	60	885	14.75	0.03
Central Western ... ..	...	...	...	...
South Western ... ..	...	...	...	...
Central	112	1,621	14.47	0.05
Maranoa	603	4,330	7.18	0.26
Downs	94,670	2,970,934	31.38	40.45
Total	234,013	6,703,518	28.65	100.00

Table No. XXIV.

MAIZE.

RETURN FOR TWO YEARS SHOWING THE AREA AND PRODUCE IN EACH PRINCIPAL DISTRICT OF THE STATE.

Petty Sessions District.	Area for Grain.			Produce.			Average per Acre.		
	1926.	1927.	Increase or Decrease	1926.	1927.	Increase or Decrease	1926.	1927.	Increase or Decrease
	Acres.	Acres.	Acres.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Allora	3,388	9,616	6,228	44,077	313,880	269,803	13.01	32.64	19.63
Atherton	17,818	20,885	3,067	884,449	610,480	—273,969	49.64	29.23	—20.41
Beaudesert	1,896	3,257	1,361	42,132	88,393	46,261	22.22	27.14	4.92
Clifton	5,857	16,805	10,948	56,119	561,601	505,482	9.58	33.42	23.84
Crow's Nest	6,077	7,288	1,211	131,601	203,964	72,363	21.66	27.99	6.33
Dalby	879	2,647	1,768	10,639	58,831	48,192	12.10	22.23	10.13
Dugandan	9,762	11,786	1,524	184,923	240,802	55,879	18.94	21.34	2.40
Esk	2,037	3,073	1,036	38,278	72,926	34,648	18.79	23.73	4.94
Gatton	5,256	8,157	2,901	68,144	217,892	149,748	12.96	26.71	13.75
Gayndah	503	2,766	2,263	4,035	92,017	87,982	8.02	33.27	25.25
Goombungee	2,060	4,068	2,008	34,104	113,895	79,791	16.56	28.00	13.44
Harrisville	2,629	4,591	1,962	55,189	102,426	47,237	20.99	22.31	1.32
Helidon	1,317	2,105	788	19,825	53,191	33,366	15.05	25.27	10.22
Highfields	2,632	4,316	1,684	51,544	114,892	63,348	19.58	26.62	7.04
Killarney	4,219	10,161	5,942	75,483	398,895	323,412	17.89	39.26	21.37
Laidley	6,811	8,021	1,210	81,934	225,093	143,159	12.03	28.06	16.03
Lowood	4,424	6,188	1,764	55,493	139,483	83,990	12.54	22.54	10.00
Nanango	16,632	20,410	3,778	251,887	575,612	323,725	15.14	28.20	13.06
Oakey	3,586	10,752	7,166	32,928	257,220	224,292	9.18	23.92	14.74
Pittsworth	840	8,318	7,578	6,501	255,840	249,339	7.74	30.76	23.02
Rosewood	1,941	2,824	883	29,364	54,355	24,991	15.13	19.25	4.12
Toowoomba	2,464	6,486	4,022	40,668	210,791	170,123	16.50	32.50	16.00
Warwick	9,352	19,464	10,112	15,275	653,175	637,900	1.63	33.56	31.93
Wienholt	15,366	22,719	7,353	240,924	675,378	434,454	15.68	29.73	14.05
All other Districts	9,796	17,810	7,914	203,379	412,486	209,107	20.77	23.16	2.39
Total State	137,542	234,013	96,471	2,658,895	6,703,518	4,044,623	18.53	28.65	10.12

Table No. XXV.

OATS.

RETURN FOR FIVE YEARS SHOWING THE AREA UNDER CROP.

Oats.	1923.	1924.	1925.	1926.	1927.
	Acres.	Acres.	Acres.	Acres.	Acres.
Reaped for grain	216	4,010	1,293	210	2,272
Mown for hay	1,344	8,304	2,214	790	2,468
Cut for green fodder	46,083	29,519	46,160	45,687	34,559
Totals	47,643	41,833	49,667	46,687	39,299

Table No. XXVI.

OATS.

RETURN FOR TWO YEARS SHOWING THE RESULT OF THE GRAIN CROP.

Year.	Area for Grain.		Produce.	Average per Acre.
	Acres.		Bushels.	Bushels.
1926	210		1,674	7.97
1927	2,272		43,788	19.27
Increase, 1927	2,062		42,114	11.30

Table No. XXVII.

RYE.

RETURN FOR FIVE YEARS SHOWING THE AREA AND PRODUCE OF THE GRAIN CROP.

Year.	Area.	Produce.	Average per Acre.
	Acres.	Bushels.	Bushels.
1923	9	64	7.11
1924	65	2,379	36.60
1925	26	615	23.65
1926	3	89	29.67
1927	25	638	25.52

Table No. XXVIII.

POTATOES.

RETURN FOR FIVE YEARS SHOWING THE AREA, PRODUCTION, AND VALUE OF THE ENGLISH POTATO CROP.

	Acres.	Tons.	Value.
1923	6,127	8,878	£131,505
1924	9,493	20,314	£179,440
1925	10,478	15,386	£220,597
1926	8,642	9,749	£169,246
1927	10,035	18,914	£178,895

Table No. XXIX.

COTTON.

RETURN FOR TWO YEARS SHOWING THE AREA AND PRODUCE OF COTTON.

Petty Sessions District.	AREA.		Increase or Decrease—1927.	Bearing, 1927.	Not Bearing, 1927.	PRODUCE (UNGINNED).	
	1926.	1927.				1926.	1927.
	Acres.	Acres.	Acres.	Acres.	Acres.	Lbs.	Lbs.
Dugandan	541	271	— 270	245	26	171,942	106,844
Eidsvold	1,376	2,043	667	1,002	1,041	562,290	491,263
Gatton	1,129	433	— 796	320	113	550,536	120,068
Gayndah	1,995	1,267	— 628	707	560	819,055	364,776
Gladstone	5,292	6,841	1,549	2,878	3,963	1,181,113	1,172,098
Laidley	495	226	— 169	133	93	370,291	74,168
Lowood	682	322	— 360	278	44	339,323	96,681
Mount Morgan	10,242	10,891	649	5,443	5,448	2,627,052	3,187,237
Rockhampton	4,947	4,145	— 802	2,559	1,586	1,169,372	947,305
Roma	289	463	184	135	328	41,444	52,621
Wienholt	775	313	— 462	230	83	210,632	100,175
All other Districts	3,697	1,615	— 2,192	1,020	595	1,016,857	347,520
Total State	*31,460	†28,830	— 2,630	14,950	13,880	9,059,907	7,060,756

* Of this area 2,455 acres was returned as ratooned for 1926.

† Of this area 1,785 acres was returned as ratooned for 1927.

Table No. XXX.

SUGAR.

RETURN SHOWING THE NUMBER OF PLANTATIONS, AREA OF AND AVERAGE AREA FOR THE YEAR 1926.

	Number of Plantations under 5 acres.	Number of Plantations. 5 acres and over.	Area under Cane.	Average to each Planter.
			Acres.	Acres.
No. 1 District	28	2,087	106,203	50
No. 2 District	92	2,273	102,501	43
No. 3 District	258	1,782	60,532	30
No. 4 District	277	445	5,602	8
Total	655	6,587	274,838	38

Table No. XXXI.

RETURN FOR FIVE YEARS SHOWING THE NUMBER OF PLANTATIONS, AREA AND PRODUCE OF SUGAR-CANE.

Year.	Number of Plantations under 5 acres.	Number of Plantations 5 acres and over.	Average to each Planter.	Acres Cultivated.	Acres Crushed.	PRODUCE.	
						Tons Cane.	Tons Sugar, at 94 per cent. Net Titre.
1923 ...	746	5,487	35	219,965	138,742	2,045,808	269,175
1924 ...	849	6,213	36	253,519	167,649	3,171,341	409,136
1925 ...	909	6,730	35	269,509	*189,466	3,668,252	485,585
1926 ...	736	6,608	36	266,519	189,312	2,925,662	389,272
1927 ...	655	6,587	38	274,838	203,748	3,555,827	485,745

*Not including 209 acres cut, but cane destroyed, 4,007 tons.

Table No. XXXII.

RETURN FOR FIVE YEARS SHOWING PERCENTAGES OF YIELDS.

Year.							TO EACH ACRE CRUSHED.		Tons of Cane to One Ton of Sugar.
							Tons of Cane.	Tons of Sugar.	
1923							14.75	1.94	7.60
1924							18.92	2.44	7.75
1925							19.36	2.56	7.55
1926							15.45	2.06	7.52
1927							17.54	2.38	7.32

Table No. XXXIII.

RETURN SHOWING AREA, PRODUCE, &C., IN EACH DIVISION OF THE STATE FOR THE YEAR 1927.

Division and District.	Area for Plants.	Area Stand-over or Unproductive.	Area Crushed for Sugar.	Total Area for Sugar.	Weight of Cane.	Sugar, 94 N.T.	Molasses Returned.
	Acres.	Acres.	Acres.	Acres.	Tons.	Tons.	Gallons.
<i>Rockingham and York Peninsula—</i>							
Cairns and Douglas	1,158	6,110	33,958	41,226	563,788	80,977	2,569,624
Ingham and Innisfail, &c.	1,734	7,397	55,846	64,977	1,072,379	147,862	4,819,059
Total	2,892	13,507	89,804	106,203	1,636,167	228,839	7,388,683
<i>Edgumbe—</i>							
Ayr and Townsville	995	10,957	17,173	29,125	354,924	52,626	1,456,830
Proserpine and Bowen	156	3,922	6,327	10,405	104,929	14,285	414,000
Mackay	1,630	20,184	41,157	62,971	718,604	103,685	3,138,521
Total	2,781	35,063	64,657	102,501	1,178,457	170,596	5,009,351
<i>Wide Bay—</i>							
Bundaberg, Gin Gin, &c.	325	8,447	25,120	33,892	362,245	46,847	1,914,722
Biggenden, Childers, Mary- borough, Tiaro, &c.	166	6,179	17,295	23,640	278,083	31,910	1,262,071
Gympie*	4	154	357	515	5,214	...	...
Total	495	14,780	42,772	58,047	645,542	78,757	3,176,793
<i>Port Curtis—</i>							
St. Lawrence†	82	394	2,009	2,485	34,930	...	...
<i>Moreton—</i>							
Logan and Southport‡	32	232	732	996	15,628	1,641	41,277
Maroochy, &c.	64	768	3,774	4,606	45,103	5,912	239,700
Total	96	1,000	4,506	5,602	60,731	7,553	280,977
TOTAL OF STATE	6,346	64,744	203,748	274,838	3,555,827	485,745	15,855,804

* Crushed in Maroochy and Tiaro.

† Crushed in Mackay.

‡ Area exclusive of 1,386 acres cut for fodder.

§ Crushed in Bundaberg.

Part crushed in Maroochy.

Table No. XXXIV.

RETURN SHOWING THE SUGAR AVERAGES IN EACH DIVISION OF THE STATE FOR THE YEAR 1927.

Divisions or Groups and Districts.	Tons of Cane per Acre Crushed.	Tons of Sugar per Acre Crushed.	Tons of Cane per Ton of Sugar.
<i>Rockingham and York Peninsula—</i>			
Cairns and Douglas	16·60	2·38	6·96
Ingham and Innisfail, &c.	19·20	2·65	7·25
Total	18·22	2·55	7·15
<i>Edgumbe—</i>			
Ayr and Townsville	20·67	3·06	6·74
Bowen and Proserpine	16·58	2·26	7·35
Mackay	17·46	2·40	7·27
Total	18·23	2·56	7·11
<i>Wide Bay—</i>			
Bundaberg, Gin Gin, &c.	14·42	1·86	7·73
Biggenden, Childers, Maryborough, Tiara, &c.	16·08	1·82	8·84
Gympie*	14·61	†	†
Total	15·12	1·85	8·18
<i>Port Curtis—</i>			
St. Lawrence†	17·39	...	...
<i>Moreton—</i>			
Logan and Southport‡	21·35	2·24	9·52
Maroochy, &c.	11·95	1·53	7·85
Total	13·48	1·64	8·21
TOTAL STATE	17·45	2·38	7·32

* Crushed in Maroochy and Tiara.

† Crushed in Mackay.

‡ Part Crushed in Maroochy.

Table No. XXXV.

RETURN FOR TWO YEARS SHOWING THE AREA AND PRODUCE IN EACH DIVISION OF THE STATE.

Division.	AREA UNDER CULTIVATION.			PRODUCTION.					
	1926.	1927.	Increase or Decrease	1926.		1927.		Increase or Decrease in 1927.	
				Area Crushed.	Sugar.	Area Crushed.	Sugar.	Area Crushed.	Sugar.
	Acres.	Acres.	Acres.	Acres.	Tons.	Acres.	Tons.	Acres.	Tons.
Rockingham and York Peninsula	100,687	106,203	5,516	84,910	221,104	89,804	224,599	4,894	3,495
Edgumbe	102,702	102,501	— 201	64,016	117,807	64,657	174,836	641	57,029
Port Curtis*	2,504	2,485	— 19	1,952	...	2,009	...	57	...
Wide Bay†	53,846	58,047	4,201	34,356	42,669	42,772	78,757	8,416	36,088
Moreton	6,780	5,602	— 1,178	4,078	7,692	4,506	7,553	428	— 139
Total	266,519	274,838	8,319	189,312	389,272	203,748	485,745	14,436	96,473

* Crushed in Edgumbe and Wide Bay.

† Part of the cane grown in Gympie was crushed in the Moreton Division.

Table No. XXXVI.

RETURN FOR TWO YEARS SHOWING PERCENTAGES IN EACH DIVISION OF THE STATE.

Division.	TO EACH ACRE CRUSHED.				TONS CANE TO EACH TON SUGAR.	
	Tons of Cane.		Tons of Sugar.		1926.	1927.
	1926.	1927.	1926.	1927.		
Rockingham and York Peninsula	19·05	18·22	2·62	2·55	7·27	7·15
Edgumbe	13·34	18·23	1·76	2·56	7·61	7·11
Port Curtis	16·22	17·39	*	*	*	*
Wide Bay	10·35	15·12	1·24	1·85	8·32	8·18
Moreton	16·30	13·48	1·87	1·64	8·76	8·21
Total	15·45	17·45	2·06	2·38	7·52	7·32

* Included in Edgumbe and Wide Bay.

Table No. XXXVII.

RETURN SHOWING THE AREA AND PRODUCTION OF SUGAR-CANE AND SUGAR BEET IN AUSTRALIA FOR THE YEAR 1927.

	*Area under Cultivation.	Area Cut or Dug for Manufacture.	Yield of Cane, &c.	Sugar Obtained.
	Acres.	Acres.	Tons.	Tons.
Queensland	274,838	203,748	3,553,827	485,745
New South Wales*	19,363	8,688	297,335	26,450
Victoria (beet)	2,353	2,353	24,344	2,349

* 1926 figures. Information for 1927 not available.

Table No. XXXVIII.

RETURN SHOWING NUMBER OF SUGAR MILLS IN QUEENSLAND DURING THE YEAR 1926-27.

Manufactories.	Works.	Hands Employed.	VALUE.		
			Machinery.	Land and Premises.	Output.
	No.	No.	£	£	£
Refineries } Sugar Mills }	In operation, 1926-7 { ...	2	6,176,444	1,042,668	11,210,136
	... { ...	36			
Total	...	38			

Table No. XXXIX.
SUGAR MILLS.

RETURN SHOWING THE FINANCIAL ASSISTANCE RENDERED TO SUGAR MILLS, &C., AND THEIR PRESENT INDEBTEDNESS AT 31ST DECEMBER, 1927.

Number of Sugar Mill Companies to which advances have been made under—

1.	The Sugar Works Guarantee Acts	..	..	..	..	..	..	13
	"The Sugar Works Act of 1911" (Babinda and South Johnstone)	..	..	..	..	..	..	2
	"The Sugar Works Act of 1922" (Tully River Mill)	..	..	..	..	..	..	1
	From Consolidated Revenue (North Eton and Racecourse)	..	..	..	..	..	..	2
	From General Loan Fund	..	..	..	..	..	..	6

2. Number of Tramway Companies to which advances have been made under—

3.	The Sugar Works Guarantee Acts (Double Peak)	..	..	..	..	..	..	1
	Under other conditions	..	..	..	..	..	..	None.

4. Total amount of advances made to 31st December, 1927, under the Sugar Works Guarantee Acts—

	£	s.	d.	£	s.	d.
Marian Mill	39,000	0	0			
Mount Bauple Mill	32,480	16	1			
Pleystowe Mill	35,472	1	3			
Nerang River Mill	19,998	18	10			
Gin Gin Mill	50,000	0	0			
Plane Creek Mill	65,000	0	0			
North Eton Mill	18,200	0	0			
Proserpine Mill	54,000	0	0			
Moreton Mill	32,864	15	0			
Mulgrave Mill	46,000	0	0			
Isis Mill	38,636	0	0			
Mossman Mill	66,300	0	0			
Johnstone Mill	847	17	8			
				498,800	8	10
5. Under "The Sugar Works Act of 1911"—						
Babinda Mill	405,429	18	8			
South Johnstone Mill	648,009	7	8			
				1,053,439	6	4
Under "The Sugar Works Act of 1922"—						
Tully River Mill				795,221	0	0
From Consolidated Revenue—						
North Eton Mill	26,000	0	0			
Racecourse Mill	21,000	0	0			
				47,000	0	0
From General Loan Fund—						
North Eton Mill	62,965	18	4			
Mount Bauple Mill	8,500	0	0			
Gin Gin Mill	2,000	0	0			
Proserpine Mill	17,765	9	4			
Moreton Mill	14,350	0	0			
Mossman Mill	14,071	14	0			
				119,653	1	8
6. Indebtedness at 31st December, 1927, under the Sugar Works Guarantee Acts—						
Mount Bauple Mill	7,439	3	5			
North Eton Mill	5,404	19	4			
				12,844	2	9
7. Under "The Sugar Works Act of 1911"—						
Babinda Mill	176,012	13	5			
South Johnstone Mill	487,281	12	3			
				663,294	5	8
Under "The Sugar Works Act of 1922"—						
Tully River Mill				780,028	19	2
Under Consolidated Revenue—						
North Eton Mill				4,097	6	3
Under General Loan Fund—						
North Eton Mill	39,213	8	9			
Mount Bauple Mill	8,500	0	0			
				47,713	8	9

Table No. XL.

ARROWROOT.

RETURN FOR TWO YEARS SHOWING AREA AND PRODUCE, &C., OF ARROWROOT TUBERS IN PETTY SESSIONS DISTRICTS.

Petty Sessions District.	1926.		1927.		Increase or Decrease— 1927.	
	Area.	Produce.	Area.	Produce.	Area.	Produce
	Acres.	Tons.	Acres.	Tons.	Acres.	Tons.
Beaudesert	1	5	2	31	1	26
Bundaberg	12	78	15	59	3	— 19
Cleveland	17	183	25	295	8	112
Esk	1	7	2	4	1	— 3
Gympie	13	152	22	134	9	— 18
Kilcoy	8	100	3	32	— 5	— 68
Logan	495	5,366	515	6,069	20	703
Lowood ... ..	...	...	1	2	1	2
Marburg	2	10	1	6	— 1	— 4
Maroochy	4	32	...	...	— 4	— 32
Maryborough ... ..	...	...	1	1	1	1
Nanango ... ..	...	...	2	20	2	20
Redcliffe	1	10	...	...	— 1	— 10
Rosewood	1	4	...	...	— 1	— 4
Southport	271	3,278	291	3,458	20	180
Tiaro	2	5	1	4	— 1	— 1
Wienholt ... ..	...	...	1	5	1	5
Woodford	3	5	1	2	— 2	— 3
Total State	831	9,235	883	10,122	52	887

Table No. XLI.

RETURN SHOWING ARROWROOT MANUFACTURED DURING THE YEAR 1926-27.

Petty Sessions District.	Hands Employed.	Tuber.	Arrowroot.
	Number.	Tons.	Lb.
Beaudesert... ..	} 79	6,790	1,452,042.
Cleveland			
Logan			
Southport			

Table No. XLII.

TOBACCO.

RETURN FOR TWO YEARS SHOWING AREA AND PRODUCTION OF TOBACCO.

Division and Petty Sessions District.	1926.		1927.		Increase or Decrease— 1927.	
	Area.	Produce Dried Leaf.	Area.	Produce Dried Leaf.	Area.	Produce
	Acres.	Lb.	Acres.	Lb.	Acres.	Lb.
<i>Moreton—</i> Lowood	4	1,428	6	930	2	— 498
<i>Edgecumbe—</i> Ayr	3	2,000	11	8,700	8	6,700
Bowen ... ..	...	...	1	616	1	616
<i>Downs—</i> Inglewood	23	11,202	9	7,280	— 14	— 3,922
Oakey ... ..	...	...	8	2,033	8	2,033
Texas	95	88,154	100	90,036	5	1,882
Total State	125	102,784	135	109,595	10	6,811

Table No. XLIII.

COFFEE.

RETURN FOR TWO YEARS SHOWING AREA AND PRODUCTION OF COFFEE.

DIVISION AND PETTY SESSIONS DISTRICT.	Not Bearing.		Bearing.				Average per Acre (Bearing).		1927. Increase or Decrease—Bearing Area.	1927. Increase or Decrease—in Produce.
	1926.	1927.	1926.		1927.		1926.	1927.		
	Acres.	Acres.	Acres.	Lb. (Parchment.)	Acres.	Lb. (Parchment.)	Lb.	Lb.		
<i>Moreton—</i>										
Lowood	...	2	...	...	...	...	...	...	...	...
Maroochy	2	13	11	4,018	8	5,978	365	747	— 3	1,960
<i>Wide Bay—</i>										
Maryborough	...	...	3	1,420	1	600	473	600	— 2	— 820
<i>Rockingham—</i>										
Atherton	...	...	3	3,360	...	...	1,120	...	— 3	— 3,360
Totals	2	15	17	8,798	9	6,578	489	731	— 8	— 2,220

Table No. XLIV.

VINES.

RETURN FOR TWO YEARS SHOWING AREA AND PRODUCTION OF VINES.

Year.	VINEYARD.			Grapes Gathered.	Average per Acre (Bearing).
	Acres Bearing.	Acres not Bearing.	Total.		
1926	1,268	414	1,682	Lb. 3,610,997	Lb. 2,848
1927	1,475	287	1,762	3,777,830	2,561

Table No. XLV.

RETURN FOR TWO YEARS SHOWING AREA UNDER VINES AND PRODUCTION OF GRAPES IN THE PRINCIPAL DISTRICTS OF THE STATE.

Petty Sessions District.	AREA UNDER VINES.								
	1926.			1927.			Increase or Decrease—	1926.	1927.
	Bearing.	Not Bearing.	Total Area.	Bearing.	Not Bearing.	Total Area.		Grapes Gathered.	Grapes Gathered.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Lb.	Lb.
Brisbane (A)	320	20	340	325	44	369	29	677,936	651,862
Brisbane (B)	3	...	3	3	...	3	...	7,560	12,412
Charters Towers	14	2	16	17	7	24	8	30,902	40,454
Chinchilla	2	...	2	2	...	2	...	13,542	12,265
Herberton	5	2	7	7	2	9	2	10,060	13,550
Logan	8	1	9	8	2	10	1	15,585	24,189
Lowood	43	2	45	23	20	43	— 2	104,560	46,922
Maryborough	18	2	20	18	1	19	— 1	17,218	19,359
Rockhampton	20	9	29	21	4	25	— 4	24,623	26,008
Roma	302	57	359	454	4	458	99	526,689	825,523
Stanthorpe	409	301	710	474	190	664	— 46	1,861,100	1,965,728
St. George	2	...	2	3	...	3	1	11,800	10,000
Toowoomba	12	1	13	7	4	11	— 2	25,476	33,017
Warwick	39	6	45	42	1	43	— 2	145,193	187,587
Wynnum	8	...	8	8	...	8	...	31,516	31,890
All other Districts	63	11	74	63	8	71	— 3	107,237	31,824
Totals	1,268	414	1,682	1,475	287	1,762	80	3,610,997	3,777,830

Table No. XLVI.

RETURN FOR FIVE YEARS SHOWING THE AVERAGE PRODUCTION OF GRAPES IN CERTAIN PETTY SESSIONS DISTRICTS OF THE STATE.

Petty Sessions District.	1923. Average per Acre.	1924. Average per Acre.	1925. Average per Acre.	1926. Average per Acre.	1927. Average per Acre.
Brisbane (A)	Lb. 1,958	Lb. 2,589	Lb. 1,935	Lb. 2,119	Lb. 2,006
Roma	2,277	1,946	1,890	1,744	1,326
Stanthorpe... ..	7,913	2,786	3,696	4,550	4,147
Toowoomba	1,329	1,642	1,648	2,123	4,717
Warwick	2,892	1,167	3,136	3,723	4,466
State	3,108	2,343	2,486	2,848	2,561

Table No. XLVII.

WINE.

RETURN FOR FIVE YEARS SHOWING NUMBER OF MAKERS, WINE MADE, AND WINE SPIRIT DISTILLED.

Year.	Number of Makers.	Quantity of Wine Made.	Quantity of Wine Spirit Distilled..
1923	57	Gallons. 37,242	Gallons. 640
1924	58	33,119	234
1925	48	39,375	281
1926	49	32,974	316
1927	50	38,571	268

Table No. XLVIII.

RETURN SHOWING THE PRINCIPAL DISTRICTS IN WHICH WINE WAS MADE DURING THE YEAR 1927.

Petty Sessions District.	Number of Makers.	Quantity of Wine Made.	Quantity of Wine Spirit Distilled.
Brisbane (A)	3	Gallons. 2,106	Gallons. ...
Maryborough	5	1,175	...
Toowoomba	8	3,229	...
Lowood	2	325	...
Roma	2	26,600	...
Warwick	1	1,200	...
All other Districts	29	3,936	...
Totals	50	38,571	268

Table No. XLIX.

BANANAS.

RETURN FOR TWO YEARS SHOWING THE AREA AND PRODUCTION OF BANANAS IN THE PRINCIPAL DISTRICTS OF THE STATE.

Petty Sessions District.	Area.				Produce.		Increase or Decrease—1927.	
	1926.	Bearing, 1927.	Not yet Bearing, 1927.	Total, 1927.	1926.	1927.	Area.	Produce.
	Acres.	Acres.	Acres.	Acres.	Bunches.	Bunches.	Acres.	Bunches.
Brisbane (A) ...	1,310	817	300	1,117	220,718	229,237	— 193	8,519
Bundaberg ...	131	91	73	164	25,820	23,404	33	— 2,416
Caboolture ...	671	478	299	777	115,942	138,057	106	22,115
Cairns ...	192	156	60	216	27,266	17,730	24	— 9,536
Cleveland ...	128	50	37	87	19,858	13,643	— 41	— 6,215
Gladstone ...	153	88	43	131	12,420	12,855	— 22	435
Gympie ...	6,683	4,280	3,653	7,933	1,252,816	1,288,142	1,250	35,326
Innisfail ...	211	209	90	299	13,629	36,916	88	23,287
Kilcoy ...	405	274	182	456	35,766	42,136	51	6,370
Logan ...	669	459	170	629	141,546	133,890	— 40	— 7,656
Maroochy ...	2,646	1,691	722	2,413	426,047	379,772	— 233	— 46,275
Maryborough ...	288	157	171	328	38,850	61,074	40	22,224
Redcliffe ...	902	771	354	1,125	145,746	213,452	223	67,706
Rockhampton ...	421	280	172	452	60,896	66,811	31	5,915
Southport ...	698	538	263	801	127,828	118,140	103	— 9,688
Tiaro ...	275	176	92	268	31,754	22,137	— 7	— 9,617
Woodford ...	203	80	80	160	12,601	13,807	— 43	1,206
All other Districts	897	373	238	611	71,516	74,351	— 286	2,835
Totals ...	16,489	10,968	6,999	17,967	2,754,795	2,863,414	1,478	108,619

Table No. L.

RETURN SHOWING THE AVERAGE YIELD OF BANANAS IN THE PRINCIPAL DISTRICTS OF THE STATE DURING THE YEAR 1927.

	Average per Acre— Bunches.				Average per Acre— Bunches.			
Brisbane (A)	281	Logan ...	...	...	292
Bundaberg	257	Maroochy ...	...	...	225
Caboolture	289	Maryborough ...	...	...	389
Cairns	114	Redcliffe ...	...	...	277
Cleveland	273	Rockhampton ...	...	...	239
Gladstone	146	Southport ...	...	...	220
Gympie	301	Tiaro ...	...	...	126
Kilcoy	154				

Table No. LI.

PINEAPPLES.

RETURN FOR TWO YEARS SHOWING THE AREA AND PRODUCTION OF PINEAPPLES IN THE STATE.

Petty Sessions District.	1926.		1927.				Increase or Decrease—1927.	
	Area.	Produce.	Bearing.	Not yet Bearing.	Total Area.	Produce.	Area.	Produce.
	Acres.	Dozen.	Acres.	Acres.	Acres.	Dozen.	Acres.	Dozen.
Bowen ...	90	11,496	120	27	147	24,843	57	13,347
Brisbane (A) ...	352	104,151	264	63	327	86,871	— 25	— 17,480
Brisbane (B) ...	126	25,040	181	39	220	38,368	94	13,328
Bundaberg ...	33	8,311	26	11	37	6,056	4	— 2,255
Caboolture ...	754	115,611	431	153	584	116,091	— 170	480
Cairns ...	72	9,451	70	10	80	8,670	8	— 781
Cleveland ...	605	279,509	341	137	478	93,554	— 127	— 185,955
Gympie ...	46	1,595	28	59	87	4,046	41	2,451
Ipswich ...	30	4,375	24	4	28	6,873	— 2	2,498
Logan ...	131	33,879	81	13	94	19,260	— 37	— 14,619
Maroochy ...	1,330	269,458	998	387	1,385	30,538	55	— 238,920
Maryborough ...	134	23,295	84	56	140	20,300	6	— 2,995
Rockhampton ...	198	25,170	198	54	252	45,217	54	20,047
Townsville ...	58	5,648	53	2	55	5,084	— 3	— 564
Wynnum ...	75	19,005	55	18	73	21,754	— 2	2,749
All other Districts	201	17,254	145	72	217	21,162	16	3,908
Total ...	4,235	953,248	3,099	1,105	4,204	548,487	— 31	— 404,761

N.B.—Brisbane (B) refers to South Brisbane.

Table No. LII.

ORANGES.

RETURN FOR TWO YEARS SHOWING THE AREA AND PRODUCTION OF ORANGES IN THE PRINCIPAL DISTRICTS OF THE STATE.

Petty Sessions District.	Area.		Bearing, 1927.	Not yet Bearing, 1927.	Produce.		Increase or Decrease - 1927.	
	1926.	1927.			1926.	1927.	Area.	Produce.
	Acres.	Acres.	Acres.	Acres.	Bushels.	Bushels.	Acres	Bushels.
Allora	18	22	16	6	550	1,295	4	745
Atherton	19	13	9	4	1,624	1,025	- 6	- 599
Brisbane (A)	17	22	11	11	365	1,532	5	1,167
Beaudesert... ..	22	23	12	11	1,725	1,506	1	- 219
Bowen	122	123	102	21	2,947	6,378	1	3,431
Bundaberg	40	31	13	18	4,411	5,310	- 9	899
Caboolture... ..	109	81	55	26	4,564	3,268	- 28	- 1,296
Cardwell	97	94	72	22	9,579	7,644	- 3	- 1,935
Charters Towers	63	70	59	11	4,576	3,494	7	- 1,082
Childers	61	60	36	24	4,032	2,462	- 1	- 1,600
Chinchilla	13	12	11	2	821	1,249	- 1	428
Cleveland	44	43	16	27	1,796	1,590	- 1	- 206
Cook	64	65	56	9	1,387	4,876	1	3,489
Crows Nest	7	21	15	6	716	3,179	14	2,463
Douglas	12	11	9	2	1,023	754	- 1	- 269
Esk	61	60	39	21	1,689	2,146	- 1	457
Gatton	59	68	49	19	2,130	8,356	9	6,226
Gayndah	72	78	49	29	1,541	4,594	6	3,053
Gin Gin	14	12	10	2	1,488	1,272	- 2	- 216
Gladstone	20	26	10	16	394	1,540	6	1,146
Gympie	25	28	9	19	1,810	1,063	3	- 747
Helidon	23	26	14	12	634	1,840	3	1,206
Ingham	19	29	22	7	1,290	3,838	10	2,548
Inni-fail	19	26	14	12	1,290	1,942	7	652
Logan	116	100	77	23	12,945	7,676	- 16	- 5,269
Lowood	15	28	22	6	1,621	2,373	13	752
Mackay	74	56	36	20	5,465	3,820	- 18	- 1,645
Maroochy	1,328	1,196	843	353	113,367	76,376	- 132	- 36,991
Maryborough	480	490	370	120	38,614	34,207	10	4,407
Proserpine	19	25	22	3	1,048	2,349	6	1,301
Redcliffe	23	36	18	18	1,861	1,227	13	634
Rockhampton	273	331	181	150	14,628	23,489	58	8,861
Roma	59	60	36	24	489	2,187	1	1,698
Southport	103	79	54	25	6,834	3,490	- 24	- 3,344
Tiaro	72	73	72	1	4,197	3,036	1	- 1,161
Woodford	17	9	8	1	3,066	1,950	- 8	- 1,116
All other Districts	300	347	244	166	20,028	8,704	47	- 11,324
Total	3,899	3,874	2,646	1,228	283,775	243,037	- 25	- 40,738

Table No. LIII.

MANGOES.

RETURN FOR TWO YEARS SHOWING THE AREA AND PRODUCTION OF MANGOES IN THE PRINCIPAL DISTRICTS OF THE STATE.

Petty Sessions District.	Area.		Bearing, 1927.	Not yet Bearing, 1927.	Produce.		Increase or Decrease - 1927.	
	1926.	1927.			1926.	1927.	Area.	Produce.
	Acres.	Acres.	Acres.	Acres.	Bushels.	Bushels.	Acres	Bushels.
Bowen	27	32	25	7	6,903	7,934	5	1,031
Brisbane (A)	6	6	5	1	487	962	...	475
Douglas	6	6	6	...	1,178	1,438	...	260
Gin Gin	3	3	3	...	1,249	1,151	...	98
Ingham	16	12	11	1	14,337	4,375	- 4	- 9,962
Logan	10	16	13	3	968	1,107	6	139
Mackay	38	32	30	2	8,117	5,331	- 6	- 2,786
Proserpine	11	16	15	1	1,092	2,425	5	1,333
Rockhampton	43	42	39	3	3,670	3,549	- 1	- 121
Tiaro	5	2	2	...	3,323	612	- 3	- 2,711
Townsville	7	8	6	2	1,401	1,109	1	292
All other Districts	68	46	35	11	7,613	4,302	- 22	- 3,311
Totals	240	221	190	31	50,338	34,295	- 19	- 16,043

Table No. LIV.

STRAWBERRIES.

RETURN FOR TWO YEARS SHOWING THE AREA AND PRODUCTION OF STRAWBERRIES IN THE PRINCIPAL DISTRICTS OF THE STATE.

Petty Sessions District.	Area.		Produce.		Increase or Decrease —	
	1926.	1927.	1926.	1927.	1927.	1927.
	Acres.	Acres.	Quarts.	Quarts.	Acres.	Quarts.
Beaudesert	1	...	340	...	— 1	— 340
Brisbane (A)	7	12	2,740	3,365	5	625
Brisbane (B) ... ..	...	1	...	681	1	681
Caboolture ... ..	...	1	...	520	1	520
Cleveland	40	52	64,696	40,908	12	— 13,788
Gympie	2	4	3,040	6,759	2	3,719
Maroochy	24	31	17,344	17,381	7	37
Rockhampton	3	3	7,975	6,080	...	— 1,895
Southport ... ..	...	1	...	300	1	300
Wynnum	9	5	6,397	9,930	— 4	3,533
Totals	86	110	102,532	85,924	24	— 16,608

N.B.—Brisbane (B) refers to South Brisbane.

Table No. LV.

APPLES.

RETURN FOR TWO YEARS SHOWING THE AREA AND PRODUCTION OF APPLES IN THE PRINCIPAL DISTRICTS OF THE STATE.

Petty Sessions District.	Area.		Increase or Decrease — 1927.	Bearing, 1927.	Not Bearing, 1927.	Produce.		Increase or Decrease — 1927.
	1926.	1927.				1926.	1927.	
	Acres.	Acres.				Bushels.	Bushels.	
Atherton	1	1	...	1	...	27	32	5
Crow's Nest ... ..	...	1	1	1	...	...	60	60
Herberton	5	11	6	5	...	22	22	...
Inglewood	1	1	...	1	...	104	33	— 71
Nanango	1	1	...	1	...	14	16	2
Stanthorpe	3,877	3,904	27	2,992	912	107,686	100,214	— 7,472
Toowoomba	4	5	1	5	...	134	135	1
Warwick	310	232	— 78	204	28	5,738	3,321	— 2,417
Wynnum	2	2	...	2	...	40	60	20
All other Districts	2	...	— 2	...	6	45	...	— 4
Totals	4,203	4,158	— 45	3,212	946	113,810	103,893	— 9,917

Table No. LVI.

OTHER FRUITS.

RETURN SHOWING THE AREA AND PRODUCTION OF OTHER FRUITS DURING THE YEAR 1927.

	Bearing.	Not Bearing.	Yield.
	Acres.	Acres.	
Almonds... ..	1	...	100 bushels
Apricots	74	33	3,575 bushels
Cape gooseberries	4	...	6,280 quarts
Cherries	4	...	74 bushels
Custard apples	252	90	39,880 bushels
Figs	15	...	616 bushels
Lemons	153	63	18,946 bushels
Nectarines	66	...	3,075 bushels
Olives	1	...	Nil bushels
Passion fruit	84	...	7,905 bushels
Papaws	179	169	99,746 dozens
Peaches	1,502	216	80,873 bushels
Pears	188	66	9,877 bushels
Persimmons	11	3	1,068 bushels
Plums	964	325	37,900 bushels
Quinces	3	...	71 bushels
Rosellas	1	...	20 bushels

Table No. LVII.

OTHER VEGETABLES.

RETURN FOR TWO YEARS SHOWING AREA AND PRODUCTION OF OTHER VEGETABLES.

Other Vegetables.	1926.		1927.	
	Acres.	Produce.	Acres.	Produce.
Pulse { Beans	1	82 bushels	13	1,161 bushels
Peas	15	252 bushels	6	276 bushels
Green { Beans	786	55,668 bushels	806	64,108 bushels
Peas	486	26,606 bushels	604	30,042 bushels
Beetroot	7	8,820 dozen	...	...
Cabbages and Cauliflowers ...	1,335	265,783 dozen	1,314	151,714 dozen
Chocos	3	4,915 dozen	...	...
Cucumbers	234	137,085 dozen	378	181,141 dozen
Marrows	5	23 tons	3	5 tons
Onions	797	22,509 cwt.	430	15,050 cwt.
Tomatoes	2,739	269,789 bushels	3,667	298,381 bushels
Turnips	127	380 tons	79	258 tons

Table No. LVIII.

PRINCIPAL OTHER CROPS.

RETURN FOR TWO YEARS SHOWING THE AREA AND PRODUCTION OF OTHER CROPS.

	1926.		1927	
	Acres.	Produce.	Acres.	Produce.
Broom millet	351	82,301 lb. straw	1,306	520,273 lb. straw
Canary seed	341	18,860 lb.	1,962	622,129 lb.
Cassava	98	6 tons	94	Nil
Cocoanuts	536	28,450 dozen	476	29,000 dozen
Grass seed	349	4,222 bushels	2,439	31,616 bushels
Indiarubber	4	Nil	...	...
Lucerne seed	281	24,795 lb.	126	7,210 lb.
Mangold wurzel	158	618 tons	129	755 tons
Millet seed ... ..	...	...	99	4,178 bushels
Peanuts	2,906	1,735,726 lb.	5,693	4,967,428 lb.

Table No. LIX.

PASTURAGE.

RETURN FOR FIVE YEARS SHOWING THE AREA UNDER PASTURAGE.

	1923. Acres.	1924. Acres.	1925. Acres.	1926. Acres.	1927. Acres.
Hay	46,909	95,007	66,828	40,141	65,412
Green forage	306,693	134,109	247,482	342,580	155,843
Artificially sown pasture	498,552	538,165	532,052	543,528	546,575
Total	852,154	767,281	846,362	926,249	767,830

Table No. LX.

HAY.

RETURN FOR TWO YEARS SHOWING THE AREA AND PRODUCTION OF HAY CROPS.

Hay Crops.	Area.		Increase or Decrease — 1927.	Produce.		Increase or Decrease — 1927.
	1926.	1927.		1926.	1927.	
	Acres.	Acres.	Acres.	Tons.	Tons.	Tons.
Wheat	2,798	3,637	839	1,901	3,743	1,842
Oats	790	2,468	1,678	736	2,834	2,098
Lucerne	33,263	48,346	5,083	40,601	72,184	31,583
Other	3,290	10,961	7,671	4,502	16,235	11,733
Totals	40,141	65,412	15,271	47,740	94,996	47,256

Table No. LXI.
ARTIFICIALLY SOWN PASTURE.
RETURN FOR TWO YEARS SHOWING THE AREA UNDER ARTIFICIALLY SOWN PASTURES.

Petty Sessions District.	1926.		1927.	
	Acres.	Acres.	Increase, 1927.	Decrease, 1927.
Atherton	47,561	50,021	2,460	...
Beaudesert	10,613	5,857	...	4,756
Biggenden	21,643	20,120	...	1,523
Chinchilla	2,386	5,089	2,703	...
Cleveland	20	5,690	5,670	...
Crow's Nest	4,587	5,277	690	...
Dalby	23,865	28,211	4,346	...
Dugandan	6,261	7,057	796	...
Gayndah	15,120	11,390	...	3,730
Gladstone	20,698	25,365	4,667	...
Gympie	94,138	103,274	9,136	...
Maroochy	50,323	46,990	...	3,333
Nanango	46,409	41,919	...	4,490
Oakey	3,452	6,949	3,497	...
Pittsworth	5,932	6,419	487	...
Redcliffe	13,239	11,714	...	1,525
Rockhampton	18,747	20,270	1,523	...
Southport	30,954	32,574	2,515	...
Tiaro	2,542	10,671	8,129	...
Wienholt	62,165	54,954	...	7,211
Woodford	12,161	11,589	...	572
All other Districts	50,712	35,175	...	15,537
Totals	543,528	546,575	2,947	...

Table No. LXII.
ENSILAGE.

RETURN FOR TWO YEARS SHOWING NUMBER OF MAKERS AND ENSILAGE MADE IN THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE.

Petty Sessions District.	1926.		1927.		Increase, 1927.		Decrease, 1927.	
	No. of Makers.	Tons.	No. of Makers.	Tons.	Tons.	Tons.	Tons.	Tons.
Atherton	1	45	1	140	95	...	...	...
Beaudesert	2	110	2	43	...	67	...	...
Biggenden	1	1	2	24	23	...	...	...
Brisbane (A)	1	20	1	25	5	...	...	...
Brisbane (B)	8	872	10	1,097	225	...	...	...
Cairns	1	60	1	40	...	20	...	...
Charters Towers ... ..	...	...	3	220	220	...	...	...
Chinchilla	1	75	...	...	...	75	...	...
Coen	1	1	1	1	...	...	...	...
Condamine ... ..	...	...	1	40	40	...	...	...
Clifton ... ..	...	...	1	50	50	...	...	...
Dalby ... ..	...	...	1	10	10	...	...	...
Douglas ... ..	...	...	...	...	...	...	...	...
Dugandan	3	213	2	125	...	88	...	...
Eidsvold ... ..	...	...	1	50	50	...	...	...
Esk	7	775	9	648	...	27	...	...
Gatton	3	250	...	...	...	250	...	...
Gayndah	1	20	3	135	115	...	...	...
Gin Gin ... ..	...	...	1	10	10	...	...	...
Gladstone	3	75	5	398	323	...	...	...
Goodna	1	181	1	198	17	...	...	...
Gympie	1	60	...	...	...	...	...	...
Harrisville	1	20	...	...	...	20	...	...
Helidon ... ..	...	...	4	340	340	...	...	...
Herberton	2	175	2	220	45	...	...	...
Inglewood ... ..	...	...	1	10	10	...	...	...
Ipswich	1	10	1	60	50	...	...	...
Kilcoy	1	120	...	...	...	120	...	...
Kilkivan ... ..	...	...	2	30	30	...	...	...
Logan	1	60	...	...	...	60	...	...
Maroochy	1	70	...	...	...	70	...	...
Maryborough ... ..	...	...	1	60	60	...	...	...
Nanango	2	45	1	30	...	15	...	...
Pittsworth	1	800	...	...	...	800	...	...
Redcliffe ... ..	...	...	2	104	104	...	...	...
Rockhampton	2	330	7	169	...	...	...	...
Rosewood	1	120	2	300	180	...	...	...
Southport	1	120	1	120	...	...	...	...
Toowoomba ... ..	...	...	2	360	360	...	...	...
Townsville ... ..	...	...	1	2	2	...	...	...
Warwick ... ..	...	...	1	350	350	...	...	...
Woodford	1	100	1	1	...	99	...	...
Wynnum ... ..	...	...	1	10	10	...	...	...
Totals	50	4,728	76	5,420	692	...	...	...

Value of Ensilage made 1926, £7,721; 1927, £9,721.
N.B.—Brisbane (B) refers to South Brisbane.

Table No. LXIII.—continued.
 RETURN SHOWING THE RESULTS OF THE DAIRYING INDUSTRY IN THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE DURING THE YEAR 1927—continued.

Districts.	HOW UTILISED.										ESTABLISHMENTS.			DAIRY CATTLE.			Average per Cow.	BUTTER MADE.			CHEESE MADE.		
	Total Milk Obtained.	For Butter on Farms.	For Cheese on Farms.	For Domestic Purposes by Producer.	Separated for Sale.	Sold for Consumption as Milk.	Sold to Condensed Milk Factories.	Sold to Cheese Factories.	Dairying.	Butter Factories.	Cheese Factories.	In Milk.	Dry.	* †	At Factories.	By Farmers.		Total.	At Factories.	By Farmers.	Total.		
	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	Gallons.	No.	No.	No.	No.	No.	No.	No.	Lb.	Lb.	Lb.	Lb.	Lb.	Lb.			
<i>Rockingham.</i>	4,830,247	116,947	..	112,083	4,151,870	87,931	..	428	2	2	13,197	4,885	756	267	2,469,310	44,402	2,513,712	165,733	..	165,733			
Atherton	162,622	11,587	..	73,678	4,310	73,047	..	216	..	..	751	470	288	133	..	4,160	4,160	..	..	..
Cairns	10,250	..	..	300	..	9,950	..	2	..	..	36	16	..	197	..	..	..	..	..	..
Cardwell	1,300	1,000	..	300	..	..	..	1	..	..	11	15	..	50	..	120	..	..	..	..
Chillagoe	219,494	6,468	..	11,382	195,644	6,000	..	38	1	..	803	305	532	198	146,204	1,818	148,022	..	..	..
Herberton	61,597	12,015	..	36,937	..	12,645	..	118	..	..	409	203	100	161	..	3,209	3,209	..	..	..
Innisfail	98,486	4,030	..	58,782	150	35,524	..	219	..	..	455	331	118	125	..	1,448	1,448	..	..	..
Total Rockingham	5,383,996	152,047	..	293,462	4,351,974	225,097	..	1,022	3	2	15,662	6,225	1,794	246	2,615,514	55,157	2,670,671	165,733	..	165,733			
<i>Maranoa.</i>	37,045	7,115	..	10,617	19,291	22	..	25	1	..	147	172	106	116	564,884	2,511	601,721	..	..	..
Mitchell	1,413,608	102,880	..	77,081	1,204,727	28,920	..	312	..	..	4,556	1,892	544	219	..	36,837	601,721	..	..	..
Roma	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Surat	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yeulba	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Maranoa	1,510,045	114,373	..	91,717	1,274,083	29,872	..	347	1	..	4,963	2,128	690	213	564,884	41,556	606,440	..	..	..
<i>Downs.</i>	1,700,319	49,687	..	83,585	1,013,833	8,675	..	261	1	..	3,375	788	24	408	635,339	19,823	655,162	..	..	..
Allora	1,022,696	52,825	..	39,033	922,163	5,425	..	139	1	..	3,088	1,481	1,174	224	441,518	22,778	464,296	..	..	..
Chinchilla	2,077,096	143,275	..	102,610	1,245,985	13,974	..	431	1	..	5,031	985	1,283	345	442,791	63,761	506,552	1,035,500	..	1,035,500			
Clifton	1,183,994	45,283	..	41,275	1,083,462	13,974	..	181	1	..	3,298	2,358	710	209	525,104	22,658	547,762	..	..	..
Condamine	6,171,655	133,617	..	142,375	4,883,422	13,245	..	516	1	..	12,962	5,411	2,839	336	1,815,919	62,973	1,878,892	..	..	..
Dalby	1,306,500	29,770	..	19,348	912,630	365	..	143	1	..	3,275	687	59	330	1,050,622	14,885	1,065,507	..	..	..
Goombungee	439,199	16,122	..	25,111	181,441	9,855	..	58	1	..	752	293	7	420	133,515	8,124	141,639	..	..	..
Goondiwindi	1,715,817	65,644	..	83,094	1,224,715	14,002	..	241	1	..	4,507	864	303	319	..	30,862	30,862	..	..	..
Highfields	736,974	26,129	..	25,302	471,484	..	..	93	..	..	1,950	600	320	289	..	12,580	12,580	..	..	..
Inglewood	874,385	11,701	..	27,519	348,653	7,892	..	64	..	..	1,577	339	137	456	..	5,159	5,159	..	..	..
Jondaryan	1,017,993	93,004	..	56,217	836,179	6,365	..	208	1	..	2,997	877	251	263	573,566	40,985	614,551	..	..	..
Killarney	7,612,208	136,320	..	130,803	5,375,297	7,665	..	574	1	..	15,280	2,915	1,955	418	2,127,320	58,232	2,185,552	..	..	..
Oakey	4,374,368	59,656	..	180,494	1,258,555	28,105	..	525	..	..	9,827	2,031	1,006	369	..	24,313	24,313	..	..	..
Pittsworth	190,322	69,147	..	71,410	21,660	..	..	410	..	..	721	333	118	181	..	28,073	28,073	..	..	..
Stanthorpe	275,651	8,457	..	14,152	253,042	..	..	44	..	..	1,003	397	42	197	154,595	8,482	158,077	..	..	..
Texas	2,535,780	91,758	..	337,858	663,715	219,602	..	390	1	..	5,211	1,066	252	404	2,459,859	41,538	2,501,397	..	..	..
Toowoomba	4,023,146	216,650	..	155,953	2,181,763	106,790	..	616	1	..	7,083	2,095	738	438	1,076,279	93,897	1,170,176	..	..	..
Warwick	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Downs	37,258,103	1,249,045	35	1,536,139	22,877,999	441,960	..	4,896	12	62	81,937	23,520	11,218	363	11,436,427	549,143	11,985,570	11,343,282	35	11,343,317			
Other Districts	1,585,045	431,554	..	484,333	179,241	489,867	..	1,618	1	..	7,616	6,548	4,509	112	88,767	133,234	222,001	..	..	..
Grand Total	1927 157,811,402 1926 132,144,165	6,115,319 5,736,647	9,095 17,763	6,102,610 5,846,084	125,024,592 103,314,026	6,846,045 6,352,517	1,399,516 1,662,755	22,547 22,451	49 51	72 76	*436,337 †397,606	*139,970 †157,913	69,009 53,708	274 238	59,978,181 48,644,199	2,574,736 2,347,786	62,552,917 50,991,985	12,225,929 8,723,391	7,591 16,764	12,233,520 8,740,355	
Increase, 1927 Decrease, 1927	25,667,237	388,672	8,668	256,526	21,710,566	493,528	263,239	96	2	4	38,731	17,943	13,301	36	11,333,982	226,950	11,560,932	3,502,338	9,173	3,493,165	

* Exclusive of 69,009 heifers intended for milking.

† Exclusive of 55,708 heifers intended for milking.

Table No. LXV.
RETURN SHOWING THE GROSS PRODUCE OF PRINCIPAL CROPS RAISED IN THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE DURING THE YEAR 1927.

QUANTITY OF PRODUCE.

Divisions and Petty Sessions Districts.	GRAIN CROPS.										POTATOES.			SUGAR-CANE.			Coffee.	Tobacco (Cured Leaf.)	Hay (All Kinds).	VINES.		Oranges.				
	Wheat.	Oats.	BARLEY.		Maize.	Rye.	Rice.	English.	Sweet.	Pumpkins and Melons.	Cotton.	Area Crushed.	Weight Obtained.	Arrow-root (Tubers).	Lb.	Tons.				Bananas.	Pineapples.		Dozens.	Bunches.	Lb.	Tons.
			Other.	Other.																							Grapes Gathered.	Bushels.
<i>Moreton Division.</i>	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.	Tons.	Tons.	Lb.	Acres.	Tons.	Tons.	Tons.	Lb.	Tons.	Bunches.	Dozens.	Bushels.	Lb.	Tons.				
Brisbane (A)	8	..	..	2,243	..	..	287	233	743	..	..	..	..	..	..	..	..	229,237	86,071	1,532	651,862	174	..
Brisbane (B)	..	..	..	20	..	..	44	13	42	..	..	..	..	..	..	..	..	685	38,368	389	12,232	312	..
Beaudesert	..	..	..	88,393	..	..	297	48	2,354	..	..	..	..	..	..	..	..	4,726	30	1,506	..	4,792	..
Caboollture	..	..	..	1,579	..	..	227	118	12	..	..	..	..	..	..	..	..	188,057	116,091	3,268	1,914	11	..
Cleveland	..	..	..	..	..	..	2	9	6	..	..	..	..	..	..	..	..	13,643	93,554	1,590	4,520	..	..	
Cooyar	..	..	..	34,473	..	..	142	..	220	..	..	..	..	..	..	..	..	..	..	..	8,784	..	..	
Crow's Nest	3,459	2,367	..	203,964	..	..	727	6	2,488	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dugandan	519	60	..	240,802	..	..	1,073	46	6,077	106,844	..	..	..	..	..	..	..	226	..	86	4,931	..	..	
Esk	..	90	..	72,926	..	..	331	72	1,692	8,076	..	..	..	..	..	..	..	6,100	..	..	5,032	..	..	
Gatton	..	..	..	217,892	..	..	1,232	925	7,621	120,068	..	..	..	..	..	..	..	..	..	..	1,700	..	..	
Goodna	..	..	..	1,600	..	..	12	5	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Harrisville	..	..	..	102,426	..	..	159	43	2,489	43,792	..	..	..	..	..	..	..	..	..	..	..	..	..
Heldon	..	..	..	53,191	..	..	562	410	2,375	20,437	..	..	..	..	..	..	..	..	..	..	..	..	..
Ipswich	..	..	..	16,791	..	..	167	16	87	3,007	..	..	..	..	..	..	..	..	..	..	..	..	..
Kilcoy	..	..	..	19,979	..	..	232	120	142	74,168	..	..	..	..	..	..	..	..	..	..	..	..	..
Laidley	..	..	..	225,093	..	..	688	231	2,657	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Logan	..	..	..	9,981	..	..	1,576	477	63	96,681	723	..	..	..	..	..	..	..	..	..	..	..	..
Lowood	..	..	..	41,526	..	..	898	287	2,172	18,349	..	..	..	..	..	..	..	..	..	..	..	..	..
Marburg	..	..	..	9,597	..	..	115	270	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maroochy	..	..	..	9,739	..	..	393	263	149	164	..	..	..	..	..	..	..	..	..	..	..	..	..
Redcliffe	..	..	..	54,355	..	..	154	8	266	26,756	..	..	..	..	..	..	..	..	..	..	..	..	..
Rosewood	..	..	..	13,970	..	..	439	96	89	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Southport	..	..	..	8,103	..	..	111	89	26	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Woodford	..	..	..	127	..	..	9	46	23	600	..	..	..	..	..	..	..	..	..	..	..	..	..
Wynnum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Moreton	4,076	2,517	300	1,568,253	125	..	10,021	3,872	31,986	519,062	4,506	60,731	9,899	930	51,034	797,382	1,294,261	422,114	118,105	..	..	..	..
<i>Wide Bay.</i>	30	36	..	22,575	..	..	127	13	537	27,366	365	4,982	..	..	..	..	..	..	..	..	..	..	..
Biggenden	..	..	..	5,490	..	..	230	60	26	..	20,319	302,436	..	..	..	..	..	..	..	..	..	..	..
Bundaberg	..	..	..	3,984	..	..	4	1	..	..	11,469	195,924	..	..	..	..	..	..	..	..	..	..	..
Childers	..	..	..	16,373	..	..	117	314	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Eidsvold	..	..	..	92,017	..	..	136	37	232	491,263	..	..	..	..	..	..	..	..	..	..	..	..	..
Gayndah	..	..	..	12,193	..	..	87	12	1,137	364,776	..	..	..	..	..	..	..	..	..	..	..	..	..
Gin Gin	..	..	..	34,850	..	..	423	688	63	18,143	..	..	..	..	..	..	..	..	..	..	..	..	..
Gympie	..	..	..	13,997	..	..	31	28	181	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kilkivan	..	..	..	1,443	..	..	365	47	45	13,285	..	..	..	..	..	..	..	..	..	..	..	..	..
Maryborough	..	..	..	306	..	..	7	8	..	1,040	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Perry	..	..	..	575,612	..	..	212	157	3,042	22,948	..	..	..	..	..	..	..	..	..	..	..	..	..
Nanango	9,185	5,132	..	8,179	..	..	578	21	37	24,898	..	..	..	..	..	..	..	..	..	..	..	..	..
Tlare	..	..	..	676,378	..	..	2,138	162	4,253	100,175	..	..	..	..	..	..	..	..	..	..	..	..	..
Wienholt	6,399	3,512	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total Wide Bay	17,009	8,680	892	1,462,397	..	..	4,455	1,548	9,594	1,068,457	42,772	645,542	223	..	11,581	39,514	1,404,167	32,274	53,535	..	..	..	..
<i>Port Curtis Division.</i>	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Banana	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gladstone	..	..	..	42,832	..	..	1,254	50	525	1,172,098	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Morgan	..	..	..	6,973	..	..	77	11	46	3,187,237	..	..	..	..	..	..	..	..	..	..	..	..	..
Rockhampton	..	..	..	25,066	..	..	914	156	756	947,305	..	..	..	..	..	..	..	..	..	..	..	..	..
St. Lawrence	..	..	..	750	..	..	19	3	12	1,752	2,009	34,930	..	..	..	..	..	..	..	..	..	..	..
Total Port Curtis	60	..	..	75,621	..	..	2,264	220	1,339	5,308,392	2,009	34,930	..	..	3,260	29,744	81,268	49,770	25,766	..	..	..	..

Table No. LXVIII.
SHOWING AVERAGE PRODUCE PER ACRE OF PRINCIPAL CROPS IN QUEENSLAND—RETURN FOR TEN YEARS.

Year.	GRAIN CROPS.						POTATOES.		Pumpkins & Melons.	Cotton Unginned.	SUGAR.		Arrowroot (Tubers).	Tobacco (Cured Leaf).	Coffee.	Hay (all kinds).	Grapes.	Bananas.	Pineapples.	Oranges.	Mangoes.	Strawberries.	Apples.	Market Garden.	Gardens and Orchards.														
	Wheat.	Oats.	Barley.		Maize.	Rye.	Rice.	English.			Sweet.	Tons of Cane Crushed.														Tons of Sugar per Acre Crushed.	Tons.	Tons.	Lb.	Tons.	Lb.	Bunches.	Doz.	Bushels.	Bushels.	Quarts.	Bushels.	£	£
			Malting.	Other.																																			
1918 ...	4.83	12.19	6.53	7.50	27.46	10.00	24.55	1.72	4.94	2.53	820	15.01	1.70	13.04	531	486	1.68	1,468	162	214	120	201	721	43	33	23													
1919 ...	6.71	7.91	10.62	11.00	17.39	6.67	6.75	1.77	2.85	2.63	517	14.83	1.91	10.87	615	671	0.86	2,002	124	172	68	193	691	36	36	23													
1920 ...	20.91	22.16	19.46	21.49	17.38	14.53	20.00	2.17	3.43	2.32	344	15.03	1.88	11.43	539	673	1.24	2,312	133	211	71	176	1,815	47	37	31													
1921 ...	18.37	15.13	16.83	18.56	21.53	12.00	7.50	1.76	4.60	3.30	484	18.60	2.30	15.10	738	791	1.41	2,245	177	221	90	197	1,513	53	37	24													
1922 ...	12.91	16.04	17.91	16.28	21.59	9.75	31.89	1.37	3.93	2.87	454	15.39	2.04	9.43	911	586	1.29	2,188	200	213	111	230	756	53	42	27													
1923 ...	4.76	11.24	5.62	6.53	16.86	7.11	...	1.45	3.37	1.99	307	14.75	1.94	7.46	765	708	0.93	3,108	167	250	88	294	983	49	44	29													
1924 ...	14.70	15.94	20.36	17.19	31.99	36.60	...	2.14	4.14	3.75	327	18.92	2.44	11.46	818	440	1.44	2,343	183	262	101	231	1,452	42	41	30													
1925 ...	11.89	11.25	13.57	11.87	21.94	23.65	11.67	1.47	4.31	2.80	488	19.36	2.56	13.81	1,078	519	1.49	2,486	245	268	109	152	1,168	52	41	38													
1926 ...	6.65	7.97	4.24	6.24	19.33	29.67	13.33	1.13	3.04	2.04	483	15.45	2.06	11.11	822	518	1.19	2,848	248	291	104	239	1,192	41	42	25													
1927 ...	17.59	19.27	24.10	18.00	28.65	25.52	...	1.88	3.72	3.25	472	17.45	2.38	11.46	812	731	1.45	2,561	261	177	92	181	781	32	40	41													
*	13.04	17.01	16.55	16.68	22.64	15.68	19.92	1.77	4.34	3.05	395	17.10	2.11	11.35	803	592	1.36	2,358	186	243	124	274	1,309	44	30	21													

* Average for twenty years (or since statistics have been collected).

Table No. LXX.

RETURN SHOWING THE TOTAL EXTENT OF LAND CULTIVATED FOR HAY, TOGETHER WITH THE YIELD OF HAY, IN EACH OF THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE AND THE AVERAGE YIELD PER ACRE DURING THE YEAR 1927.

PETTY SESSIONS DISTRICTS.	HAY.									
	Wheat.		Oats.		Lucerne.		Other.		Total.	
	Acres.	Tons.	Acres.	Tons.	Acres.	Tons.	Acres.	Tons.	Acres.	Tons.
Allora	25	15	16	10	1,240	1,201	88	79	1,369	1,305
Clifton	324	324	69	42	4,227	3,173	1,775	1,928	6,395	5,467
Crow's Nest	10	8	15	24	841	1,778	13	17	879	1,827
Dugandan	153	195	141	149	3,344	8,606	466	715	4,104	9,665
Esk	13	18	90	79	1,561	3,933	161	259	1,825	4,289
Gatton	783	852	213	253	3,386	5,041	968	1,416	5,350	7,562
Harrisville	311	388	487	567	2,638	4,174	902	1,493	4,338	6,622
Helidon	64	62	17	20	672	1,400	210	252	963	1,834
Killarney	73	45	4	4	2,146	3,193	330	309	2,553	3,551
Laidley	359	435	26	47	4,319	4,351	389	691	5,093	5,524
Nanango	37	12	117	113	1,996	3,186	207	258	2,357	3,569
Oakey	46	29	29	33	1,960	1,435	320	451	2,355	1,948
Pittsworth	270	255	41	41	1,105	987	1,158	1,340	2,574	2,623
Roma	20	21	..	..	1	1	152	201	173	223
Rosewood	3	3	27	34	1,157	1,874	401	677	1,588	2,588
Toowoomba	104	117	179	161	3,264	2,987	518	501	4,065	3,766
Warwick	129	40	70	58	6,093	5,168	562	572	6,854	5,837
Wienholt	50	41	110	112	1,900	4,072	405	824	2,465	5,049
All Other Districts	863	883	817	1,087	6,496	15,624	1,936	5,745	10,112	21,524
Grand Total { 1927	3,637	3,743	2,468	2,834	48,346	72,184	10,961	16,235	65,412	94,996
{ 1926	2,798	1,901	790	736	33,263	40,601	3,290	4,502	40,141	47,740
Increase, 1927	839	1,842	1,678	2,098	15,083	31,583	7,671	11,733	25,271	47,256
Decrease, 1927 .. ..	..	..	..	..	..	..	..	..	..	..
Average Yield per Acre	..	1.03	..	1.15	..	1.49	..	1.48	..	1.45

Table No. LXXI.

RETURN SHOWING THE TOTAL EXTENT OF LAND CULTIVATED FOR GREEN CROPS IN EACH OF THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE DURING THE YEAR 1927.

PETTY SESSIONS DISTRICTS.	GREEN CROPS.				
	Wheat.	Oats.	Lucerne.	Other.	Total of all Kinds.
	Acres.	Acres.	Acres.	Acres.	Acres.
Allora	1,720	307	3,233	688	5,948
Beaudesert	233	857	1,072	959	3,121
Brisbane (A)	160	152	117	1,363	1,792
Clifton	2,495	949	3,577	2,562	9,583
Crow's Nest	147	2,249	344	825	3,565
Dalby	2,010	742	66	1,067	3,885
Dugandan	76	1,435	268	2,230	4,009
Esk	165	999	272	2,213	3,649
Gatton	586	469	181	2,378	3,614
Gayndah	372	646	55	2,048	3,121
Goombungee	646	1,458	382	1,988	4,474
Gympie	45	642	63	778	1,528
Harrisville	64	875	250	1,099	2,288
Helidon	224	302	83	989	1,598
Highfields	512	1,643	547	1,872	4,574
Inglewood	1,755	106	443	410	2,714
Jondaryan	381	489	46	1,046	1,962
Killarney	483	272	873	702	2,330
Laidley	535	63	179	1,268	2,046
Lowood	152	446	86	1,611	2,295
Marburg	184	267	89	1,875	2,415
Nanango	386	3,285	498	2,861	7,030
Oakey	2,861	5,315	792	7,275	16,243
Pittsworth	8,345	2,215	2,467	6,970	19,997
Redcliffe	150	146	53	1,067	1,416
Roma	2,296	72	90	196	2,654
Rosewood	154	665	428	1,903	3,150
Toowoomba	673	1,632	1,489	1,269	5,063
Warwick	2,125	954	2,791	2,888	8,758
Wienholt	372	2,372	582	2,289	5,615
All Other Districts	2,006	2,535	1,157	9,738	15,406
Grand Total .. { 1927	32,313	34,559	22,543	66,428	155,843
{ 1926	150,783	45,687	40,420	105,690	342,580
Increase, 1927 .. ..	..	..	..	..	..
Decrease, 1927	118,470	11,128	17,877	39,262	186,737

Table No. LXXII.
RETURN SHOWING AVERAGE YIELD PER ACRE OF CROPS IN EACH DIVISION OF THE STATE FOR THE YEAR 1927.

Division.	GRAIN CROPS.							POTATOES.			Sugar-cane (to Acres Crushed)	Cotton.	Arrow-root (Tuber)	Tobacco (Dried Leaf)	Coffee.	Pumpkins and Melons.	Hay of all Kinds.	Grapes.	Bananas.	Pine-apples.	Oranges.	
	Wheat.	Oats.	Barley, Maltng.	Barley, Other.	Maize.	Rye.	Rice.	English.	Sweet.	Tons.												Tons.
Moreton	16.57	29.61	30.00	22.86	24.90	17.86	...	1.71	3.76	13.48	395	11.77	155	747	3.05	1.79	2,066	248	173	93	...	...
Wide Bay	13.67	25.23	...	11.89	25.96	...	...	1.89	4.15	15.12	467	5.31	...	600	4.51	1.85	1,411	296	207	92	...	...
Port Curtis	10.00	...	...	...	25.15	...	...	3.08	2.53	17.39	488	...	...	...	2.63	2.49	1,062	213	212	129	...	...
Edgumbe	...	30.00	...	...	19.08	...	...	2.03	2.28	18.23	359	...	776	...	1.91	1.76	2,118	134	182	71	...	...
Rockingham	...	...	...	...	29.15	...	...	2.15	2.37	18.22	335	...	...	...	2.40	1.60	1,936	144	128	93	...	...
York Peninsula	...	...	...	...	28.04	...	...	...	2.71	...	...	...	...	...	2.00	...	...	67	77	87	...	...
Carpentaria	...	...	...	...	14.75	...	...	2.00	...	...	...	...	...	...	2.00	...	...	...	...	...	13	...
Central-western	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1.00	...	...	...	...	...	...	...
South-western	...	...	...	...	...	...	...	2.00	...	...	...	...	...	...	3.00	...	3,218	...	...	...	65	...
Central	0.48	...	...	...	14.47	...	...	2.33	1.50	...	292	...	...	...	2.09	1.07	888	...	6	47	...	...
Maranoa	0.66	...	...	...	7.18	...	...	1.00	4.00	...	390	...	...	...	2.64	1.29	1,330	...	...	61	...	...
Downs	19.44	17.67	24.08	18.61	31.38	28.50	...	1.92	2.25	...	468	...	849	...	3.33	0.99	4,116	...	...	68	...	...
TOTAL AVERAGE YIELD, 1927	17.59	19.27	24.10	18.00	28.65	25.52	...	1.88	3.72	17.45	472	11.46	812	731	3.25	1.45	2,561	261	177	92	...	...
" " 1926	6.65	7.37	4.24	6.24	19.33	20.67	13.33	1.13	3.04	15.45	483	11.11	822	518	2.04	1.19	2,848	248	291	104	...	...
INCREASE, 1927	10.94	11.30	19.86	11.76	9.32	...	...	0.75	0.68	2.00	...	0.35	...	213	1.21	0.36	...	13	...	...	...	...
DECREASE, 1927	...	...	...	...	...	4.15	13.33	...	...	...	11	...	10	...	...	...	287	...	...	114	...	12

Table No. LXXIII.
RETURN SHOWING THE AREA, YIELD, AND VALUE OF CROPS FOR THE YEAR 1927.

Description of Crop.		Area.	Yield.	Value.
		Acres.		£
Cereals	Barley { Malting	2,366	57,032 bushels	13,961
	{ Other	854	15,368 "	3,810
	Maize	234,013	6,703,518 "	1,815,536
	Oats	2,272	43,788 "	11,859
	Wheat	215,073	3,783,584 "	1,040,486
	Other Cereals—Rice	...	...	...
	" Rye	25	638 "	249
Grass Seed	...	2,439	31,616 "	26,347
Green Forage (all kinds)	...	155,843	...	779,215
Hay	Lucerne	48,346	72,184 tons	464,685
	Oaten	2,468	2,834 "	35,010
	Wheaten	3,637	3,743 "	26,903
	Other	10,961	16,235 "	77,117
Straw	Oaten	...	96 "	616
	Wheaten	...	1,637 "	10,504
Pulse	Other	...	31 "	199
	Beans	13	1,161 bushels	3,048
	Peas	6	276 "	379
Root Crops	Cassava	94	...	...
	Arrowroot (Tubers)	883	10,122 tons	20,244
	Mangolds	129	755 "	3,020
	Onions	430	15,050 cwt.	4,972
	Potatoes	10,035	18,914 tons	178,895
	" Sweet	1,615	6,009 "	28,543
	Turnips (including Swede Turnips)	79	258 "	1,268
Grapes, Productive	For table use	...	...	...
	For wine	1,475	3,777,830 lb.	62,964
	For drying purposes	...	...	...
" Unproductive	287	...	...
Sugar-cane, Productive	203,748	3,555,827 tons	7,108,907	
" Unproductive	71,090	...	...
Tobacco	135	109,595 lb.	8,895	
Market Gardens	1,083	...	43,834	
Orchards and Fruit Gardens	Almonds	1	100 "	4
	Apples	3,212	103,893 bushels	87,119
	Apricots	74	3,575 "	1,899
	Bananas	10,968	2,863,414 bunches	1,200,810
	Cherries	4	74 bushels	106
	Custard Apples	252	39,880 "	11,881
	Figs	15	616 "	200
	Gooseberries (Cape)	4	6,280 quarts	262
	Lemons	153	18,946 bushels	10,183
	Limes	...	...	...
	Mangoes	190	34,295 "	13,432
	Nectarines	66	3,075 "	2,921
	Olives	1	Nil	...
	Oranges	2,646	243,037 "	170,126
	Passion Fruit	84	7,905 "	7,921
	Pawpaws	179	99,746 dozen	27,015
	Peaches	1,502	80,873 bushels	52,904
	Pears	188	9,877 "	7,902
	Plums	964	37,900 "	30,004
	Pineapples	3,099	548,487 dozen	197,646
	Persimmons	11	1,068 bushels	374
	Quinces	3	71 "	34
	Rosellas	1	20 "	4
	Strawberries	110	85,924 quarts	7,697
	Other (Gardens and Orchards)	728	...	21,671
	Unproductive	11,274	...	...
	Broom Millet	1,306	520,273 lb. straw	18,270
Cabbages and Cauliflowers	1,314	151,714 dozen	55,945	
Canary Seed	1,964	622,129 lb.	11,109	
Cocoanuts	476	29,000 dozen	5,800	
Coffee	9	6,578 lb.	247	
" Unproductive	15	...	...
Cotton, Unginned	14,950	7,060,756 "	144,576	
" Unproductive	13,880	...	...
Cowpea	126	7,409 bushels	4,631	
Cucumbers	378	181,141 dozen	13,586	
Green Beans	806	64,108 bushels	25,042	
Green Peas	604	30,042 "	15,522	
India Rubber	...	...	...
Lucerne Seed	126	7,210 lb.	691	
Peanuts	5,693	4,967,428 "	108,662	
Pumpkins and Melons	15,760	51,148 tons	184,346	
Millet Seed	99	4,178 bushels	1,915	
Tomatoes	3,667	298,381 "	211,460	
Marrows	3	5 tons	36	
Panicum Seed	158	150,260 lb.	5,635	
Sorghum Grain (Milo)	152	5,898 bushels	590	
Total under Crop	1,066,612		14,431,644	
Land in fallow	81,259			
Area under permanent artificially sown grasses	546,575			
New ground broken up during season	11,597			
Previously cropped land lying idle during season	136,524			
Total area of arable land	1,842,567			

J. J. J. J.

Registrar-General.

REPORT OF THE REGISTRAR-GENERAL ON LIVE STOCK FOR THE YEAR 1927

INDEX.

	Table.	Page.
Angora Goats	XXV.	207
Bacon and Hams	XVII.	204
Bacon Curing Establishments	XL.	218
Beef—	XVI.	203
Fresh, Preserved	XL.	218
Frozen	XL.	218
Salted	XL.	218
Bones, Product of Meat Preserving Establishments	XLI.	218
Camels	XXVI.	207
Cattle—		
Average Size of Herds, Return for ten years	X.	201
Boiling Down, Slaughtered for	XIII.	202
Breeds of	XL.	218
Calves Branded during 1927	XLII.	219
Calves Branded in Pastoral Districts, Return for ten years	XXIX.	210
Calves Branded in the State, Return for ten years	XXXI.	212
Decrease—	XXVII.	207
Centesimal in 1927	I.	199
Numerical in 1927	I.	199
Density in Divisions of State	VII.	200
Density in Pastoral Districts	IV.	200
Density in State	XXXIV.	215
Density in Various Countries	V.	200
Disposal of—		
The Cattle Depastured on 31st December, 1927, were		5,225,804
Add those dealt with as per Table XIII., page 8		703,952
		5,929,756
On 31st December, 1926, the Cattle Depastured were		5,464,845
		464,911
Distribution of Herds in Pastoral Districts	XXXV.	215
Estimated and Actual Numbers Killed for Food for Home Consumption	XIII.	202
Exported—	XXXIX.	217
Alive, Overland	XIII.	202
Alive, Oversea	XV.	203
Freezing, Slaughtered for	XIII.	202
Graph of	XL.	218
Herds, Distribution of, in Pastoral Districts	Facing Table XXXIII.	
Hides Obtained during the Year	XXXV.	215
Increases, Proportional, during each year of last ten years	XLI.	218
Inwards, Return for ten years	III.	199
Killed for Farm or Station Use	XIV.	203
Killed for Farm or Station Use, Return for three years	XXIX.	210
Number—	XXX.	211
In Divisions of the State	VI.	200
In Pastoral Districts	IV.	200
In Pastoral Districts, Return for ten years	XXXIII.	214
In Petty Sessions Districts	XXXII.	213
In State, Return for ten years	XXVIII.	208
Of Acres per Head in Pastoral Districts	II.	199
Per Capita Population	IV.	200
Per Square Mile in Pastoral Districts	IV.	200
Outwards, Return for ten years	XXXIV.	215
Overland, Exported Alive	IV.	200
Oversea, Exported Alive	XXXIV.	215
Owners, Number of	XIV.	203
Petty Sessions Districts, Number in	XIII.	202
Preserved, Frozen, and Boiled Down	XIV.	203
Preserving, Slaughtered for	XV.	203
Sizes and Distribution of Herds—	XIII.	202
In Divisions of the State	XIV.	203
In Pastoral Districts	X.	201
Slaughtered for	X.	201
Sized for ten years	XXXV.	215
Sized for ten years	XXXVI.	216
Sized for ten years	XXVIII.	208
Sized for ten years	XIII.	202
Sized for ten years	XL.	218
Sized for ten years	XXXVI.	216
Sized for ten years	XXXV.	215
Sized for ten years	X.	201

INDEX.

	Table.	Page.
Cattle— <i>continued.</i>		
Slaughtered for—		
Boiling Down	XL.	218
Freezing	XL.	218
Preserving	XL.	218
Central Division—		
Cattle, per Square Mile and per Capita	VII.	200
Horses, per Square Mile and per Capita	VII.	200
Sheep, per Square Mile and per Capita	VII.	200
Common Goats	XXIV.	206
Density of Live Stock in Pastoral Districts	IV.	200
Density of Live Stock in State	XXXIV.	215
Density of Live Stock in Various Countries	V.	200
Edible Fats—Product of Meat Preserving Establishments	XLI.	218
Establishments	XL.	218
Average Number of Hands Employed	XL.	218
Bacon Curing	XVI.	203
Meat Preserving	XVI.	203
Financial Districts—		
Number of Stock in	VI.	200
Percentage of Stock in	VII.	200
Per Capita	VII.	200
Per Square Mile	VII.	200
Fresh Pork	XVII.	204
Goats—		
Angora	XXV.	207
Common	XXIV.	206
Mohair Obtained	XXV.	207
Skins Obtained (Angora)	XXV.	207
Skins Obtained (Common)	XXIV.	206
Hair—Products of Meat Preserving Establishments	XLI.	218
Hides and Skins—		
Products of Meat Preserving Establishments	XLI.	218
Value of Export Oversea	XXXIII.	206
Hoofs—Products of Meat Preserving Establishments	XLI.	218
Horns—Products of Meat Preserving Establishments	XLI.	218
Horses—		
Decrease—		
Centesimal in 1927	I.	199
Numerical in 1927	I.	199
Density in—		
Divisions of the State	VII.	200
Pastoral Districts	IV.	200
State	XXXIV.	215
Entire	IX.	201
Graph of	Facing Table XXXIII.	
Import and Export Trade	VIII.	201
Import and Export Trade Borderwise	XV.	203
Increases, Proportional, during each year of last ten years	III.	199
Number—		
In Divisions of the State	VI.	200
In Pastoral Districts	IV.	200
In Petty Sessions Districts	XXXIII.	214
In State, Return for ten years	XXVIII.	208
Of Acres per Head in Pastoral Districts	II.	199
Per Capita Population	IV.	200
Per Square Mile in Pastoral Districts	IV.	200
Per Square Mile in Pastoral Districts	XXXIV.	215
Industries—Freezing and Preserving—		
Bacon Curing	XVI.	203
Hands Employed in Industries	XVI.	203
Land and Premises, Value of	XVI.	203
Machinery, Value of	XVI.	203
Meat Preserving	XVI.	203
Number of	XVI.	203
Output, Value of	XVI.	203
Output, Value of	XVI.	203
Lamb—		
Fresh, preserved	XL.	218
Frozen	XL.	218
Lambs—		
Marked	XLVI.	223
Preservation for Food, &c.	XL.	218
Shorn	XLII.	219
Slaughtered for Consumption as Food	XXXIX.	217
Lard Produced	XL.	218
Live Stock—		
Calves Branded during 1927	XXIX.	210
Calves Branded in the State for ten years	XXVII.	207
Density in Divisions of the State	VII.	200
Density in Pastoral Districts	IV.	200
Density in State	XXXIV.	215
Density in Various Countries	V.	200
Disposal of—		
Cattle (see Cattle)		
Sheep (see Sheep)		
Distribution of—		
In Pastoral Districts	XXXV.	215
In the State	XXXIV.	215
Export Oversea, Value of	XXIII.	206
Graph of	Facing Table XXXIII.	
Pastoral Districts	XXXV.	215

INDEX.

	Table.	Page.
Live Stock— <i>continued.</i>		
Slaughtered for—		
Consumption as Food	XXXIX.	217
Consumption as Food on Farms or Stations	XXIX.	210
Freezing	XL.	218
Preservation as Food	XL.	218
Tallow	XL.	218
Value of all Products shown in Meat Preserving Establishments	XL.	218
Manure—Product of Meat Preserving Establishments	XLI.	218
Meat—		
Essence of, Produced	XL.	218
Export Oversea, Value of	XXIII.	206
Extract of, Produced	XL.	218
Preserved or Frozen	XL.	218
Preserving Establishments	XVI.	203
Preserving Establishments, Return for ten years	XL.	218
Mohair Obtained	XXV.	207
Mules	XXVI.	207
Mutton—		
Fresh, Preserved	XL.	218
Frozen	XL.	218
Salted	XL.	218
Northern Division—		
Cattle, per Square Mile and per Capita	VII.	200
Horses, per Square Mile and per Capita	VII.	200
Sheep, per Square Mile and per Capita	VII.	200
Oils, &c.—Product of Meat Preserving Establishments	XLI.	218
Ostriches	XXVI.	207
Pastoral Districts—		
Acres per head of Horses	IV.	200
Area in Acres	IV.	200
Cattle to Square Mile	IV.	200
Horses to Square Mile	IV.	200
Live Stock in	XXXIII.	214
Sheep to Square Mile	IV.	200
Pastoral Industry—		
Proportion to Total Export Oversea	XXII.	206
Products, Value of Exports of	XXIII.	206
Petty Sessions Districts—		
Calves Branded in	XXIX.	210
Cattle Killed for Farm or Station Use in	XLI.	218
Cattle, Number in	XXVIII.	208
Horses, Number in	XXVIII.	208
Sheep Killed for Farm or Station Use in	XXIX.	210
Sheep, Number in	XXVIII.	208
Swine, Number in	XXVIII.	208
Swine Slaughtered in	XVII.	204
Pork—		
Fresh	XVII.	204
Salt and Fresh Preserved	XL.	218
Salt and Preserved	XVII.	204
Products, all other, of Meat Preserving Establishments	XLI.	218
Sheep	{ XXVIII.	208
	{ XXXIII.	214
	{ XLIII.	222
	{ XLVI.	223
Ages of	{ XLV.	223
As per Wool Returns for ten years	{ XII.	202
Average Size of Flocks, Return for ten years	{ XI.	202
Boiling Down, Slaughtered for	{ XIII.	202
	{ XL.	218
Breeds of	{ XLV.	223
Decrease—		
Centesimal in 1927	I.	199
Numerical in 1927	I.	199
Density in Divisions of the State	VII.	200
Density in Pastoral Districts	IV.	200
Density in State	XXXIV.	215
Density in Various Countries	V.	200
Disposal of—		
The Sheep Depastured on 31st December, 1927, were		16,642,385
Add those dealt with as per Table XIII., page 8		5,269
		<hr/>
On 31st December, 1926, the Sheep Depastured were		16,647,654
		16,860,772
		<hr/>
A difference (equal to 1.26 per cent. decrease) of		213,118
Distribution of Flocks in Pastoral Districts	XXXVII.	216
Estimated and Actual Numbers Killed for Food for Home Consumption	{ XIII.	202
Exported—	{ XXXIX.	217
Alive Overland	{ XIII.	202
	{ XIV.	203
	{ XV.	203
Alive Oversea	{ XIII.	202
	{ XIV.	203
Flocks, Distribution of, in Pastoral Districts	XXXVII.	216
Freezing, Slaughtered for	XL.	218
Graph of	Facing Table XXXIII.	
Increase, Proportional, during each year of last ten years	III.	199
Inwards, Return for ten years	XIV.	203
Killed for Farm or Station Use	XXIX.	210
Killed for Farm or Station Use, Return for ten years	XXX.	211

	Table.	Page.
<i>Sheep—continued.</i>		
Losses, Details of	XLVII.	224
Number—		
In Divisions of the State	VI.	200
In Pastoral Districts	IV.	200
In Pastoral Districts, Return for ten years	XXXIII.	214
In Petty Sessions Districts	XXXII.	213
In State, Return for ten years	XXVIII.	208
Of Acres per Head in Pastoral Districts	II.	199
Per Capita Population	IV.	200
Per Square Mile	IV.	200
XXXIV.	215	
IV.	200	
XXXIV.	215	
Outwards, Return for ten years	XIV.	203
Overland, Exported Alive	XIII.	202
XIV.	203	
XV.	203	
Oversea, Exported Alive	XIII.	202
XIV.	203	
XI.	202	
Owners, Number of	XXXVII.	216
XXXVIII.	217	
Preserved, Frozen, and Boiled Down	XIII.	202
Preserving, Slaughtered for	XL.	218
Progress of Sheep Raising	XLVI.	223
Progress of Sheep Raising, Return for ten years	XII.	202
XVIII.	205	
Shorn, Number of	XLIII.	222
XLIV.	223	
Sizes and Distribution of Flocks—		
In Pastoral Districts	XXXVII.	216
In Divisions of the State	XXXVIII.	217
Sizes of Flocks of Sheep for ten years	XI.	202
Skins Obtained during year	XL.	218
XLVI.	223	
Slaughtered for—		
Boiling Down	XL.	218
Freezing	XL.	218
Preserving	XL.	218
Value of Machinery on Sheep Holdings	XLIII.	222
<i>Skins—</i>		
Angora, Obtained	XXV.	207
Common Goat, Obtained	XXIV.	206
Obtained on Holdings	XLVI.	223
Product of Meat Preserving Establishments	XL.	218
Sheep	XII.	202
Sheep (and Hides), Value of Export, Oversea	XXIII.	206
<i>Southern Division—</i>		
Cattle, per Square Mile and per Capita	VII.	200
Horses, per Square Mile and per Capita	VII.	200
Sheep, per Square Mile and per Capita	VII.	200
<i>Swine—</i>		
Decrease—		
Centesimal in 1927	I.	199
Numerical in 1927	I.	199
Graph of	Facing Table XXXIII.	
Increases, Proportional, during each year of the last ten years	III.	199
Number—		
In Divisions of the State	VI.	200
In Pastoral Districts	XXXIII.	214
In Petty Sessions Districts	XXVIII.	208
In the State, Return for ten years	II.	199
Slaughtered in Petty Sessions Districts	XVII.	204
<i>Tallow—</i>		
Produced	XL.	218
Value of Export Oversea	XXIII.	206
Value of all Other Products of Preserving Establishments	XLI.	218
Value of Exports of Pastoral Products	XXIII.	206
<i>Wool—</i>		
Average Export Price, Oversea only	XLIII.	222
Average Weight of Bale	XIX.	205
XVIII.	205	
XLIII.	222	
XVIII.	205	
XLIII.	222	
XVIII.	205	
XX.	205	
XVIII.	205	
XLIII.	222	
XLIV.	223	
XVIII.	205	
XLIII.	222	
XVIII.	205	
XLIII.	222	
XVIII.	205	
XXI.	206	
XXIII.	206	
XVIII.	205	
XLIII.	222	
XLI.	218	

REPORT OF THE REGISTRAR-GENERAL ON LIVE STOCK FOR THE YEAR 1927.

Table No. I.

RETURN SHOWING THE NUMBER OF LIVE STOCK IN THE STATE FOR TWO YEARS, AND THE INCREASE OR DECREASE FOR THE YEAR 1927.

Year.	Horses.	Cattle.	Sheep.	Swine.
1926	571,622	5,464,845	16,860,772	183,662
1927	548,333	5,225,804	16,642,385	191,947
Numerical Increase in 1927 ... ..	...	...	...	8,285
Numerical Decrease in 1927	23,289	239,041	218,387	...
Centesimal Increase in 1927 ... ..	...	...	...	4.51
Centesimal Decrease in 1927	4.07	4.37	1.30	...

Table No. II.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF HORSES, CATTLE, SHEEP, AND SWINE IN THE STATE.

Year.	Horses.	Cattle.	Sheep.	Swine.
1918	759,726	5,786,744	18,220,985	140,966
1919	731,705	5,910,433	17,379,332	99,593
1920	742,217	6,455,067	17,404,840	104,370
1921	747,543	7,047,370	18,402,399	145,083
1922	714,055	6,955,463	17,641,071	160,617
1923	661,593	6,396,514	16,756,101	132,243
1924	660,093	6,454,653	19,028,252	156,163
1925	638,372	6,436,645	20,663,323	199,598
1926	571,622	5,464,845	16,860,772	183,662
1927	548,333	5,225,804	16,642,385	191,947

Table No. III.

RETURN FOR TEN YEARS SHOWING THE CENTESIMAL INCREASE OR DECREASE IN LIVE STOCK.

Year.	Horses.	Cattle.	Sheep.	Swine.
1918	3.64	8.84	5.91	— 18.37
1919	— 3.69	2.66	— 4.62	— 29.35
1920	1.44	8.66	0.15	4.80
1921	0.72	9.18	5.73	39.01
1922	— 4.48	— 1.30	— 4.14	10.71
1923	— 7.35	— 8.04	— 5.02	— 17.67
1924	— 0.23	0.91	13.56	18.09
1925	— 3.29	— 0.28	8.59	27.81
1926	— 10.46	— 15.10	— 18.40	— 7.98
1927	— 4.07	— 4.37	— 1.30	4.51

— Decrease.

Table No. IV.

RETURN SHOWING THE DENSITY AND THE PROPORTION OF THE VARIOUS KINDS OF LIVE STOCK IN THE SEVERAL PASTORAL DISTRICTS AND THE NUMBER PER CAPITA IN THE STATE FOR THE YEAR 1927.

In Converting Horses and Cattle to Terms of Sheep, Ten Head of Sheep are Taken as Equal to One Horse or Head of Cattle.

Pastoral District.	Area in Acres.	Centesimal Ratio of Area of District to Area of State.	HORSES.			CATTLE.			SHEEP.			ALL KINDS IN TERMS OF SHEEP.		
			Acres per Head.	Number per Square Mile.	Percentage to Total in State.	Acres per Head.	Number per Square Mile.	Percentage to Total in State.	Acres per Head.	Number per Square Mile.	Percentage to Total in State.	Acres per Head.	Number per Square Mile.	Percentage to Total in State.
Burke ...	65,383,040	15.24	1,563	0.41	7.63	102	6.27	12.26	26	24.70	15.16	6.99	91.51	12.57
Burnett ...	7,972,480	1.86	207	3.09	7.01	17	37.19	8.87	812	0.79	0.06	1.59	403.52	6.76
Cook ...	63,601,920	14.82	1,427	0.45	8.13	128	4.99	9.49	18,957	0.03	0.02	11.76	54.43	7.27
Darling Downs ...	16,249,600	3.79	238	2.69	12.44	39	16.33	7.93	7	98.29	15.00	2.22	288.47	9.85
Gregory North ...	54,266,240	12.64	3,475	0.18	2.85	399	1.60	2.60	51	12.44	6.34	21.12	30.31	3.45
Gregory South ...	31,617,920	7.37	3,608	0.18	1.60	207	3.09	2.93	108	5.92	1.76	16.56	38.64	2.57
Leichhardt ...	30,946,560	7.21	815	0.79	6.92	58	11.03	10.21	29	21.73	6.31	4.57	139.91	9.09
Maranoa ...	25,110,400	5.85	933	0.69	4.91	118	5.43	4.08	9	75.22	17.73	4.69	136.42	7.20
Mitchell ...	35,431,680	8.26	1,258	0.61	5.13	391	1.64	1.73	10	67.10	22.32	7.23	88.55	6.59
Moreton ...	5,649,920	1.32	92	6.96	11.20	11	56.22	9.50	255	2.51	0.13	1.01	634.31	7.53
North Kennedy ...	21,832,960	5.09	359	1.78	11.10	49	12.98	8.47	2,199	0.29	0.06	4.33	147.90	6.78
Port Curtis ...	8,994,560	2.09	274	2.33	5.98	23	27.56	7.41	307	2.09	0.18	2.13	301.03	5.69
South Kennedy ...	19,528,960	4.55	569	1.12	6.25	64	9.98	5.82	111	5.79	1.06	5.48	116.79	4.79
Warrego ...	37,333,760	8.71	2,027	0.32	3.36	245	2.61	2.92	16	39.50	13.84	9.31	68.78	5.39
Wide Bay ...	5,200,000	1.21	173	3.70	5.49	17	37.17	5.78	1,105	0.58	0.03	1.56	409.28	4.47
STATE ...	429,120,000	100.00	783	0.82	100.00	82	7.79	100.00	26	24.82	100.00	5.77	110.94	100.00
Number per Capita Population ...				0.61			5.81			18.51			82.72	...

Table No. V.

The following table shows, from the latest information available, the live stock density in various countries:—

	Live Stock in Terms of Sheep per Square Mile.
Queensland ...	111
New South Wales ...	269
Victoria ...	377
Argentina ...	435
Germany ...	1,178
Union of South Africa ...	323
United Kingdom ...	980
United States of America ...	254

Table No. VI.

RETURN SHOWING NUMBER AND PROPORTION OF HORSES, CATTLE, SHEEP, AND SWINE IN THE SOUTHERN, CENTRAL, AND NORTHERN DIVISIONS OF THE STATE FOR THE YEAR 1927.

Division.	Horses.		Cattle.		Sheep.		Swine.	
	No.	%	No.	%	No.	%	No.	%
Southern Division ...	258,952	47.22	2,322,633	44.45	8,118,128	48.78	166,178	86.57
Central Division ...	114,805	20.94	1,149,911	22.00	5,928,454	35.62	10,155	5.29
Northern Division ...	174,576	31.84	1,753,260	33.55	2,595,803	15.60	15,614	8.14
Total State ...	548,333	100.00	5,225,804	100.00	16,642,385	100.00	191,947	100.00

Table No. VII.

RETURN SHOWING NUMBER OF HORSES, CATTLE, AND SHEEP PER SQUARE MILE AND PER CAPITA OF POPULATION IN THE SOUTHERN, CENTRAL, AND NORTHERN DIVISIONS OF THE STATE FOR THE YEAR 1927.

Division.	Area in sq. miles.	Population.	HORSES.		CATTLE.		SHEEP.		ALL KINDS IN TERMS OF SHEEP.	
			Per Sq. Mile.	Per Capita of Population.	Per Sq. Mile.	Per Capita of Population.	Per Sq. Mile.	Per Capita of Population.	Per Sq. Mile.	Per Capita of Population.
Southern Division ...	209,980	639,577	1.23	0.40	11.06	3.63	38.66	12.69	161.61	53.06
Central Division ...	209,340	105,574	0.55	1.09	5.49	10.89	28.32	56.15	88.73	175.95
Northern Division ...	251,180	154,025	0.70	1.13	6.98	11.38	10.33	16.85	87.09	142.02

* Estimated 31st December, 1927.

Table No. VIII.

RETURN SHOWING THE NUMBER OF HORSES IMPORTED AND EXPORTED INTO AND FROM THE STATE FOR THE YEAR 1927.

HORSES IMPORTED DURING 1927.				HORSES EXPORTED DURING 1927.					
Country.	Number.		Value.		Country.	Number.		Value.	
<i>Oversea—</i>			£	£	<i>Oversea—</i>			£	£
					India	412	...	5,899	
					Papua	10	...	64	
					Netherlands, East Indies	211	...	3,165	
					Territory of New Guinea	1	...	7	
						634			9,135
<i>Interstate (by land)—</i>					<i>Interstate (by land)—</i>				
New South Wales...	8,206	...	38,782		New South Wales ...	8,174	...	36,099	
South Australia ...	3,255	...	13,082		South Australia ...	1,761	...	7,947	
		11,461		51,864		9,935			44,046
Totals		11,461		51,864	Totals		10,569		53,181

Table No. IX.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF ENTIRE AND OTHER HORSES.

Year.	Entire Horses.	Other Horses.	Total.
1918	7,664	752,062	759,726
1919	6,616	725,089	731,705
1920	6,402	735,815	742,217
1921	6,164	741,379	747,543
1922	4,930	709,125	714,055
1923	4,728	656,865	661,593
1924	3,717	656,376	660,093
1925	2,827	635,545	638,372
1926	2,221	569,401	571,622
1927	1,951	546,382	548,333

Table No. X.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF OWNERS AND THE SIZES OF HERDS UNDER VARIOUS GROUPINGS, ALSO THE INCREASE OR DECREASE FOR THE YEAR 1927.

For Details of Sizes of Herds of Cattle in Pastoral Districts, for the Year 1927, see Table No. XXXV.

Year.	1 to 100.		101 to 300.		301 to 500.		501 to 1,000.	
	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.
1918	36,724	987,136	3,836	642,188	1,356	736,084	*	*
1919	37,276	1,018,273	4,039	682,548	1,411	762,010	*	*
1920	39,203	1,107,774	4,431	741,056	1,682	888,702	*	*
1921	41,009	1,178,980	4,846	817,130	1,859	976,696	*	*
1922	41,040	1,177,859	4,663	786,218	1,010	395,291	777	552,765
1923	40,616	1,085,453	3,887	653,056	907	355,714	695	491,764
1924	39,921	1,093,972	3,902	653,778	897	348,761	742	526,408
1925	39,341	1,096,618	4,151	694,989	916	355,795	715	506,630
1926	38,922	1,048,964	3,781	635,735	819	321,806	657	467,437
1927	38,234	1,058,777	3,841	640,761	791	307,384	639	460,477

Year.	1,001 to 5,000.		5,001 to 10,000.		10,001 and Upwards.		Totals.		Average Size of Herds.
	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	
1918	819	3,421,336	†	†	†	†	42,735	5,786,744	135
1919	850	3,477,602	†	†	†	†	43,576	5,940,433	136
1920	916	3,717,535	†	†	†	†	46,232	6,455,067	140
1921	1,005	4,074,564	†	†	†	†	48,719	7,047,370	145
1922	814	1,731,341	118	817,350	90	1,494,639	48,512	6,955,463	143
1923	743	1,581,675	120	846,622	80	1,382,230	47,048	6,396,514	136
1924	747	1,588,186	131	898,451	76	1,345,097	46,416	6,454,663	139
1925	751	1,563,877	136	921,985	73	1,296,751	46,083	6,436,645	140
1926	617	1,303,068	113	776,324	49	911,511	44,958	5,464,845	122
1927	609	1,278,875	106	731,917	40	747,613	44,260	5,225,804	118

Increase or Decrease —

— 1·55 — 4·37 — 3·28

* Included in group 301 to 500.

† Included in group 1,001 to 5,000.

Table No. XI.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF OWNERS AND THE SIZES OF FLOCKS UNDER VARIOUS GROUPINGS, ALSO THE INCREASE OR DECREASE FOR THE YEAR 1927.

For Details of Sizes of Flocks of Sheep in Pastoral Districts for the Year 1927 see Table No. XXXVII.

Year.	1 to 500.		501 to 1,000.		1,001 to 2,000.		2,001 to 5,000.		5,001 to 10,000.	
	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.
1918 ..	1,966	196,634	354	274,564	419	646,788	519	1,761,902	327	2,385,750
1919 ..	2,047	204,255	361	279,882	395	808,537	570	1,912,488	341	2,435,229
1920 ..	1,934	199,542	371	251,689	390	574,129	571	1,825,882	358	2,554,884
1921 ..	1,965	179,974	305	232,192	408	612,923	558	1,861,362	426	3,036,394
1922 ..	1,800	180,315	290	219,303	402	606,742	606	2,047,236	445	3,168,890
1923 ..	1,675	174,917	311	236,598	426	644,570	686	2,321,322	432	3,033,207
1924 ..	1,614	186,342	345	261,812	464	685,075	716	2,434,612	481	3,385,487
1925 ..	1,760	225,800	382	290,070	521	788,722	805	2,701,654	525	3,686,331
1926 ..	1,917	254,351	474	357,721	604	908,897	1,027	3,389,550	457	3,207,379
1927 ..	2,024	273,668	554	410,614	709	1,071,703	1,020	3,371,043	471	3,220,135

Year.	10,001 to 20,000.		20,001 to 50,000.		50,001 to 100,000.		100,001 and Upwards.		Totals.		Average Size of Flocks.
	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	
1918 ..	237	3,402,384	148	4,689,314	49	3,440,722	11	1,422,927	4,030	18,220,985	4,521
1919 ..	224	3,207,602	139	4,493,626	43	3,004,086	10	1,233,627	4,130	17,379,332	4,208
1920 ..	198	2,841,774	159	4,884,224	46	3,215,847	9	1,056,869	4,036	17,404,840	4,312
1921 ..	211	2,984,081	157	4,770,684	47	3,192,221	13	1,532,568	4,090	18,402,399	4,499
1922 ..	210	2,968,342	149	4,414,776	41	2,826,021	10	1,209,446	3,953	17,641,071	4,463
1923 ..	228	3,166,296	117	3,617,743	43	2,974,156	5	587,292	3,923	16,756,101	4,271
1924 ..	227	3,145,912	162	4,995,505	42	2,943,945	8	989,562	4,059	19,028,252	4,688
1925 ..	286	3,931,942	151	4,707,128	48	3,304,523	9	1,027,153	4,487	20,663,323	4,605
1926 ..	235	3,240,198	120	3,726,023	23	1,423,600	3	353,053	4,860	16,860,772	3,469
1927 ..	234	3,280,459	109	3,364,725	22	1,362,817	2	287,221	5,145	16,642,385	3,235

Increase or Decrease --	5.86	-1.30	-6.75
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Table No. XII.

RETURN FOR TEN YEARS SHOWING THE RESULTS OF LAMBING, LOSSES, ETC., IN THE STATE.

For Details for the Year 1927 see Tables No. XLVI. and XLVII.

	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.
Total Sheep as per Stock Returns on 1st January	17,204,268	18,220,985	17,379,332	17,404,840	18,402,399	17,641,071	16,756,101	19,028,252	20,663,323	16,860,772
Ewes mated with Rams	7,587,417	7,056,171	7,405,279	7,762,276	7,574,309	7,225,507	8,481,332	8,772,276	6,557,034	6,980,529
Lambs Marked	4,038,680	2,564,548	3,729,026	4,711,185	3,420,409	3,052,893	4,833,145	4,638,376	2,245,998	2,481,955
Percentage of Lambing	53.23	36.34	50.35	60.69	45.16	42.25	56.99	52.83	34.25	35.56
Purchases	3,086,904	3,557,278	3,826,035	3,283,849	3,115,912	3,904,803	5,143,617	4,173,815	3,889,789	4,371,786
Sales	3,584,631	4,274,909	5,321,673	5,325,881	4,521,108	5,053,173	5,646,885	4,793,725	4,409,589	4,420,268
Total Losses	2,280,379	2,421,744	1,992,362	1,436,443	2,543,675	2,577,987	1,877,428	2,147,262	5,335,207	2,449,231
Killed for Food on Holding	243,857	266,826	245,518	235,151	232,866	211,506	180,298	186,133	193,542	193,629
Total Sheep as per Stock Returns on 31st December	18,220,985	17,379,332	17,404,840	18,402,399	17,641,071	16,756,101	19,028,252	20,663,323	16,860,772	16,642,385
Skins obtained during the Year	243,053	277,690	262,231	232,935	216,969	214,389	*182,755	†180,852	†201,169	†232,920

* Estimated.

† Year ended 30th June.

Table No. XIII.

RETURN FOR TWO YEARS SHOWING THE NUMBER OF CATTLE, ETC., EXPORTED AND KILLED.

	CATTLE AND CALVES.		SHEEP AND LAMBS.	
	1926.	1927.	1926.	1927.
Exported, less number imported alive Oversea	72	54	6	22
" " " " Overland	317,132	60,538	565,954	-692,540
Preserved, frozen, and boiled down	255,869	283,587	24,925	31,822
Number killed for food for home consumption	372,965	359,783	676,324	665,965
Totals	946,038	703,962	1,267,209	5,269

N.B.—This Table does not include Interstate Traffic by Sea in live animals; this is unascertainable, but insignificant in number.

Table No. XIV.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF CATTLE AND SHEEP IMPORTED INTO AND EXPORTED FROM THE STATE OVERLAND AND OVERSEA.

* Year.	CATTLE.		SHEEP.		
	Inwards.	Outwards.	Inwards.	Outwards.	
	Number.	Number.	Number.	Number.	
1918	Overland, Calendar year ...	55,048	101,995	205,763	476,255
	Overland, Financial year ...	21,862	112,358	134,341	405,263
	Oversea, Financial year ...	...	66	9	32
1919	Overland, Calendar year ...	58,618	91,874	396,731	409,982
	Overland, Financial year ...	83,146	63,518	437,932	382,717
	Oversea, Financial year ...	...	10	...	9
1920	Overland, Calendar year ...	51,202	351,475	280,406	1,493,206
	Overland, Financial year ...	38,694	152,469	328,604	684,723
	Oversea, Financial year ...	1	37	11	4
1921	Overland, Calendar year ...	57,111	300,862	74,459	1,566,245
	Overland, Financial year ...	50,761	429,507	96,079	1,927,428
	Oversea, Financial year ...	2	436	...	1,074
1922	Overland, Calendar year ...	30,939	158,966	273,518	922,246
	Overland, Financial year ...	67,497	230,409	196,234	1,325,195
	Oversea, Financial year ...	...	169	...	74
1923	Overland, Calendar year ...	31,090	215,790	332,480	725,144
	Overland, Financial year ...	26,042	133,134	339,532	565,756
	Oversea, Financial year ...	...	1,131	...	62
1924	Overland, Calendar year ...	67,681	195,943	222,489	642,055
	Overland, Financial year ...	61,747	256,093	231,325	912,849
	Oversea, Financial year ...	...	483	...	25
1925	Overland, Calendar year ...	23,353	243,322	283,795	606,237
	Overland, Financial year ...	29,431	194,608	242,674	461,161
	Oversea, Calendar year ...	4	53	...	13
1926	Overland, Calendar year ...	14,530	335,600	448,586	684,498
	Overland, Financial year ...	18,592	335,724	225,579	791,533
	Oversea, Calendar year ...	...	72	...	6
1927	Overland, Calendar year ...	108,192	168,730	1,150,437	457,897
	Overland, Financial year ...	71,772	265,384	937,030	630,207
	Oversea, Calendar Year ...	...	54	...	22
	Oversea, Financial year ...	...	80	...	17

* Interstate Coastwise Traffic no longer available.

Table No. XV.

RETURN OF NUMBER OF LIVE STOCK INWARDS AND OUTWARDS ACROSS THE BORDER DURING THE YEAR ENDED 31ST DECEMBER, 1927.

	HORSES.		CATTLE.		SHEEP.		Total Value.
	Number.	Value.	Number.	Value.	Number.	Value.	
	£	£	£	£	£	£	£
INWARDS.							
From—							
New South Wales ...	8,206	38,782	31,632	139,738	1,149,637	1,118,921	1,297,441
South Australia ...	3,255	13,082	76,560	364,545	800	650	378,277
Totals ...	11,461	51,864	108,192	504,283	1,150,437	1,119,571	1,675,718
OUTWARDS.							
Into—							
New South Wales ...	8,174	36,099	156,391	859,464	451,597	486,490	1,382,053
South Australia ...	1,761	7,947	12,339	136,140	6,300	7,875	151,962
Totals ...	9,935	44,046	168,730	995,604	457,897	494,365	1,534,015

Table No. XVI.

RETURN SHOWING THE NUMBER, &C., OF BACON-CURING AND MEAT-PRESERVING WORKS FOR THE YEAR ENDED 30TH JUNE, 1927, AND INCREASE OR DECREASE ON PREVIOUS YEAR.

Kind of Establishment.	Number.	Number of Hands Employed.	Value of Machinery and Plant.	Value of Land and Premises.	Value of Output.
			£	£	£
Bacon Curing ...	8	544	121,063	184,455	1,224,640
Meat Preserving ...	12	3,020	919,598	1,460,123	1,955,467
Totals, 1926-27 ...	20	3,564	1,040,661	1,644,578	3,180,107
Totals, 1925-26 ...	19	4,211	1,016,778	1,641,560	5,361,638
Increase, 1926-27 ...	1	...	23,883	3,018	...
Decrease, 1926-27 ...	...	647	...	...	2,181,531

Table No. XVII.

RETURN SHOWING NUMBER OF SWINE SLAUGHTERED AND THE PRODUCTS THEREOF IN THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE FOR THE YEAR 1927.

Petty Sessions District.	Swine Slaughtered.	Fresh Pork.	Salt and Preserved Pork.	Bacon and Hams.
	Number.	Lb.	Lb.	Lb.
Atherton	7,688	166,719	1,425	435,393
Bowen	53	3,222	580	...
Brisbane*	155,401	995,035	1,244,390	10,582,223
Bundaberg	79	940	500	9,142
Clifton	117	120	8,020	8,044
Crow's Nest	171	395	150	22,577
Dalby	56	781	524	5,278
Gatton	144	8,378	14,000	2,640
Gayndah	70	2,332	7,844	240
Gladstone	41	1,060	2,945	1,155
Gympie	52	1,916	1,840	1,285
Harrisville	113	3,685	7,856	4,950
Ipswich	58	4,235	500	350
Killarney	103	2,277	4,470	6,571
Laidley	134	2,444	21,744	1,950
Logan	276	9,734	17,633	11,359
Lowood	181	14,453	8,186	6,225
Mackay	159	514	6,078	855
Marburg	70	3,265	2,736	5,136
Maryborough	6,584	26,956	46,889	462,258
Nanango	272	2,609	975	29,509
Oakey	195	16,654	2,104	9,192
Pittsworth	142	2,069	2,736	13,895
Rockhampton	3,202	99,564	890	212,214
Roma	63	2,059	1,820	1,460
Stanthorpe	58	940	1,875	4,412
Toowoomba	52,737	1,765	2,724	3,851,299
Warwick	5,811	33,813	3,246	452,642
Wienholt	208	3,352	21,300	4,486
All other Districts	3,178	155,374	57,686	91,205
Totals, 1927	237,416	1,566,660	1,493,666	16,237,945

N.B.—Returns received from Inspectors of Slaughter-houses for 1927 account for 62,362 swine killed, producing 5,156,000 lb. of fresh pork in addition to the above. In a few instances it is possible that some of these have been also included in the returns from which this table is compiled, but to what extent it is impossible to determine.

* Including South Brisbane.

Table No. XVIII.

WOOL.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF SHEEP SHORN AND THE WOOL PRODUCED.

For details for the year ended 30th June, 1927, see Table No. XLIII.

Production of Wool.	1917.	1918.	1919.	1920.	1921.
Number of sheep shorn	11,920,074	17,290,116	17,210,372	15,709,426	16,832,655
Result off Shears only, lb. net—					
Greasy wool	67,772,382	83,997,850	88,450,759	89,215,429	109,440,938
Scoured wool	7,310,368	12,475,776	12,476,486	10,648,967	9,031,961
Above expressed as "Greasy"	82,393,118	108,949,402	113,403,731	110,513,363	127,504,860
Average weight, lb.—					
Per Greasy bale	365	353	356	368	361
Per Scoured bale	239	235	226	235	243
Per Fleece in the Grease	6·91	6·30	6·59	7·03	7·57
Total wool production (Greasy), including quantity fell-mongered, exported on skins, and utilised, lb.	87,425,558	113,777,272	118,035,461	114,809,963	132,579,733
*Estimated value of production	£6,283,712	£8,296,259	£8,606,752	£7,175,623	£7,733,818

Production of Wool.	1922.	1923.	1924-5.	1925-6.	1926-7.
Number of sheep shorn	18,465,471	17,754,989	18,518,682	20,552,992	17,600,510
Result off Shears only, lb. net—					
Greasy wool	106,989,147	100,964,197	123,078,294	129,361,017	104,308,040
Scoured wool	11,030,559	8,112,704	7,099,421	7,156,291	5,964,445
Above expressed as "Greasy"	129,050,265	117,189,605	137,277,136	143,673,599	116,236,930
Average weight, lb.—					
Per Greasy bale	344	348	346	341	335
Per Scoured bale	229	228	238	229	221
Per Fleece in the Grease	6·99	6·60	7·41	6·99	6·60
Total wool production (Greasy), including quantity fell-mongered, exported on skins, and utilised, lb.	134,971,150	121,913,075	140,862,541	146,985,689	119,847,967
*Estimated value of production	10,£825,811	£12,191,308	£15,553,572	£10,993,305	£9,423,046

NOTE—In addition to the above, returns amounting to 36,523,190 lb. of greasy wool shorn were received for the first six months of 1924.

* Based on Oversea Export value (Financial Year).

Table No. XIX.

RETURN FOR TEN YEARS SHOWING THE AVERAGE EXPORT PRICE OF WOOL. (OVERSEA ONLY.)

Year ended 30th June.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.
Greasy wool ...	Per lb. 17½d.	Per lb. 17½d.	Per lb. 15d.	Per lb. 14d.	Per lb. 19¼d.	Per lb. 24d.	Per lb. 26½d.	Per lb. 17·95d.	Per lb. 18·87d.	Per lb. 20·19d.
Scoured wool ...	28d.	29¼d.	28¼d.	24¼d.	32½d.	42d.	46d.	30·86d.	31·40d.	34·48d.

Table No. XX.

RETURN FOR TEN YEARS SHOWING THE QUANTITY AND VALUE OF WOOL EXPORTED Oversea.

Exports of Wool, Oversea Only.	Year.	GREASY.		SCOURED.	
		Quantity.	Value.	Quantity.	Value.
		Lb. gross.	£	Lb. gross.	£
1918-1919	...	56,666,969	4,114,183	22,780,888	2,651,034
1919-1920	...	92,835,718	6,730,813	20,019,683	2,435,603
1920-1921	...	71,532,151	4,467,815	14,821,191	1,749,033
1921-1922	...	140,302,968	8,284,688	25,427,103	2,576,715
1922-1923	...	103,982,252	8,360,164	15,333,125	2,068,548
1923-1924	...	82,555,619	8,266,711	10,847,962	1,892,303
1924-1925	...	89,761,910	9,902,962	10,888,055	2,089,990
1925-1926	...	155,529,490	11,636,937	10,166,018	1,307,051
1926-1927	...	92,434,753	7,267,525	9,371,143	1,225,868
1927-1928	...	98,572,221	8,290,737	10,645,113	1,529,291

Table No. XXI.

RETURN FOR TEN YEARS SHOWING THE AMOUNT OF SCOURED WOOL USED IN MANUFACTURE.

	1918.	1919.	1920.	1921.	1922.	1923.	1924-25.	1925-26.	1926-27.	1927-28.
Quantity of Scoured Wool used in manufacture ...	Lb. 262,393	Lb. 122,814	Lb. 268,787	Lb. 875,610	Lb. 659,133	Lb. 629,784	Lb. 544,269	Lb. 454,075	Lb. 625,342	Lb. 625,852

Table No. XXII.

RETURN FOR TWO YEARS SHOWING THE EXPORT Oversea OF HOME PRODUCE.

Value of—	1925-26.		1926-27.	
	HOME PRODUCE ONLY.		HOME PRODUCE ONLY.	
	Total Exports.	Percentage to Total Exports.	Total Exports.	Percentage to Total Exports.
	Oversea	Only.	Oversea	Only.
	£		£	
Agricultural and Dairy Products ...	8,003,207	30.46	3,348,230	22.90
*Pastoral " ...	17,841,091	67.89	10,872,097	74.38
Mineral " ...	185,814	0.71	34,185	0.23
Other " ...	246,988	0.94	363,284	2.49
Totals ...	£26,277,100	100.00	£14,617,796	100.00

* Exclusive of Furred Skins:—1925-26, £24,414; 1926-27, £196,281.

Table No. XXIII.

RETURN FOR TWO YEARS SHOWING THE DETAILS OF PASTORAL PRODUCTS EXPORTED Oversea.

Value of—	1925-26.		1926-27.		Increase or —Decrease, 1926-27.
	HOME PRODUCE ONLY.				
	Exports Oversea.	Exports Oversea.	Exports Oversea.	Exports Oversea.	
	£	£	£	£	
Pastoral Products—					
Wool ...	12,943,988	8,493,393	—	4,450,595	
Live stock ...	52,053	46,903	—	5,150	
*Meat (all kinds, including Extract) ...	3,384,397	1,459,736	—	1,924,661	
Tallow ...	521,768	229,578	—	292,190	
†Hides and skins ...	720,542	550,815	—	169,727	
All other ...	218,343	91,672	—	126,671	
Totals ...	17,841,091	10,872,097	—	6,968,994	

* Exclusive of Bacon, Ham, Pork and Poultry, these being treated as products of Agriculture:—1925-26, £72,567; 1926-27, £66,782.

† Exclusive of Furred Skins:—1925-26, £24,414; 1926-27, £196,281.

Table No. XXIV.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF COMMON GOATS IN THE STATE AND THE NUMBER KILLED FOR FOOD, &C.

Year.	Number Depastured.	Number Killed.	Weight: Lb.	Average Weight: Lb.	Number of Skins Obtained.
1918 ...	124,964	26,375	719,033	27.26	13,851
1919 ...	122,088	26,903	698,874	25.93	16,133
1920 ...	122,993	30,863	801,474	25.97	18,994
1921 ...	134,177	25,080	689,587	27.49	11,630
1922 ...	127,784	24,468	638,323	26.09	9,759
1923 ...	119,832	23,134	596,621	25.79	10,200
1924 ...	131,148	21,204	571,619	26.96	8,256
1925 ...	126,752	25,141	717,087	28.52	11,305
1926 ...	86,012	14,252	395,028	27.72	9,409
1927 ...	95,227	16,657	470,378	28.24	10,447

Table No. XXV.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF ANGORA GOATS IN THE STATE AND THE NUMBER KILLED FOR FOOD, MOHAIR OBTAINED, &C.

Year.	Number of Animals.	Mohair Obtained.	Number Killed for Meat.	Average Weight: Lb.	Skins Obtained.
		Lb.			
1918	3,569	2,188	501	*	411
1919	3,682	2,181	528	*	477
1920	3,210	1,858	406	*	314
1921	4,248	2,895	625	*	517
1922	3,503	1,596	565	*	617
1923	3,931	2,204	860	31.49	625
1924	3,511	1,782	729	28.97	519
1925	3,923	1,604	554	28.52	520
1926	3,343	1,532	590	28.82	487
1927	2,354	1,765	303	31.78	239

* Not available.

Table No. XXVI.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF CAMELS, OSTRICHES, AND MULES IN THE STATE, TOGETHER WITH THE INCREASE OR DECREASE.

Year.	Number of Camels.	Increase or Decrease.	Number of Ostriches.	Increase or Decrease.	Number of Mules.	Increase or Decrease.
1918	660	— 24.49	3	— 80.00	1,094	5.50
1919	379	— 42.58	5	66.67	1,379	26.05
1920	740	95.25	2	— 60.00	1,175	— 14.79
1921	936	26.49	...	— 100.00	1,257	6.98
1922	463	— 50.53	...	...	985	— 21.64
1923	399	— 13.82	...	...	1,142	15.94
1924	362	— 9.27	...	...	1,031	— 9.72
1925	480	32.60	...	...	936	— 9.21
1926	313	— 34.79	...	...	932	— 0.43
1927	440	40.58	...	...	921	— 1.18

— Decrease.

Table No. XXVII.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF CALVES RETURNED AS BRANDED AND THE INCREASE OR DECREASE. For details for 1927 see Table XXIX.

Year.	Male.	Increase or Decrease.	Female.	Increase or Decrease.	Total.	Increase or Decrease.
1918	*592,720	...	*605,403	...	*1,198,123	...
1919	588,008	— 0.79	598,524	— 1.14	1,186,532	— 0.97
1920	674,523	14.71	690,876	15.43	1,365,399	15.07
1921	742,811	10.12	777,013	12.47	1,519,824	11.31
1922	586,171	— 21.09	631,170	— 18.77	1,217,341	— 19.90
1923	497,112	— 15.19	539,883	— 14.46	1,036,995	— 14.81
1924	508,342	2.26	554,145	2.64	1,062,487	2.46
1925	612,606	20.51	660,784	19.24	1,273,390	19.85
1926	409,702	— 33.12	450,373	— 31.84	860,075	— 32.46
1927	374,849	— 8.51	420,822	— 6.56	795,671	— 7.49

— Decrease.

* First Year collected.

Table No. XXVIII.

RETURN OF THE NUMBER OF HORSES, CATTLE, SHEEP, AND SWINE IN THE VARIOUS PETTY SESSIONS DISTRICTS OF THE STATE, TOGETHER WITH THE INCREASE OR DECREASE OF CATTLE AND SHEEP ON THE 31ST DECEMBER, 1927.

Petty Sessions District.	HORSES.	CATTLE.					SHEEP.				SWINE.
		1927.	1926.	1927.	1927.		1926.	1927.	1927.		
					Increase.	Decrease.			Increase.	Decrease.	
Adavale	889	8,881	5,507	..	3,374	208,464	154,775	..	53,689	4	
Allora	3,831	8,252	8,272	20	..	8,692	7,434	..	1,258	1,712	
Alpha	4,315	48,352	43,372	..	4,980	148,491	131,428	..	17,063	164	
Aramac	2,200	4,582	5,180	598	..	204,124	268,230	64,106	..	16	
Atherton	6,592	41,897	44,144	2,247	..	12,547	3,211	..	9,336	7,407	
Augathella	2,900	30,855	31,910	1,055	..	320,507	338,888	18,381	..	41	
Ayr	9,104	31,744	30,207	..	1,537	11,682	658	..	11,024	902	
Banana	2,453	66,857	63,207	..	3,650	142	193	51	..	12	
Barcaldine	2,103	3,746	3,285	..	461	432,819	354,080	..	78,739	204	
Beaudesert	4,512	61,093	67,758	6,665	..	5,978	6,376	398	..	8,856	
Biggenden	3,124	38,464	39,435	971	..	534	518	..	..	16
Blackall	3,680	8,856	6,347	..	2,509	630,532	528,061	..	102,471	167	
Bollon	4,015	39,339	32,714	..	6,625	766,686	770,707	4,021	..	5	
Boulia	2,959	51,045	43,094	..	7,951	143,538	94,258	..	49,280	7	
Bowen	5,150	27,712	28,648	936	..	1	1	..	..	386
Brisbane	5,876	17,587	17,383	..	204	901	564	..	337	2,928	
Bundaberg	7,136	58,839	54,638	..	4,201	1,755	571	..	1,184	1,457	
Burke	4,416	91,705	90,371	..	1,334	65,692	45,193	..	20,499	67	
Caboolture	1,100	7,960	7,085	..	875	327	297	..	30	929	
Cairns	4,216	5,906	5,125	..	781	24	142	118	..	244	
Camooweal	3,249	69,334	69,300	..	34	7,000	8,850	1,850	..	15	
Cape River	7,649	78,916	83,301	4,385	..	521	609	88	..	215	
Cardwell	1,158	8,154	8,056	..	98	..	..	..	..	36
Charleville	4,549	34,384	25,906	..	8,478	630,570	496,187	..	134,383	164	
Charters Towers	13,832	160,407	143,953	..	16,454	1,492	2,071	579	..	1,408	
Childers	2,318	12,105	12,918	813	..	..	..	..	..	297
Chillagoe	4,840	42,637	38,378	..	4,259	..	..	..	..	125
Chinchilla	2,498	23,784	26,362	2,578	..	9,061	17,099	8,038	..	1,275	
Clermont	9,158	127,770	122,453	..	5,317	393,136	579,840	186,704	..	289	
Cleveland	572	1,086	1,136	50	..	29	31	2	..	277	
Clifton	6,253	11,778	12,698	920	..	20,720	28,373	7,653	..	2,627	
Cloncurry	15,072	236,650	197,496	..	39,154	518,060	505,612	..	12,448	114	
Coen	3,396	39,960	28,434	..	11,526	..	..	..	..	..
Collinsville	5,016	121,764	120,456	..	1,308	..	50	50	..	136	
Condamine	3,172	38,352	36,919	..	1,433	16,066	24,576	8,510	..	644	
Cook	4,853	31,411	82,912	..	4,637	..	..	..	..	232
Cooyar	1,351	10,466	11,937	1,471	..	4,127	3,344	..	783	1,388	
Crow's Nest	2,850	21,039	22,310	1,271	..	71	125	54	..	6,073	
Croydon	2,202	31,205	37,161	5,956	..	..	..	..	..	42
Cunnamulla	3,118	19,039	14,776	..	4,263	883,202	627,762	..	255,440	46	
Dalby	10,294	97,274	92,009	..	5,265	480,602	618,249	137,647	..	4,788	
Diamantina	2,872	58,357	47,748	..	10,609	6	806	800	..	..
Douglas	1,493	2,417	2,783	366	..	..	..	..	..	42
Dugandan	4,807	34,362	35,169	807	..	129	91	..	38	8,549	
Eidsvold	3,358	57,826	58,627	801	..	316	334	18	..	803	
Emerald	2,479	22,100	21,814	..	286	130,291	164,283	33,989	..	206	
Esk	4,992	65,805	67,065	1,260	..	3,985	3,790	..	195	3,472	
Etheridge	10,966	176,712	161,632	..	15,080	..	..	..	..	82
Eulo	1,120	14,327	13,290	..	1,037	123,826	122,709	..	1,117	12	
Gatton	3,966	20,734	20,790	56	..	1,027	929	..	98	4,643	
Gayndah	7,594	110,136	119,870	9,734	..	1,754	2,046	292	..	4,684	
Gin Gin	4,202	53,757	55,311	1,554	..	331	407	76	..	492	
Gladstone	12,273	150,038	157,607	7,569	..	3,820	3,708	..	112	3,663	
Goodna	503	1,821	1,988	167	..	..	50	50	..	213
Goombungee	1,367	6,566	6,630	64	..	114	529	415	..	2,432	
Goondiwindi	4,182	45,148	46,175	1,027	..	423,445	475,473	52,028	..	382	
Gympie	6,562	95,168	96,614	1,446	..	1,401	1,464	63	..	11,625	
Harrisville	2,961	17,745	18,271	526	..	1,084	731	..	353	3,965	
Helidon	2,169	12,126	12,839	713	..	57	16	..	41	2,770	
Herberton	6,349	53,563	56,612	3,049	..	1,094	954	..	140	516	
Highfields	1,295	7,807	8,224	417	..	82	97	15	..	1,933	
Hughenden	6,724	60,190	58,329	..	1,861	484,904	604,051	119,147	..	80	
Hungerford	679	11,872	9,362	..	2,510	92,608	112,297	19,689	..	6	
Ingham	9,015	24,589	26,814	2,225	..	73	131	58	..	807	
Inglewood	3,017	19,283	17,322	..	1,961	240,367	264,480	24,113	..	645	
Innisfail	4,002	3,678	3,851	173	..	9	2	..	7	250	
Ipswich	1,853	11,700	12,232	532	..	89	76	..	13	1,268	
Isisford	2,792	9,816	4,757	..	5,059	547,030	305,120	..	241,910	40	
Jondaryan	1,180	6,878	8,423	1,545	..	92,644	130,537	37,893	..	715	
Julia Creek	5,097	86,575	79,554	..	7,021	420,351	581,281	160,930	..	17	
Jundah	1,524	12,056	9,002	..	3,054	179,408	144,279	..	35,129	30	
Kilcoy	1,415	15,796	15,904	108	..	276	297	21	..	2,107	
Kilkivan	1,460	17,664	18,984	1,320	..	554	606	52	..	786	
Killarney	2,506	8,565	8,921	356	..	2,630	5,448	2,818	..	854	
Laidley	3,291	15,007	16,369	1,362	..	174	217	43	..	3,526	
Logan	2,263	14,529	14,529	..	..	306	274	..	32	1,228
Longreach	5,509	19,973	9,630	..	10,343	953,621	701,896	..	251,725	157	
Lowood	1,940	14,136	16,054	1,918	..	169	96	..	73	3,046	

Table No. XXVIII.—continued.

RETURN OF THE NUMBER OF HORSES, CATTLE, SHEEP, AND SWINE IN THE VARIOUS PETTY SESSIONS DISTRICTS OF THE STATE, TOGETHER WITH THE INCREASE OR DECREASE OF CATTLE AND SHEEP ON THE 31ST DECEMBER, 1927.

Petty Sessions District.	HORSES. 1927.	CATTLE.				SHEEP.				SWINE. 1927.
		1926.	1927.	1927.		1926.	1927.	1927.		
				Increase.	Decrease			Increase.	Decrease.	
Mackay	25,766	127,902	116,009	...	11,893	2,929	2,619	...	310	1,147
Marturg	1,466	6,580	7,322	742	...	58	57	...	1	3,023
Maroochy	3,436	31,128	33,652	...	476	679	636	...	43	4,823
Maryborough	4,631	23,264	21,853	...	1,411	656	615	...	41	994
Mitchell	7,371	78,150	82,588	4,338	...	489,573	445,284	...	44,289	229
Mount Isa	501	2,040	2,240	200	...	...	892	892	...	62
Mount Morgan	6,649	62,312	62,335	23	...	578	956	378	...	1,438
Mount Perry	1,928	34,804	34,675	...	129	22	27	5	...	112
Muttaburra	5,114	15,874	14,566	...	1,308	790,636	934,112	143,476	...	6
Nanango	12,400	98,450	103,738	5,288	...	1,848	2,865	1,017	...	12,859
Norman	7,523	251,957	223,252	...	28,705	34,541	15,368	...	19,173	43
Oakey	5,759	34,226	33,413	...	813	26,928	46,547	19,619	...	7,753
Pittsworth	7,012	26,378	30,798	4,420	...	179,253	238,852	59,599	...	5,320
Proserpine	4,613	14,614	13,959	...	655	4,748	4,155	...	593	221
Quilpie	1,137	14,464	6,868	...	7,596	250,270	215,736	...	34,534	104
Ravenswood	2,104	14,142	14,008	...	134	...	...	...	...	181
Redcliffe	1,794	15,865	16,477	612	...	192	1,343	1,151	...	1,689
Richmond	7,650	64,485	69,631	5,146	...	803,667	1,164,936	361,269	...	39
Rockhampton	17,898	254,254	241,988	...	12,266	24,079	25,246	1,167	...	3,663
Roma	9,361	83,866	76,474	...	7,392	343,750	330,770	...	12,980	965
Rosewood	2,597	18,834	21,204	2,370	...	1,400	1,291	...	109	3,213
St. George	5,163	31,052	20,961	...	10,091	1,246,176	930,065	...	316,111	140
St. Lawrence	3,958	93,090	75,147	...	17,943	950	1,931	981	...	46
Somerset	272	644	679	35	...	...	...	...	...	3
Southport	2,540	32,175	32,862	687	...	639	1,022	383	...	4,482
Springsure	8,251	85,934	80,059	...	5,875	383,676	392,075	8,399	...	173
Stanthorpe	1,731	10,382	11,369	987	...	247,917	247,887	...	30	153
Surat	2,779	28,281	26,098	...	2,183	531,932	491,261	...	40,671	59
Tambo	3,302	21,257	15,555	...	5,702	432,987	407,643	...	25,344	...
Taroom	4,202	97,411	94,465	...	2,946	16,830	20,737	3,907	...	131
Texas	1,281	10,042	9,714	...	328	88,093	85,114	...	2,979	99
Thargomindah	6,144	124,660	123,284	...	1,376	196,745	161,836	...	34,909	20
Tiaro	3,914	49,966	47,980	...	1,986	779	863	84	...	1,936
Toowoomba	3,304	13,658	13,288	...	370	11,963	18,900	6,937	...	2,165
Townsville	5,008	26,545	29,403	2,858	...	2,977	1,803	...	1,174	940
Warwick	9,155	39,528	38,338	...	1,190	196,813	284,986	88,173	...	2,976
Wienholt	9,650	111,299	113,713	2,414	...	3,323	4,267	941	...	14,138
Windsorah	4,521	59,737	63,897	4,160	...	119,221	94,545	...	24,676	1
Winton	5,512	31,241	11,693	...	19,548	786,429	815,023	28,594	...	25
Woodford	1,578	19,091	19,739	648	...	276	297	21	...	2,129
Wynnum	502	1,475	1,250	...	225	98	140	42	...	64
Yeulba	1,108	14,641	13,611	...	1,030	1,070	1,815	745	...	110
Total in State, 1927	548,333	...	5,225,804	...	...	...	16,642,385	...	...	191,947
Total in State, 1926	571,622	...	5,464,845	...	...	...	16,860,772	...	...	183,662
Increase in 1927 ... ..	...	...	...	...	...	...	...	...	...	8,285
Decrease in 1927	23,289	...	...	239,041	...	...	...	218,387	...	...
Centesimal Increase in 1927 ... ..	...	...	...	...	...	...	...	...	...	4.51
Centesimal Decrease in 1927	4.07	...	...	4.37	...	...	...	1.30	...	...

NOTE.—Totals of (1) Caboolture and Woodford, (2) Oakey and Pittsworth, (3) Mackay and St. Lawrence are comparable only as wholes, owing to iterations in the internal boundaries of these districts.

Table No. XXIX.

RETURN SHOWING NUMBER OF CALVES RETURNED AS BRANDED IN THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE DURING THE YEARS 1926 AND 1927, THE INCREASE OR DECREASE, ALSO THE NUMBER OF CATTLE AND SHEEP KILLED FOR FARM OR STATION USE DURING THE LATTER YEAR.

Petty Sessions District.	Male.			Female.			Cattle Killed.	Sheep Killed.
	1926.	1927.	Per cent.	1926.	1927.	Per cent.	1927.	1927.
Adavale	285	196	— 31.23	294	219	— 25.51	137	2,925
Allora	482	387	— 19.71	543	519	— 4.42	36	113
Alpha	3,866	3,111	— 19.53	3,778	3,260	— 13.71	383	834
Aramac	209	450	115.31	247	393	59.11	88	2,310
Atherton	847	907	7.08	2,818	2,816	— 0.07	103	12
Augathella	3,199	3,236	1.16	3,142	2,956	— 5.92	536	3,432
Ayr	3,076	2,559	— 16.81	2,984	2,446	— 18.03	8	..
Banana	6,165	6,688	8.48	6,188	6,787	9.68	351	..
Barcaldine	77	227	194.81	50	291	482.00	112	4,862
Beaudesert	2,512	2,558	1.83	4,259	4,368	2.56	112	151
Biggenden	1,997	2,012	0.75	3,355	3,247	— 3.22	130	14
Blackall	362	203	— 43.92	342	231	— 32.46	191	9,779
Bollon	2,690	1,616	— 39.93	2,526	1,491	— 40.97	525	9,288
Boulia	4,206	2,268	— 46.08	4,497	2,524	— 43.87	482	1,577
Bowen	2,293	2,467	7.59	2,365	2,451	3.64	119	..
Brisbane	77	151	96.10	871	795	— 8.73	13	3
Bundaberg	2,212	2,428	9.76	3,068	3,469	13.07	426	24
Burke	11,228	10,367	— 7.67	11,242	10,463	— 6.93	655	251
Caboolture	165	112	— 32.12	584	522	— 10.62	25	..
Cairns	239	206	— 13.81	276	238	— 13.77	35	..
Camooeal	4,681	4,682	0.02	4,998	4,599	— 7.98	449	50
Cape River	6,245	7,195	15.21	6,172	7,128	15.49	391	7
Cardwell	564	643	14.01	592	725	22.47	52	..
Charleville	2,685	1,565	— 41.71	2,690	1,523	— 43.38	658	6,043
Charters Towers	12,992	12,828	— 1.26	12,901	13,120	1.70	853	24
Childers	705	1,028	45.82	797	1,093	37.14	31	..
Chillagoe	2,938	3,085	5.00	3,021	3,187	5.49	197	..
Chinchilla	1,965	2,238	13.89	2,196	2,432	10.75	111	121
Clermont	8,535	10,415	22.03	8,580	10,887	26.89	1,044	5,138
Cleveland	10	6	— 40.00	75	38	— 49.33	10	..
Clifton	443	515	16.25	844	798	— 5.45	116	637
Clonecurry	14,182	18,197	28.31	14,565	18,477	26.86	2,141	3,410
Coen	3,357	2,414	— 28.09	3,232	2,493	— 22.87	240	..
Collinsville	11,965	11,644	— 2.68	11,900	12,157	2.16	653	..
Condamine	4,389	3,645	— 16.95	4,447	3,698	— 16.84	356	113
Cook { Cook	3,200	8,444	— 0.54	2,991	8,012	— 0.40	335	..
{ Palmer	5,290			5,053				
Cooyar	716	706	— 1.40	890	944	6.07	85	43
Crow's Nest	973	1,102	13.26	1,498	1,620	8.14	125	10
Croydon	3,052	3,582	17.37	3,113	3,650	17.25	258	..
Cunnamulla	2,421	835	— 65.51	2,484	769	— 69.04	257	10,766
Dalby	8,042	6,983	— 13.17	9,181	8,266	— 9.97	600	4,732
Diamantina	7,773	2,182	— 71.93	7,952	2,179	— 72.60	519	..
Douglas	119	106	— 10.92	157	256	63.06	12	..
Dugandan	1,395	1,305	— 6.45	2,283	2,169	— 4.99	97	6
Eidsvold	4,459	5,937	33.15	4,708	6,266	33.09	269	18
Emerald	1,412	1,433	1.49	1,319	1,448	9.78	114	920
Esk	2,616	2,136	— 18.35	3,558	3,029	— 14.87	258	159
Etheridge	15,928	14,159	— 11.11	15,600	14,245	— 8.69	803	..
Eulo	1,196	854	— 28.60	1,033	758	— 26.62	160	1,698
Gatton	927	911	— 1.73	1,317	1,387	5.32	156	92
Gayndah	7,044	9,050	28.48	9,167	10,970	19.67	413	38
Gin Gin	3,609	4,494	24.52	3,975	4,815	21.13	271	40
Gladstone	8,722	9,726	11.51	10,591	11,503	8.61	838	55
Goodna	84	88	4.76	156	152	— 2.56	2	..
Goombungee	195	196	0.51	557	542	— 2.69	41	..
Goondiwindi	4,337	3,529	— 18.63	4,231	3,657	— 13.57	405	6,114
Gympie	1,903	1,326	— 30.32	5,804	5,534	— 4.65	185	..
Harrisville	623	666	6.90	951	1,157	21.66	30	..
Helidon	490	453	— 7.55	939	999	6.39	24	..
Herberton	5,597	5,929	5.93	5,775	5,825	0.87	262	30
Highfields	279	313	12.19	695	753	8.35	15	..
Hughenden	1,290	4,187	224.57	1,293	4,465	245.32	491	4,406
Hungerford	1,226	83	— 93.23	1,237	70	— 94.34	123	862
Ingham	2,180	2,665	22.25	2,213	2,694	21.74	190	..
Inglewood	1,905	1,765	— 7.35	1,993	1,871	— 6.12	322	2,457
Innisfail	211	213	0.95	219	201	— 8.22	40	..
Ipswich	252	337	33.73	551	743	34.85	4	..
Isisford	788	98	— 87.56	798	106	— 86.72	202	8,811
Jondaryan	398	339	— 14.82	431	439	1.86	85	639
Julia Creek	5,790	5,852	1.07	5,490	6,396	16.50	439	5,382
Jundah	1,367	196	— 85.66	1,289	182	— 85.88	125	1,931
Kilcoy	509	527	3.54	857	985	14.94	89	..
Kilkivan	869	1,089	25.32	1,286	1,481	15.16	71	28
Killarney	457	441	— 3.50	648	730	12.65	43	85

Table No. XXIX.—continued

RETURN SHOWING NUMBER OF CALVES RETURNED AS BRANDED IN THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE DURING THE YEARS 1926 AND 1927, THE INCREASE OR DECREASE, ALSO THE NUMBER OF CATTLE AND SHEEP KILLED FOR FARM OR STATION USE DURING THE LATTER YEAR.

Petty Sessions District.	Male.			Female.			Cattle Killed.	Sheep Killed.
	1926.	1927.	Per cent.	1926.	1927.	Per cent.	1927.	1927.
Laidley	614	594	— 3.26	859	894	4.07	40	..
Logan	174	133	— 23.56	860	678	— 21.16	16	15
Longreach	1,040	588	— 43.46	984	582	— 40.85	248	12,537
Lowood	746	635	— 14.88	878	803	— 8.54	59	22
Mackay	9,912	8,090	— 18.38	9,757	8,178	— 16.18	426	24
Marburg	98	66	— 32.65	387	466	20.41	2	..
Maroochy	441	447	1.36	2,090	2,134	2.11	34	32
Maryborough	893	879	— 1.57	1,443	1,542	6.86	45	2
Mitchell	7,463	6,689	— 10.37	7,711	6,653	— 13.72	877	3,738
Mount Isa	152	82	— 46.05	160	82	— 48.75	12	..
Mount Morgan	3,141	3,704	17.92	3,697	4,111	11.20	389	..
Mount Perry	2,984	2,959	— 0.84	2,922	2,818	— 3.56	127	..
Muttaburra	305	1,566	413.44	357	1,554	335.29	360	10,335
Nanango	5,636	5,389	— 4.38	8,233	7,729	— 6.12	566	53
Norman	24,156	19,224	— 20.42	24,119	19,335	— 19.83	1,030	..
Oakey	1,005	1,070	6.47	2,284	2,397	4.95	178	524
Pittsworth	1,566	1,548	— 1.15	2,345	2,398	2.26	147	2,585
Proserpine	1,329	1,327	— 0.15	1,295	1,292	— 0.23	58	40
Quilpie	644	185	— 71.27	575	225	— 60.87	272	3,228
Ravenswood	1,838	987	— 46.30	1,716	901	— 47.49	73	..
Redcliffe	81	87	7.41	694	796	14.70	46	12
Richmond	2,466	8,025	225.43	2,674	8,159	205.12	559	9,267
Rockhampton	22,920	16,490	— 28.05	23,876	18,088	— 24.24	1,334	293
Roma	8,828	7,432	— 15.81	8,833	7,658	— 13.30	890	3,312
Rosewood	525	468	— 10.86	857	1,028	19.95	55	49
St. George	3,070	1,601	— 47.85	2,973	1,539	— 48.23	585	16,341
St. Lawrence	7,432	3,688	— 50.38	7,378	3,641	— 50.65	420	58
Somerset	58	48	— 17.24	68	54	— 20.59	40	..
Southport	534	510	— 4.49	2,361	2,240	— 5.12	39	82
Springure	8,465	5,008	— 40.84	8,447	5,161	— 38.90	1,054	1,252
Stanthorpe	659	568	— 13.81	671	581	— 13.41	139	2,465
Surat	3,266	2,975	— 8.91	3,246	3,011	— 7.24	512	5,800
Tambo	1,762	999	— 43.30	1,694	1,007	— 40.55	231	6,414
Taroom	11,773	11,236	— 4.56	11,623	11,448	— 1.51	826	202
Texas	1,124	737	— 34.43	1,139	725	36.35	85	872
Thargomindah	14,325	11,166	— 22.05	14,255	11,257	— 21.03	1,276	1,866
Tiaro	3,371	2,923	— 13.29	3,848	3,850	0.05	178	28
Toowoomba	411	469	14.11	1,062	1,042	— 1.88	16	148
Townsville	2,440	2,931	20.12	2,422	2,795	15.40	88	..
Warwick	3,621	3,015	— 16.74	3,994	3,325	— 16.75	260	2,032
Wienholt	5,848	6,020	2.94	8,634	8,833	2.30	527	72
Windsor	7,551	3,335	— 55.83	7,792	3,491	— 55.20	709	650
Winton	1,443	537	— 62.79	1,481	562	— 62.05	343	8,810
Woodford	640	575	— 10.16	1,389	1,251	— 9.94	47	6
Wynnum	9	3	— 66.67	73	55	— 24.66	..	23
Yeulba	1,456	1,355	— 6.94	1,495	1,344	— 10.10	140	..
Totals	409,702	374,849	— 8.51	450,373	420,822	— 6.56	35,885	193,629

NOTE.—Totals of (1) Caboolture and Woodford, (2) Oakey and Pittsworth, (3) Mackay and St. Lawrence, are comparable only as wholes, owing to alterations in the internal boundaries of these districts.

Table No. XXX.

RETURN FOR TEN YEARS SHOWING THE NUMBER OF CATTLE AND SHEEP KILLED IN THE STATE FOR FARM OR STATION USE, ALSO THE CENTESIMAL INCREASE OR DECREASE. For details for 1927, see Table XXIX.

Year.	Cattle.	Increase or Decrease.	Sheep.	Increase or Decrease.
1918 .. .. .	..	..	243,857	25.57
1919 .. .. .	..	..	266,826	9.42
1920 .. .. .	..	..	245,518	— 7.99
1921 .. .. .	..	..	235,151	— 4.22
1922 .. .. .	..	..	232,866	— 0.97
1923 .. .. .	..	..	211,506	— 9.17
1924 .. .. .	..	..	180,298	— 14.76
1925	*44,721	..	186,133	3.24
1926	38,617	— 13.65	193,542	3.98
1927	35,885	— 7.07	193,629	0.04

* First year collected.

— Decrease.

Table No. XXXI.
RETURN FOR TEN YEARS SHOWING THE NUMBER OF CALVES RETURNED AS BRANDED IN THE SEVERAL PASTORAL DISTRICTS OF THE STATE.

Year.	BURKE.		BURNETT.		COOK.		DARLING DOWNS.		GREGORY NORTH.		GREGORY SOUTH.		LEIGHARDT.		MARANO.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1918	100,491	96,274	32,451	39,885	48,091	46,891	40,959	45,693	34,828	31,950	20,456	19,109	81,747	78,049	27,300	25,332
1919	99,692	95,180	32,193	39,432	47,708	46,358	40,633	45,174	34,552	31,587	20,293	18,892	81,097	77,162	27,033	25,637
1920	114,359	109,866	36,930	45,517	54,728	53,511	46,612	52,144	39,635	36,461	23,279	21,807	93,029	89,068	31,068	29,593
1921	125,937	123,564	40,669	51,191	60,268	60,182	51,330	58,645	43,648	41,007	25,636	24,526	102,448	100,173	34,213	33,233
1922	99,380	100,372	32,093	41,583	47,559	48,886	40,506	47,638	34,444	33,310	20,230	19,922	80,844	81,371	26,998	27,035
1923	84,281	85,855	27,217	35,569	40,333	41,816	34,352	40,748	29,211	28,492	17,156	17,041	68,561	69,602	22,897	23,125
1924	86,185	88,123	27,832	36,508	41,245	42,920	35,128	41,824	29,870	29,245	17,544	17,491	70,110	71,441	23,414	23,736
1925	103,862	105,081	33,540	43,534	49,704	51,180	42,333	49,873	35,997	34,873	21,142	20,857	84,490	85,189	28,216	28,304
1926	53,868	54,364	27,965	36,879	42,088	43,275	31,968	37,972	16,771	17,460	15,812	16,332	53,921	53,611	22,966	22,900
1927	57,957	58,632	31,635	40,062	40,746	42,888	28,374	34,813	8,684	9,299	10,816	11,022	42,804	43,503	18,010	17,843

Year.	MITCHELL.		MORETON.		NORTH KENNEDY.		PORT CURTIS.		SOUTH KENNEDY.		WARREGO.		WIDE BAY.		TOTAL.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1918	19,522	18,507	19,713	32,858	54,202	50,970	32,705	34,922	43,545	40,933	22,589	21,934	14,121	21,496	592,720	605,403
1919	19,367	18,297	19,556	32,485	53,771	50,391	32,446	34,526	43,199	40,468	22,409	21,684	14,009	21,251	588,008	598,524
1920	22,216	21,120	22,433	37,497	61,682	58,167	37,220	39,853	49,555	46,712	25,707	25,030	16,070	24,530	674,523	690,876
1921	24,465	23,753	24,704	42,172	67,927	65,419	40,988	44,822	54,572	52,536	28,309	28,151	17,697	27,589	742,811	777,013
1922	19,806	19,295	19,495	34,257	53,803	53,140	32,344	36,409	43,064	42,675	22,340	22,867	13,965	22,410	586,171	631,170
1923	16,373	16,504	16,533	29,302	45,459	45,454	27,430	31,143	36,521	36,503	18,945	19,560	11,843	19,169	497,112	539,883
1924	16,743	16,940	16,906	30,076	46,485	46,655	28,050	31,966	37,346	37,467	19,373	20,077	12,111	19,676	508,342	554,145
1925	20,177	20,200	20,374	35,864	56,020	55,633	33,803	38,117	45,006	44,677	23,347	23,940	14,595	23,462	612,606	660,784
1926	5,777	5,585	15,882	29,238	40,764	40,754	24,059	27,737	26,388	26,163	18,207	17,681	13,266	20,422	409,702	450,373
1927	5,380	5,548	15,406	29,274	40,249	40,221	22,629	26,418	27,388	28,626	11,162	10,745	13,609	21,878	374,849	420,822

TABLE No. XXXII.
RETURN FOR TEN YEARS SHOWING THE NUMBER OF CATTLE AND SHEEP IN THE VARIOUS PASTORAL DISTRICTS OF THE STATE.

Year.	BURKE.		BURNETT.		COOK.		DARLING DOWNS.		GREGORY NORTH.		GREGORY SOUTH.		LEICHHARDT.		MARANO.	
	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.
1918	808,748	2,029,690	427,688	8,799	446,939	229	465,461	1,236,064	298,123	1,816,528	143,612	395,915	554,300	853,725	270,214	2,038,422
1919	815,621	1,886,578	432,514	6,166	424,497	123	501,450	1,120,888	323,019	1,602,069	146,113	341,919	563,080	885,817	308,207	2,210,000
1920	830,771	2,226,075	484,293	5,784	431,926	76	550,372	1,134,721	350,132	1,818,733	158,616	345,454	661,124	880,171	339,378	1,957,707
1921	883,705	2,479,894	525,058	5,223	465,654	399	597,643	1,117,956	382,828	2,061,699	168,565	319,702	759,999	917,444	373,699	2,023,562
1922	894,325	2,606,955	508,140	10,774	507,010	177	571,610	1,229,788	343,719	1,776,378	167,395	286,419	730,726	843,496	374,653	2,075,934
1923	811,024	2,385,859	469,649	4,219	518,685	210	421,869	1,066,076	322,762	1,689,221	188,440	253,166	738,237	1,117,746	300,785	2,075,053
1924	844,987	2,654,350	467,061	5,296	502,716	695	430,626	1,478,163	330,000	1,885,035	201,684	292,280	761,349	947,043	311,141	2,416,934
1925	825,822	2,928,780	467,036	5,263	527,624	270	468,389	1,862,217	297,335	1,964,021	176,275	286,189	761,676	979,070	273,224	2,785,128
1926	685,267	1,978,074	440,562	7,487	520,708	12,580	414,433	2,045,745	212,735	1,086,545	135,915	344,859	568,449	840,487	235,658	3,366,810
1927	640,707	2,523,372	463,258	9,815	495,975	3,355	414,658	2,495,527	135,913	1,054,398	152,891	292,261	533,485	1,050,723	213,221	2,951,182

Year.	MITCHELL.		MORETON.		NORTH KENNEDY.		PORT CURTIS.		SOUTH KENNEDY.		WARREGO.		WIDE BAY.		TOTAL.	
	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.	Cattle.	Sheep.
1918	130,154	6,374,100	513,925	10,917	463,256	4,529	408,572	14,520	353,155	221,368	211,814	2,712,126	295,783	4,053	5,786,744	18,220,985
1919	195,366	6,774,454	513,821	11,484	437,946	4,499	434,420	19,885	341,038	216,048	210,080	2,345,236	293,261	3,566	5,940,433	17,379,332
1920	218,761	6,425,183	564,219	12,749	477,557	6,070	453,797	20,792	398,189	194,292	209,736	2,372,391	326,196	4,642	6,455,067	17,404,840
1921	251,918	6,854,732	587,182	12,033	520,917	5,028	485,307	25,861	440,171	162,146	259,443	2,412,383	345,281	4,287	7,047,370	18,402,399
1922	257,517	6,427,205	548,837	10,736	534,914	4,365	473,963	24,132	470,575	163,250	223,941	2,176,291	348,138	5,176	6,955,463	17,641,071
1923	220,175	5,514,654	460,539	10,849	487,222	5,999	448,096	23,788	447,363	199,051	230,701	2,401,746	330,967	8,464	6,396,514	16,756,101
1924	202,130	6,384,802	473,197	18,047	491,309	4,069	439,046	24,671	435,105	143,657	237,541	2,765,960	326,761	7,250	6,454,653	19,028,252
1925	196,115	6,696,458	502,658	25,257	503,296	4,528	449,293	27,462	432,297	154,642	236,587	2,938,281	319,108	5,757	6,436,645	20,663,323
1926	114,015	4,135,681	476,828	22,022	454,412	22,214	383,711	28,040	328,545	165,182	191,168	2,799,535	302,439	5,511	5,464,845	16,860,772
1927	90,554	3,715,045	496,342	22,133	442,700	9,923	387,349	29,320	304,395	176,627	152,377	2,303,993	301,979	4,706	5,225,804	16,642,385

Table No. XXXIII.

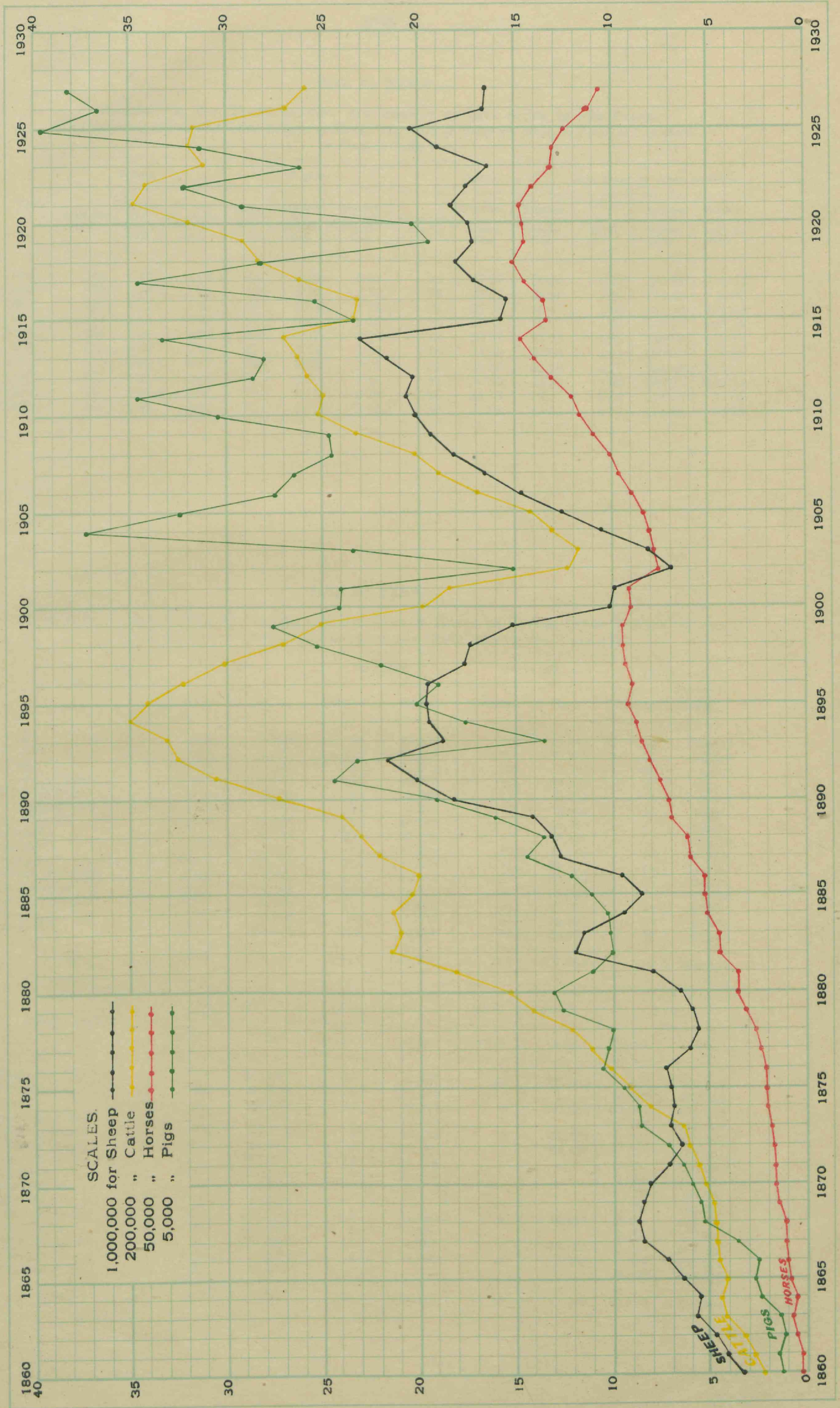
RETURN OF THE NUMBER OF HORSES, CATTLE, SHEEP, AND SWINE IN THE VARIOUS PASTORAL DISTRICTS OF THE STATE FOR THE YEARS 1926 AND 1927, TOGETHER WITH THE NUMERICAL AND CENTESIMAL INCREASE OR DECREASE IN THE LATTER YEAR.

Pastoral District.	Year.	Horses.	Cattle.	Sheep.	Swine.	Numerical Increase or Decrease —				Centesimal Increase or Decrease —			
						Horses.	Cattle.	Sheep.	Swine.	Horses.	Cattle.	Sheep.	Swine.
Burke ...	1926	42,738	685,267	1,978,074	414	...	...	...	...	...	...	...	...
	1927	41,838	640,707	2,523,372	446	— 900	— 44,560	545,298	32	— 2·11	— 6·50	27·57	7·73
Burnett ...	1926	38,185	440,562	7,487	30,808	...	...	...	...	...	...	...	...
	1927	38,431	463,258	9,815	34,614	246	22,696	2,328	3,806	0·64	5·15	31·09	12·35
Cook ...	1926	44,252	520,708	12,580	8,323	...	...	...	...	...	...	...	...
	1927	44,563	495,975	3,355	8,406	311	— 24,733	— 9,225	83	0·70	— 4·75	— 73·33	1·00
Darling Downs	1926	69,158	414,433	2,045,745	35,664	...	...	...	...	...	...	...	...
	1927	68,212	414,658	2,495,527	36,517	— 946	225	449,782	853	— 1·37	0·05	21·99	— 2·39
Gregory North	1926	19,119	212,735	1,086,545	35	...	...	...	...	...	...	...	...
	1927	15,616	135,913	1,054,398	51	— 3,503	— 76,822	— 32,147	16	— 18·32	— 36·11	— 2·96	45·71
Gregory South	1926	10,429	135,915	344,859	1	...	...	...	...	...	...	...	...
	1927	8,763	152,891	292,261	1	— 1,666	16,976	— 52,598	...	— 15·97	12·49	— 15·25	...
Leichhardt ...	1926	40,384	568,449	840,487	1,513	...	...	...	...	...	...	...	...
	1927	37,969	533,485	1,050,723	1,564	— 2,415	— 34,964	210,236	51	— 5·98	— 6·15	25·01	3·37
Maranoa ...	1926	28,607	235,658	3,366,810	1,485	...	...	...	...	...	...	...	...
	1927	26,906	213,221	2,951,182	1,266	— 1,701	— 22,437	— 415,628	— 219	— 5·95	— 9·52	— 12·34	— 14·75
Mitchell ...	1926	33,318	114,015	4,135,681	460	...	...	...	...	...	...	...	...
	1927	28,159	90,554	3,715,045	704	— 5,159	— 23,461	— 420,636	244	— 15·48	— 20·58	— 10·17	53·04
Moreton ...	1926	62,730	476,828	22,022	69,895	...	...	...	...	...	...	...	...
	1927	61,416	496,342	22,133	73,279	— 1,314	19,514	111	3,384	— 2·09	4·09	0·50	4·84
North Kennedy	1926	62,899	454,412	22,214	5,160	...	...	...	...	...	...	...	...
	1927	60,865	442,700	9,928	5,593	— 2,034	— 11,712	— 12,286	433	— 3·23	— 2·58	— 55·31	8·39
Port Curtis ...	1926	33,486	383,711	28,040	7,877	...	...	...	...	...	...	...	...
	1927	32,785	387,349	29,320	8,018	— 701	3,638	1,280	141	— 2·09	0·95	4·56	1·79
South Kennedy	1926	33,879	328,545	165,182	1,709	...	...	...	...	...	...	...	...
	1927	34,304	304,395	176,627	1,316	425	— 24,150	11,445	— 393	1·25	— 7·35	6·93	— 23·00
Warrego ...	1926	21,684	191,168	2,799,535	510	...	...	...	...	...	...	...	...
	1927	18,419	152,377	2,303,993	397	— 3,265	— 38,791	— 495,542	— 113	— 15·06	— 20·29	— 17·70	— 22·16
Wide Bay ...	1926	30,754	302,439	5,511	19,808	...	...	...	...	...	...	...	...
	1927	30,087	301,979	4,706	19,775	— 667	— 460	— 805	— 33	— 2·17	— 0·15	— 14·61	— 0·17

Pastoral and Petty Sessions Districts.

Pastoral District.	Petty Sessions District.	Pastoral District.	Petty Sessions District.	Pastoral District.	Petty Sessions District.	Pastoral District.	Petty Sessions District.
Burke ...	Burke Camooweal Mt. Isa Richmond	Darling Downs —contd.	Oakey Pittsworth Stanthorpe Texas	Mitchell —contd.	Blackall Longreach Alpha, part of Hughenden, part of Isisford, part of Jundah, part of Muttaborra, part of Tambo, part of Beaudesert	North Kennedy —contd.	Proserpine Ravenswood Townsville Cape River, part of Collinsville, part of Herberton, part of Bundaberg, part of Gladstone, part of Mackay, part of
	Cloncurry, part of Croydon, part of Hughenden, part of Julia Creek, part of Norman, part of		Warwick Crow's Nest, part of Highfields, part of Toowoomba, part of Yeulba, part of		Brisbane Caboolture Cleveland Cooyar Dugandan Esk Gatton Goodna Harrisville Helidon Ipswich Kilcoy Laidley Logan Lowood Marburg Redcliffe Rosewood Southport Wynnum		Mount Morgan, part of Rockhampton, part of St. Lawrence, part of Alpha, part of Cape River, part of Clermont, part of Collinsville, part of Mackay, part of Muttaborra, part of Augathella Charleville Cunnamulla Eulo Hungerford
Burnett	Gayndah Mount Perry Wienholt Biggenden, part of Gin Gin, part of Gladstone, part of Nanango, part of	Gregory North	Boulia Winton Cloncurry, part of Diamantina, part of Julia Creek, part of Windorah, part of	Moreton	Adavale, part of Diamantina, part of Isisford, part of Jundah, part of Quilpie, part of Thargomindah, part of Windorah, part of	South Kennedy	Adavale, part of Quilpie, part of Tambo, part of Thargomindah, part of Childers Gympie Kilkivan Maryborough Tiara
	Atherton Cairns Chillagoe Coen Cook Douglas Etheridge Innisfail Somerset		Adavale, part of Clermont, part of Mackay, part of Mount Morgan, part of Rockhampton, part of Roma, part of St. Lawrence, part of Bollon Mitchell		Crow's Nest, part of Highfields, part of Maroochy, part of Nanango, part of Toowoomba, part of Woodford, part of Ayr Bowen Cardwell Charters Towers Ingham		Biggenden, part of Bundaberg, part of Gin Gin, part of Maroochy, part of Woodford, part of
Cook ...	Herberton, part of Norman, part of Allora Chinchilla Clifton Condamine Dalby Goombungee Goondiwindi Inglewood Jondaryan Killarney	Leichhardt	Emerald Springsure Taroom Clermont, part of Mackay, part of	North Kennedy		Warrego	
			St. George Surat Roma, part of Yeulba, part of Aramac Barcaldine				

GRAPH SHOWING LIVE STOCK IN QUEENSLAND from 1860 to 1927.



EXPLANATION OF GRAPH.—The base of each small square represents an interval of one year, and the vertical height of each square denotes in the case of sheep, 1,000,000; in the case of cattle, 200,000; in the case of horses, 50,000; and in the case of pigs, 5,000.

Table No. XXXIV.

RETURN FOR TEN YEARS SHOWING THE DENSITY OF LIVE STOCK IN THE STATE.
(In Converting Horses and Cattle to terms of Sheep, Ten Head of Sheep are taken as Equal to One Horse or Head of Cattle.)

Year.	HORSES.			CATTLE.			SHEEP.			ALL KINDS IN TERMS OF SHEEP.		
	Acres per Head.	Number per Square Mile.	Number per Capita Population.	Acres per Head.	Number per Square Mile.	Number per Capita Population.	Acres per Head.	Number per Square Mile.	Number per Capita Population.	Acres per Head.	Number per Square Mile.	Number per Capita Population.
1918...	565	1.13	1.09	74	8.63	8.33	24	27.17	26.24	5.13	124.81	120.51
1919...	586	1.09	1.01	72	8.86	8.20	25	25.92	23.96	5.10	125.43	115.97
1920...	578	1.11	1.01	66	9.63	8.74	25	25.96	23.57	4.80	133.30	121.04
1921...	574	1.11	0.97	61	0.51	9.15	23	27.45	23.90	4.45	143.70	125.13
1922 ..	601	1.06	0.90	62	10.37	8.80	24	26.31	22.32	4.55	140.70	119.38
1923...	649	0.99	0.82	67	19.54	7.89	26	24.99	20.66	4.91	130.26	107.67
1924...	650	0.98	0.79	66	9.63	7.73	23	28.38	22.79	4.76	134.49	108.01
1925...	672	0.95	0.74	67	9.60	7.47	21	30.82	23.99	4.69	136.34	106.15
1926...	751	0.85	0.65	79	8.15	6.19	25	25.15	19.11	5.56	115.18	87.54
1927...	783	0.82	0.61	82	7.79	5.81	26	24.82	18.51	5.77	110.94	82.72

Table No. XXXV.

RETURN SHOWING THE NUMBER OF OWNERS AND THE SIZES OF HERDS OF CATTLE UNDER VARIOUS GROUPINGS IN THE SEVERAL PASTORAL DISTRICTS OF THE STATE DURING THE YEAR 1927.

Pastoral Districts.	1 to 100.		101 to 300.		301 to 500.		501 to 1,000.	
	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.
Burke	379	10,030	89	17,875	35	14,568	43	30,681
Burnett	4,038	152,219	552	88,646	96	36,649	91	63,348
Cook	1,777	44,828	127	21,052	23	8,790	20	15,452
Darling Downs	7,067	198,474	555	89,194	80	29,919	57	39,210
Gregory North	160	3,446	28	5,348	17	6,619	10	7,421
Gregory South	57	1,875	27	5,318	8	3,504	15	11,091
Leichhardt	1,263	31,910	253	46,562	119	45,960	91	66,439
Maranoa	1,325	35,719	209	37,225	42	17,137	27	19,699
Mitchell	588	13,123	73	13,399	27	10,168	25	17,824
Moreton	9,988	284,272	756	121,546	77	29,572	49	33,947
North Kennedy	2,122	40,421	179	31,054	57	22,125	48	34,132
Port Curtis	2,652	71,149	343	58,021	69	27,282	59	42,950
South Kennedy	1,366	24,300	110	18,942	44	17,696	40	29,624
Warrego	467	13,336	86	15,699	31	12,402	29	22,696
Wide Bay	4,985	133,675	454	70,880	66	24,993	35	25,963
Totals	38,234	1,058,777	3,841	640,761	791	307,384	639	460,477

Pastoral Districts.	1,001 to 5,000.		5,001 to 10,000.		10,001 and upwards.		Totals.	
	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.
Burke	54	126,451	20	138,457	18	302,645	638	640,707
Burnett	46	92,556	4	29,840	..	..	4,827	463,258
Cook	41	91,247	12	90,847	9	223,759	2,009	495,975
Darling Downs	28	45,335	2	12,526	..	..	7,789	414,658
Gregory North	15	42,189	6	39,336	2	31,554	238	135,913
Gregory South	20	49,331	6	43,146	2	38,626	135	152,891
Leichhardt	107	218,296	18	124,318	..	..	1,851	533,485
Maranoa	34	64,376	6	39,065	..	..	1,643	213,221
Mitchell	17	36,040	..	..	..	..	730	90,554
Moreton	17	27,005	..	..	..	..	10,887	496,342
North Kennedy	74	164,629	8	51,346	6	98,993	2,494	442,700
Port Curtis	68	132,764	9	55,183	..	..	3,200	387,349
South Kennedy	48	103,860	11	76,887	2	33,086	1,621	304,395
Warrego	17	38,328	4	30,966	1	18,950	635	152,377
Wide Bay	23	46,468	..	..	..	..	5,563	301,979
Totals	609	1,278,875	106	731,917	40	747,613	44,260	5,225,804

Table No. XXXVI.

RETURN SHOWING THE NUMBER OF OWNERS AND THE SIZES OF HERDS OF CATTLE UNDER VARIOUS GROUPINGS IN THE SOUTHERN, CENTRAL, AND NORTHERN DIVISIONS OF THE STATE FOR THE YEAR 1927.

Division.	1-100.		101-300.		301-500.		501-1,000.		1,001-5,000.		5,001-10,000.		10,001 and Upwards.		Totals.	
	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.	Owners.	Cattle.
Southern Division	28,249	880,540	2,739	446,663	435	167,704	327	233,588	202	401,265	26	185,297	3	57,576	31,981	2,322,633
Central Division	4,468	111,834	624	110,298	219	85,240	180	131,159	213	442,303	36	237,523	2	31,554	5,742	1,149,911
Northern Division	5,517	116,403	478	83,800	137	54,440	132	95,730	194	435,307	44	309,097	35	658,483	6,537	1,753,260
Total	38,234	1,058,777	3,841	640,761	791	307,384	639	460,477	609	1,278,875	106	731,917	40	747,613	44,260	5,225,804

Table No. XXXVII.

RETURN SHOWING THE NUMBER OF OWNERS AND THE SIZES OF FLOCKS OF SHEEP UNDER VARIOUS GROUPINGS IN THE SEVERAL PASTORAL DISTRICTS OF THE STATE FOR THE YEAR 1927.

Pastoral Districts.	1 to 500.		501 to 1,000.		1,001 to 2,000.		2,001 to 5,000.		5,001 to 10,000.		10,001 to 20,000.		20,001 to 50,000.		50,001 to 100,000.		100,001 and Upwards.		Totals.		
	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	
Burke	31	3,868	14	10,510	28	45,525	142	516,421	94	635,891	32	485,814	24	635,834	3	183,509	...	368	2,523,372		
Burnett	86	4,275	1	650	2	2,590	1	2,300	...	...	...	...	...	...	...	...	90	9,815	...	90
Cook	26	2,765	1	590	...	...	...	...	...	...	...	...	...	...	...	...	27	3,355	...	27
Darling Downs	751	133,839	267	196,479	246	357,015	197	633,014	72	486,671	26	354,555	10	338,954	4	238,234	...	1,569	2,495,527		
Gregory North	27	4,683	13	10,444	18	31,616	51	172,588	32	207,156	7	97,112	9	292,565	...	...	161	1,054,398	...	161
Gregory South	7	591	6	4,580	8	12,520	12	38,571	8	53,980	5	70,891	2	56,294	1	54,834	...	49	292,261	...	49
Leichhardt	149	24,479	47	35,210	74	110,847	60	185,104	21	150,906	15	201,477	8	279,887	1	62,813	...	375	1,050,723	...	375
Maranoa	224	42,927	118	59,923	166	250,201	217	704,114	75	493,471	44	602,628	19	543,056	1	56,910	...	865	2,951,182	...	865
Mitchell	97	16,401	37	26,951	80	120,520	182	599,386	99	698,954	64	907,137	24	790,381	7	436,046	...	591	3,715,045	...	591
Moreton	273	11,187	2	1,456	1	1,740	3	7,750	...	...	...	...	...	...	...	...	279	22,133	...	279
North Kennedy	54	5,503	2	1,425	...	...	1	3,000	...	...	...	...	...	...	...	...	57	9,928	...	57
Port Curtis	105	7,231	4	2,887	3	5,100	2	8,461	1	8,461	...	...	...	...	...	...	115	29,320	...	115
South Kennedy	24	3,167	8	5,531	9	13,835	6	19,437	5	37,658	3	44,497	...	...	...	...	56	176,627	...	56
Warrego	44	8,046	34	23,978	74	120,194	146	483,717	64	446,987	38	516,348	13	432,754	4	271,969	...	417	2,303,993	...	417
Wide Bay	126	4,706	...	...	...	...	...	...	...	...	...	...	...	...	...	...	126	22,133	...	126
Totals	2,024	273,668	554	410,614	709	1,071,703	1,020	3,371,043	471	3,220,135	234	3,280,459	109	3,364,725	22	1,362,817	2	287,221	5,145	16,642,385	

Table No. XXXVIII.
RETURN SHOWING THE NUMBER OF OWNERS AND THE SIZES OF FLOCKS OF SHEEP UNDER VARIOUS GROUPINGS IN THE SOUTHERN, CENTRAL, AND NORTHERN DIVISIONS OF THE STATE FOR THE YEAR 1927.

Division.	1-500.		501-1,000.		1,001-2,000.		2,001-5,000.		5,001-10,000.		10,001-20,000.		20,001-50,000.		50,001-100,000.		100,001 and Upwards.		TOTALS.	
	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.	Owners.	Sheep.
Southern	1,559	213,911	440	325,687	506	758,239	579	1,877,037	219	1,481,109	113	1,544,422	44	1,366,058	6	383,713	1	167,952	3,467	8,118,128
Central	339	45,573	96	71,815	169	259,594	292	953,290	156	1,091,491	88	1,234,994	41	1,362,833	13	789,595	1	119,269	1,195	5,928,454
Northern	126	14,184	18	13,112	34	53,870	149	540,716	96	647,535	33	501,043	24	635,834	3	189,509	..	..	483	2,595,803
Total	2,024	273,668	554	410,614	709	1,071,703	1,020	3,371,043	471	3,220,135	234	3,280,459	109	3,364,725	22	1,362,817	2	287,221	5,145	16,642,385

Table No. XXXIX.
RETURN FOR TEN YEARS SHOWING THE ESTIMATED NUMBER OF CATTLE, SHEEP, ETC., SLAUGHTERED FOR CONSUMPTION AS FOOD IN THE STATE, TOGETHER WITH THE AVERAGE DEAD WEIGHT OF EACH ANIMAL AND THE ESTIMATED QUANTITY CONSUMED PER CAPITA (EXCLUSIVE OF MEATWORKS ENGAGED IN SLAUGHTERING FOR PRESERVATION).

Years.	Mean Population for the Year.	NUMBER SLAUGHTERED.					AVERAGE DRESSED WEIGHT.					CONSUMPTION PER CAPITA.					
		Cattle.	Sheep.	Calves.	Lambs.	Swine.	Cattle.	Sheep.	Calves.	Lambs.	Swine.	Beef.	Mutton.	Veal.	Lamb.	Pork.	Total.
1918	688,547	159,066	359,688	5,659	13,665	39,588	576	43	47	29	81	133.00	22.61	0.88	0.57	4.65	161.21
1919	719,928	204,977	431,503	10,773	16,219	33,986	586	39	50	30	86	166.80	23.41	0.75	0.68	4.08	195.72
1920	734,379	229,839	417,423	18,144	22,184	25,635	471	43	56	34	91	147.56	24.49	1.39	1.03	3.19	177.66
1921	764,665	214,547	624,758	33,342	23,948	27,273	583	41	49	30	86	163.64	33.79	2.12	0.93	3.06	203.54
1922	782,890	251,562	668,673	36,404	25,471	54,620	567	41	51	30	86	182.21	34.93	2.38	0.97	3.00	226.49
1923	802,748	281,760	538,770	38,916	24,298	63,019	525	40	77	30	85	184.13	26.89	3.73	0.91	6.66	222.32
1924	825,151	282,516	421,874	42,330	23,843	57,402	547	43	51	30	88	187.19	22.18	2.62	0.87	6.10	218.96
1925*	851,419	333,095	580,566	49,691	19,969	66,398	543	42	50	30	82	212.28	28.98	2.90	0.71	6.43	251.30
1926*	875,187	321,795	656,458	51,170	19,866	72,145	550	44	79	31	83	202.07	33.06	4.59	0.69	6.84	247.25
1927*	891,908	316,661	641,636	43,122	24,329	68,580	572	42	83	30	83	203.23	30.49	4.01	0.82	6.36	244.91

NOTE.—Total value of By-Products as returned by Slaughter-houses for 1927 is £691,350. * Figures based on actual collection.

Table No. XI.
RETURN FOR TEN YEARS OF LIVE STOCK SLAUGHTERED FOR PRESERVATION AS FOOD, OR FREEZING, OR FOR TALLOW, IN THE STATE, WITH THE QUANTITY AND VALUE OF MEAT, TALLOW, LARD, ETC., PRODUCED.

Year.	NUMBER SLAUGHTERED.										MEAT PRESERVED OR FROZEN.										Quantity of Tallow Produced.	Quantity of Lard Produced.	Total Value of all Products shown here.										
	Cattle.					Sheep.					Beef.					Mutton.								Lamb.	Pork, Salt and Fresh.	Bacon and Hams.	Extract and Essence of Meat Produced.						
	For Freezing.		For Boiling Down.		For Freezing.		For Preserving.		For Boiling Down.		Lambs.		Swine.		Frozen.		Fresh.		Frozen.									Fresh.		Lb.	Tons.	Lb.	Tons.
	No.	£	No.	£	No.	£	No.	£	No.	£	No.	£	No.	£	Lb.	£	Lb.	£	Lb.	£								Lb.	£				
1917	21	5,100	390,558	28,282	2,441	233,019	25,811	477	2,529	170,490	215,966,464	24,701,945	9,995,999	1,023,815	96,200	217	14,791,540	808,518	996,123	9,069	761,060	6,740,976	9,069	761,060	6,740,976								
1918	21	5,079	290,342	41,119	2,551	74,640	94,338	46	102	208,498	176,849,345	31,709,394	3,162,016	3,833	141,641	2,136	16,476,490	890,252	277,333	7,889	854,161	5,830,105	7,889	854,161	5,830,105								
1919	21	4,351	197,632	45,033	2,782	215,419	48,022	1,168	4,860	166,575	120,875,330	26,603,970	8,226,181	1,410,136	141,641	2,136	12,155,489	721,072	289,656	6,115	656,547	4,503,806	6,115	656,547	4,503,806								
1920	19	3,780	186,655	13,109	1,356	18,848	2,631	...	3,633	132,049	137,343,094	7,341,758	811,616	11,979	536,645	...	12,337,489	668,445	61,540	4,197	474,426	3,646,033	4,197	474,426	3,646,033								
1921	18	3,641	243,059	8,010	1,034	89,287	13,633	13	17,721	160,205	147,710,372	6,829,273	4,062,835	701,774	268,342	...	12,337,489	1,506,982	25,496	5,981	800,280	3,721,211	5,981	800,280	3,721,211								
1922	17	3,161	189,667	14,527	2,234	60,588	327	18	7,488	181,108	115,383,250	12,077,237	2,755,296	14,514	268,342	...	15,130,545	901,894	107,817	6,020	781,650	2,190,512	6,020	781,650	2,190,512								
1923	17	3,007	225,297	16,807	3,672	54,002	476	263	318	200,234	126,584,907	10,721,227	1,992,322	18,846	11,130	...	16,219,969	541,923	107,821	4,825	833,159	2,494,186	4,825	833,159	2,494,186								
1924-25	19	4,371	539,135	25,144	4,044	452	78	...	...	206,454	295,294,239	23,042,674	17,082	7,877	2,205	...	15,334,549	603,553	182,503	10,931	766,360	4,921,665	10,931	766,360	4,921,665						
1925-26	19	4,211	363,011	29,480	2,513	34,702	35	...	...	243,605	201,983,990	15,570,168	1,265,319	1,451	2,205	...	18,013,086	891,326	141,283	7,767	895,925	4,107,662	7,767	895,925	4,107,662						
1926-27	20	3,564	179,694	14,043	938	2,943	...	...	...	208,016	100,744,984	9,559,202	121,956	...	...	...	17,971,692	867,4137	60,516	3,042	767,376	2,320,059	3,042	767,376	2,320,059		

* In addition meat valued at £506,874 (approximately) was supplied to the State Butchers' Shops.
 † In addition meat valued at £405,358 was supplied to the State Butchers' Shops.
 ‡ Not including farmers' bacon and pork.
 N.B.—8,199 swine killed by farmers and 820,223 lb. of pork and bacon made therefrom during 1926 are not included in this table.

Table No. XII.
RETURN FOR TEN YEARS SHOWING THE QUANTITY AND VALUE OF OTHER PRODUCTS OF MEAT PRESERVING, ETC., ESTABLISHMENTS IN THE STATE.

Year.	No.	Hides.		Skins.		Edible Fats.		Bones.		Hoofs and Horns.		Hair.		Oils, &c.		Manure.		All Other Products.	Total Value.
		Number.	£	Number.	£	Lb.	£	Tons.	£	£	£	£	Tons.	£	Tons.	£			
1917	21	426,610	948,747	290,170	98,547	9,132,507	337,043	648	11,431	8,805	118,889	3,302	6,602	23,669	4,439	50,136	284,259	1,746,769	
1919	21	340,155	740,086	186,569	62,116	8,875,269	242,602	578	10,885	7,978	109,102	2,892	5,404	22,961	5,609	47,379	373,180	1,492,777	
1919	21	291,384	802,167	184,353	57,698	8,295,790	253,336	541	7,979	8,729	118,200	3,469	4,710	33,433	9,406	48,355	467,444	1,658,563	
1920	19	247,210	575,999	23,213	7,777	5,605,730	220,412	439	4,867	8,328	99,384	2,950	3,613	20,880	7,789	43,225	366,979	1,238,326	
1921	18	263,196	276,405	72,232	5,546	7,694,850	158,044	471	5,226	7,981	120,214	3,849	3,885	19,278	5,539	45,126	300,661	808,657	
1922	17	215,397	280,921	68,396	16,603	5,481,586	84,076	288	3,630	7,945	156,889	3,009	4,071	12,590	3,163	44,610	314,876	758,893	
1923	17	245,843	313,978	55,059	27,291	5,379,914	137,750	385	7,692	11,861	169,874	10,098	4,718	17,894	4,983	50,657	340,600	904,560	
1924-25	19	568,134	678,377	559	337	14,465,038	280,525	845	12,801	27,356	188,801	16,452	9,191	45,700	10,363	80,224	536,070	1,643,105	
1925-26	19	394,110	471,505	34,800	26,081	10,753,803	213,596	570	5,867	20,144	173,899	5,218	5,970	34,134	7,633	50,198	453,734	1,253,976	
1926-27	20	194,641	260,470	2,942	1,189	5,926,129	113,821	223	2,122	7,929	129,149	2,927	4,761	14,797	3,424	43,963	424,703	860,048	

NOTE.—The Total Value of Production of the Cattle Industry for 1926-27 has been estimated at, approximately, £6,702,000.

Table No. XLIII.
RETURN SHOWING THE BREEDS OF CATTLE AS RETURNED IN THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE FOR THE YEAR ENDED 31ST DECEMBER, 1927.

Petty Sessions District.	Aberdeen Angus.	Ayrshire.	Devon.	Friesian.	Guernsey.	Hereford.	Illawarra, M. Shorthorn and I.M.S.	Jersey.	Polled Durham.	Red Polled.	Shorthorn.	Crossed and Unspecified.	Total.
Adavale	..	492	..	..	..	..	..	..	..	..	4,541	474	5,507
Allora	..	1	..	..	..	..	865	115	..	..	3,775	3,282	8,272
Alpha	7	..	..	..	..	36,351	7,021	43,372
Aramac	..	6	..	..	..	..	42	..	..	..	4,877	248	5,180
Atherton	..	490	7	166	..	106	9,811	2,886	..	..	9,883	20,901	44,144
Augathella	..	144	1	..	..	2	10	74	..	153	29,975	1,819	31,910
Ayr	613	..	..	..	13,958	15,262	30,207
Banana	28,214	..	..	..	..	323	34,670	63,207
Barcaldine	15	2,459	811	3,285
Beaudesert	..	337	103	348	..	4,498	17,411	2,833	..	..	21,914	20,114	67,758
Biggenden	..	172	..	54	..	1,092	3,097	783	..	1,230	620	32,387	39,435
Blackall	50	12	10	..	5	3,185	3,085	6,347
Bollon	16	..	2,214	..	5	..	28	24,839	5,612	32,714
Boulia	33,599	9,495	43,094
Bowen	..	28	55	..	..	52	10	23	..	..	13,571	14,909	28,648
Brisbane	..	80	..	111	..	..	749	718	..	..	236	15,489	17,383
Bundaberg	..	436	..	7	..	4,764	2,189	1,645	..	2	6,423	39,169	54,638
Burke	20	55,133	35,218	90,371
Cabootture	..	46	..	..	..	..	1,197	965	..	..	282	4,588	7,085
Cairns	..	3	..	41	..	..	..	192	..	..	474	4,415	5,125
Camooeal	63,801	5,499	69,300
Cape River	2,002	..	..	..	..	42,712	38,587	83,301
Cardwell	755	..	..	..	..	4	..	..	4,640	2,657	8,056
Charleville	..	3	..	..	..	4,056	250	6	..	..	13,493	8,097	25,906
Charters Towers	..	25	2006	..	..	11,107	235	210	..	..	64,456	65,914	143,953
Childers	..	5	622	13	..	3,759	411	99	..	1	1,226	7,364	12,918
Chillagoe	5,154	..	68	..	1,788	19,784	10,962	38,378
Chinchilla	1,946	1,650	..	..	..	3,584	18,903	26,362
Clermont	279	..	3,232	23	5	..	..	93,603	25,590	122,453
Cleveland	35	..	..	1,101	1,136	1,136
Clifton	..	40	..	41	..	..	..	106	..	..	6,128	6,383	12,698
Cloncurry	2,426	..	..	..	5,000	179,901	10,154	197,496
Coen	8,799	19,635	28,434
Collinsville	1,205	977	..	..	..	76,321	42,930	120,456
Condamine	3,620	..	73	..	30	7,692	24,425	36,919
Cook	4,446	..	..	1,192	528	1	..	..	2,833	74,440	82,912
Cooyar	2,743	1,252	50	..	320	2,364	5,932	11,937
Crow's Nest	..	56	..	22	..	496	..	1,023	..	..	4,373	15,088	22,310
Croydon	23,150	14,011	37,161
Cunnamulla	223	..	33	..	..	12,578	1,197	14,776
Dalby	..	416	..	10	..	28,372	1,569	507	51	47	31,036	29,927	92,009
Diamantina	43,511	4,237	47,748
Douglas	4	40	..	..	151	2,588	2,783
Dugandan	192	..	2,332	3,743	1,452	..	..	8,521	18,929	35,169
Eidsvold	..	201	..	..	..	42,352	679	191	..	51	3,683	11,470	58,627
Emerald	3,575	19	20	..	60	4,495	13,505	21,814
Esk	..	53	..	392	..	7,964	4,168	707	..	..	8,777	44,934	67,065

Table No. XLIII.—continued.
 RETURN SHOWING THE BREEDS OF CATTLE AS RETURNED IN THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE FOR THE YEAR ENDED 31ST DECEMBER, 1927—continued.

Petty Sessions District.	Aberdeen Angus.	Ayrshire.	Devon.	Friesian.	Guernsey.	Hereford.	Illawarra, M. Shorthorn and I.M.S.	Jersey.	Polled Durham.	Red Polled.	Shorthorn.	Crossed and Unspecified.	Total.
Etheridge	..	..	483	..	..	18,630	..	..	..	..	51,384	91,135	161,632
Eulo	..	..	..	..	..	1,025	..	..	..	..	11,212	1,053	13,290
Gatton	160	359	* 81	102	..	439	223	460	..	..	1,632	17,774	20,790
Gayndah	925	80	..	112	..	43,001	12,532	2,372	..	1,170	15,890	43,428	119,870
Gin Gin	1	715	..	38	..	19,746	391	695	..	..	1,757	32,603	55,311
Gladstone	731	..	..	123	..	64,776	13,185	3,480	..	452	8,824	65,321	157,607
Goodna	..	..	..	..	..	..	..	38	..	..	50	1,900	1,988
Goombungee	266	2	..	41	..	61	319	362	..	..	1,429	4,152	6,630
Goondiwindi	82	730	..	..	..	7,052	406	130	..	..	29,670	8,833	46,175
Gympie	..	..	..	54	87	7,891	25,013	4,390	..	..	1,443	57,006	96,614
Harrisville	26	67	..	..	..	662	1,472	215	..	..	4,981	10,848	18,271
Helidon	..	60	..	..	..	..	520	203	..	..	841	11,215	12,839
Herberton	..	..	200	42	..	1,000	494	665	..	600	5,092	48,519	56,612
Highfields	..	41	..	50	..	..	408	155	..	..	1,169	6,401	8,224
Hughenden	30	..	2,500	..	..	7,685	8	28	..	150	35,586	12,342	58,329
Hungerford	..	..	..	..	..	..	..	..	..	..	4,786	4,576	9,362
Ingham	..	..	76	..	..	260	72	97	..	..	1,333	24,976	26,814
Inglewood	..	148	13	..	1	351	1,644	100	666	..	5,300	7,985	17,322
Innisfail	1,114	..	..	..	..	..	114	9	..	..	14	3,714	3,851
Ipswich	..	..	..	..	..	..	150	505	..	..	861	10,716	12,232
Isisford	..	..	..	..	..	79	7	..	..	..	1,137	3,534	4,757
Jondaryan	..	..	..	..	..	30	192	77	..	..	2,150	5,974	8,423
Julia Creek	..	..	..	..	..	..	..	50	..	40	78,093	1,371	79,554
Jundah	..	..	..	..	..	..	..	..	..	..	8,910	92	9,002
Kilcoy	..	..	..	64	..	633	1,891	1,852	..	..	337	11,127	15,904
Kilkivan	..	134	1	..	..	6,659	2,859	1,063	..	1	3,862	4,405	18,984
Killarney	..	..	593	118	..	186	741	154	..	..	1,815	5,314	8,921
Laidley	..	..	..	1	..	2	692	230	..	..	663	14,780	16,369
Logan	1	7	..	..	..	..	91	183	..	..	56	14,192	14,529
Longreach	527	34	..	7	..	..	..	..	..	..	7,344	1,752	9,630
Lowood	..	..	..	..	..	1,772	450	426	..	..	3,443	9,929	16,054
Mackay	130	16	..	89	..	+ 11,620	203	400	..	..	2,379	101,172	116,009
Marburg	..	..	..	86	..	..	181	336	..	..	282	6,437	7,322
Maroochy	..	217	..	41	127	700	10,717	3,650	..	..	980	17,220	33,652
Maryborough	142	555	..	10	..	1,727	1,373	331	..	..	844	16,871	21,853
Mitchell	..	..	..	..	..	3,080	43	138	..	..	22,010	57,317	82,588
Mount Isa	..	2	..	..	..	29,040	668	358	..	540	..	2,240	2,240
Mount Morgan	..	28	..	..	..	6,964	385	8	..	..	8,295	29,877	62,335
Mount Perry	..	..	..	34	..	114	21	..	..	..	8,297	18,995	34,675
Muttaborra	..	..	..	..	..	..	..	..	..	18	..	6,082	14,566
Nanango	1,002	83	+ 23	360	..	14,976	14,544	1,220	..	1,407	14,705	55,418	103,738
Norman	..	..	100	..	..	39,565	..	..	..	..	174,535	9,052	223,252

Table No. XLII.—continued.
 RETURN SHOWING THE BREEDS OF CATTLE AS RETURNED IN THE SEVERAL PETTY SESSIONS DISTRICTS OF THE STATE FOR THE YEAR ENDED 31ST DECEMBER, 1927—continued.

Petty Sessions District.	Aberdeen Angus.	Ayrshire.	Devon.	Friesian.	Guernsey.	Hereford.	Illawarra, M. Shorthorn and I.M.S.	Jersey.	Polled Durham.	Red Polled.	Shorthorn.	Crossed and Unspecified.	Total.
Oakey	..	193	..	178	..	120	339	309	..	..	3,773	28,501	33,413
Pittsworth	..	944	..	900	..	1,526	961	172	..	196	10,493	15,606	30,798
Proserpine	..	24	..	25	..	53	476	117	..	80	7,084	6,100	13,959
Quilpie	6,056	812	6,868
Ravenswood	90	..	..	..	2,869	15	..	..	6,334	7,569	14,008
Redcliffe	..	383	..	..	..	..	250	1,350	..	..	1,270	10,605	16,477
Richmond	7,840	9	381	..	..	54,655	6,496	69,631
Rockhampton	..	422	35	79	..	109,496	6,357	1,418	6	..	15,259	107,537	241,988
Roma	..	312	..	1	..	3,063	1,975	358	..	117	35,036	35,612	76,474
Rosewood	..	95	..	..	..	88	2,422	295	..	..	2,621	15,676	21,204
St. George	529	..	3	..	..	15,836	3,918	20,961
St. Lawrence	40,936	93	26	..	..	6,775	27,317	75,147
Somerset	..	1	..	..	..	..	..	3	..	..	..	675	679
Southport	..	258	..	44	..	..	4,506	1,306	..	..	2,165	24,543	32,862
Springsure	24,720	30	7	..	3	39,659	15,610	80,059
Stanthorpe	43	18	..	2,589	16	41	..	..	855	6,441	11,369
Surat	1,656	..	..	..	..	20,476	3,966	26,098
Tambo	15,255	300	15,555
Taroona	27,707	..	..	..	..	48,528	18,230	94,465
Texas	188	2,961	1,547	283	..	..	4,145	395	9,714
Thargomindah	1,010	..	..	..	..	97,165	25,109	123,284
Tiaro	..	484	..	..	..	12,309	7,038	1,335	..	..	4,879	21,935	47,980
Toowoomba	..	34	..	237	..	200	851	345	..	..	1,455	10,166	13,288
Townsville	169	133	..	..	320	14	..	125	13,933	14,709	29,403
Warwick	..	118	185	71	..	1,551	4,280	1,040	..	..	16,415	13,726	38,338
Wienholt	..	139	..	1,196	..	29,392	21,502	2,243	..	7,573	6,120	44,653	113,713
Windorah	57,325	6,572	63,897
Winton	3	82	..	..	10,481	1,127	11,693
Woodford	..	150	..	177	..	124	3,227	1,325	..	..	8,347	12,389	19,739
Wynnum	..	3	..	..	..	..	37	32	..	..	2	1,176	1,250
Yeulba	2,109	620	80	..	..	4,691	6,111	13,611
Totals	12,306	9,872	12,587	6,124	403	728,460	203,242	51,467	717	21,609	2,034,359	2,144,658	5,225,804

* Including 61 South Devon.

† Including 12 Polled Hereford.

‡ South Devon.

§ Including 180 Sussex.

Table No. XLIII.
RETURN SHOWING NUMBER AND CLASSIFICATION OF SHEEP SHORN AND UNSHORN AT TIME OF SHEARING, TOGETHER WITH VALUE OF MACHINERY ON HOLDINGS FOR THE YEAR ENDED 30TH JUNE, 1927.

Pastoral District.	CLASSIFICATION OF SHEEP SHORN AND UNSHORN AT TIME OF SHEARING.										RESULT OF CLIP.				AVERAGE PER FLEECE IN THE GREASE.			Value of Machinery on Sheep Holdings.									
	Ewes.	Wethers.	Weaners and Hoggets.	Lambs.	Rams.	Total.	Lambs Unshorn.	Grown Sheep Unshorn.	Grand Total.	Greasy.		Average per Bale.	Scoured.		Average per Bale.	Total Production of Wool expressed as Greasy.	1925.		1926.	1927.	Increase or Decrease 1927 over 1926.						
										Bales.	Lb.		Bales.	Lb.													
Burke	1,215,035	832,644	160,513	94,411	33,411	2,336,014	12,836	30,590	2,379,440	26,266	9,259,001	353	7,931	1,770,258	223	12,799,517	Lb.	Lb.	Lb.	£							
Burnett	4,207	865	277	508	67	5,924	311	10	6,245	35,981	286	...	...	...	...	35,981	Lb.	Lb.	Lb.	£			
Cook	2,972	966	68	78	30	4,114	163	40	4,317	17,087	267	...	...	...	...	17,087	Lb.	Lb.	Lb.	£			
Darling Downs	745,716	960,455	221,944	138,031	15,268	2,081,414	18,493	61,394	2,161,301	14,725,210	311	...	...	...	...	14,730,646	Lb.	Lb.	Lb.	£			
Gregory North	794,759	399,270	77,707	38,285	20,774	1,330,795	2,693	23,521	1,357,009	5,477,693	355	5,059	1,064,328	210	7,606,349	Lb.	Lb.	Lb.	£								
Gregory South	169,518	96,259	44,598	19,881	4,260	334,516	4,772	6,975	346,263	2,315,597	357	666	151,848	228	2,619,293	Lb.	Lb.	Lb.	£								
Leighhardt	366,854	476,119	61,659	22,340	9,644	936,616	431	17,050	954,097	5,045,244	316	16	2,969	186	5,051,182	Lb.	Lb.	Lb.	£								
Maranoa	1,557,230	948,699	406,458	279,818	35,498	3,227,703	41,605	152,944	3,422,252	73,784	24,631,922	334	2,080	524,172	252	25,680,266	Lb.	Lb.	Lb.	£							
Mitchell	2,747,248	1,047,359	298,002	165,162	81,993	4,339,674	13,213	128,249	4,481,136	63,052	21,316,184	338	9,731	2,109,393	217	25,534,970	Lb.	Lb.	Lb.	£							
Moreton	5,501	9,956	910	715	105	17,187	917	280	18,384	416	112,588	271	...	...	...	112,588	Lb.	Lb.	Lb.	£				
North Kennedy	2,394	3,814	130	254	78	6,670	14	205	5,889	108	36,220	325	6	1,500	250	39,220	Lb.	Lb.	Lb.	£							
Port Curtis	11,309	10,246	3,100	2,628	296	27,579	22	16	27,617	498	155,313	312	...	...	...	155,313	Lb.	Lb.	Lb.	£				
South Kennedy	70,417	92,415	15,304	2,378	1,238	181,752	...	...	181,752	3,064	1,043,584	341	13	2,393	184	1,048,320	Lb.	Lb.	Lb.	£					
Warrego	1,519,569	641,579	327,343	239,122	39,992	2,767,605	33,844	99,416	2,900,865	58,451	20,120,915	344	1,513	334,866	221	20,790,647	Lb.	Lb.	Lb.	£							
Wide Bay	1,790	710	182	235	30	2,947	47	47	3,041	55	15,551	283	...	...	...	15,551	Lb.	Lb.	Lb.	£				
Totals	9,214,519	5,521,356	1,618,195	1,003,846	242,594	17,600,510	129,361	520,737	18,250,608	311,083	104,308,040	335	27,027	5,964,445	221	116,236,930	Lb.	Lb.	Lb.	£							
Quantity of wool returned greasy but subsequently scoured															
Total Greasy										292,705	98,151,497					
Total Scoured														
Quantity of wool fellmongered during the year														
Grand Total Scoured										41,006	9,049,197					
Estimated quantity wool on skins other than fellmongered during the year													
Total of all Wool Produced expressed as Greasy												
Total of all Wool Produced expressed as Greasy										119,847,967	valued at * £9,423,046.

* Based on Oversea Export Value.

Table No. XLIV.

RETURN SHOWING THE TOTAL NUMBER OF SHEEP SHORN AND THE RESULT OF THE CLIP IN EACH OF THE THREE DIVISIONS OF THE STATE FOR THE TWELVE MONTHS ENDED 30TH JUNE, 1927.

Division.	Total Number of Sheep Shorn.	RESULT OF THE CLIP.				Total Clip Expressed as Greasy Wool. Lb.	Average Weight per Fleece in the Grease. Lb.	
		Greasy.		Scoured.			1926-27.	1925-26.
		Bales.	Lb.	Bales.	Lb.			
Southern	8,465,165	187,243	62,136,620	4,271	1,013,604	64,163,828	7.58	7.26
Central	6,755,004	96,841	32,670,067	14,816	3,178,632	39,027,331	5.78	6.94
Northern	2,380,341	26,999	9,501,353	7,940	1,772,209	13,045,771	5.48	6.45
Totals	17,600,510	311,083	104,308,040	27,027	5,964,445	116,236,930	6.60	6.99

Table No. XLV.

RETURN SHOWING THE BREEDS OF SHEEP IN QUEENSLAND ON 31ST DECEMBER, 1927; ALSO THE NUMBER OF SHEEP UNDER ONE YEAR, AND ONE YEAR AND OVER, ON THAT DATE.

Pastoral District.	BREEDS.				Total Sheep on 31st Dec., 1927.	AGES.		
	Merino.	Pure Breeds other than Merino.	Merino Comeback.	Crossbreeds and *Unspecified.		Under One Year.	One Year and Over.	Unspecified. *
Burke	2,523,372	..	..	..	2,523,372	354,339	2,162,533	6,500
Burnett	4,495	..	349	4,971	9,815	2,186	6,234	1,395
Cook	1,915	a 39	228	1,173	3,355	496	2,054	805
Darling Downs	2,315,451	b 1,401	118,668	60,007	2,495,527	301,864	2,187,175	6,488
Gregory North	1,051,958	..	800	1,640	1,054,398	142,476	911,922	..
Gregory South	291,961	..	300	..	292,261	29,210	263,051	..
Leichhardt	1,039,782	..	6,658	4,283	1,050,723	135,108	915,615	..
Maranoa	2,938,956	c 10	11,447	769	2,951,182	362,538	2,588,644	..
Mitchell	3,712,103	..	277	2,665	3,715,045	603,745	3,111,300	..
Moreton	9,301	d 271	2,389	10,172	22,123	2,162	16,091	3,880
North Kennedy	4,027	e 10	1,888	4,003	9,928	882	7,217	1,829
Port Curtis	11,745	f 1	2,095	15,479	29,320	6,681	20,288	2,351
South Kennedy	173,349	..	1,076	2,202	176,627	22,197	154,430	..
Warrego	2,300,927	..	3,066	..	2,303,993	288,412	2,015,581	..
Wide Bay	89	..	230	4,387	4,706	463	1,629	2,614
Totals	16,379,431	1,732	149,471	111,751	16,642,385	2,252,759	14,363,764	25,862
Percentage to total sheep	98.42	0.01	0.90	0.67	100.00	13.54	86.31	0.15

* Mainly butchers' and ration sheep.

a Corriedale 28, Border Leicester 11; b Corriedale 1,274, Lincoln 100, Dorset Horn 27; c Corriedale 10; d Corriedale 113, Dorset Horn 8, Romney Marsh 150; e Romney Marsh 10; f Romney Marsh 1.

Table No. XLVI.

RETURN SHOWING THE RESULTS OF LAMBING, LOSSES, SHEEP KILLED FOR FOOD ON HOLDINGS, ETC., IN THE SEVERAL PASTORAL DISTRICTS OF THE STATE DURING THE YEAR 1927.

Pastoral District.	Total Sheep as per Stock Returns on 1st Jan., 1927.	Ewes Mated with Rams.	Lambs Marked.	Percentage of Lambing.	Purchases and Transfers.	Sales and Transfers.	Total Losses. *	Killed for Food on Holding.	Total Sheep as per Stock Returns on 31st Dec., 1927.	Skins Obtained. †
Burke	1,978,074	1,039,261	351,189	33.79	744,618	312,302	218,170	20,037	2,523,372	32,824
Burnett	7,487	3,909	2,508	64.16	3,113	1,558	1,584	151	9,815	142
Cook	12,580	1,678	585	34.86	966	9,281	1,483	12	3,355	212
Darling Downs	2,045,745	670,963	304,100	45.32	1,308,901	891,922	247,652	23,645	2,495,527	30,760
Gregory North	1,086,545	567,924	154,777	27.25	73,533	115,008	133,771	11,678	1,054,398	21,985
Gregory South	344,859	163,693	68,684	41.96	22,000	64,311	75,946	3,025	292,261	3,081
Leichhardt	840,487	257,491	122,489	47.57	331,196	118,273	118,219	6,957	1,050,723	8,243
Maranoa	3,366,810	1,198,484	457,997	38.21	992,092	1,296,119	531,219	38,379	2,951,182	31,437
Mitchell	4,135,681	1,930,079	615,045	31.87	532,621	958,636	555,073	54,593	3,715,045	66,917
Moreton	22,022	3,973	2,194	55.22	16,298	15,535	2,149	697	22,133	697
North Kennedy	22,214	2,188	997	45.57	2,477	13,134	2,532	94	9,928	204
Port Curtis	28,040	10,064	6,673	66.31	11,002	8,960	7,042	393	29,320	500
South Kennedy	165,182	52,666	24,424	46.38	22,772	17,805	17,009	937	176,627	1,785
Warrego	2,799,535	1,077,367	369,778	34.32	307,223	602,724	536,921	32,898	2,303,993	33,999
Wide Bay	5,511	789	515	65.27	2,974	3,700	461	183	4,706	134
Totals	16,860,772	6,980,529	2,481,955	35.56	4,371,786	4,429,268	2,449,231	193,629	16,642,385	322,920

* Losses of unmarked lambs are not taken into consideration; For details, see Table No. XLVII.

† Year ended 30th June, 1927

Table No. XLVII.
RETURN SHOWING DETAILS OF LOSSES IN SHEEP DURING THE YEAR 1927.

Pastoral District.	* LOSSES AND THE CAUSES AS RETURNED BY OWNERS AND THE PERCENTAGE OF EACH CAUSE TO TOTAL LOSSES.												TOTAL LOSSES AND PERCENTAGE TO TOTAL SHEEP ON 31ST DECEMBER.										
	Cancer (Senile Necrosis)		Dingoes.		Drought.		Flood.		Fly.		Lambing.		Old Age.		Shearing.		† Other.		1927.		1926.		
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Burke	8,672	3.98	7,661	3.51	125,098	57.34	455	0.21	5,492	2.52	18,591	8.52	34,687	15.90	6,881	3.15	a	10,633	4.87	218,170	8.65	1,146,669	57.97
Burnett	11	0.69	231	14.58	32	2.02	..	..	91	5.75	101	6.38	254	16.04	43	2.71	b	821	51.83	1,584	16.14	857	11.45
Cook	40	2.70	194	13.08	340	22.93	30	2.02	53	3.57	31	2.09	202	13.62	4	0.27	c	589	39.72	1,483	44.20	431	3.43
Darling Downs	1,984	0.80	6,557	2.65	129,440	52.27	1,837	0.74	14,333	5.79	21,434	8.65	19,558	7.90	18,690	7.55	d	33,819	13.65	247,652	9.92	172,003	8.41
Gregory North	2,436	1.82	2,895	2.16	96,527	72.16	320	0.24	521	0.39	7,352	5.50	18,717	13.99	3,787	2.83	e	1,216	0.91	133,771	12.69	774,165	71.25
Gregory South	177	0.23	4,177	5.50	64,678	85.16	135	0.18	306	0.40	1,039	1.37	4,399	5.79	635	0.84	f	400	0.53	75,946	25.99	34,989	10.15
Leichhardt	1,183	1.00	16,798	14.21	56,738	47.99	3,962	3.35	13,653	11.55	6,545	5.54	9,215	7.79	4,229	3.58	g	5,896	4.99	118,219	11.25	269,880	32.11
Maranoa	1,119	0.21	17,480	3.29	420,795	79.21	693	0.13	7,111	1.34	25,241	4.75	22,700	4.28	12,797	2.41	h	23,283	4.38	531,219	18.00	188,833	5.61
Mitchell	7,696	1.39	36,216	6.52	422,373	76.09	6,309	1.14	2,347	0.42	22,729	4.09	35,663	6.43	7,304	1.32	i	14,436	2.60	555,073	14.94	2,238,495	54.13
Moreton	40	1.86	368	17.12	229	10.66	27	1.26	78	3.63	89	4.14	240	11.17	60	2.79	k	1,018	47.37	2,149	9.71	3,064	13.91
North Kennedy	10	0.40	175	6.91	1,322	52.21	..	..	27	1.07	41	1.62	212	8.37	16	0.63	l	729	28.79	2,532	25.50	3,533	15.90
Port Curtis	146	2.07	252	3.58	4,819	68.43	..	..	210	2.98	218	3.10	363	5.15	68	0.97	m	966	13.72	7,042	24.02	4,561	16.27
South Kennedy	420	2.47	2,421	14.23	6,826	40.13	..	..	1,749	10.28	1,079	6.35	2,942	17.30	424	2.49	n	1,148	6.75	17,009	9.63	61,979	37.52
Warrego	1,815	0.34	46,101	8.58	414,395	77.18	2,301	0.43	6,135	1.14	23,625	4.40	24,421	4.55	12,175	2.27	o	5,953	1.11	536,921	23.30	434,868	15.53
Wide Bay	8	1.74	190	41.22	11	2.39	3	0.65	3	0.65	15	3.25	57	12.36	..	..	p	174	37.74	461	9.80	880	15.97
Totals	25,757	1.05	141,716	5.78	1,743,623	71.19	16,072	0.66	52,109	2.13	128,130	5.23	173,630	7.09	67,113	2.74	101,081	4.13	2,449,231	14.72	5,335,207	31.64	

* Losses of unmarked lambs are not taken into consideration.

† Causes included in "Other"—

- a. Boggling, blight, excessive rain, poisoning, travelling.
- b. Poisoning, scrub tick, worms.
- c. Domestic dogs, scrub ticks, worms.
- d. Blight, blight, boggling, crows, dipping, domestic dogs, eagle hawks, foxes, frost, grass seed, tetanus, travelling, worms.
- e. Boggling, poison weed.
- f. Travelling.
- g. Boggling, dipping, domestic dogs, eagle hawks, poison weed, spear grass, travelling, worms.
- h. Boggling, domestic dogs, frost, poisoning, travelling, worms.
- i. Blight, boggling, domestic dogs, eagle hawks, grass seed, poisoning, travelling.
- k. Domestic dogs, grass seed, poison weed, scrub tick, worms.
- l. Domestic dogs, ticks, worms.
- m. Domestic dogs, grass seed, excessive rain, worms.
- n. Boggling, eagle hawks, worms.
- o. Boggling, travelling, poison weed.
- p. Domestic dogs, poison weed, scrub ticks, worms.

Registrar-General's Office,
Brisbane, 31st October, 1928.



Registrar-General.

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