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ANNUAL REPORT
OF THE
DEPARTMENT OF AGRICULTURE
AND STOCK
FOR
THE YEAR 1940-41.

PRESENTED TO PARLIAMENT BY COMMAND.

BRISBANE:
BY AUTHORITY: A. H. TUCKER, GOVERNMENT PRINTER.

A. 9—1941.

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REPORT OF THE DEPARTMENT OF AGRICULTURE AND STOCK FOR THE YEAR 1940-41.

TO THE HONOURABLE THE SECRETARY FOR AGRICULTURE AND STOCK.

SIR,—I have the honour to present herewith the report of the Department for the year ended 30th June, 1941.

SEASONAL CONDITIONS.

The winter and spring seasonal period of 1940 was unusually dry, and pastures and crops suffered accordingly.

Favourable conditions were restored by the excellent November-December rains, which facilitated the establishment of summer crops. This period was followed by heavy wet season rains, extending from January to March, which ensured prolific growth of pastures and crops.

THE PASTORAL INDUSTRY.

The following preliminary figures compiled by the Government Statistician show the estimated live stock population of the State as on 1st January, 1941:—

	Estimate at 1st January, 1941.	Actual Numbers at 1st January, 1940.
Sheep	24,000,000	24,190,931
Cattle	6,300,000	6,198,798
Horses	445,000	445,810
Pigs	450,000	391,333

The estimated number of sheep is slightly below the record total of the previous year, but it is higher than the total for any other year. The estimated number of cattle, which is 100,000 above the 1940 level, is the highest total recorded since 1st January, 1926, when the number was 6,436,645. The number of pigs in the State has risen steeply from 100,000 in 1919 to 450,000 (estimated) in 1941.

The figure for horses remains constant, and there were 577 of this class of stock exported overseas during the last twelve months. Horses of good quality, particularly drafts, have been in keen demand at good prices, and with increased petrol restrictions, it is anticipated that they will be more sought after.

Fat lamb production is making satisfactory progress. Numbers have increased and quality has improved.

The natural grasses over large tracts of Central and Western Queensland have made an excellent recovery, and pastures, although mostly dry at the close of the year, are sufficient to maintain sheep for several months to come.

Stock routes throughout the State are in good order and safe for travelling stock.

The number of pigs treated at bacon factories totalled 457,012 as compared with 429,498 in 1939-40, and 355,103 in 1938-39. The export total rose from 110,127 in 1939-40 to 130,322 in 1940-41.

Registrations of horse and cattle brands show an increase for the year, but there was a slight decrease in the number of sheep brands and earmarks registered.

Animal Nutrition.—During the year further sets of digestibility trials on Queensland fodders and concentrates were completed. Drought conditions in the South-Western portion of the State during the latter half of 1940 provided an opportunity to test out on a large scale the laboratory results of feeding trials. Approximately 10,000 sheep were fed concentrates only on bare country for twenty-two weeks without provision of roughage as bought fodder. Losses were small amongst grown sheep, and the marking of 60 per cent. among lambs which were dropped in the middle of the drought provided ample proof of the soundness of the laboratory work.

Some progress has been made with an investigation of the detoxication of terpenes—essential oils—by the ruminant. Some surprising results have been obtained from these tedious investigations, which have indicated that the animals apparently use quite unexpected methods of detoxicating terpenes. It is hoped that greater details of these results will be available during the coming year.

VETERINARY SERVICES.

It has been possible during the year to consolidate and improve the veterinary services supplied to stockowners of the State, and all departmental activities in connection with animal diseases are now co-ordinated by the office of the Director of Veterinary Services.

There have been no major outbreaks of animal disease, but the buffalo fly spread to some extent owing to the particularly favourable climatic factors operating in the Gulf country. In view of the danger of the spread of this pest to areas of dense cattle population on the coast, vigorous preventive measures are being adopted, and spraying plants have been erected at selected centres on the Northern railways.

To ascertain the position more exactly and to enable proper investigations to be carried out, several diseases have been the subject of special survey and inquiry.

The Animal Health Stations at Yeerongpilly and Oonoonba have continued to render valuable service to stockowners of Queensland. Vaccine and other materials prepared by these stations have given excellent results to users. Work has been continued in conjunction with the Poison Plants Committee into the testing of suspected poisonous plants, and a number of plants were submitted during the year for feeding purposes.

AGRICULTURE.

Sugar.—The output of 759,000 tons manufactured from 5,180,000 tons of cane was 132,000 tons below the record yield of the previous year. Despite shipping difficulties, the full crop was satisfactorily disposed of at a gross value of just over £13,000,000. The average price per ton was the best since that of the 1932 season. The preliminary estimates for the 1941 season suggest that a similar crop to that of 1940 will be available for harvest. The Government has acquired the full 1939 peak quotas for each mill which, if filled, would provide 737,000 tons. The actual production within these limits is likely to be something slightly less than the full quota. Greater difficulty is anticipated in regulating overseas shipments, and it is probable that much of the production of the current season will have to be stored.

Wheat.—Good early rains were experienced and sowings were carried out under excellent conditions. The quantity of wheat harvested for grain totalled 5,600,000 bushels from an area of 302,003 acres. For the third year in succession the yield was considerably above the average, and the grain was of high quality. Queensland-bred wheats continue to increase in popularity, and now constitute approximately 77 per cent. of the total acreage sown.

Maize.—Returns from the maize districts indicate that both the total area sown and the total yield of grain will be above the average for the State. Because of prolonged wet weather during the ripening of the crop and during the harvesting period, yields on the Atherton Tableland were not as heavy as were earlier anticipated.

Cotton.—Climatic conditions experienced during the season were variable and, as a whole, were generally unfavourable for the production of satisfactory yields of cotton. In spite of this fact, a total of 12,262,498 lb. of seed cotton was received by the end of June at the two ginneries operating. This is a substantial increase upon the figure for the corresponding period of the previous season—8,605,496 lb.

Sorghums.—The area sown to grain sorghums once again showed a very substantial increase, and a keen demand existed for all grain produced. The value of the grain for stock or poultry feeding purposes is now more widely appreciated, and is likely to encourage large scale production of sorghums for grain purposes.

Tobacco.—Because of erratic seasonal conditions and damage by insect pests, results in all tobacco districts were not as good generally as those obtained during the previous year. The area harvested was approximately 4,235 acres, with a yield of slightly under 2,000,000 lb. of cured leaf.

Peanuts.—Growers on the whole had satisfactory results, and in some instances very high yields were obtained. The seed selection work conducted by departmental officers for some years past has resulted in a very definite improvement in type of plant and quality of nut.

Potatoes.—Results from this crop generally were satisfactory, and the total yield for the State is estimated to be above average.

Soil Conservation.—The services of the soil conservation officer have been much in demand during the year, and large areas of eroded land in various districts have been treated. These demonstrations have aroused keen interest and much appreciation by local landowners.

Fodder Conservation.—The fact that during the year a record number of requests for information on silage were received from graziers is an indication of the increasing interest which is being taken in fodder conservation.

FRUIT.

In spite of handicaps due to irregular seasonal conditions, the occurrence of pests, and the loss of export markets because of restricted shipping space, the fruit industry continued to progress steadily throughout the year.

The area under cultivation for banana-growing now totals 11,900 acres, and the number of growers engaged is forty-three more than the previous season's total.

The yield of pineapples rose to 1,400,000 cases, which is the highest on record.

Citrus fruits also showed a substantial increase, 460,000 cases being marketed.

The production of tomatoes aggregated 1,750,000 cases, which represents an increase of 140,000 cases over the previous year.

The avocado—a comparatively new fruit—has gained a great deal of favour, and the area under trees has more than doubled in two years.

PLANT INDUSTRY (RESEARCH).

The Division of Plant Industry (Research) has again completed a successful year of investigational work on a wide range of problems associated with many crops of major importance. Plant breeding in both agriculture and horticulture is a prominent feature of its activities, pasture investigations are conducted both on the coast and in the far West, and a very considerable amount of attention is also devoted to general horticultural problems, particularly to those of a nutritional nature.

In view of its wartime importance, cotton has received during the year an unusually large share of attention from the Division's officers, and a considerable proportion of them are engaged on the numerous plant breeding, entomological, soils, irrigation, and plant physiology problems which have arisen since the advent of cotton as an important feature in the rural economy of the State.

As is natural in a subtropical and tropical climate, pests and diseases are responsible for very serious annual losses, and the Division's programme accordingly includes many projects dealing with their control.

A large number of research projects are of a long-range nature, and immediate results cannot be expected; nevertheless, the numerous articles published in the *Queensland Agricultural Journal* bear witness to the fact that satisfactory progress is being made in the solution of many of Queensland's problems.

THE DAIRY INDUSTRY.

Because of unseasonal conditions, the output of dairy produce fell below the figure of the previous season. Butter production for the year was 117,081,269 lb., valued at £7,517,172, compared with 139,795,042 lb., valued at £8,862,037 for 1939-40. Cheese production was 11,731,976 lb., valued at £390,000, compared with 13,841,405 lb., valued at £452,182 for 1939-40.

Butter quality showed an improvement over the results of the previous year. This may be attributed, in some measure, to the fact that considerable progress was made in bringing farm buildings and facilities into conformity with regulation requirements for the production of high-quality milk and cream. A marked improvement in factory hygiene and the manufacture of a butter of more uniform and economical composition have been attained as a result of the butter improvement service which provides for the regular scientific examination of the produce of all factories.

A most pleasing feature is the progressive improvement in cheese quality which has been achieved over the past three years.

PIG RAISING.

The pigs slaughtered during the year showed a steady improvement in type and quality and a further reduction in the incidence of disease, suggesting improved breeding and better management.

POULTRY RAISING.

Considerable expansion in the poultry industry is indicated by the fact that Egg Board receipts during the year totalled 6,215,747 dozen—a record for the Board.

The relatively high cost of maize and wheat and the shortage of bran and pollard have been instrumental in inducing poultry farmers to make use of grain sorghum.

WILD LIFE PRESERVATION.

Enforcement of the provisions of the Fauna Protection Act and the Native Plants Protection Act has been effected by the continuation of a system of regular patrols. A total of nine additional sanctuaries was proclaimed during the year, and ninety-one new appointments of honorary rangers were gazetted.

CHEMISTRY SERVICES.

During the year, 10,790 samples were received for chemical analysis, which is the highest number on record and exceeds the total of the previous year by 727. In addition, 6,378 samples of glassware were tested, and of these 6,044 were approved.

DEPARTMENTAL PUBLICATIONS.

The *Queensland Agricultural Journal* is now entering its forty-fifth year and during the period under review 106,030 copies were distributed. The *Weekly News Bulletin* continues to supply a regular press service. The demand for the Departmental bulletin, pamphlet, and advisory leaflet services remains constant. An additional volume of *The Queensland Agricultural and Pastoral Handbook* was published in the course of the year, and another volume is now on the press.

MARKETING.

In coping with wartime problems brought about by the shortage of shipping to lift the exportable surplus of primary production, the Queensland system of organised marketing has been of material assistance not only to this State, but also to the Commonwealth. It has proved of great value in the administration of schemes of export control put into operation by the Commonwealth Government.

The amount distributed annually to primary producers in respect of products disposed of under producer-controlled organised marketing schemes now exceeds £22,000,000.

RESERVES OF ESSENTIAL COMMODITIES.

The safeguarding of the food needs of the population is an essential part of the nation's wartime economy. To meet the urgent need of building up stocks of essential commodities in Queensland, an Emergency Supplies Committee, representative of Governmental and trading interests, was instituted towards the end of the year.

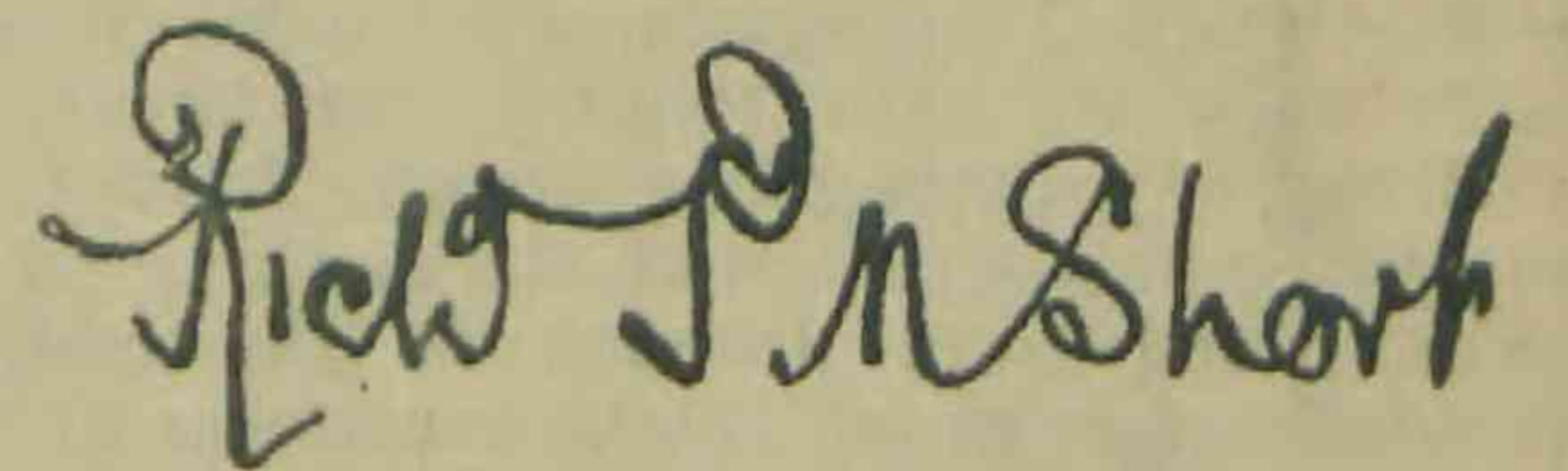
In six coastal districts the obligation to build up reserve stocks is placed on wholesale suppliers, and in other parts of the State retailers are required to establish and maintain reserve stocks. Financial assistance is made available to suppliers by way of interest-free overdrafts, Commonwealth and State Governments sharing the costs.

ANNEXURES.

Detailed accounts of the work of the Department during the year are contained in the report of the Director of Plant Industry (Research); the Director of Agriculture; the Director, Bureau of Tropical Agriculture; the Director of Cotton Culture; the Director of Fruit Culture; the Director of Veterinary Services; the Chief Inspector of Stock; the Director of Dairying; the Agricultural Chemist; the Officer in Charge of the Seeds, Fertilizers, Veterinary Medicines, Pest Destroyers and Stock Foods Investigation Branch; the Editor of Publications; the Director of Marketing; and the Registrar of Co-operative Associations—all of which are incorporated herein.

I am, Sir,

Yours faithfully,



Under Secretary.

REPORT OF THE DIRECTOR OF PLANT INDUSTRY (RESEARCH).

The work of the Division of Plant Industry (Research) has again proceeded more or less along the lines laid down at its inception in July, 1937, and it is pleasant to be able to record the fact that appreciable progress has been made in many directions during the year that has just ended. Some of the salient features of the work of the Division are reviewed in the following paragraphs.

AGRICULTURAL PLANT BREEDING.

Four officers of the Division are now engaged on plant breeding in agricultural crops, two of them being employed exclusively on cotton, while a third will be engaged thereon in future for a portion of his time. Cotton is, of course, a crop of very definite wartime importance, and in peace time it plays an important part in the rural economy of the Callide, Dawson, and Burnett Valleys. Considerable attention has accordingly been devoted by the plant breeding staff of the Agricultural Section of the Division to the production of improved strains of cotton, and satisfactory progress is being made in that objective.

Several strains of the very promising quick-maturing Oklahoma Triumph variety have once more given satisfactory results, and three of these strains, which possess superior quality fibre, are to be released for seed multiplication under ordinary field conditions. An improved strain of New Boykin will be available for planting next season on a considerable scale in the Central district, where this variety is steadily increasing in popularity. The Lone Star variety is now represented by several very good strains which are available for general planting, the variety being particularly useful in drier districts and seasons. Work has also been continued with some measure of success in the breeding blocks of Farm Relief, New Mexico Acala, Stoneville, Qualla, and Half and Half, but as yet no strains of outstanding merit have been evolved in these varieties. Several thousand acres of an improved strain of Miller, which is now the most extensively grown variety in Queensland, are expected to be sown next cotton season. This variety is also playing a prominent and promising part in the search for a jassid resistant cotton, one of the strains developed from it having displayed a high degree of resistance to attack. It is also being crossed with U.4, and in the hybrid material so obtained there are several strains which may be of value as jassid resistant cotton. Progress in this project is most desirable, because there appears to be no real prospect of direct control of the cotton jassid and, in all probability, success in dealing with this serious and widespread pest can be achieved only by the production of jassid resistant varieties or strains.

The value of the wheat-breeding work, which has been carried out in Queensland for many years, has again been demonstrated by the fact that 77 per cent. of the acreage sown to wheat for grain production in this State during 1940 was sown to varieties evolved by this Department. The work was continued on a large scale, but the dry conditions prevailing in winter and spring militated against progress in the development of rust resistant types for grain and hay production. The season was similarly unfavourable for the testing of rust resistance in barley. Attention was again devoted to the production of pure seed of the leading Queensland wheat varieties. Further barley crosses were made, but the prevailing dry conditions prevented complete success being achieved in a cross-breeding project which it was desired to carry out in oats.

Promising results were obtained in the work of producing superior nematode resistant strains of cowpea both for green manuring and feed requirements, and hybridization was attempted between native and cultivated forms in the genus to which cowpea belongs.

HORTICULTURAL PLANT BREEDING.

The pineapple plant selection programme has progressed satisfactorily and sixteen experimental plots, containing in all some 16,000 plants, are now under observation. Their purpose is to determine and to demonstrate just how much benefit is to be derived from the use of selected planting material in preference to planting with ordinary field material. The search for superior types of pineapples is being continued and some time has also been devoted to the question of inheritance in the collar-of-slips type of plant.

Papaw experimental and observational plots are now located on seven sites between Brisbane and Maryborough, and more than twenty progenies are included therein. Among these are inbred and crossbred strains obtained from material collected in this State and in the Hawaiian Islands, the United States of America, and Ceylon. Trials of various strains are also under way at Kamerunga, in North Queensland, in co-operation with the Fruit Branch.

Most of the range of variations in the Phenomenal variety of strawberry are now represented in a collection of plants assembled at the Nambour Field Station in connection with the search for an improved type of strawberry. These will be kept under observation for several generations in order to

obtain data required for actual improvement work. Inbred seedlings have also been produced for the immediate purpose of obtaining homogeneous inbred strains which carry and preserve desirable characteristics.

The plant breeding staff has extended its programme to include the tomato, the primary objective in the case of this crop being the evolution of disease-resistant varieties. A considerable quantity of hybrid material has been produced and several of the hybrids are now under trial.

PASTURE INVESTIGATIONS.

An extensive pasture investigational programme was again carried out in coastal districts south of Gympie, and as seasonal conditions were much more satisfactory than in the preceding two years good progress has been made in this set of projects. Pasture work in the far west, handled with Blackall as a centre, also progressed satisfactorily.

There was evidence that the rested areas in the Dayboro' blue couch pasture improvement experiment benefited by freedom from grazing; it will be remembered that similar results were not obtained in the two previous dry seasons, and the occurrence of a long wet season may therefore be essential to success in resting these areas. The prevailing favourable conditions facilitated the establishment of Townsville lucerne by sowing on the pasture without cultivation treatment, and this legume was also successfully established in contour furrows.

Four cuttings were obtained from the Cooroy paspalum pasture renovation experiment, and responses to superphosphate applications were significant on both ploughed and unploughed pastures. Plots which were ploughed late in the 1938-39 season were still much less productive than those which were ploughed early in the season, although their yields were better than those obtained from the unploughed plots. Maleny was selected as the site of a paspalum pasture renovation experiment, which includes a comparison of contour furrowing and rotary hoe renovation; a fertilizer trial has also been laid down on the areas receiving the rotary hoe treatment. The value of paspalum renovation by the use of rotary picks is the subject of another experiment which has been initiated in the Coomera district; in this case lime and fertilizer treatments were laid down both on the renovated area and on an adjacent area which had not been broken up by the rotary picks.

Paspalum pasture contour furrowing experiments were initiated at Eumundi, North Arm, and Maleny, and similar work was undertaken on mixed native pastures at Waterford. There was a substantial increase in the production of grass in and about the furrows as well as a temporary increase in nitrification. Work on the make and break type of contour pasture furrows was continued near Blackall, and although, under the exceptionally wet conditions prevailing there was no benefit in so far as the production of grass was concerned, there was a most marked increase in the population of a valuable legume, *Psoralea cinerea*, around the furrows. Paired deep furrows, 4 feet apart, with the crowns thrown towards each other, were substituted for single deep furrows in the pasture contour furrowing experiment at Biloela. The adopted treatment resulted in an increase of 50 per cent. over the control in the production of air-dried hay.

Observations were continued on the carpet grass control experiments established at Palmwoods, an interesting feature being the second year stand of Townsville lucerne. This legume was closely grazed by young cattle and grew well in association with the carpet grass and paspalum mixture. Townsville lucerne was also successfully established in the strip pasture trial at Graceville.

The strains of Rhodes grass supplied by the Council for Scientific and Industrial Research were again kept under observation; at Dayboro', Biloela, and on the Atherton Tableland a late-maturing Kenya strain was an appreciably heavier yielder than the Queensland and South African strains. At Biloela, strips of Rhodes grass, 5 feet wide and separated by cultivated strips 4 feet wide, continued to give very much better yields than the areas sown broadcast in the usual manner. These results were obtained under dry conditions and at a reasonable cost.

The effects of resting native pastures in the Blackall district were again studied. However, the exceptionally heavy rain of the 1940-41 season produced such a growth of grass and consequently necessitated so many cuttings that the botanical analysis could not be completed in time to permit of results being discussed in this report.

A considerable amount of attention has been given during the year under review to pasture legumes both in North and South Queensland. In the north the work is carried out in association with the Agriculture Branch and under the auspices of the Tableland Experiments Committee. A large legume introduction garden was established near Atherton a few years ago, and in that garden several hundred species, varieties, and strains of legumes, some of which may ultimately prove to be of value for incorporation in pastures, have been under obser-

vation. As was anticipated, many of these have shown little promise under North Queensland conditions, but at least seven summer legumes and six winter legumes are now considered definitely worthy of further study. Pasture legume work was also continued in the south where, at Dayboro, both Queensland and New Zealand white clovers successfully carried through the second year of their establishment. Field experiments, each comprising fourteen species of pasture legumes, have been established at Mount Pleasant, Eumundi, and Waterford, and pot experiments for the study of types and placements of phosphatic fertilizers for white clover on the Cooroy yellow clay have yielded interesting results.

TOBACCO.

During recent years a great deal of tobacco experimental work has been undertaken throughout the State and much valuable information has been obtained. It is believed that many tobacco growers have made full use of this information, but it was nevertheless felt that there was room for an unusually intensive campaign of extension work last summer to ensure as widespread an adoption as possible of cultural practices best calculated to increase production. Under these circumstances it was decided to suspend the experimental programme during the 1940-41 tobacco season. Nevertheless, some reference has to be made now to successful tobacco experimental work, but such reference deals with certain 1939-40 experiments, the final returns from which were not available in time to permit of their discussion in last year's report.

Varietal trials gave some indication that, under prevailing seasonal conditions, Gold Dollar was the most promising variety in the typically poor soils of North Queensland, while Kelly gave the best results on the more fertile soils. Normal and heavy fertilizer applications were contrasted in these varietal trials, but no significant increase in yield was obtained over that produced by a normal application at the rate of 600 lb. per acre. In a fertilizer formula experiment an application at the rate of 25 lb. of nitrogen, 80 lb. of phosphoric acid, and 50 lb. of potash per acre produced the best results. All the tobacco experimental work was carried out in co-operation with the Agriculture Branch.

COTTON INVESTIGATIONS.

Cotton investigational work has already been discussed when giving consideration to plant-breeding activities, and it will again be referred to when the entomological and soils work of the year is being reviewed. It is appropriate at this juncture, however, to mention the fact that the staff of the Plant Physiology Section of the Division is now associated with certain aspects of cotton work. This section originally concerned itself almost exclusively with pineapple problems, but the progress made therein in recent years has been of such a satisfactory nature as to justify a partial transfer of attention to other crops. The papaw has accordingly been included in the section's programme during the last year or two and, in view of its great wartime importance, attention is now being devoted to physiological problems encountered in the production of the cotton crop.

SORGHUM INVESTIGATIONS.

The Division continues to be interested in both grain and saccharine sorghums, the divisional work thereon being conducted at the Biloela Research Station. An additional plant breeder has been transferred to that centre and sorghums will be included in his programme. Although adverse climatic conditions resulted in the sorghums being planted four weeks later than usual, quite satisfactory yields were obtained. Sugar Drip was the leading producer of green fodder in the saccharine sorghum varietal trial, and in a grain sorghum trial of the best varieties of previous seasons a Feterita x Kafir x Feterita hybrid and a Milo x Kafir hybrid gave heavier yields than the standard varieties. A Milo x Hegari hybrid slightly outyielded several early maturing strains of Kalo in a trial of some of the newer varieties of grain sorghums.

DECIDUOUS FRUIT INVESTIGATIONS.

The various fertilizer experiments in deciduous fruit orchards at Stanthorpe have been continued but, as indicated in last year's report, increasing importance is being attached to the organic matter and soil moisture supplies in the investigation of nutritional problems of the apple and pear in this district. With respect to the supply of organic matter, sufficient progress has been made in field experimental work to warrant the publication, at an early date, of a report dealing with cover crops suitable for Stanthorpe. Work on the "hen and chicken" phenomenon in Waltham Cross grapes has continued in association with the Fruit Branch; this season's results show that although a boron deficiency may not be exclusively responsible for the trouble, the application of substances containing this element will produce a definite reduction in the incidence of small fruit, and the applications have been responsible for a marked stimulation of the vines.

TROPICAL AND SUB-TROPICAL FRUIT INVESTIGATIONS.

It is now about five years since Nambour was selected as a major centre for tropical and sub-tropical horticultural research, and four officers, engaged wholly on such work, are

permanently stationed at that centre, which is also the headquarters of two officers of the Entomological Section who are normally working almost exclusively on insect problems of tropical and sub-tropical fruits. Time has proved the selection to have been a wise one, and field experimental projects of the Horticultural Section, which are actually located in the Nambour district, include work on the banana, citrus, pineapple, papaw, strawberry, passion fruit, beans, and coastal cover crops. Observational and laboratory work on other crops, at present of lesser importance in the district, is also included in the programme of the Nambour staff.

Banana nutritional studies are featured prominently in that programme, and although they are still in progress, the first phase of the work was completed late in 1940; a very comprehensive manuscript dealing with some of the results now awaits publication.

Citrus work has also been largely confined to nutritional studies, but these, of course, are of fundamental importance in the production of any crop. The experimental block at Mapleton has responded to nitrogen applications and pruning, but there is, as yet, no evidence of differences due to potash and phosphoric acid. The new experimental block at Gayndah is now progressing satisfactorily. Growth studies have again been carried out, and information, essential to sound fertilizing, irrigation, and cover cropping practices in citrus is being gradually accumulated. The investigation of lemon rind breakdown, the incidence of which is evidently subject to considerable seasonal fluctuations, made no progress during the year under review, simply because the trouble did not occur anywhere to any appreciable extent.

Good progress has been made on the problem of small fruit and poor setting in papaws and, in connection therewith, the fundamental importance of adequate pollination has been amply demonstrated. Attention is now being devoted to devising measures best calculated to ensure that such adequate pollination does take place.

Association has been maintained with the mango experimental work at Kamerunga, near Cairns, and at Oonoonba, near Townsville, and with the avocado work in South Queensland, two crops in which the work is largely the responsibility of officers of the Fruit Branch. Work on passion fruit has been confined to studying possible deficiencies in minor elements on several small observational plots.

PINEAPPLE INVESTIGATIONS.

The past twelve months have again been characterised by very considerable activity in pineapple investigational work, the more important projects being the investigation of soil deficiency problems, black heart, acetylene forcing of fruiting, the protection of fruit from sunburn, and the continuation of the large scale fertility trial established at Glasshouse Mountains in 1938 for a five-year cycle. These projects have all been handled by the Plant Physiology Section of the Division, acting in some cases in co-operation with the Fruit Branch.

It has now been clearly demonstrated that very small soil applications of zinc sulphate and copper sulphate will prevent the incidence of the "crookneck" condition of pineapples, which has been rather acute in certain sections of the Elimbah district. As neither of these materials is fully effective on its own, it would appear that a deficiency of two minor elements is involved in the problem. It may be that zinc and copper deficiencies occur in other pineapple districts, but to a lesser degree than at Elimbah, and twenty-three exploratory plots to test this possibility have been established between Redland Bay and Gympie on typical pineapple soils. A large-scale experiment at Elimbah demonstrated that the use of small quantities of zinc and copper in the fertilizer mixture to combat "crookneck" did not enable a reduction to be made in the other fertilizer requirements, and it also showed that, in this district, the most satisfactory results accrued when copper sulphate and zinc sulphate were mixed in the proportion of two parts of the former, by weight, to one part of the latter. A very comprehensive experiment, comprised of 252 plots, has been laid down at Glasshouse Mountains to further investigate the role of minor elements in pineapple production, the elements included in the experiment being zinc, copper, boron, magnesium, and arsenic applied singly and in various combinations.

The difficult problem of black heart in pineapple fruit seems to be yielding results at last, and it may soon be practicable to make recommendations for the control of this serious source of loss in pineapples harvested in winter and spring. The incidence of black heart is associated with a disturbance of the normal ripening processes, and freedom from the trouble has been obtained in controlled experiments.

Although the large-scale fertility trial at Glasshouse Mountains, which has been discussed in earlier reports, will not be finalised until 1943, it is already evident that it will be productive of much very useful information. The importance of an adequate supply of potash and of its influence on the effective use of nitrogen by the pineapple plant has been amply demonstrated.

The year's pineapple programme included further work on the use of acetylene for the forcing of blossoming, a practice which has recently increased considerably in South

Queensland. Field trials with various materials for the protection of pineapple fruit from sunburn were also undertaken, but the summer months were so unusually mild that no conclusive results were obtained, although some useful information was gathered regarding the durability of the materials tested and the ease with which they could be placed on the fruit to be protected.

VEGETABLE INVESTIGATIONS.

A report on the bean fertilizer experiments conducted during 1940 was published in the April, 1941, issue of the departmental journal, and it is pleasing to be able to record the fact that many bean growers have acted promptly on the suggestions contained in that report. Further trials are now under way to clear up those points on which information is still required.

Field experimental work demonstrated that the heart rot trouble in beetroot can be largely overcome by the application of substances containing boron.

COVER CROPS.

Small observational plots of varieties which may be suitable for use as cover crops in South Coastal Queensland were initiated at Nambour and Buderim, the Poona variety of cowpea and Gambia pea being the established varieties used for comparative purposes.

ESSENTIAL DRUG PLANTS.

Some work is being carried out at Nambour on native plants which may be a source of drugs at present obtained from abroad, and the raising of seedlings of certain introduced drug plants is also being undertaken. Both of these projects are being carried out in collaboration with and on behalf of the Council for Scientific and Industrial Research.

LEGUME INOCULATION.

The demand for cultures for the inoculation of legume seed has increased greatly during the past year, and the work necessitated by the supply of these cultures has been undertaken by the Plant Pathological Section of the Division. During the year, 436 cultures were supplied and some highly satisfactory reports of their value were obtained. Laboratory and glasshouse testing of the various strains available has been completed in Brisbane for a number of the more important legumes and is in progress with others. The range of legumes for which cultures are available is thus being steadily increased. The isolation of strains for the inoculation of lucerne is also being undertaken by the soil bacteriologist stationed at Atherton.

ENTOMOLOGICAL INVESTIGATIONS.

During the departmental year a large proportion of the time of the staff of the Entomological Section of the Division was devoted to investigational and advisory work on cotton pests. Five permanent officers stationed at Biloela, Rockhampton, Gayndah, and Toowoomba were engaged either wholly or largely on this work and, during midsummer, three of them were assisted by the appointment of temporary officers.

The investigational work in cotton entomology was designed largely for the purpose of determining the value of maize trap crops for the control of corn ear worm in cotton districts other than the Callide Valley, for ascertaining the practicability of anticipating insect pest outbreaks so that control measures can be promptly and effectively applied, and for determining the most efficient manner in which to use the molasses-lead arsenate spray for the control of corn ear worm in irrigated cotton. The maize trap crop procedure has given satisfactory results in recent years in the Callide Valley, admittedly years which were not characterised by general and very serious corn ear worm infestation; it was considered quite possible that it would be productive of less satisfactory results elsewhere, and the 1940-41 experiments indicate that such is the case. Some useful information was obtained regarding the time and frequency of application of the molasses-lead arsenate spray on irrigated cotton at Theodore.

The position with respect to forecasting insect outbreaks in cotton appears to be rather difficult in that conditions influencing the incidence of its pests, such as the corn ear worm, vary markedly from farm to farm, and a destructive larval population may develop within a few days and severely and quickly damage a very promising crop. Under these circumstances it is frequently difficult for the cotton-grower to assess the possibilities for himself and to apply the requisite insecticidal control in time. Departmentally, the position is not wholly satisfactory, because cotton-growing is scattered over such a wide area that departmental officers cannot maintain frequent personal contact with every grower and give him timely advice regarding insect pest control. At Stanthorpe, the Department has had in operation, for several years, a codling moth advisory service through which growers are advised just when to spray their trees for the control of codling moth, the advice being based on the fluctuations in the number of moths caught in traps at key centres in the district. Unfortunately, it is unlikely that a similar equally satisfactory

advisory service can be made available for corn ear worm control in the widely scattered cotton-growing districts. There is now evidence, however, that from time to time there may be justification for issuing a general recommendation for the application of an insecticide to cotton carrying a reasonable crop of bolls and squares; such recommendations would be issued after the occurrence of such an amount of rain as would be likely to lead to considerable egg laying by corn ear worm moths. The cost of the materials used in the molasses-lead arsenate spray is only two or three shillings per acre per application, and, with improved facilities for its use, there is some justification for protecting an actual crop of bolls on non-irrigated as well as on irrigated cotton.

Hessian covers for use in the control of banana rust thrips are no longer readily available, and the value of various types of brown paper bunch covers for this purpose was accordingly investigated during the year. The results of this work were published in the December, 1940, issue of the departmental journal and they show that single tubes of a moderately heavy unglazed brown paper with a D/C rating of 30 to 35 lb. are suitable for most plantations but that, in exposed areas, double tubes of a lighter unglazed brown paper with a D/C rating of 26 lb. are necessary. Nicotine dusts, of course, are also applied under the bunch covers.

The work on lures for the Queensland fruit fly was continued in citrus orchards in the Nambour and Gayndah districts, and the formula of a lure, composed of pollard and ammonia, was released for use at the beginning of the deciduous fruit season. Since then field experiments have demonstrated the value of yeast and ammonium carbonate, although, like the pollard-ammonia lure, this lure does not trap fruit flies exclusively.

Field experiments with combination sprays for the control of the bronze orange bug and scale insects were carried out at Montville. At Severnlea, in the Stanthorpe district, an orchard plot successfully demonstrated the efficiency of non-herbicidal cover success schedules recommended by the Department for the control of codling moth. The banana weevil borer predator, which was introduced several years ago, is increasing at a rapid rate, but an accurate assessment of its value has not yet been practicable. Work on strawberry thrips and mites has been resumed this winter in the Buderim district.

Considerable attention has been devoted during recent years to the insect pests of the tomato, the work having been carried out chiefly in the Rockhampton district. A report giving recommendations for the control of these pests, based on the work referred to, has now been prepared for publication.

The year has fortunately been free from outbreaks of the Australian plague locust; there were considerable emergences in spring from extensive egg beds in the Warwick and Kulpi districts, but these emergences encountered drought conditions which virtually eliminated the locust population. The spur-throated locust, however, has again been common in some sub-coastal localities, and one very large swarm was reported from the Roma district late in June. The occurrence of this swarm affords an opportunity for further testing control measures against this insect, which so far has been less easy to handle than the common plague species. Its control was investigated in the Theodore district, where it invaded cotton from Rhodes grass during the 1940-41 cotton season; useful information was obtained there but, as indicated, further work on its control is necessary.

Sorghum midge infestation has been unusually severe this year, particularly on the eastern Darling Downs. Losses have been consistently heavy in varieties which mature their tillers over a relatively long period, and it would appear that one line of attack in this problem might be the improvement of tillering habits in the commercial varieties. Direct control of the pest is obviously impracticable.

Insect infestation is responsible for appreciable losses in stored peanuts at Kingaroy, and as fumigation is not usually practicable in this case, experiments have been conducted with a paraffin-pyrethrum spray. A reasonably good kill of the insects concerned has been obtained, and attention can now be devoted to working out the details for the application of the spray. Wheat from the various receiving sheds on the Darling Downs was sampled to determine the extent to which infestation by the rice weevil takes place in the field; samples gave very little evidence in support of the commonly held belief that such infestation occurs.

The successful work on starch depletion by high ringing for the control of the powder post beetle has been extended to North Queensland, where certain timbers, such as red tulip oak, find a restricted market owing to susceptibility to attack by this insect.

The lantana leaf bug was once more responsible for seriously checking lantana in the coastal and hinterland country north of Townsville. Quite a number of colonies were liberated further south during the 1940-41 summer, and certain of these are showing some promise of success. Their liberation sites will be inspected during the early summer months of 1941, and this survey should give some indication of the possibilities of the lantana leaf bug in South and Central Queensland.

PLANT PATHOLOGICAL INVESTIGATIONS.

A second plant pathological field station was established early in 1941 by the transfer of an officer from Brisbane to Atherton. It is intended that this officer devote his attention primarily to the investigation of diseases which are inflicting severe losses on the Atherton Tableland maize crop. He will also act as a consultant on plant pathological problems in the far north.

The use of Bordeaux mixture for the control of citrus diseases was recognised some years ago as being attended by a certain measure of deterioration in the general health of the sprayed trees. The possibility of replacing Bordeaux mixture by some other spray, such as a home-made cuprous oxide mixture, was therefore explored in a series of field experiments initiated by the Plant Pathological Section of the Division in 1937. These experiments have shown that a home-made cuprous oxide mixture is an effective substitute for Bordeaux mixture in the control of a number of important citrus diseases, and that its use is not attended by the decline in general vigour that is associated with Bordeaux mixture applications. The results of this project, which has now been finalised, have been submitted for publication in the July, 1941, issue of the departmental journal.

An important piece of work on latent infection in tropical fruits was finalised early in the 1940-41 season. Immature bananas were inoculated in the field by *Gloeosporium musarum*, and it was shown that the organism could remain latent for as long as five and a-quarter months and then resume activity and produce typical anthracnose lesions as the fruit ripened. The practical importance of the information obtained in this investigation is very considerable, because it explains previous failures to achieve satisfactory control of anthracnose of the banana by surface disinfection at the time of harvesting. The investigation also included the papaw and the mango.

An investigation of the value of the home-made cuprous oxide mixture for the control of ripe fruit rots in the papaw was continued from last year. Two spray schedules were under trial, one involving summer applications and the other summer and autumn applications. The results will not be available until the fruit is harvested in spring; they may be adversely affected because of the occurrence of latent infection demonstrated in the set of experiments referred to in the preceding paragraph.

A green fruit rot of pineapples caused considerable economic loss in a large North Queensland plantation. A species of *Phytophthora* was isolated from affected plants, and its relationship to the disease is now the subject of investigation.

A considerable amount of attention has again been devoted to tomato disease investigations, one of the most important projects being a comparison of the fungicides commonly employed for disease control. Varietal reactions to various tomato wilts also called for attention and involved co-operation with the plant-breeding staff. The cluster varieties of tomatoes grown during winter and early spring are affected by *Verticillium* and *Fusarium* wilts, and Salads, the variety most commonly grown, has been crossed with Riverside, which is resistant to both these wilts but fails to set fruit during the period mentioned. A varietal trial for *Fusarium* wilt resistance was carried out in the spring crop, and resistance to bacterial wilt was also tested in a series of similar trials. The co-operation of the plant breeders was again sought in connection with the bacterial wilt problem, and a breeding programme, which includes Sensation, Marvel, and some introductions from North Carolina, is being undertaken.

A preliminary survey of grain sorghum diseases indicated that smut might be considered to be potentially the most serious. An experiment was accordingly initiated at Toowoomba for the purpose of ascertaining the effect of various seed dressings on the incidence of this disease. Two mercurial seed dressings were also tested on each of the three varieties of cotton at Lawes, the objective being to determine whether such treatment effected an increase in lint production as had been claimed in an overseas report. This was not a plant pathological experiment, but it was allocated to the staff of the Plant Pathological Section in view of its close association with seed treatments for disease control. No results are yet available for the cotton-seed treatment experiment, but satisfactory results were obtained with three of the dusts used on sorghum seed, and, fortunately, these are the dusts commonly employed for wheat-seed treatment on the Darling Downs.

A small experiment was carried out to determine just how safe certain combination sprays would be if used in conjunction with apple powdery mildew control. The information was required as a preliminary to larger experiments which it is proposed to undertake in the Stanthorpe district.

The plant pathological staff was again responsible for periodic examinations of bean crops included in the departmental bean seed certification scheme. It would appear that a considerable quantity of certified seed will be available this year, and it is hoped that the scheme will henceforth make satisfactory progress.

A survey of phosphate requirements of exotic species of pines growing on the various reforestation areas in the Glasshouse Mountains district was carried out during the year. This was a sequel to the successful conclusion of the fused needle investigation discussed in last year's report. Further attention has been given to chlorosis in hoop pine nurseries, and experiments showed that sulphur applications to the seed-beds were beneficial; there was also some indication that watering with acidulated water effected an improvement.

BOTANICAL INVESTIGATIONS.

The activities of the Botanical Section of the Division are largely of an advisory nature, but time has been available for some investigational work on the flora of Queensland and a manuscript for inclusion in the "Contributions to the Queensland Flora" series is now available for publication in "The Proceedings of the Royal Society of Queensland." A paper on the *Myrtaceae* of the three Richard Archbold Expeditions to Papua and Dutch New Guinea was also prepared at the request of the Director of the Arnold Arboretum at Harvard and forwarded to him for publication.

This section continued its active and helpful association with the work of the Poison Plants Committee, and supplied the botanical descriptions required in published accounts of work on plants which had been demonstrated to be poisonous to stock.

The herbarium and botanical museum were maintained and considerable attention was devoted to the rearrangement of the former. In the course of that rearrangement herbarium monographic work was done on several genera and manuscript descriptions of rare undescribed species were prepared; this work may form the basis of an article for publication at a later date. Some valuable botanical material was obtained by way of exchange, both in Australia and overseas, but the disturbed world conditions led to a curtailment in exchanges with foreign institutions.

SOILS INVESTIGATIONS.

The staff of the Plant Physiology Section has again made progress with the programme initiated in 1937 for the purpose of elucidating problems in the selection and management of South Queensland pineapple soils. The results of much of this work have been published during the year in the departmental journal, but a further article on pineapple soil management is now being prepared. Another experiment was initiated for the purpose of ascertaining the extent, if any, to which nitrogenous fertilizers and leguminous cover crops can accelerate pineapple trash decomposition.

The officer seconded from the Soils Division of the Council for Scientific and Industrial Research for a period of two years has concerned himself with important soil problems in Central Queensland, paying particular attention to the irrigation of cotton. Much useful information of immediate practical importance has been obtained as a result of his investigational work.

One of the main projects on which the Soil Bacteriologist at Atherton is engaged is a survey of the Tableland agricultural and pasture soils, and this project is making satisfactory progress although much work remains to be done. The investigation of soil deficiencies has been actively pursued, maize, cowpea, and lucerne being used as the deficiency indicator crops.

TABLELAND EXPERIMENTS COMMITTEE.

Participation in the field experiments included in the programme of the Tableland Experiments Committee represented about half the year's work of the Soil Bacteriologist. This programme is a very comprehensive one and is a co-operative effort in which the Agriculture Branch and the Division are each represented by two officers. Maize, pasture, and silage problems constitute the bulk of the work, which will have to be continued for some time before final and clear-cut results can be obtained in what is a set of somewhat complicated problems.

APIARY WORK.

Apiary work during the year included a rather detailed inspection of the Wide Bay district, in addition to individual inspections elsewhere. A considerable volume of advisory work was also handled, and the administration of "The Apiaries Act of 1938" is now proceeding quite satisfactorily.

PUBLICATIONS.

A number of contributions, prepared by officers of the Division, appeared in *The Queensland Agricultural Journal*, and included the following:—

- (1) Pineapple Culture in Queensland, Chapters VI. and VII., by H. K. Lewcock.
- (2) Codling Moth Control—Report on 1938-39 Investigations, by Keighley M. Ward and J. L. Groom.
- (3) The Pineapple Soils of the Nambour, Woombye, and Palmwoods Districts, by L. G. Vallance and H. L. Wood.

- (4) Plant Breeding and the Production of Better Seed, by L. G. Miles.
- (5) The Plough Cultivation of Tobacco, by L. F. Mandelson and H. McNee (of the Agriculture Branch).
- (6) Brown Paper Bunch Covers for the Control of Banana Rust Thrips, by N. E. H. Caldwell.
- (7) Seed Inoculation of Legumes, by T. McKnight.
- (8) Maori Mite of Citrus, by N. E. H. Caldwell.
- (9) Some Queensland Couch Grasses, by L. S. Smith.
- (10) The Soils of the Nambour, Woombye, and Palmwoods Districts and their Suitability for Pineapple Culture, by L. G. Vallance.
- (11) Water Blister Disease of Pineapples, by T. McKnight.
- (12) The Lantana Leaf Bug in Queensland, by Robert Veitch.
- (13) Bean Fertilizer Investigations during 1940, by W. A. T. Summerville.
- (14) Suggestions for Conserving and Increasing the Production of Beeswax, by H. Hacker.

Contributions were also made to the Weekly News Bulletin, and an article, entitled "Latent Infection in Tropical Fruits Discussed in Relation to the Part Played by Species of *Gloeosporium* and *Colletotrichum*," was contributed to "The Proceedings of the Royal Society of Queensland" by J. H. Simmonds.

ROBERT VEITCH,
Director of Plant Industry (Research).

REPORT OF THE DIRECTOR OF AGRICULTURE.

SEASONAL.

During the period under review, seasonal conditions generally were not particularly favourable for crop production over the whole period. The first half of the year proved very dry indeed, and pastures and crops suffered accordingly. In most districts, however, good rains were recorded during December and January and again in March, and these were of immense benefit to pastures and market and summer fodder crops.

WHEAT.

Good early rains were experienced and sowings were carried out under excellent conditions. Generally, the weather conditions during the growth of the crop were favourable, and a good crop was harvested in most districts. This applies particularly to the Dalby and Pittsworth districts where the total quantity of grain harvested is reported to be at least equal to that harvested during any previous season.

In parts of the Maranoa and Warwick districts seasonal conditions were not so favourable and yields were lighter than is usual in those districts. The general harvest was carried out under very good conditions, and the quality of the grain harvested was particularly good.

The five leading varieties of wheat were Queensland bred. Altogether, varieties bred by the departmental wheat breeder represented 77 per cent. of the total area sown.

Departmental officers again co-operated with the State Wheat Board in selecting crops to be reserved for seed purposes.

MAIZE.

Production in maize-growing districts as a whole will be above average, and in some districts heavy yields are reported. These reports also indicate that both the total area sown and the total yield of grain for the State will be above average.

On the Atherton Tableland, yields were not as heavy as was earlier anticipated, due to prolonged wet weather during the time the crop was ripening and also during the harvesting period.

Seed maize selection work was carried out as usual and stocks of seed of a number of varieties were selected for distribution to farmers.

SORGHUMS.

The area sown to grain sorghums again showed a very substantial increase, and a keen demand existed for all grain that was produced. The value of the grain for stock or poultry feeding purposes is now more widely appreciated, and this, together with the fact that the shorter stalked varieties can be so readily harvested by machinery, is likely to encourage large-scale production of sorghums for grain purposes. This applies particularly to areas in which the rainfall is such that maize growing for grain purposes is not a safe proposition.

The value of the saccharine or sweet varieties for fodder purposes has long been recognised in the dairying districts, but there has been an increase in acreage sown during recent seasons for grazing for sheep.

A number of large-scale experiments were conducted in the various districts, in addition to which various plots were established for seed selection purposes. Trials of new varieties were continued.

Sorghum midge caused considerably greater damage to grain varieties during the period under review than in any previous season.

TOBACCO.

Results in all districts were not as good generally as those obtained during the previous year, the decline in production being due mainly to erratic seasonal conditions and damage by insect pests.

The area harvested was approximately 4,235 acres with a yield of slightly under 2,000,000 lb. of cured leaf.

The experimental programme which has been conducted over a number of years past was suspended for the season to enable field officers to pay farm-to-farm visits and make available to farmers information gained from experimental work of previous years.

PEANUTS.

Growers, on the whole, had satisfactory results, and in some instances very high yields were obtained.

The seed selection work which has been conducted by departmental officers for some years past has resulted in a very definite improvement in type of plant and quality of nut.

Large plots of these improved strains were established, and the resultant crops have been reserved for seed for next season's planting.

POTATOES.

Winter and spring rainfall was light and generally insufficient to promote good growth. On the whole, the spring crop was light on the unirrigated lands.

Crops grown under irrigation, however, yielded well, and quality of the tubers was very good.

Good rains occurred from November to January and conditions were favourable for the establishment of the main crop which was planted in February. Results from this crop generally were satisfactory, and the total yield for the State is estimated to be above average.

SOIL CONSERVATION.

The services of the departmental officer specialising in soil conservation work have been much in demand, and large areas of eroded land have been treated in the Greenmount, Pittsworth, and Felton districts. These demonstrations have aroused keen interest, and have been much appreciated by local landowners.

Further demonstrations are being conducted in the Pilton, Warwick, Oakey, Monto, and Kingaroy districts.

Field days were held at Pilton, Pittsworth, and Monto. A set of models prepared by the officer specialising in this work was displayed at the Rockhampton, Toowoomba, Ipswich, and Brisbane shows. These attracted great attention, and numerous inquiries regarding soil conservation have since been received by this Department.

During October and November, the soil conservation officer visited New South Wales to study various aspects of the work being conducted by the soil conservation service in that State.

FODDER CONSERVATION.

The increasing interest in fodder conservation has necessitated the construction of several additional sets of moulds for loan to farmers. This interest has been stimulated considerably by the display of models, which have been constructed by the departmental fodder conservation officer, at the Ipswich, Toowoomba, Monto, Mundubbera, Rockhampton, and Brisbane Shows.

It is pleasing to record that a greater number of requests for information on silage were received during the past year from graziers than during any previous season.

GENERAL.

Field officers in the various districts were responsible for a varied experimental programme in addition to their normal duties as advisory officers.

Some agricultural field officers also devoted a large portion of their time to encouraging increased cotton production with excellent results.

Plant introduction work was continued at the property reserved for that purpose at Moggill, and a large number of native and introduced legumes, as well as fodder crops, were grown.

CHAS. J. MCKEON,
Director of Agriculture.

FIELD REPORTS.

SOUTHERN DIVISION.

DARLING DOWNS.

During the first half of the period under review the rainfall was below average. Good rains during December altered the position considerably, and pastures and summer fodder and cash crops benefited immensely.

Summer crops made good growth throughout the growing season. Good rains late in the season also assured a plentiful supply of soil moisture on lands which had been prepared for wheat and other winter cereals. Early in the season, wheat crops in many districts made such rapid growth that feeding off had to be resorted to. Conditions throughout the growing period were fairly favourable, and a good harvest resulted. Weather conditions during harvesting were excellent and the quality of the grain was very good.

The maize crop was considered by many to be one of the heaviest on record, this being due largely to extensive sowings in the Warwick and Killarney districts, on lands which were originally prepared for wheat, but which were not sown with wheat owing to the lateness of the rains in those areas.

The yield of grain will be very heavy and the quality promises to be of a high standard.

The acreage under grain sorghums again showed a very considerable increase. Yields were below that of the previous year, due largely to damage by sorghum midge. The damage to many crops from this cause was very severe and was much more extensive throughout the whole district than during any previous season. The demand for the grain was again very keen, and it would appear that this demand is likely to be maintained in future seasons.

The total area planted to tobacco was 865 acres, 41 acres of which were grown for sun drying. Owing to a shortage of water for planting out, the area planted was not as great as was originally intended.

Weather conditions generally were not ideal, and yields, on the whole, were lighter than usual.

The total acreage harvested was 758 acres, or an estimated yield of 687,000 lb. of cured leaf.

Throughout the whole of the districts an increased quantity of fodder was conserved in the form of silage. On one property in the Dalby district approximately 900 tons have been stored in trenches and in two 100-ton silos which were recently constructed.

The pasture improvement work conducted at this centre has received much notice and accommodation, and the demand for planting material has been considerable.

Approximately twenty different kinds of grains are under trial, and more extensive trials of some of the most promising are contemplated.

In addition to ordinary instructional duties, a large experimental programme was carried out which included wheat observation trials, oat varietal and oat hay trials, onion varietal trials, harvesting trials with grain sorghums, grain and saccharine sorghum yield trials, grain and saccharine sorghum grazing trials, sorghum spacing trials, sorghum *versus* maize trials, and lucerne establishment trials.

Small trials with canning beans and soy beans were also conducted.

SOUTH BURNETT.

Although seasonal conditions were not favourable for crop production during the early months of the period under review, good rains were experienced in late November and early December.

These enabled farmers to carry out sowings of the chief summer crops, from which satisfactory results were obtained. Dry conditions again prevailed during February, and although crops suffered somewhat, good rains were recorded during March, which improved the position very considerably.

Serious erosion again occurred on some cultivated lands, but it is pleasing to record that an increased interest in soil conservation work is being shown by farmers as a result of the success which has followed the demonstration work carried out last season by departmental officers.

Peanut crops generally were very satisfactory and some very high yields were recorded. A very noticeable improvement has been effected in the type of peanut plant, and the percentage of runner type of plants has been greatly reduced. A total area of approximately 130 acres was sown with selected seed of the Virginia Bunch variety, and the resultant crop has been reserved for seed for the forthcoming season.

Maize yields over a large portion of the district were high. Early frosts caused some damage to late sown maize crops, but generally yields were very satisfactory.

Grain sorghum sowings showed a substantial increase, but many crops suffered severe damage from attack by parrots,

the damage in some instances amounting to complete destruction of the crop for grain purposes. Sorghum midge also reduced yields of late crops very considerably, and this, together with the damage as a result of parrot attack, is likely to check the rising popularity of this crop.

Fodder conservation has not been practised in this district to the extent it should be when it is considered how frequently shortages of feed occur. The difficulty in obtaining labour for silage making is, to some extent, responsible for this state of affairs.

General instructional duties were combined with a fairly large experimental programme which included yield and varietal trials of maize, sorghums, peanuts, oats, soy beans, and canning beans. Selections of both Virginia Bunch and Red Spanish peanuts were made for inclusion in trials during the forthcoming season.

Rhodes grass strain trials were also conducted in conjunction with officers of the Council for Scientific and Industrial Research.

GYMPIE.

The year commenced with extremely dry weather conditions, the light showers recorded during the spring and early summer months being sufficient to revive plant growth only temporarily. Good rains were recorded in December and January, and these promoted a luxuriant growth of pastures and fodder and cash crops. Because of the lateness of the season, however, and the fact that a hot dry spell during February caused them to run to seed, pastures were at their best for a very short period only.

Early sowings of maize generally yielded poorly owing to dry weather conditions, but good yields were obtained from the late or main crop, which encountered much more favourable conditions.

The spring crop of potatoes was light because soil moisture was insufficient to bring the crop to maturity. As a result of the shortage of seed from this crop, the main crop was not as large as usual, but results from this crop were generally satisfactory.

A number of seed maize improvement plots and seed maize propagation plots were established, and fairly substantial quantities of seed of several different varieties will be available for further plot work, and also for distribution to farmers. Yields from these plots were very satisfactory. Grazing trials and rust-resistant trials with oats were continued, and from these some very interesting information is being obtained.

Trials with soy beans and beans for canning purposes were also conducted.

MARANOA.

The season was one of striking contrasts, as the first half was abnormally dry and the latter half abnormally wet. A very cold winter followed by a dry spring was a serious limiting factor to the growth of pasture and crops. From December onwards good rains were experienced and pastures were in first-class condition. Rhodes grass on the scrublands made abnormally heavy growth. A definite increase in the Blue Grass types has been noticed in the ringbarked scrub country during the past two years.

Stockowners are showing a very gratifying interest in fodder conservation as an insurance against the ever recurring dry spells.

Both graziers and dairymen have conserved large quantities of fodder during the year, and it is estimated that approximately 2,000 tons of silage have been stored in the Roma district, 1,000 tons in the Chinchilla district, and a slightly lesser quantity in the Dulacca district. The trench type of silo was the most favoured.

The production of sorghums for feeding in the green state has increased enormously.

Weather conditions were not favourable for the production of winter fodder crops such as wheat, oats and barley. A wide range of summer fodder crops was sown during December and January, including Dwarf and Standard varieties of Sorghum, Sudan grass, Japanese Millet and Panicums, and exceptionally high yields of green fodder were obtained.

The wheat crop generally was light, and success was obtained only in those areas where conservation of moisture by summer fallows had been vigorously carried out. Early sown (March) crops made fairly good early progress, but dry conditions later caused a check in growth, and, in some cases, premature heading. Continued dry weather and a shortage of natural green feed compelled many growers who had lambing ewes to graze their crops off.

The experimental programme which has been conducted for a number of years past was almost entirely suspended so that as much time as possible could be devoted to encouraging increased cotton production.

Although the season did not break until late in November, there was a large increase in the area under cotton, and this would have been even greater if rains had eventuated in October. Excessive rains induced heavy growth of weeds which militated against high yields. A varietal trial was conducted in the Chinchilla district.

CENTRAL DIVISION.

BUNDABERG.

Seasonal conditions throughout practically the whole period under review were abnormal. The rainfall for the first six months totalled only 500 points, whilst that for the remainder of the year (January to June) was 3,373 points. The dry conditions which prevailed during the spring and early summer months had an adverse effect on tobacco crops. Planting out was delayed until December, and in some instances, as late as January. This necessitated resowing seedbeds which ultimately caused a shortage of suitable seedlings.

The reduction in acreage can be attributed mainly to the lateness of the season, and the resultant shortage of seedlings.

The total number of active growers was 16, the area harvested being 69 acres, from which a yield of 40,301 pounds of cured leaf were obtained.

Seasonal conditions were favourable for late maize crops, and many heavy yields were obtained. Yields of up to 80 bushels per acre were recorded, and it is of interest to note that these high yields were obtained from crops which were grown from seed selected from departmental strains.

Attempts which were made during the year to encourage stockowners to practice fodder conservation resulted in five silos being constructed and filled.

The increase in the area sown to the various summer and winter fodder crops during the past season was fairly considerable.

The area under potatoes was more extensive than during the previous season, but yields were light, due to dry conditions and poor quality seed.

The production in broom millet has increased considerably, and the yields and quality of the brush harvested have been highly satisfactory.

The attempts to produce grain sorghums in this district have not been very encouraging, as many crops were almost complete failures for grain owing to heavy damage by sorghum midge. Parrots also caused considerable damage, and as a result of the combined damage grain sorghum production in this district has received a very severe setback.

Excellent results have been obtained from trials with a number of different varieties of sweet or saccharine sorghums, and some very good yields were obtained.

In addition to the usual instructional duties, a considerable amount of time has been devoted to encouraging increased cotton production. As a result of these efforts the area under cotton was increased from 60 acres during the 1940 season to 1,300 acres for the 1941 season.

MONTO.

During practically the whole of the period under review, weather conditions were unfavourable for pastures and for crop production. The first half of the year was particularly dry, only 762 points of rain being recorded from June to December. During the rest of the year 14 inches were recorded, making the total rainfall for the twelve months less than 22 inches.

Sowings of summer crops were carried out after the usual rains which fell in late December, and considering the lateness of the season, the resultant crops generally were fairly satisfactory.

The area devoted to the production of grain sorghums showed a marked increase over that for the previous season, and considering seasonal conditions, the results were remarkably good.

Particulars of yields from a number of different crops were obtained, and these varied from 30 bushels to 60 bushels per acre. As a result of the trials which have been conducted to date, it would appear that sowing through every second grain run of a seed drill at the rate of 8 lb. of seed per acre is the most satisfactory method for the short-growing varieties in this district.

Damage by sorghum midge was much more serious this season than during any previous season. Considerable damage by parrots also occurred, and in some instances entire crops were completely destroyed.

On the more fertile areas fairly good maize crops were harvested, but on the poorer soils failures were common.

The area under fodder crops showed a considerable increase, and crops such as White Panicum and Japanese Millet have given excellent results when sown either alone or in conjunction with a legume.

Because of dry weather conditions, the spring crop of potatoes was very poor indeed, but some fairly good results were obtained from a late crop.

The following pure seed plots were established:—

Maize	..	..	..	4 varieties
Grain sorghum	..	..	..	4 varieties
Saccharine sorghums	..	..	..	2 varieties

Experimental work included sorghum varietal trials, varietal and grazing trials with oats, white panicum and poona pea.

During the year, the departmental fodder conservation models were displayed at the Gayndah, Mundubbera, and Monto shows.

ROCKHAMPTON.

Very dry conditions prevailed during the first five months of the year, but from December onwards conditions improved considerably, and good rains were recorded.

The usual heavy wet season did not eventuate, and consequently large waterholes were not filled at any time during the season.

Early sown maize crops were very poor, but fair results were obtained later in the season when quick-maturing varieties were sown.

The production of fodder crops for grazing and hay-making purposes is gradually extending. Sudan grass and White Panicum were very extensively grown for this purpose, and results generally were very satisfactory.

The area sown to wheat in the Callide Valley for grain production has declined very considerably, and last season did not exceed 500 acres. Owing to unfavourable weather conditions, and in many instances to hurried preparation of the land, crops were light, and the grain was suitable only for stock-feeding purposes.

Better results were obtained in the Dawson Valley, where an area of approximately 1,500 acres was sown, the yield varying from five to eight bags per acre.

It is estimated that the area under grain sorghums in the Callide and Dawson Valleys was approximately 3,000 acres. The grain varieties are now seldom grown in the coastal areas owing to ravages by the peach moth. Areas of the saccharine varieties were sown throughout the district.

Weather conditions delayed the main sowing of peanuts until January. Good results, however, were obtained chiefly in the Caves district, and the yield per acre and the quality of the nuts is considered much superior to that of the previous season.

Early sowings of pumpkins were not successful, but late sowings resulted in particularly heavy crops, and very large quantities have been stored in the hope that prices will improve.

On irrigated lands very good crops of potatoes were produced, but on non-irrigated lands crops were very poor.

The area being sown to lucerne is steadily increasing. Several areas, each 20 acres in extent, were sown during the past season.

During the year large quantities of hay were stored throughout the district, but fodder conservation in the form of silage has not been practised as extensively as it should be in this part of the State. The chief obstacle appears to be lack of suitable labour for the extra work which silage making entails.

An area of $\frac{1}{2}$ acre has been secured for use as a grass propagation plot, and approximately two-thirds of this area has been planted up with a large number of different grasses to provide planting material for distribution.

Tobacco pure-seed plots were established at Farnborough, Rockhampton, and Barcaldine.

Experimental work included four saccharine sorghum varietal trials, four sorghum versus maize trials, one grain sorghum varietal trial, twelve wheat varietal trials, a soy bean varietal trial, a lucerne trial, and a cow cane varietal trial. Two cotton varietal trials were also conducted at the request of the Director of Cotton Culture.

At the Barcaldine experimental area, the following work was conducted:—Pure seed tobacco plot, grain and saccharine sorghum varietal trials, and a lucerne establishment trial.

MACKAY.

Following abnormally heavy rains in August, the succeeding four months were extremely dry. From January to June very wet conditions prevailed and the season was one of the wettest on record, 92.87 inches being recorded at Mackay. Such conditions were unfavourable for crop production, but pastures made excellent growth and stock were in splendid condition.

The season has been one of the worst on record for tobacco production. A total of 56 acres were planted, but only eight were harvested. The saturated condition of the soil retarded fair growth, and conditions generally were favourable for the development of blue mould. Three wet seasons in

succession have now been experienced, proving the necessity for again practising early planting to avoid blue mould, which almost invariably attacks autumn crops.

The area placed under artificial pastures is steadily increasing, especially scrub areas, where molasses grass and para grass have given the best results. These grasses are now the most popular in the Funnel Creek, Koumala, O'Connell River, and Kungarri areas.

Para grass is also being planted extensively on cultivated areas.

Seasonal conditions were not favourable for maize production. Some fair crops were produced, but the quality of the grain in many instances was adversely affected by moulds caused by the continuous wet conditions.

Although potatoes are not grown extensively in this district, numerous small areas were planted during the year, but the seasonal conditions were unfavourable for heavy yields. Better cultural methods are now being practised, and growers are appreciating the necessity for hilling to reduce damage to the tubers by the potato moth.

Experimental work included pasture trials, saccharine sorghum varietal trials, observation and grazing trials with oats and a number of lucerne establishment trials.

NORTHERN DIVISION.

TOWNSVILLE.

Dry conditions prevailed over the whole district during the closing months of 1940. The wet season broke early in the new year, and continued until June, the rainfall for January being the highest ever recorded at Townsville. The long wet season promoted heavy growth of pastures over a considerably longer period than is usual.

Most potato crops were planted later than usual, but fairly substantial areas were again sown. It is estimated that approximately 500 acres have been planted, and good strikes were obtained. During the previous season, approximately 400 acres were planted, with a total yield of 2,000 tons of tubers. Individual yields were as high as 9 tons per acre.

The area under cotton has been increased considerably over the last few years, and at present about 1,000 acres are under this crop. The yield last season averaged from 1 to 1½ bales per acre, most of this being grown under natural rainfall conditions. One crop of irrigated cotton yielded 3 bales of seed cotton per acre.

Small areas of other crops such as maize, sorghum, broom millet, lucerne, and onions, have been grown with marked success. Some particularly good results have been obtained from lucerne.

In the Woodstock area, tobacco production has almost ceased, only one acre being grown. In the Bowen and Ingham areas, early crops grown under irrigation yielded well and produced good quality bright leaf.

Large areas of low-lying country have been planted with para grass, and the results have been so satisfactory that it is expected that during the forthcoming year over 1,000 acres of para grass will be established in the Ayr district.

A small introduction plot has been started, and a number of introduced grasses are now making very satisfactory growth.

The experimental work for the season included two potato fertilizer trials, one potato cultural trial, one Rhodes grass trial, three cotton variety trials, and 1 sweet potato variety plot.

MAREEBA.

Storm rains were later than usual, but these were followed by a period of better distributed and consequently more favourable monsoonal rains.

As tobacco-growers in the non-irrigated areas depend on the storm rains for the establishment of their crops in the field, their late arrival hampered planting-out operations to a considerable extent. The prospects for the tobacco crop up to the end of December were anything but bright, but the position was greatly relieved when good rains fell early in January. In many respects weather conditions this season have been most exceptional. The recording of only 55 points of rain for October is the lowest on record for the Mareeba district, and in only six other years out of the last forty-six has the recording been below 200 points. The normal rains followed a course different from usual in that they were regularly and more favourably distributed.

It is very gratifying to note that growers are now fully appreciating the necessity for an early and thorough preparation of tobacco lands. A considerable area of virgin land has been cleared well in advance, and the majority of old lands have been cleaned up to permit of an early spring ploughing.

Growers are also readily appreciating the importance of strict attention to seedling production. Few growers this season failed to take some precautions against blue mould and benzol retained its popularity. The disease situation was reasonably satisfactory.

Under normal conditions, the supply of seedlings raised would have been ample, but because of the dry conditions which prevailed during December, the loss of young transplants was enormous and a shortage of suitable seedlings resulted.

Many growers in non-irrigated areas planted out during December, despite the lack of rain, and the young plants remained practically at a standstill for some time after planting out. This, together with the fact that considerable damage was caused by leaf miner while the young plants were struggling to survive, was responsible for considerably reduced yields.

In the irrigated areas harvesting was practically completed by the end of January. Ripening of the leaf was uniform and good cures resulted. The leaf, although smaller than usual, was of good colour and texture.

In the non-irrigated areas, harvesting presented greater difficulties owing to irregularity of stands, and was not completed until the end of April. Generally, the cured leaf from the non-irrigated areas was of good size, quality, and colour, though much of it was somewhat marred by mould damage.

During this season farm grading came into even greater prominence than previously.

It was anticipated early in the season that at least 2,000 acres would be planted, but the area actually harvested was 1,860 acres for a total yield of approximately 600,000 lb. of cured leaf.

The demand for tobacco land at present is very keen.

During the year, experimental work was suspended to enable farm to farm visits being made for the purpose of making available to farmers the information gained from previous years' experimental work.

DIMBULAH.

The year as a whole could not be considered favourable for tobacco production, due largely to the erratic weather conditions and severe leaf miner infestation.

Light rains during November, followed by only 80 points in December, were not sufficient to give the young transplants a good start in the field. From January to March good rains were experienced, these being sufficient to bring crops to maturity.

Seedbeds established during September and October produced seedlings which normally would have been more than sufficient for requirements, but damage by insect pests and losses of transplants due to lack of early rains caused a severe shortage of good quality seedlings when more favourable planting conditions prevailed. The shortage of seedlings and the heavy damage in the field by leaf miner were responsible for a reduced acreage being harvested.

Benzol was used extensively, mainly under galvanised iron covers. The use of this type of cover, and the fact that these beds were frequently left uncovered for as much as three nights out of four, is no doubt responsible, to a large extent, for leaf miner gaining access to the seedbeds in large numbers.

With few exceptions blue mould was not responsible for losses in the seedbeds.

The acreage under irrigation showed an increase over that of the previous season, and it is estimated that an area of 250 acres was irrigated during the season.

Planting out on non-irrigated areas was commenced in November, and was completed in January.

Conditions early in the season were unfavourable for transplanting, and horse-drawn planters proved invaluable for watering the seedlings, as in most crops losses of seedlings were light where this method of planting was adopted.

In some instances the young crops were completely destroyed in the field by leaf miner.

Blue mould appeared in the field late in January and spoilt the appearance of much of the local leaf.

Curing proceeded normally, and some excellent leaf was obtained, the colour and texture being equal to that in any previous season.

Farm grading was more extensively practised this season than during previous seasons.

The total area harvested was approximately 1,400 acres, or a total yield of approximately 600,000 lb. of cured leaf.

REPORT OF THE DIRECTOR, BUREAU OF TROPICAL AGRICULTURE.

GENERAL.

Pasture investigations have formed the main work carried out by the Bureau during the year. In particular, attention has been devoted to the search for, and testing of, suitable legumes for grassland. Experimental work has also been carried out on the cultivation of—

- (1) Plants suitable for fibre production;
- (2) Medicinal plants.

PASTURE INVESTIGATIONS.

Grazing of the following legumes in $\frac{1}{4}$ square chain plots has been effected:—Calopo (*Calopogonium mucunoides*), Centro (*Centrosema pubescens*), Pueru (*Pueraria phaseoloides*), and Stylo (*Stylosanthes guyannensis*). Stylo has been grazed for twelve months in combination with each of the following grasses:—Common Guinea Grass (*Panicum maximum*), Purple Top Guinea Grass, Molasses Grass (*Melinis minutiflora*), *Paspalum dilatatum*, Kikuyu (*Pennisetum clandestinum*), *Brachiara brizantha*, *Brachiara decumbens*, and *Brachiara mutica*. (Para Grass). Results indicate that Stylo may have an important part in the development and improvement of grassland on the North Queensland coast. Experiments on the property of Mr. W. D. Davies, Innisfail, show that, given satisfactory harvesting machinery for Stylo seed collection, widespread planting of this legume may develop, particularly on the red acid soils of the North Coast.

Productivity studies with various promising grasses have been continued. A grazing trial with four strains of Rhodes grass is in progress. The broadcasting of Centro and Stylo through one series of replicates, without any land preparation whatever, has produced promising results.

GREEN MANURES.

Experiments are in progress to determine the relative values of Calopo, Centro, Pueru, Stylo, pigeon peas, and giant cowpeas as green manures under North Queensland coastal conditions.

SOIL CONSERVATION.

Contour terracing on a small hill at the foot of the Basilisk Range was completed during the year. A Caterpillar Twenty-two tractor-drawn plough was used to cut the terraces,

excepting the few steep portions near the summit. Perennial tropical legumes have been planted between the terraces. An investigation on the value of tropical legumes for the control of river-bank erosion along the South Johnstone River has been carried out. The results show distinct promise, and may be of value to the authorities concerned with river-bank erosion control.

PAPAW STRAIN TRIAL.

Various strains of papaw planted on contour terraces with a ground cover of perennial legumes are under trial.

FIBRE PLANTS.

During the year, attention has been given to the possibility of using the common North Queensland weed, Pink burr, *Urena lobata*, for fibre manufacture. Through the courtesy of the Council for Scientific and Industrial Research, the manufacture of a trial consignment of *U. lobata* fibre from South Johnstone by Edward Bentley and Sons, Pty. Ltd., Sydney, was arranged. The following extract is taken from the report received: "On the whole, we consider the experiment very successful, and think you should feel encouraged to make further trials, perhaps even to the extent of cultivating the plant."

Trial plots of the following plants have also been grown during the year, to compare their relative values for fibre production; three varieties of jute, Manchurian jute, Sunn hemp, and Deccan hemp. Good growth was obtained with jute and Sunn hemp.

DRUG PLANTS.

Plots of the following drug plants have been established at South Johnstone at the request of the Council for Scientific and Industrial Research: *Cephaelis ipecacuanha*, *Strychnos nux vomica*, and *Cinchona*.

AGRICULTURAL RESEARCH ON THE ATHERTON TABLELAND.

Contact with research work on the Atherton Tableland has been maintained and all meetings of the Tableland Experiments Committee have been attended.

J. LEEMING SCHOFIELD, Director.

REPORT OF THE DIRECTOR OF COTTON CULTURE.

The climatic conditions experienced during the season under review were variable, and as a whole were mostly unfavourable for the production of satisfactory yields of cotton. Severely dry conditions ruled in all districts from March to either the middle or the end of November. The preparation of the seed beds was therefore either seriously handicapped or, in many instances, not carried out. This resulted in a greatly reduced planting of the acreage that was anticipated, as well as mostly later planting than is suitable for obtaining highly satisfactory yields. For the rest of the season the rainfall experienced in many districts was either insufficient or barely sufficient to maintain satisfactory plant development, while in some districts extraordinary precipitations occurred which prevented the maintenance of satisfactory cultivation.

Departmental Programme.—The implementation of the Queensland Government's programme for the development of the cotton-growing industry on a scale commensurate with Australia's requirements for raw cotton, while handicapped by the adverse seasonal conditions, progressed reasonably satisfactorily. As part of the plan sixty individual irrigation plants were provided on either supplies of surface water or in wells, for the purpose of demonstrating the merits of growing cotton under supplementary irrigation facilities. While difficulties in securing equipment under the war-time conditions prevented installing all of the plants in time to allow of thoroughly satisfactory returns being realised, several co-operators obtained yields of 1,000 lb. or more of seed cotton per acre. The results produced have encouraged the Government to make financial provision for the equipping of an additional 100 plants during the coming season.

Acreage.—As a result of a comprehensive programme of propaganda conducted by both the Queensland Government and the Queensland Cotton Board, sufficient cotton seed was purchased to plant 73,500 acres, as compared with 45,000 acres in the previous season. Owing to the unfavourable planting conditions and the crop abandonment brought about by the adverse season, only 2,865 growers reported 50,876 acres as having produced cotton by the thirtieth of June, as compared with 2,076 growers and 40,962 acres at this date in the previous season. It is not anticipated that the total productive area this season will exceed 55,000 acres.

Yields.—Generally, only moderate yields were produced under the irregular conditions, although in some instances good results were realised. The yields obtained by most of the

farmers on the Theodore Irrigation Area, through practising proper cultural and irrigation methods, will show an improvement over those of the previous season. A total of 12,262,498 lb. of seed cotton was received by the end of June at the two ginneries operating, as compared with only 8,605,496 lb. in the same period in the previous season, and 12,108,491 lb. for the whole of that crop. It is estimated that approximately 17,000,000 lb. of seed cotton may eventually be received from the present crop.

Grades.—The grades of the crop received to the 30th June have, as a whole, been satisfactory, the absence of rain during April and May contributing to the obtaining of much high-grade cotton. The operations connected with the grading of the crop have again been carried out by the cotton graders of the Department of Agriculture and Stock.

Australia's Spinning Requirements.—The development of the cotton-spinning and manufacturing industries has continued to expand during the past twelve months. The value of having these industries within the country has been amply demonstrated under the present war conditions, much of their operations being related to defence purposes. It is estimated that fully 80,000 bales of raw cotton will be required in the coming year.

Biloela Research Station.—Although the very adverse seasonal conditions seriously restricted yields in most of the cotton experiments conducted at the Biloela Research Station, some informative results were obtained. The benefits to be realised from planting cotton only on cultivations in the first three years following the breaking up of grass land were once more demonstrated, even under the combination of lack of sufficient subsoil moisture at planting time, late planting, and a very dry growing period. As in the previous season, under the conditions of early December planting the quick-maturing Triumph variety outyielded all other standard varieties tested. The general stunted plant growth resulting from the dry conditions experienced placed a premium on treatments containing a large number of plants. Under the circumstances, 1-foot single plant spacing in rows $3\frac{1}{2}$ feet apart outyielded either 2-foot single plant spacing in the same row widths or 1-foot or 2-foot plant spacing in rows spaced $4\frac{1}{2}$ feet apart.

The value of growing cotton with supplementary irrigation facilities was amply demonstrated in the newly established irrigation investigational area at the research station. An average of 1,456 lb. of seed cotton per acre was produced on

the irrigation plots, as compared with only 420 lb. on the rain-grown plots. In a varietal trial of varieties considered to be suitable for growing under irrigation facilities, the lowest yielding variety produced 1,697 lb. of seed cotton per acre, and the highest averaged 1,909 lb. No significant differences were obtained between the spray and furrow methods of irrigation.

Pure Seed Operations.—Considering the seasonal conditions, satisfactory progress was made in increasing the seed supplies of improved strains of the most important varieties of cotton. Very promising results were also obtained in the cotton-breeding programme. These are described under the plant-breeding operations of the Division of Plant Industry (Research).

Instructional.—The field staff had a very busy season carrying out not only the usual extension, advisory, and experimental duties, but also supervising the growing of the areas under supplementary irrigation.

Insect Pests.—As has occurred in the past when the bulk of the cotton crops has been planted late, cotton pests have been fairly active in most districts this season. Corn ear worm

was prevalent in southern and coastal parts of the State, where weed eradication was hampered by more or less continuous rain during the early growth of the cotton crop. In the Callide Valley an unprecedented outbreak of the cotton looper took place between January and March, and the use of insecticides on an extensive scale was necessary to cope with it. Long periods of overcast weather during summer were favourable for the cotton jassids, which caused appreciable damage to, and in some districts prevented the development of, the top crop. In some districts where the top crop did develop normally, a considerable proportion of the lint was damaged by pink boll worm. Outbreaks of the spur-throated locust were reported from dry cotton grown in the Dawson Valley.

The seasonal importance of pink boll worm and the cotton looper again draws attention to the necessity for eliminating ratoon and standover crops. The focal points of the more important outbreaks of these pests this year were usually small areas of ratoon or standover, the yields from which were negligible compared with the losses experienced in adjacent plant crops.

W. G. WELLS,

Director of Cotton Culture and Senior Research Officer.

REPORT OF THE DIRECTOR OF FRUIT CULTURE.

Weather conditions throughout the year were irregular. The spring and summer were mainly dry, but late summer and autumn were unusually wet. In spite of this, however, most sections of the fruit industry showed progress. The exception occurred in the case of bananas, where, because of unfavourable climatic conditions and the production of about a million cases in New South Wales, growers experienced a difficult year. The Stanthorpe district experienced what was probably a record invasion of fruit fly, and large quantities of fruit were lost as a consequence; but for this loss, apple and pear growers would have had a good season. The crop was harvested under the control of the Australian Apple and Pear Acquisition Board set up under the National Security Regulations, and, although at first there was some opposition to the operations of the Board, it is generally realised that marketing conditions would have been chaotic and the fruit would not have returned anything like the prices realised if the Commonwealth Government had not taken control of the crop. The placing of heavy additional quantities of apples and pears and canned fruits on the Australian market because of lack of shipping space for export has naturally affected returns for other fruits, but generally not as seriously as might have been expected. Shortage of farm labour because of enlistments is affecting cultural operations in most districts and will necessitate restriction of production of some fruits and vegetables during the coming year. Additional staff enlistments and militia training caused temporary upsets in the work of the Branch, but by periodic adjustments it has been possible to maintain a reasonably efficient field and market service. During the year Volume 2 of *The Queensland Agricultural and Pastoral Handbook*, describing the production and marketing of Queensland fruits and vegetables, was completed and published and has added another link to the valuable collection of departmental literature on Queensland agriculture.

BANANAS.

The number of growers engaged in the industry rose by 43 during the year, making the total 2,369. The aggregate area under cultivation was 11,905 acres, compared with 10,829 acres for the previous twelve months. New plantings amounted to 2,363 acres, and eradications totalled 2,322 acres. Production reached 550,339 one and a-half bushel cases, which was about 12,000 more than the previous year. A combination of three main factors—unfavourable climatic conditions, labour shortage, and heavy New South Wales production—has resulted in growers concentrating cultural attention on the best plantations. Poorer areas as they further depreciate must be eradicated.

The persistent occurrence of bunchy top in new plantations on the North Coast each season, even though it might be only of minor incidence, is causing considerable worry. Officers are carefully patrolling the plantations where periodic outbreaks occur, and growers are being instructed how to detect and control diseased plants.

PINEAPPLES.

The production of pineapples has shown a steady increase for several years. During the year 1,456,684 cases were marketed as fresh fruit or treated at canneries. Considerable loss was again experienced during the latter part of the summer crop from the occurrence of water blister in consignments sent to the southern markets. In some instances the loss was 100 per cent. of a grower's fruit. Field officers have been endeavouring particularly to educate growers in the importance of sanitation on their plantation and in their packing-sheds as a means of minimising this trouble.

As a consequence of personal instruction and the conduct of periodical field days at departmental demonstration plots established in the various pineapple districts, the standard of pineapple culture is now generally high. Much experimental work is still being done in co-operation with the research officers in the field.

CITRUS.

In citrus districts, although the spring was dry, blossoming and fruit formation was good. Some shedding occurred after early summer rains, and this also caused the setting of much second-crop fruit.

The industry in the irrigation districts—Gayndah, Grantham, Lockyer, and Murphy's Creek—is progressing very well, and the acreage planted with young trees is steadily increasing. In the Howard-Burrum area, and also on the coast, good average crops are in sight for the coming season.

Last year's production showed a substantial increase over that for 1939. According to figures prepared by the Committee of Direction of Fruit Marketing, 460,000 cases were marketed, of which 73,800 cases were sent to interstate markets. Oranges and mandarins are produced in approximately equal quantities and represent about 90 per cent. of the total crop.

CITRUS BUDWOOD.

During the year departmental officers selected 162,000 citrus buds from approved trees and distributed them to registered nurserymen in Queensland. Additionally, 82 lb. of seedling lemon and 64½ lb. of seedling sweet orange seed were distributed for the raising of root stocks.

The budwood scheme was introduced in 1934, and in that year 51,625 buds were selected. The work of selection has more than trebled in seven years, during which period more than half a million buds have been distributed. Citrus trees of such a high standard are now available in Queensland that not only are local requirements being fully met, but 26,380 trees were sold outside the State in the course of the year to New South Wales, Victoria, Papua, and Ceylon.

AVOCADOS.

Avocado-growing is becoming an industry of more importance annually and production is steadily increasing. Assistance has been given to producers to form an avocado-growers' association, which is actively engaging the interest of its members in the marketing of only the best varieties of this fruit. As a consequence, growers are being urged to rework their poorer-type seedlings planted several years ago when the industry was commencing. As a result of experimental work done recently in Queensland, field officers are able to offer growers valuable advice in the selection of the best varieties and the best methods of reworking their trees.

OTHER COASTAL FRUITS.

Practically all kinds of Queensland fruits, other than those already mentioned, showed increased production during the past year.

Papaw production rose from 153,907 one and a-half bushel cases in 1939 to 185,965 cases in 1940.

Strawberries showed increased interstate railings from 441,504 to 493,712 pints.

Tomato production is estimated to have risen to 1,725,000 half-bushel cases—an increase of 138,000 cases over the previous year.

Passion Fruit and *Queensland Nuts* are becoming increasingly popular, and areas are being extended each year.

FRUIT PACKING AND MARKETING.

Fruit packing and marketing instruction was given to individual growers and at field days in all fruit districts as far north as Bowen. Packing classes were also continued at State schools in the main centres of production. The work of the fruit-packing instructor has been considerably strengthened by the introduction of a system whereby he is enabled to visit occasionally the Sydney markets, as well as the Brisbane markets, in order to personally observe the condition of the fruit upon its arrival at its destination. The officer is thus enabled to determine faults in the system of packing generally, and in the case of individual growers. It also has been possible for him to have a series of slides prepared from photographs he has taken for the purpose of showing growers the actual condition of much of their fruit upon arrival at the markets. This system of visual education should be of immense value to growers.

NURSERIES.

There are now 110 nurseries and 66 shops selling nursery stocks registered in Queensland. The quality of the trees and plants produced was generally good, and only on very rare occasions were condemnations necessary. Sales also were good, and, as a consequence, there was a shortage of citrus and rose trees, despite a greatly increased production over the previous year.

EXPERIMENTAL WORK.

Tomatoes.—Several experiments in connection with tomatoes were laid down during the year in the Redlands district. These were designed primarily to lower costs of production. The first experiment showed how acre production could be increased by 200 cases by varying the customary method of raising and transplanting seedlings. A special article outlining the methods employed was published in the *Queensland Agricultural Journal*. The second experiment was of a long-range nature to determine the optimum requirements of phosphoric acid for maximum production. Adverse influences operated against the carrying of the trial to a complete determination, but nevertheless some valuable information was gained on which to base further work for the next season. The third experiment was decided upon as the outcome of a series of soil analyses on a number of farms in the Redlands district. These analyses revealed excessive concentrations of potash and phosphoric acid in soils which had been heavily fertilized for years for successive crops of tomatoes and other vegetables. In the experiment, nitrogen only was applied to tomato plants, and a comparison of the weight of fruit obtained from plants to which heavy dressings of complete fertilizer had been applied showed that the plants receiving nitrogen only produced a crop equal to, and in some instances better than, plants receiving the complete mixture.

In the Bowen district the work of three years of crossing and selection of tomatoes to obtain greater solidity, colour, and disease-resistance in local strains is reaching an advanced stage. In the coming year promising types will be distributed to farmers for trial under commercial conditions.

The successful production of seed of selected varieties of tomatoes was also undertaken by the Fruit Branch for the first time. The seed was sold to growers in small quantities with the idea that it would form the nucleus from which growers would, in future, be able to select their own disease-free seed.

Avocados.—Investigations into avocado-growing have been continued, the work being mainly devoted to establishing root stock trial plots. In propagation trials it has been found that grafting gives more satisfactory results than budding.

Custard Apples.—Nurserymen have for some years found difficulty in germinating seeds of commercial varieties of custard apples in sufficient numbers to produce seedlings for propagation. As a result of Fruit Branch experiments, it has been found that seeds of the sour sop fruit germinate readily, and each fruit will yield upwards of forty seedlings. These produce an abundance of healthy fibrous roots, and as the

seedlings unite very readily with scions of the better varieties of custard apple, it is probable that another of the commercial nurserymen's problems has been solved for them.

Grapes.—The phylloxera-resistant grape stocks introduced to the Pinkenba-Myrtle town district in an effort to save the industry there continue to give so much satisfaction that many growers are now following the departmental recommendations. The stock varieties A.R.G. 1, 1202, and 420A are proving very successful. The A.R.G. 1 is most extensively used, but 420 A, although more difficult to grow from cuttings, gives promise of being the most vigorous.

In the Charters Towers district a variety trial plot of 78 vines, comprising six vines each of thirteen selected varieties on their own roots, was planted. Several of the selected varieties have made exceptional growth during the year, and are very promising. A further 70 vines have been grafted on resistant stocks in the Stanthorpe district, and will be planted next season at Charters Towers.

Pineapples.—Much assistance has been given to the Research Division in the conduct of experimental and demonstrational blocks of pineapples in the main producing districts, but, as the results will be fully reported by that Division, details are not quoted in this report.

In the Innisfail district, where cover cropping between rows of pineapple plants to shade the soil was tried in comparison with clean cultivation, it was found that fruit produced from rows between which cover crops of *Stylosanthes sunaica* had been planted was of larger size, and the plants were more vigorous than those planted in clean cultivated rows. The experiment indicated that soil cover with this crop between pineapple rows, and possibly also between other crops, has distinct possibilities. At Magnetic Island, trials to overcome black heart in pineapples have not been completed.

Kamerunga Horticultural Station.—All the fruit experimental work has now been transferred to this station from South Johnstone. Much of the preliminary clearing has been completed, and a mango variety orchard has been commenced. This orchard, when complete, will be composed of four grafted trees of each of fifty selected varieties, with the object of testing their commercial possibilities. A plot of more than 400 papaw plants, containing twenty strains, selections, and crosses made at the Bureau of Tropical Agriculture, has also been planted for future genetical work and observation. The plants were set out early in January, and about half have already commenced flowering. Some which failed to make such rapid progress were retarded by the long wet season.

Tropical Fruit Plot.—Tropical fruit plants set out in the Cairns Botanic Gardens during the early part of 1940 are well established and making good progress. The collection now includes fifteen of the lesser-known tropical fruits.

Mango Root Stock Trials.—The mango root stock trial at Oonoonba, near Townsville, is progressing, some of the trees being now 4 and 5 feet high. The more advanced trees flowered and set fruit, but this was removed at an early stage to enable the trees to develop a strong constitution.

Bananas.—In the Ayr district an acre of bananas planted by the Kalamia Estates was included in a simple trial to observe the respective behaviour of different types of planting material. It is anticipated that this will supply some useful fundamental data on banana-planting in North Queensland.

Passion Fruit.—In the Bowen district further crossing of the varieties *Passiflora edulis* and *Passiflora incarnata* and their hybrids has been made. About 500 plants of the second generation of this cross have been planted. Further selections and crosses will be made when these vines fruit, with the object of obtaining types resistant to disease and of prolonging the fruiting season.

Dates.—The two date experimental plots in the Central and South-West are making excellent progress, and several more palms are now fruiting. In dry seasons it seems probable that bunches will need to be protected from the ravages of galahs and other birds which destroy much of the fruit.

H. BARNES, Director of Fruit Culture.

REPORT OF THE DIRECTOR OF DAIRYING.

Seasonal conditions were not as satisfactory as during the previous two years. Severe drought conditions, which caused stock losses in some districts, were encountered early in the season.

Butter production for the year under review was 117,081,269 lb., and was valued at £7,517,172, compared with 139,795,042 lb., valued at £8,862,037 for 1939-40. Cheese production was 11,731,976 lb., valued at £390,000, compared with 13,841,405 lb., valued at £452,182 for 1939-40.

The industry has been fortunate during the first eighteen months of the war in being able to ship all the exportable surplus of dairy produce in accordance with the contract entered into with the British Government. For the ensuing year, increased volumes of whole-milk powder, condensed milk, and cheese will be contracted for. Second-grade and pastry

butter is now eliminated from the contract. Fortunately, the marketing section of the industry is strongly organised in Australia to meet changing circumstances.

By co-operative action the industry and the Department are fully exploring all avenues by which cheese manufacture may be expanded in this State. By implementing this change-over, the objective of reducing butter production will be partly achieved, while at the same time producers who are situated in cheesemaking localities will be assured of a more remunerative return for their produce, as the new Imperial contract is on a base of 7s. 2d. per cwt. (Australian currency) higher than for 1939-40. The progressive improvements made in cheese factory buildings, equipment, manufacturing technique, and milk supplies in the past three years have been most opportune, and will enable this section of the industry to face up to the requirements for a rapid expansion of cheese production.

Field days which were held at a number of centres during the year attracted good attendances, and keen interest was taken in the various lectures and practical demonstrations.

Considerable progress was made during the year in bringing farm dairy buildings and facilities into conformity with regulation requirements for the production of high-quality milk and cream. Because of the extension of the use of steam sterilisation and refrigeration on dairy farms, a building which will facilitate the adoption of these practices by permitting all dairy operations and milk or cream storage under a single roof was designed by officers of the Dairy Branch.

BUTTER QUALITY.

Butter quality showed a slight improvement over the results of the previous year, which may be considered fairly satisfactory in view of the effect on quality of the dry weather in the early months of the season. Since the British Government has announced the exclusion of inferior grades of butter from the Imperial contract for 1941-42, it is a matter for urgent attention by all connected with the industry that every effort should be made to reduce substantially the quantity of such butter produced in this State. It is conceivable that under normal marketing conditions in the post-war period low-grade butter will only be saleable at a price equivalent to that of margarine.

The following figures, which have been supplied by the Commonwealth Dairy Branch, indicate the quality of the butter graded:—

BUTTER, SALTED AND UNSALTED (INCLUDING PATS AND TINS).

Choicest.	First.	Second.	Pastry.	Total Boxes.
740,901	573,088	169,975	20,118	1,504,082
49.26%	38.1%	11.3%	1.34%	..

The butter improvement service, which provides for the regular scientific examination of the produce of all factories, has functioned successfully during the year. A marked improvement in factory hygiene and the manufacture of a butter of more uniform and economical composition has been attained as a result of this service.

CHEESE QUALITY.

The response of both manufacturers and producers to the departmental drive for improved cheese quality over the past three years has been most encouraging, and is reflected in the export gradings for 1940-41 when compared with those for 1937-38.

—	Choicest.	First.	Second and Third.	Total.
1937-38 ..	Crates. 462	Crates. 14,608	Crates. 25,868	Crates. 40,938
	1.12%	35.68%	63.2%	..
1940-41 ..	lb. 563,035	lb. 1,438,395	lb. 1,157,494	lb. 3,158,924
	17.82%	45.54%	36.64%	..

This progressive improvement is a most pleasing feature in view of the urgent necessity of effecting a rapid change-over from butter to cheese manufacture wherever practicable.

REPORT OF THE DIRECTOR OF VETERINARY SERVICES

During the year it has been possible to consolidate and improve the veterinary services supplied to stockowners of the State, and all departmental activities in connection with animal disease are now co-ordinated by the office of the Director of Veterinary Services.

However, owing to various influences connected with the nation's war effort, it has not been possible to achieve the same progress as would have been possible in normal times.

ANIMAL HEALTH STATIONS.

These stations have functioned as heretofore as centres for diagnosis and research and the supply of products (vaccines, &c.) for the prevention and treatment of disease, the extent of this latter being shown by the following figures:—

	Yeerong-pilly.	Ooonooba
Mammitis vaccine	26,766	Doses. 530
Calf pneumonia vaccine	1,074	..
Strangles vaccine	281	..
Blackleg vaccine .. .. .	..	2,010
Contagious pleuro-pneumonia vaccine	123,325	144,625
Tick fever blood	6,118	2,925
Acaprin	3,294	463
Agglutination tests	8,496	156
Specimens submitted	1,528	395

The systematic grading of milk and the payment of a differential price according to quality, which was introduced by two associations during the year, represents a forward movement of the greatest importance for the future stability of the industry.

Many associations have commenced applying periodical quality tests to milk supplies, but have not yet penalised the supplier of inferior milk by paying a lower price.

On the 1st January last a scheme for the examination of all cheese sold locally or for processing in addition to interstate sales was initiated, and has been particularly helpful to the factories whose output is utilised almost completely for processing and local sales.

Cheese graded for interstate, local, and process trades for six months ending 30th June, 1941—

Choice.	First.	Second.	Third.	Total.
lb. 69,053	lb. 1,709,197	lb. 677,395	lb. 32,306	lb. 2,487,951
2.77%	68.7%	27.23%	1.3%	..

PURE-BRED TESTING.

A total of 398 animals, representing the A.I.S., Jersey, Ayrshire, and Friesian breeds, qualified for entry into the Advanced Register of their respective herd books.

A departmental bulletin on bull-indexing, which is of particular interest to breeders as a guide in assessing the value of the sires used, was published.

REBATES OF FREIGHT.

Rebates of rail freight amounting to £303 1s. 7d. were paid in respect to the transport of sixty-nine pure-bred bulls purchased by dairy farmers.

GRADE HERD RECORDING.

Because of labour shortage, the grade herd testing facilities were not used so much as formerly. During the year 177 herds comprising 6,195 cows were tested, the average yield of butter-fat being 152 lb.

PIG-RAISING.

The drought conditions early in the year affected production, and the changes in the specifications of pig meats for the United Kingdom brought about a slump in the second half of the year. This came when the supply of live pigs was at its maximum, and caused operators to limit their purchases. Fortunately, the position improved during the last month of the year.

The statistics dealing with pigs slaughtered show a steady improvement in type and quality and record a further reduction in the incidence of disease, which suggests that improved breeding and better management has resulted in a higher standard of health and hygiene, and indicates in a measure the success of the instructional campaign.

During the year trials were carried out in the feeding of pigs with various proportions of maize or grain sorghum and meatmeal whilst grazing on lucerne.

A special correspondence course of instruction in pig-raising continues to attract attention, and at the close of the year 80 students were actively enrolled, making a grand total of more than 800 enrolments during the several years in which this course has been in operation.

E. B. RICE, Director of Dairying.

SPECIFIC DISEASES.

Cattle Tick and Tick Fever.—The past summer was particularly favourable for the propagation of cattle tick and, as a result, outbreaks of tick fever were more numerous than usual, animals in many districts having lost their resistance.

During the latter months of the year ticks, unfortunately, reached the normally tick-free Darling Downs on several occasions. Investigations have shown that certain of these outbreaks have been due to non-compliance with regulations, but in certain cases the manner by which ticks have reached these localities has not been elucidated. To trace the origin of these outbreaks presents considerable difficulty in view of the many movements of stock which take place, and the fact that the infestation may have been introduced by only odd, or a few, ticks, and months may elapse before a recognisable infestation is built up or detected.

As in past years a considerable amount of blood and some 54 bleeders were supplied from the Animal Health Stations, 144 stud animals being sent to either Yeerongpilly or Ooonooba for preventive inoculation. The practice of some owners in withdrawing animals from the station before they have passed through the ensuing reaction is to be condemned, as it stands to reason that the efficacy of the inoculation cannot be closely observed, whilst the risk of death from a severe reaction is greater.

At the outbreak of war all available supplies of acaprin (a German product) were purchased and supplies have been very seriously diminished by the heavy demand during the past year. A British firm is now manufacturing a drug (pirevan) which has been tested here and found to give equally good results. A substantial order for this product has therefore been placed.

Microscopical examination of blood smears at the Animal Health Stations shows that the prevailing cause of tick fever is *Babesiella argentinum*. Though *Anaplasma centrale* is widespread and rarely by itself causes disease, it is of interest that there were two instances during the past year of Anaplasmosis uncomplicated by other tick fever organisms.

A carefully controlled test of the claims of Mr. A. Qualishefski for his dip for cattle tick was conducted by a committee, on which there were representatives of the United Graziers' Association and the Selectors' Association, as well as departmental officers. The committee reported that none of the claims were substantiated.

At the request of the Council for Scientific and Industrial Research a series of experiments is in progress to determine whether tick fever carriers can be "sterilised" with acaprin—i.e., as to whether all tick fever parasites in their system can be killed and such animals cease to act as reservoirs of infection. Results, if successful, will be applicable in New South Wales, where the continued existence of such reservoirs presents a problem for the Federal Cattle Tick Commission.

Tuberculosis.—During the year the provisions of the Departmental tubercle-free herd scheme were revised, bringing them into line with recent scientific knowledge. The number of herds listed under this scheme totals 74, of which 45 are fully accredited.

It is pleasing to note that, in the case of many of the towns in the central and northern coastal districts, one or more of the local suppliers is in a position to supply milk from a tuberculin-tested herd.

In addition to these a large number of other herds have been tested by veterinary officers in all districts. These have been done to control direct losses in cattle from tuberculosis, or losses occasioned by condemnation for tuberculosis of pigs fed on milk from these herds. A number of tuberculin tests have also been undertaken by inspectors of stock.

Animals tested by veterinary officers numbered 25,613. Of this total 23,784 proved negative, 1,710 positive, and 119 suspicious.

The percentage of reactors to animals tested cannot be taken to indicate even broadly the incidence of tuberculosis, as many of the herds were tested because it was suspected that there was a considerable amount of tuberculosis in them. A number of herds from which the disease had been eliminated as a result of previous tests, and which were being retested to check up on their disease-free state, are also included in these figures.

The Council for Scientific and Industrial Research have been assisted in their researches concerning the application of the Complement Fixation Test by the supply of large numbers of blood samples from both diseased and healthy animals.

A British tuberculin (P.P.D.) was the subject of trials by the Senior Veterinary Surgeon.

Synthetic medium tuberculin is now being used by all veterinary officers. This product is more satisfactory than any product heretofore available.

Seven herds have been compulsorily tested, five following the finding of living tubercle bacilli in the milk, one because it had been suspected that cases of tuberculosis had been contracted as a result of consumption of milk from the herd in question, and one because of other evidence pointing to a high incidence of the disease in the herd. In all cases a high percentage of reactors was found and the diseased animals destroyed.

In addition to tuberculin testing, much advisory work on the dangers of the tuberculous animal and the prevention of this disease is undertaken by veterinary officers and inspectors of stock.

Bovine Contagious Abortion.—As in all dairying countries, this disease is all too prevalent and there is great need for a less costly means of combating it. The ideal state is a disease-free herd, but the disease has obtained such a strong hold in many herds that owners cannot afford to take the radical step of testing and eliminating all reactors and having the herd retested as necessary to eliminate the disease.

Nevertheless, there are 28 herds embraced in the Departmental abortion-free herd scheme, of which 13 are fully accredited.

As the disposal of reactors through the saleyards and their introduction into other herds is calculated to spread the disease, the policy has been adopted of requiring that all reactors be disposed of by immediate slaughter or speyed for fattening and later slaughter.

Porcine Brucellosis (Contagious Abortion of Swine).—Though the germ causing this disease is very closely related

to that causing abortion in cattle, the two diseases are to be regarded as distinct and except in rare instances are not inter-communicable.

To prevent its further spread occurrences of the disease are being sought out and all suspected cases submitted to the agglutination test, reactors being slaughtered.

To protect our stock it is now required that all pigs introduced into Queensland, unless they are for immediate slaughter at the Cannon Hill Abattoirs or a bacon factory, shall have come from a fully-accredited herd or shall have been twice tested at an interval of not less than thirty days and maintained in isolation since the first test. (New South Wales requires the same provision for pigs introduced into that State.)

To assist in the control of the disease a porcine brucellosis-free herd scheme has been inaugurated, and already two studs have been accepted under it. In addition to freedom from the disease, animals from such herds will be eligible for introduction to New South Wales without further testing.

Contagious Bovine Pleuro-pneumonia.—The recorded outbreaks of the disease during the past year numbered twenty-eight, and of these one originated in cattle introduced from the Northern Territory. Over a not inconsiderable part of the State, however, the disease is endemic, though occurrences of the disease are limited, particularly in travelling stock, by inoculation.

Whilst over 250,000 doses of vaccine are distributed from the Animal Health Stations annually, it is felt that the greater use of this vaccine, and particularly systematic annual vaccination of all cattle in districts where the disease is endemic, would lead to a lessening of cases of this disease. This procedure is therefore recommended.

Buffalo Fly.—Although control work was most satisfactory inasmuch as the fly was never carried away from the infested area on travelling stock, natural spread during the past wet season in the Gulf country led to the fly extending to cattle in country not previously involved. An extension of the declared infested area thus became necessary, and a further outlet (with spraying race) has been provided for cattle from infested properties.

As the pest has now spread further along the eastern side of the Gulf of Carpentaria and its hinterland, the danger of the fly ultimately reaching the coastal country of the eastern seaboard is greater.

Worry of cattle by buffalo fly was much in evidence, particularly in recently-infested areas along the Norman, Flinders, and Gilbert Rivers.

An extensive series of investigations by an entomologist were conducted in the buffalo fly area during the year, whilst a considerable amount of research into sprays has been undertaken. A trap for buffalo fly, designed on the same principle as the American trap for horn fly (also a species of *Lyperosia*), has been constructed and will be tested during the coming year.

Sawfly.—Losses occur in cattle as a result of eating the decomposing larvæ which congregate at the base of the host tree, the silver-leaved ironbark. All these were in the area previously known to experience this trouble, and though a fear has been expressed that the pest is spreading, a careful review of the problem gives reason for believing that the trouble will remain a local one.

As the malady requires further investigations, plans for undertaking these during the coming season have been developed.

Swine Paratyphoid.—The occurrence of a septicaemic disease of pigs, marked by extensive reddening of the skin and rapid death, is probably no new thing in Queensland, but when the opportunity presented itself during the year of investigating material from two outbreaks the identity of the disease was established at the Animal Health Station, Yeerongpilly. It proved to be swine paratyphoid. A chronic form of this disease, prominent symptoms of which are scouring and unthriftiness, has been seen on other occasions.

Swine Pneumonia.—Losses from this disease do not seem to have been unduly severe.

Pullorum Disease of Poultry.—The usual annual testing of registered hatcheries has been undertaken by officers of the Poultry Branch, the antigen used being supplied from the Animal Health Station, Yeerongpilly.

Anthrax.—This disease has never been recorded in stock in Queensland. Following the occurrence in Central Queensland of a case in a human subject, under circumstances which suggested infection from an animal source, an extensive field investigation was undertaken. Material from certain mortalities which had occurred in sheep was submitted for bacteriological examination, but no evidence of the occurrence of a mortality due to anthrax having occurred in cattle or sheep could be obtained.

Sterility in Dairy Cattle.—In all dairying districts there is more or less trouble from cows failing to breed regularly, the unduly prolonged "dry" period resulting in economic loss. All field veterinary officers are frequently called upon to

advise on this matter and find that it is a temporary sterility which, by appropriate action, can be overcome. It demands, however, conscientious and persistent treatment.

Lice in Sheep.—The areas of the State in which both the more serious form—the body louse—and the less common form—the foot louse—occur, were surveyed during last year and a map showing the distribution of each published in *The Queensland Agricultural Journal*. The seriousness of lice has been brought before stockowners and necessary measures taken to prevent the spread of lice to properties where they do not occur. It is pleasing to note the greatly increased number of dips in the areas concerned, for without these effective control cannot be exercised.

Strangles.—In certain northern areas this disease was widespread amongst station horses, strangles being also reported from other districts.

Mackenzie River Cattle Disease.—During the year an extensive investigation was undertaken into a complaint which, over a number of years, has been observed to occur in the eastern part of Central Queensland, and more particularly in country on the watershed of the Mackenzie River. As the cause is not yet known, it became necessary to give it some name for reference purposes, and the name Mackenzie River cattle disease was applied. Whilst most common there, it does not occur in all country on the Mackenzie River, and it is also present in country watered by other rivers.

The indications are that the disease is not infectious, and therefore is not likely to be carried to other districts.

Further investigations in the area are planned for next year.

St. George Cattle Disease.—This again is a disease which is no new one but whose cause has not yet been ascertained. Apparently it is a local disease, confined to an area between the western line and the southern border of the State, but as often happens in such cases, not occurring on all properties in the area concerned. Again, a "place" name has been applied for identification purposes, though the objections of such terminology are well recognised. It is intended to apply a scientific name when the cause has been ascertained. Unfortunately, a suitable opportunity for investigation has not yet presented itself.

Tetanus.—The policy of recommending, and in some cases arranging for, immunisation of horses with toxoid has been continued, particularly in North Queensland.

Internal Parasites.—Several older and now obsolete methods are still being used for the treatment of worms in animals despite the large amount of research work which has been undertaken. To enable stockowners to know the best methods a list of Departmental recommendations for each particular parasite has been issued.

Probably the greatest advance in treatment of recent years has been the discovery, primarily and largely as a result of investigations by the Departmental Parasitologist, Dr. F. H. S. Roberts, of a thoroughly satisfactory treatment for nodule worm. The drug in question is, moreover, of equal value against other stomach and bowel parasites, so that it may be termed an "all purposes" drench.

Unfortunately, this drug is not at present manufactured in Australia, but it is hoped that it will be, for there is no doubt that, notwithstanding its relatively high cost, the effective value is such that its use must become general in districts where nodule worm occurs.

Research work has been continued in regard to nodule worm and pig and poultry parasites, and the utilisation of phenothiazine for animals other than sheep.

Poison Plants.—The Poison Plant Committee has continued to co-ordinate poison plant investigations conducted by scientific workers of the Department and the University of Queensland,

the work being subsidised by the Australian Wool Board. Much valuable work has been undertaken, and among results obtained during the year are—

- (a) Proof of the toxicity of *Trema aspera* and *Trema virgata*, two forms of wild peach;
- (b) Recognition of the poisonous action of *Myoporum acuminatum*, a native shrub or tree, the danger of which had not hitherto been even suspected, and of *Pimelea tetrastachya*, a broom bush, common in the sheep country of Western Queensland;
- (c) A survey of the native couch grasses, with recognition of the harmfulness of those which are cyanogenetic and thus may poison stock;
- (d) The finding that an introduced couch grass, *Cynodon plectostachyum*, when grown in the drier areas of Central Queensland, may develop poisonous properties;
- (e) Proof of the toxicity of *Solanum Seaforthianum*, and *Phyllanthus Fuernrohii*. As these plants are apparently obnoxious to the palate, however, it seems unlikely that they would be eaten by sheep under natural circumstances.

Sheep Blowfly.—That State extension officers may have first-hand knowledge and experience in the most modern methods of combating fly strike, the Council for Industrial and Scientific Research has recently conducted two schools of instruction at the Animal Husbandry Farm, near Sydney. The instruction imparted was essentially practical and the schools were attended by four officers of this department.

All these officers in the near future will, at subsidiary schools and field days in the sheep-raising districts, demonstrate these methods to sheepowners and others engaged in combating this pest. Further, as three of these officers will in future be resident in sheep districts, and as other officers are being instructed in these methods, stockowners will be able to obtain advice or demonstration in combating fly from the local veterinary officer, sheep and wool officer, or inspector of stock.

PUBLICATIONS.

Several articles, embodying the results of research work, have been published by members of the staff in scientific journals. Articles are also regularly contributed to *The Queensland Agricultural Journal*, whilst a number of leaflets, both printed and reneued, have been prepared for distribution to stockowners.

CONFERENCES, &C.

Meetings of the Australian Animal Production Committee of the Australian Agricultural Council have been attended as representative of Queensland.

In May the State was represented at a conference of Commonwealth and State veterinary officers. Measures for prevention of the introduction of disease and for the control of animal disease in Australia were reviewed with a view to improved control in the future.

To arrive at the most appropriate lines of action and to afford officers the opportunity of consultation and exchange of views, a conference of those veterinary officers who could conveniently be got together was held during the year.

CO-OPERATION WITH STOCKOWNERS.

For best results in investigation and control of disease, the full co-operation of stockowners with departmental officers is necessary. Co-operation of individual stockowners and associations of stockowners has been sought and given. Besides being mutually helpful such co-operation promotes confidence and better understanding, without which full and proper application of veterinary science to animal industry problems cannot be established and maintained.

H. R. SEDDON,
Director of Veterinary Services.

REPORT OF THE CHIEF INSPECTOR OF STOCK.

During the period under review, the pastoral districts were favoured with good seasonal conditions, and, generally speaking, stock were in good condition for winter following the excellent late summer and early autumn rains, which produced a good herbage growth.

Preliminary figures of livestock in the State on the 1st January, 1941, are as follow:—Sheep, 24,000,000; cattle, 6,300,000; horses, 445,000; pigs, 450,000.

The cattle population is the highest for fifteen years. The number of sheep remains high and a remarkable record has been reached with pigs at 450,000. This total has been rising steeply since 1919, when it was 100,000. The figure for horses remains constant, and there were 577 of this class of stock exported overseas during the last twelve months.

Fat cattle during the year have realised good prices and stores have been in demand, with Southern buyers also operating.

Horses of good quality, particularly draughts, have been in keen demand at good prices. With increased petrol restrictions it is anticipated that this class of stock will be more sought after.

There has been an increase in the volume of interstate stock movements in the past twelve months.

Precautionary measures to prevent the spread of the buffalo fly have been maintained, and a further extension of the quarantine area has been gazetted. This has necessitated the erection of a spray at Gilliat.

It has been found necessary to institute 41 prosecutions under *The Diseases in Stock Acts*, and convictions have been obtained in each case.

The registration of all cattle and sheep dips in the State has been completed.

TICK CLEANSING.

Operations in the Helidon, Crow's Nest, and South Burnett areas have been continued, but have been somewhat hampered by a depleted staff. Progress has been made in the Cooyar-Yarraman section, and an extension of the area has been made.

An effort is being made to have portion of the South Burnett area taken out of Schedule S and placed in Schedule T. This, if given effect to, will be beneficial to stockowners in that area who have assisted in freeing their country of ticks and maintaining it in a clean condition.

QUARANTINES.

There were twenty-eight outbreaks of contagious pleuropneumonia during the period under review, and the properties infected were placed under quarantine restrictions.

"THE SLAUGHTERING ACT OF 1898."

The Slaughtering Act and Regulations has been administered in such a way as to ensure a clean and healthy supply of meat to the public. Fourteen prosecutions were instituted and convictions obtained in each case.

The Regulations governing slaughter-yards are being observed satisfactorily, and nine new slaughter-houses have been constructed.

Regularity in the inspection of butcher shops has been maintained and satisfactory conditions prevail. Thirteen new shops have been constructed throughout the State.

BRISBANE ABATTOIR AREA.

The usual supervision over the butcher shops in the metropolitan area has been maintained, and, generally speaking, these shops are kept in good condition. Vehicles have also been subjected to regular inspection, and some reversion to the horse-drawn type has been noticed, this being due to the present exigencies. There has also been an increase in the tricycle method of delivery.

Several cases of illegal slaughter have been investigated, and one case was brought before the Court, where a conviction was made.

Details of the registration of metropolitan shops and vehicles are as follow, the figures for 1939-40 being shown in brackets:—Butcher shops, 302 (307); delivery vehicles, 466 (464); cash carting carts, 56 (63).

BACON FACTORIES.

The number of pigs treated at bacon factories totalled 457,012, as compared with 429,498 in 1939-40 and 355,103 in 1938-39. The export total rose from 110,127 in 1939-40 to 130,322 in 1940-41.

In addition, 28,327 cattle and 15,391 calves were slaughtered at bacon factories.

Condemnations for tuberculosis numbered 3,108 carcasses and 21,930 heads. In 1939-40 the figures were 2,612 and 27,882 respectively.

Follow-up work in the field is constantly being undertaken in an effort to eliminate the source of infection by tuberculosis on the farm.

STOCK SLAUGHTERED AND CONDEMNED AT THE BRISBANE ABATTOIR.

Stock slaughtered at the Brisbane Abattoir for the home markets numbered 745,951, of which 13,579 were condemned.

SUMMARY OF STOCK SLAUGHTERED.

The following is a summary of all stock slaughtered throughout the State for home consumption. It is exclusive of stock killed for export purposes and those killed on farms and stations for private consumption:—

Inspection.	Bullocks.	Cows.	Calves.	Sheep.	Swine.
Bacon Factories..	8,327	20,000	15,391		326,690
Brisbane Abattoir	49,430	81,305	98,312	478,690	38,214
Departmental Inspectors	41,170	101,239	22,640	274,784	46,148
Police—Acting Inspectors	25,500	44,623	7,989	72,936	15,031
Totals ..	124,427	237,167	144,332	826,410	426,083

L. D. CAREY,
Chief Inspector of Stock.

APPENDIX A.

SHEEP AND WOOL BRANCH.

During the first six months of the year very little rain was experienced over the sheep pastoral areas of the State. The Central and North-Western areas, however, had a good carry-over of dry grasses, especially Mitchell grass, which maintained condition very well. The South and South-Western areas suffered from lack of even sufficient dry feed, and scrub and supplementary feeding had to be resorted to. Good mid-summer rain occurred over the whole of the pastoral areas of the State, developing into record registrations and much flooding in many of the Western districts. These rains resulted in a vigorous growth of grass and herbage. In the areas improved in recent years by ringbarking a rank growth resulted to the detriment of the wellbeing of the sheep.

Practically the whole of the sheep districts of the State are now in good order for this period of the year and are safe for several months to come. The health of the flocks generally suffered to some extent because of dry conditions in the spring and excessive rainfalls and cloudy conditions in the autumn. With these wet conditions were associated a lengthy period of fly strike and an extension of worm infestation, resulting in drenching in areas where it was never before necessary. The state of the pastures in many districts made it difficult to work sheep, while in the flooded areas mustering for treatment was impossible.

Lice have been spreading further West, but most graziers realise the advantage of keeping their flocks free and are erecting dips or sprays to control them.

The demand throughout the year for store ewes and wethers was dull, while old sheep were difficult of sale even at low prices.

The supply of fats to Cannon Hill was irregular in keeping with seasonal conditions. An unsettled market resulted.

FAT LAMB RAISING.

Fat lambs were at a payable price throughout the season. Extremely high prices were obtained from time to time when supplies were inadequate to meet the demand. A summary of the sales, compiled from particulars collected from some of the growers under the fat lamb scheme, discloses the following prices for lambs from all breeds of ewes from the rams indicated:—

Rams.	Lambs.	—		Averaged:
		£	s. d.	s. d.
Southdown	2,877	2,769	4 10	19 3
Border Leicester	4,030	3,727	1 3	18 6
Dorset Horn	2,188	1,976	1 7	18 1
Ryelands	287	269	1 3	18 9
Corriedale	261	197	17 3	15 0

Following is a comparison of results from the three principal breeds of British rams when used in the crossbred ewe flocks (including Corriedales) and from merino ewes:—

Rams.	Ewes.	Average Price.	Ewes.	Average Price.
		s. d.		s. d.
Border Leicester ..	Crossbred and Corriedale	19 4	Merino	17 7
Southdown ..	Crossbred and Corriedale	19 7	Merino	17 7
Dorset Horn ..	Crossbred and Corriedale	20 2	Merino	15 4

The average price secured at the various sales held during the year for the 9,643 lambs from all ewes under review was 18s. 6d. per head. The average prices secured varied from sale to sale and these fluctuations influence the returns from the Dorset Horn x merino lambs in particular. The five breeding trials linked with the scheme were greatly hampered by the dry conditions prevailing in the early summer, but these trials promise to provide useful details as a result of late matings. The greatest progress in fat lamb raising is being made on the Darling Downs, but satisfactory returns have been secured by breeders outside this area.

FARMERS' WOOL SCHEME.

Under this scheme wool is received from—

- (a) Holdings of less than 1,500 merino sheep;
- (b) Crossbred or British breeds from any holding;
- (c) Bags, butts, or mixed bales from any holding;
- (d) Unclassed wool from our selling agents.

The scheme provides for a useful service to small owners, as all wool is correctly classed by qualified classers and on receipt an advance of 60 per cent. free of interest is made to those running less than 1,500 sheep. The quantity of wool received and treated during the year—namely, 843 bales—is not in keeping with the support which the scheme deserves.

With abundant pastures in practically the whole of the sheep-grazing districts of the State the outlook for the industry is very encouraging.

JAS. CAREW,
Senior Instructor in Sheep and Wool.

APPENDIX B.

THE POULTRY INDUSTRY.

Production.—During the year ended 30th June, 1941, the Queensland Egg Board received 6,215,747 dozen eggs, which creates a record for that organisation. This indicates a considerable expansion in the industry in the area over which the Board operates. This expansion is in evidence outside the area controlled by the Egg Board.

Export.—For the period under review, 2,045,430 dozen eggs were exported as eggs in shell. In addition, small quantities of pulp were exported, which would, collectively, create a record for the State for overseas export.

Egg Quality and Values.—Egg quality and values have been well maintained, and it is anticipated that the Queensland Egg Board will be able to make a further payment to producers of approximately .3d. on all eggs supplied during the period under review.

Fodder.—The relatively high cost of maize and wheat and the shortage of bran and pollard have been instrumental in inducing poultry farmers to make use of grain sorghum. The use of this grain has indicated to the poultry-raiser its value. The agriculturist can be assured, in future, of a ready demand for available supplies.

Registration of Hatcheries.—The voluntary registration of hatcheries has extended. The following table indicates the position in this direction:—

Registered Hatcheries.	1940.	1941.
Number who have applied for registration ..	70	73
Number who have been rejected	1	2
Number of registrations pending	7	6
Number now registered	61	67

Because of sickness, death, war conditions, and hatchery-owners going out of business, nine hatcheries registered in 1940 have not applied for re-registration.

For registered hatcheries 87,221 birds have been blood-tested. In addition to this, 9,086 have been blood-tested for small holders.

Chick-sexing.—During the past twelve months nine licensed sexers have determined the sex of 811,906 chickens. Twelve candidates underwent an examination in chick-sexing, and one qualified.

Market Inspections.—The increase in the poultry staff has permitted of greater supervision over the live-poultry markets. A total of 1,486 birds was condemned as being unfit for human consumption, due to the following causes:—

Emaciated	701
Enlarged abdomens due to cysts, dropsy, internal laying, or undetermined growths	195
Anæmic	71
Abnormal growths	79
Roup	327
Enteritis	49
Paralysis	45
Vent gleet	19

Instruction.—During the period under review, the most thickly poultry-populated areas of the State have been visited by officers and every opportunity taken to give instruction by lectures and demonstrations.

P. RUMBALL, Poultry Expert.

APPENDIX C.

REPORT OF REGISTRAR OF BRANDS.

DETAILS OF REGISTRATIONS, TRANSFERS, &C., FOR YEAR 1940-1941.

	Number.	Fees Received.	Number since Inception of Legislation.
		£ s. d.	
Three-piece brands registered ..	584	584 0 0	89,028
Cancelled brands reallocated ..	94	232 0 0	7,223
Symbol brands registered ..	35	262 10 0	1,726
Cattle earmarks registered ..	355	355 0 0	28,986
Brands transferred	1,481	740 10 0	59,009
Sheep brands and earmarks registered	131	89 0 0	13,027
Sheep brands and earmarks transferred	155	38 15 0	6,780
Distinctive brands registered ..	12	No fee	..
Alteration of address of brands ..	197	No fee	..
Brands cancelled	17	No fee	..
Earmarks cancelled	99	No fee	..
Total .. .. .	..	£2,351 15 0	..

The registrations of horse and cattle brands show an increase for the year, but there was a slight decrease in the number of sheep brands and earmarks registered. The fees received were £160 in excess of those for the previous year. The Brands Directory compiled to the end of 1940 will be issued shortly, and will show all the brands recently cancelled, together with a large number which have been reinstated. This year's directory will be benefited by the results of an extensive revision, now nearly completed, of the brands and cattle earmarks registered throughout the State.

Numerous cases of minor infringements of the Acts were dealt with, and successful proceedings were instituted in one case of a serious nature.

H. S. ILIFF, Registrar of Brands.

APPENDIX D.

VETERINARY SURGEONS' BOARD.

During the year the Board held six meetings and fifteen new registrations were approved.

The number of veterinary surgeons registered to the 30th June, 1941, totalled 121. Of these, 36 hold diplomas or degrees in veterinary science, 51 hold diplomas from approved agricultural colleges, and 34 were registered under section 18 (1) (iii.) of the Act, having had five years' *bona fide* practice prior to the Act coming into force.

Three veterinary surgeons have left the State, two died during the year, and one name was removed from the Register, leaving 115 names on the Register.

Ten have joined the Australian Military Forces.

The second triennial election for two members of the Board was held on the 28th February, 1941. Five nominations were received, and Dr. J. Legg and Mr. K. M. Lucas, B.V.Sc., were elected. Messrs. E. F. E. Sunners and R. P. M. Short were appointed by the Governor in Council as the Government representatives of the Board.

Inquiries were made into a number of cases involving infringements of the Act or Regulations, and suitable action was taken to prevent repetition.

H. S. ILIFF, Registrar.

REPORT OF THE AGRICULTURAL CHEMIST

The number of samples received for analysis during the year ended June, 1941, is tabulated below, together with the corresponding figures for the previous two years. Marked increases occur in certain commodities—notably cheese for the Customs and Excise Department. The total increase over the record established last year is 727.

	1938-39.	1939-40.	1940-41.
Butters	674	861	637
Buttermilks	13	5	1
Cheese	718	784	1,392
Digestibility trials (stock foods)	151	309	91
Dipping Fluids	432	411	415
Egg Pulps .. .. .	..	..	100
Fertilizers	73	149	176
Fruits, fresh	36	148	83
Fruits, canned, jams, preserves, &c.	33	47	13
Grasses, plants, seeds, &c.	165	636	562
Grasses, plants for hydrocyanic acid	12	6	5
Limestones, limes, &c.	34	23	15
Margarines .. .. .	..	..	10
Milk and other Milk Products	47	69	39
Meats, tinned .. .. .	..	..	64
Pest Destroyers	149	193	225
Plants, for Poison Plants Committee	48	49	59
Salts and Stock Licks	12	4	2
Soils and subsoils	138	166	..
Soil Moisture Determinations	1,824	2,541	2,700
Soils licked by stock	1	2	4
Soils for nitrate, pH, carbon, partial analysis and mechanical analysis	3,001	2,979	3,092
Spray residues on plants	1,115	104	..
Stock Foods	65	85	121
Waters	125	185	575
Wheats	95	95	33
Viscera and Toxicological specimens	282	176	226
Veterinary Medicines	12	2	6
Miscellaneous	46	34	144
Totals	9,301	10,063	10,790

Of the total number of samples analysed during 1940-41, 2,329, or more than 21 per cent., were from the Customs and Excise Department.

In addition, 6,378 samples of glassware—chiefly for the dairy industry—were tested. Of these, 6,044 were approved.

The service that this laboratory renders to all branches of the Department of Agriculture and Stock, the Customs and Excise Department, the Forestry Sub-Department, industry, primary producers, and private individuals cannot be gauged from tables. Too often the contribution which the laboratory makes to an investigation is either inadequately appreciated or given insufficient recognition in departmental reports. Some idea of the importance of the work done may be gained from the correspondence, the scope of which covers almost the whole cycle of Nature—waters, soils, plants, animals and their by-products.

In common with all sections of the community, changes of personnel, their work, and the facilities for prosecuting it have followed the war; hence, while advances in some lines of investigation must occur, it is certain that rigid economy in reagents and equipment will reduce considerably work of a lesser national significance. Such disappointments as follow this curtailment must be accepted more as communal sacrifices than an indication of lowered efficiency of the branch.

During the year regular representation on various Departmental committees has been maintained, and publications bear further testimony to the diligence of the staff.

From May, the position of Agricultural Chemist has been filled by Dr. Montgomery White. Mr. E. H. Gurney, who has been Acting Agricultural Chemist, continues to give the Department the benefit of his long years of experience.

E. H. GURNEY.

MONTGOMERY WHITE.

REPORT OF THE SEEDS, FERTILIZERS, VETERINARY MEDICINES, PEST DESTROYERS, AND STOCK FOODS INVESTIGATION BRANCH.

During the year 7,414 samples were dealt with, being 233 less than the previous period. Licenses issued numbered exactly the same as last year; registrations decreased by 183 to 1,042. Board meetings increased by 7 to 35.

Analyses by the Agricultural Chemist numbered 422, compared with 353 for the previous period.

In addition to supervision in Brisbane, 38 different centres were visited, with 22 return visits—a decrease of 8.

Seeds for Sowing.—Because of low germination or injurious weed seeds, 2,871 bags of various farm and vegetable seeds were seized. Of these, 1,087 bags were subsequently released after cleaning; 67 bags—including 1,011 lb. of small lots of vegetable seeds—were destroyed.

Dodder in lucerne seed and *Datura* in Sudan, Japanese millet, and white panicum seed were the most serious injurious weeds found.

The presence of wild oats in oats intended for sowing resulted in 250 bags being crushed, while 913 bags had to be cleaned under supervision, and 1,414 bags are still under seizure awaiting action. In all, 15,811 bags of oats for sowing were examined. There is still room for much improvement in the quality of oats offered for sale as seeds for sowing.

The three-year seed storage experiment is now in its second year and already has shown that in areas of high humidity, such as in North Queensland coastal areas, it is possible to store seeds successfully for sowing, provided they are of high germination capacity, dry, and stored in airtight containers placed in a household refrigerator run at a temperature between 50 and 55 degrees F.

Nine hundred and thirty-one samples of seeds for sowing, representing 761 bags of vegetable and 331 bags of farm seeds, seeking entry to Queensland from overseas were examined. Of these, only 3 lb. lettuce and $\frac{1}{4}$ lb. leek seed had to be refused entry because of faulty germination.

Fertilizers.—In the course of the year under review it was necessary to take legal proceedings against a seller of fertilizers for failure to obtain a license; the proceedings were successful.

Unregistered fertilizer totalling 900 lb. was diverted to a use by which illegal sale was obviated. Twenty-six bags of unlabelled fertilizer were seized and held until labelled as prescribed.

The provisions of the *Agricultural Requirements Control and Conservation Act* were brought into operation during the

year. The use of all forms of potash was restricted to inclusion in mixtures only. The percentage of potash (K_2O) as sulphate was limited to 7.5 per cent. in tobacco, 10 per cent. in pineapple, 7.5 per cent. in strawberry, and 7.5 per cent. in potato mixtures.

Muriate of potash was restricted in mixtures to 7.5 per cent. potash (K_2O) in sugar-cane, vegetable crops, citrus, deciduous fruits, papaws, custard apples, passion fruit, and avocados, with a total prohibition of the use of potash on sugar-cane in the Ayr petty sessions district (Burdekin).

In certain potash-deficient sugar-cane districts, such as the red volcanic soils of Cairns, Innisfail, Bundaberg, and Childers, an increased amount of potash was allowed.

This conservation has permitted the stocks available to be spread over a much longer period than would otherwise have been the case.

Board Meetings.—The personnel of the Veterinary Medicines and Pest Destroyers Boards has been changed by the appointment of Dr. White to the position of Agricultural Chemist, thus replacing Mr. Gurney, who has been on both Boards since their inception in 1933 and 1939 respectively, in the capacity of Agricultural Chemist and chairman.

It is desired here to put on record an appreciation of Mr. Gurney's services on these boards; the work covered during the periods in which he served was most arduous—especially during the early phases when matters of policy and methods of operation were laid down for future guidance.

Veterinary Medicines.—One hundred and thirty-four packages of veterinary medicines were destroyed voluntarily by the sellers; these packages were either old stock, damaged, or unregistered preparations.

Pest Destroyers.—Two hundred and forty packages of unregistered pest destroyers were seized; of these, 195 were subsequently destroyed and 55—phenolic preparations—sold as disinfectants.

Stock Foods.—Samples numbering 23, representing 284 bags of bird seed seeking entry to Queensland from overseas, were examined and all were found to be free from prohibited weed seeds.

As will be observed from the number of samples, licenses and registrations handled, the activities of the branch have been maintained.

F. B. COLEMAN, Officer in Charge.

REPORT OF THE EDITOR OF PUBLICATIONS.

By means of departmental publications, Press articles, and radio broadcasting, an extensive informational service was maintained throughout the year. *The Queensland Agricultural Journal*, now entering its forty-fifth year, attained an aggregate distribution of 106,030 copies, as compared with approximately 112,000 in the previous year. The decline is attributed to enlistments in the Defence Forces and to the movement of country population to industrial centres under the stimulus of war requirements. *The Weekly News Bulletin*, now in its sixth year, continues to supply a regular Press service. In addition, special articles on agricultural development and progress were supplied as required for Press publication. In co-operation with the Australian Broadcasting Commission, radio discussions on pastoral and farming practice were contri-

buted to the Sunday Morning Countryman's Session throughout the term. The demand for the departmental bulletin, pamphlet, and advisory leaflet services remains constant.

An additional volume of *The Queensland Agricultural and Pastoral Handbook* was published in the course of the year; another volume is now on the Press.

The Photographic Section also had a very busy year.

Important additions were made to the central library, which now contains a valuable collection of technical literature. Sectional libraries also were well maintained.

JOHN REID,
Editor of Publications.

REPORT OF THE DIRECTOR OF MARKETING FOR THE YEAR 1940-41.

In accordance with the provisions of "The Primary Producers' Organisation and Marketing Acts, 1926 to 1939," I have the honour to submit herewith my Annual Report for the year ended 30th June, 1941.

Control imposed as a result of Regulations issued by the Commonwealth Government under the *National Security Act*, 1939, has either wholly or partially superseded, as a war-time measure, the authority previously exercised by producer-controlled marketing boards, operating under Queensland marketing legislation, over the marketing of several agricultural commodities, *i.e.*, butter, cheese, eggs, wheat, barley, apples, and pears. The marketing boards, however, have been utilised by the Commonwealth Government as State advisory and administrative bodies to assist, in co-operation with the Minister for Agriculture and Stock, in carrying out the schemes of control imposed under the *National Security Act*.

The marketing boards, the activities of which are hereinafter reviewed, operate, unless otherwise indicated, under "The Primary Producers' Organisation and Marketing Acts, 1926 to 1939." The amount distributed annually to primary producers in respect to products disposed of under producer-controlled organised marketing schemes governed by the State's marketing legislation (including sugar—approximately £8,600,000) now exceeds £22,000,000.

ARROWROOT BOARD.

The Board has an indefinite term and functions in respect of both arrowroot bulbs and arrowroot flour.

1940 Crop.—The Board's intake, which amounted to 755 tons of flour, has been sold. As only a small quantity has yet to be delivered against contracts, it is anticipated that the season's transactions will be finalised within the next three months.

The average selling price should be in the vicinity of £33 per ton, compared with approximately £40 per ton for the previous season. The difference in these averages may be attributed, mainly, to those millers who act independently of the Pool and sell their flour direct to buyers at lower rates than those quoted by the Board. Under such circumstances, stability of the industry is not attained, and consequently full advantage cannot be taken of the opportunities provided by war-time demands for this product, the meeting of which may require concerted action by the industry with differential prices for flour of varying qualities and for different uses.

ATHERTON MAIZE BOARD.

The Board is empowered to function to 30th June, 1943.

1940-41 Season—		Tons.	Tons.
Maize Delivered—			
Southern Maize Purchases .. .. .	.. .. .		186
Gross delivered by Growers .. .. .	.. .. .	15,326	
Returns to Growers .. .. .	.. .. .	142	
		15,184	
Less Moisture .. .. .	.. .. .	463	
			14,721
			14,907
Maize Despatches—			
Total Sales .. .. .	.. .. .	15,960	
Less Weight of bags sold as Maize .. .. .	.. .. .	171	
		15,789	
Less Poultry Food Ingredients .. .. .	.. .. .	1,482	
		14,307	
Plus Offal Sales .. .. .	.. .. .	237	
			14,544
Net under-run .. .. .	.. .. .		363

This under-run represents 2.3 per cent. of the total delivery, compared with 0.6 per cent. the previous year.

Marketing.—Sales for the crop year ended 30th April, 1941, including sales of poultry, pig, and cattle foods, realised £124,801 6s. 4d. A further amount of £2,211 3s. 4d. was received from growers for maize repurchased. The first

advance to growers was at the rate of £4 per ton on maize delivered to the Board containing 3 per cent. dead grain, with premiums and dockages according to quality. Two further advances, amounting to 10s. and £1 per ton respectively, have been paid to date.

BARLEY BOARD.

For the duration of the war the marketing of all malting barley produced in Australia is subject to Regulations issued under the *National Security Act*, which authorise the Commonwealth Government to acquire this product. The operations of the *Primary Producers' Organisation and Marketing Acts* in relation to Queensland barley, therefore, have been superseded. The Queensland Barley Board acts as the sole licensed receiver and agent in Queensland of the Australian Barley Board.

1939-40 Season.—A third advance was paid by the Australian Barley Board in September, 1940, at the rate of 8d. per bushel for No. 1 Chevalier, and 2d. per bushel for No. 2 Chevalier and Cape malting barley. On 23rd December, a fourth advance was paid at the rate of 4d. per bushel for No. 1 and feed Chevalier; 5d. for No. 2 Chevalier; 6d. for Cape malting, and 3d. for feed Cape.

With the payment of the final advance, now imminent, the total payment per bushel to growers, less freight from sender's station to receiving depot, will amount to 3s. 5.4935d. for No. 1 Chevalier; 2s. 11.4935d. for No. 2 Chevalier; 2s. 4.4935d. for feed Chevalier; 2s. 10.4935d. for Cape malting; and 2s. 2.4935d. for feed Cape.

In addition to the abovementioned payments a further distribution at the rate of 4d. per bushel on all grades of barley delivered is about to be made by the Queensland Barley Board, representing a distribution of profits on malting activities.

1940-41 Season.—Adverse seasonal conditions were reflected in the intake which amounted to 63,323 bushels, compared with 138,217 bushels in the previous season. The intake was classified as follows:—No. 1 Chevalier, 34,531 bushels; No. 2 Chevalier, 18,194 bushels; feed Chevalier, 7,108 bushels; Cape malting, 3,490 bushels. The total deliveries to the Australian pool were 4,156,052 bushels, compared with 11,616,091 bushels for the previous season.

Two advance payments have been made to growers by the Australian Barley Board, the first—less freight from sender's station to receiving depot—being at the following rates:—2s. 9d. per bushel for No. 1 Chevalier; 2s. 6d. for No. 2 Chevalier and Cape malting; 2s. for feed Chevalier; and 1s. 9d. for feed Cape.

A second advance was paid on 19th May, 1941, at the rate of 7d. per bushel for No. 1 Chevalier; 4d. for No. 2 Chevalier and Cape malting; 3d. for feed Chevalier; and 5d. for feed Cape. A third advance will shortly be paid at the rate of 6d. per bushel for all grades.

The whole of the intake has been disposed of, the purchases of malting barley by the two malthouses operating in Queensland aggregating 44,002 bushels. One of the malthouses is operated by the Queensland Barley Board, which purchases malting barley for the purpose from the Australian Barley Board. The price of such barley from the current Pool was 5s. 5d. per bushel.

The Queensland Board has entered into contracts for the sale to brewers of 30,000 bushels of Chevalier malt.

BROOM MILLET BOARD.

The Board is empowered to function to the 31st October, 1943.

1939-40 Season.—During this season, which covers the period, 1st November, 1939, to 31st October, 1940, the quantity of broom millet received and sold amounted to 86 tons 0 cwt. 3 qr. 19 lb., which realised £4,312 19s. 4d. or an average of £50 2s. 6d. per ton. The maximum and minimum prices

realised were £57 10s. and £30 per ton respectively. As the volume of production was insufficient to meet the local demand, broom manufacturers found it necessary to obtain the balance of their requirements from Southern States.

1940-41 Season.—Return forms in respect to this season disclosed that the crop would not be a large one, as a consequence of which the Board decided that full control should not be exercised. From the commencement, 1st November, 1940, to the 30th June, 1941, 56 tons 14 cwt. 0 qr. 5 lb. of broom millet were sold, the realisations on which amounted to £2,272 5s. 2d. The maximum price was £62 10s. per ton, and the minimum £20 per ton.

The average selling price to date has been £40 1s. 5d. per ton, approximately £10 per ton below that of the previous season. This is attributable to the Board's being obliged to meet competition on the local market from Southern States, where large crops were produced during the 1940-41 season.

BUTTER BOARD.

The Board is empowered to function to 31st December, 1941.

Production.—The production of butter in Queensland for the year ended 30th June, 1941, which was affected by drought in the early part of the season, amounted to 2,090,677 boxes, as compared with 2,496,350 boxes for the previous year.

Sales.—Sales of Queensland-made butter during the twelve months ended 30th June, 1941, consisted of 547,912 boxes in Queensland (as compared with 534,067 boxes in the previous year) and 161,579 boxes to other States, making a total within the Commonwealth of 709,491 boxes, plus exports totalling 1,376,741 boxes, of which 1,292,224 boxes went to Great Britain—a grand total sales of 2,086,232 boxes. The exports for the 1939-40 season totalled 1,878,023 boxes, including 1,795,034 boxes to Great Britain, and the grand total sales 2,513,165 boxes.

Consumption.—Consumption of butter in Queensland has continued to increase. It has been estimated that after taking into account border imports, the total consumption approximates 560,000 boxes, compared with approximately 546,067 boxes in the previous year, and 401,806 boxes in 1925-26, the initial year of the Board's operation.

Values Returned to Manufacturers.—The total net value of the 2,086,232 boxes of butter sold during the year ended 30th June, 1941, was £7,469,255 5s. 5d., compared with £8,946,922 0s. 4d. for 2,513,165 boxes sold in the preceding year. The net prices returned to factories on the basis of equalisation figures show a net value per box of £3.5802611, or 1s. 3.34d. per lb., approximately. The previous year's returns were £3.56002171 per box, or 1s. 3.25d. per lb., approximately. In these figures selling commission has been taken into account on all markets, and in the case of exports, allowance has been made for charges associated therewith after delivery of butter into cold stores. The values represent, therefore, net returns at agents' floors, Australian port of shipment, or other recognised centre of distribution, and local transport charges only require to be deducted from the average rates to establish net returns to manufacturers.

Marketing Control in Brisbane.—The Board has continued to exercise control over the marketing of butter in the Brisbane area. Suitable butters are carefully selected by the Board and patted at the Board's premises at Hamilton for delivery to its selling agents. For the year under review, the Board's operations at Hamilton have been responsible for enhancing the return to Queensland dairymen by £45,530 13s. 8d.

Butter Improvement Service.—The Board has continued to co-operate with the Department of Agriculture and Stock in carrying out this service, which is free to the factories. The year under review has shown an increasingly enthusiastic response on the part of dairy factory managers and butter makers.

Administrative Expenses.—The administrative cost of the Board, apart from cartage and costs involved in the cutting of the butter at Hamilton, worked out at approximately ½d. per box.

Marketing Arrangements Under War Contracts.—The Commonwealth Government, by regulations issued under the *National Security Act*, has acquired all butter and cheese delivered at an appointed place for export, and which is not rejected for non-compliance with the provisions of the *Export (Dairy Produce) Regulations*.

The Butter and Cheese Acquisition Regulations are administered by a Dairy Produce Control Committee, consisting of dairy industry representatives and a representative of the Commonwealth Government. The extent to which the dairy industry was organised prior to the war has lightened the Government's task in dealing with problems affecting this industry as a result of the war. The Dairy Products Stabilisation Board, which is composed of the members of the Butter and Cheese Boards, is, with similar stabilisation boards in other States, integrated with the Commonwealth Dairy Produce Equalisation Committee Limited, the Australian Dairy Produce Board, and the National Security Dairy Produce Control Committee.

The second war-time butter contract between the Australian Government and the British Ministry of Food covered the period 1st July, 1940, to 30th June, 1941, and was in respect to a quantity of 100,000 tons. Actual shipments for the period totalled approximately 77,792 tons, of which Queensland contributed approximately 32,291 tons. The terms and conditions of the contract were the same as those contained in the original contract. The point of sale was f.o.b. Australian port. Contract prices per cwt., expressed in f.o.b. values, Australian currency, were as follows:—Choicest, 137s. 2½d.; first-grade, 135s. 7½d.; second-grade, 131s. 1½d.; and pastry grade, 127s. 6d. The contract provided for payment to be made, 90 per cent. on shipment, and 10 per cent. within twenty-eight days after arrival or, if vessel lost, of estimated due date of arrival.

CANARY SEED BOARD.

The Board is empowered to function to 30th June, 1943.

1938-39 Season.—The whole of the intake has been disposed of and finalisation of the Pool is imminent.

In December, 1940, a second advance at the rate of £2 per ton was paid to growers for seed delivered to this particular season's Pool.

1939-40 Season.—Deliveries totalled 1,783 tons of commercial seed. The Board was successful during the year in obtaining, under Government guarantee, the sum of £1,475 to cover administrative expenses on approximately 600 tons of canary seed delivered late in the season, and the necessary funds to pay a first advance at the rate of £8 per ton, of which £4 per ton was guaranteed by the Government. An advance of £8 per ton had previously been paid on the other seed in the Pool.

1940-41 Season.—The Board obtained finance from the Bank of Australasia to the extent of £4 per ton to cover administrative expenses, and, under Government guarantee, £8 per ton for payment by way of a first advance to growers. The guarantee was limited to 300 tons, the Board's estimated intake. To date, 21 tons have been received from growers.

Selling Prices.—Prices at which commercial seed was sold by the Board during the year ranged from £16 per ton c.i.f. Southern ports, to £17 per ton f.o.b. Brisbane.

CHEESE BOARD.

The Board is empowered to function to 31st December, 1941.

Production.—The quantity of cheese produced during the year was 11,736,848 lb. (5,240 tons), representing a decrease of 2,108,283 lb., as compared with the production of the previous year. As is usual, the year's production consisted mainly of cheddar cheese, with 96,160 lb. of Gruyere, and 202,888 lb. of other fancy varieties. The decline in production was common to all States, and was due to drought conditions. The approximate value of Queensland's production was £389,663.

Quality.—A pleasing improvement has taken place in the quality of cheese submitted for grading for export, as will be seen from the following table. (The figures are recorded by courtesy of the Department of Commerce):—

Grade.	1938-39.		1939-40.		1940-41.	
	Lb.	Per Cent.	Lb.	Per Cent.	Lb.	Per Cent.
Choicest ..	267,326	2.68	590,217	6.77	564,487	17.31
Firsts ..	3,765,297	37.75	2,918,386	33.44	1,549,327	47.51
Seconds ..	5,559,720	55.74	4,549,142	53.27	1,014,637	31.11
Thirds ..	355,896	3.59	496,962	5.69	122,184	3.75
Rejects ..	26,660	0.24	72,891	0.83	10,397	0.32
	9,974,899	100.00	8,627,598	100.00	3,261,032	100.00

On the 1st January last, the Board, in conjunction with this Department, inaugurated a system of grading cheese disposed of on the local and process markets, and henceforth it should be possible to get actual figures of gradings of the total output during each year.

Particulars of cheese gradings for interstate, local, and process trades for the six months ended 30th June, 1941, appear in the report of the Director of Dairying on page 16.

Disposals and Values.—Sales of cheese during the year ended 30th June, 1941, totalled 11,420,219 lb., which were disposed of to the following markets, viz.:—Local, 3,422,167 lb.; to processors, 1,438,345 lb.; and overseas, 6,559,707 lb.

The net Commonwealth equalisation prices per lb. on the various markets are shown hereunder, with prices for the previous year in brackets.

Local 9.998d. (10.099d.), process 8.73d. (8.73d.), and overseas 7.42d. (7.37d.). The net average equalisation price for all sales made by the States operating under the Equalisation Plan was 8.300d. per lb., compared with 8.166d. for the previous year. In making these figures available, the Equalisation Committee points out that interim figures have been taken into account for April, May, and June. The slight differences in net equalisation returns under local and overseas headings were entirely due to variations in interstate and f.o.b. charges respectively.

Effect of War Conditions.—The second war-time cheese contract between the Australian Government and the British Ministry of Food operated for the year 1st July, 1940, to 30th June, 1941, and was in respect of a quantity of 20,000 tons. The point of sale was f.o.b. Australian port, and the terms and conditions were similar to those contained in the original contract. Contract prices expressed in f.o.b. values, Australian currency, were as follows:—

	Per Cwt.	
	s.	d.
Choicest and First Grade	76	6½
Second Grade	74	0½
Third Grade	71	6½

Exports from Queensland under the contract did not exceed 13,437 crates (approximately 960 tons), there having been no shipment since 1st March, 1941. This was due to the fact that large quantities of tinned processed cheese were required by the Australian Military Authorities for shipment to troops serving overseas.

Preliminary arrangements are now in train for a major increase in cheese production in Queensland, in view of the intimation that the British Ministry of Food will renew the contracts for dairy products only on the basis of a much lower quantity of butter, with an increase to 40,000 tons of cheese and larger quantities of dried and condensed milks. This will mean a change-over of a considerable quantity of the Queensland butter production to cheese, for which the price under the new contract is to be increased by 7s. 2½d. per cwt. Australian currency.

Finance.—Collections for administrative purposes were levied during the year at the rate of 2½d. per cwt. of cheese manufactured. Expenditure included precept for Dairy Cattle Improvement Board, £239 8s. 6d.

During the year a sum of £500 was invested in the Commonwealth War Loan in lieu of renewing a fixed deposit at the bank, and an amount of £832 7s. 4d. was advanced to the Queensland Cheese Manufacturers' Co-operative Association Ltd., in order to facilitate the indenting of large quantities of cheese bandage.

COTTON BOARD.

The operations of the Board were extended without opposition, for a further period of five years, until 31st December, 1946.

1939-40 Season.—An area of 41,530 acres was planted by 2,143 growers, as compared with 41,112 acres planted by 2,409 growers in the previous season.

Delay in announcing renewal of the bounty on raw cotton, the period of which had terminated at the end of the 1938-39 season, militated against the desired expansion of cotton growing in 1940 to meet war-time needs. Adverse seasonal conditions also had their effect upon plantings and upon the resultant yield.

The quantity of seed cotton received and ginned was 12,108,491 lb., from which 4,127,823 lb. of raw cotton lint were produced, which is the equivalent of 8,370 bales of raw cotton lint, compared with a production of 12,447 bales in the 1938-39 season. The whole of the crop was sold to Australian spinners and manufacturers. Upon the finalisation of the Pool, payments totalling £197,272 16s. 5d. were made to growers by three separate advances, and a final payment averaging, for all classifications of hand-picked and snapped cotton, the equivalent of 11.47d. per lb. of raw cotton lint. (The previous season's payment was expressed as the equivalent of 11.2407d. per lb. of raw cotton lint.)

Included in the above payment was a sum of £13,778 18s. 4d., representing payment to growers at the rate of £4 per ton for 7,716,193 lb. of cotton seed, contained in their seed cotton, together with amounts paid to growers during the period as a result of profits from the Board's oil mill. It included also Commonwealth bounty at the rate of 2.46d. per lb. of raw cotton lint.

Revolving Fund.—A deduction of .16d. per lb. of raw cotton lint was made from the final payment to growers and placed to their credit in the Working Account Reserve Revolving Fund. This deduction amounted to £2,738 6s. 1d. Concurrently with this action, a sum of £2,397 5s. 11d. was withdrawn from the fund and returned to the growers of the 1930 season.

Renewal of Bounty.—In August, 1940, there was passed the Raw Cotton Bounty Act, which renewed for a period of five years, commencing with 1941, the payment of bounty on the production of raw cotton. The Federal Government had previously announced that the previous season's bounty rate of 4½d. per lb. of raw cotton would continue to operate for the 1940 season. The new Act provided for bounty, commencing at 4½d. for the 1941 season, and thereafter diminishing by ¼d. per lb. each succeeding season to 4d. in 1944, and a reduction of the rate by ½d. to 3½d. in 1945. The Act provided that these rates would apply when the Liverpool spot price for raw cotton was 6d. (sterling) per lb. The rate of bounty rises and falls inversely with fluctuations of the Liverpool price above or below 6d. per lb., with provisos that the rate shall not be allowed to exceed 5½d. per lb., and the total amount of bounty paid in any one year shall not exceed £150,000. The

bounty is paid to the Cotton Board as the producer of the raw cotton, and the Board distributes it to the growers of seed cotton.

Provision is made in the Act for the Minister for Trade and Customs to determine the rate of bounty on the basis of New York prices in the event of there being no weekly quotation of a cotton price at Liverpool. The Liverpool Cotton Exchange did, in fact, close down on 31st March, 1941, but the position was complicated by other factors which made an amendment of the Act imperative. The Commonwealth Government's policy for cotton industry assistance provides that the spinners shall be allowed to obtain Australian or foreign raw cotton at Australian import parity duty free prices. War conditions, resulting in a cotton shortage in Britain and large surpluses in the Americas, had changed the normal relationship between the Liverpool price and cotton values in other markets, in addition to which Brazilian cotton was undercutting the Government-sustained New York price. Thus, the guarantee to the Australian grower was lowered, as the relationship between the import parity price of raw cotton and the rate of bounty was destroyed. To meet the position, the Commonwealth Government, early in 1941, amended the *Raw Cotton Bounty Act*, 1940, to ensure an average net return to producers in respect of the 1941 and 1942 crops of 12½d. per lb. of raw cotton after taking into account their profits from oil and cattle fodder made from cotton seed. This amount is equivalent to 4.3d. per lb. of seed cotton, which by the 1940 Act, it was designed, the cotton-grower would receive. The same amendment increased the maximum amount which may be paid in bounty in any one year to £170,000.

Representations have been made to the Commonwealth Government for a further review of the bounty on the grounds that it is insufficient to bring about the desired increase in cotton production.

1940-41 Season.—Of 2,865 crop reports received from growers 671 have reported total failures. It is probable, therefore, that the total area to be harvested will not greatly exceed 55,000 acres, for a probable yield of 12,500 bales of raw cotton lint. Up to 30th June, 1941, 12,262,498 lb. of seed cotton had been received at the ginneries, from which 4,311,529 lb. of raw cotton had been ginned, or the equivalent of 8,744 bales.

EGG BOARD.

The Board is empowered to function to 31st December, 1944.

Supplies.—For the twelve months ended 28th June, 1941, the Board and its agents received 6,215,747 dozens of eggs, an increase of 16 per cent. over the quantity received during the previous twelve months. At the Board's packing floors 4,614,987 dozens were received and 1,600,760 dozens were received at the packing floors of the agents. The average nett price, including all grades, returned to growers for eggs delivered during the year under review was 12.62d. per dozen. For the previous twelve months the figure was 11.91d. To the latter figure should be added .43d. per dozen, being a *pro rata* payment of surplus funds from export made after last year's report was prepared. This brought the average nett figure for the year ended 29th June, 1940, to 12.34d. per dozen. To the nett price for the year ended June, 1941, a bonus payment will also have to be added, but at the moment that figure cannot be determined. It is anticipated, however, that with the addition of the bonus the nett figure will increase to approximately 1s. 1d. per dozen.

Sales.—Sales within the State for the year under review were 10 per cent. in excess of those of the previous twelve months. Eggs cold stored (28,200 dozen) declined by almost 75 per cent. The extension of the period of exportation overseas to January and February is largely responsible for such a large decrease. There was a further decline in the quantity (294,390 dozens) of eggs, which it was found necessary to send to Southern markets, a decline of 16 per cent., compared with the figure of the previous year. Eggs converted to pulp accounted for 391,939 dozens.

Export.—The contract for the exportation of eggs in shell to the British Ministry of Food in the season 1939-40 resulted in an average nett return to the Board (including all categories) of slightly over 1s. per dozen.

Early in 1940 negotiations were opened for a further contract, and representations were made by the Egg Supervision Committee—on which the Board is represented—for an increased price for eggs to be shipped during the season 1940-41. In justification of the request the Egg Supervision Committee directed the Ministry's attention to the increased cost of production and other costs since, and actually during, the period of the former contract. Finally, in June, 1940, the Ministry agreed to an increase of 1s. sterling per long hundred (10 dozen eggs) per category. As in the former year the contract was on an f.o.b. basis, and the contract prices per long hundred (120) in Australian currency were—

	s.	d.
13½ lb. pack	11	1.83
15 and 16 lb. pack	13	5.87
17 and 18 lb. pack	13	7.25

Ninety per cent. of the price was paid on shipment, and 10 per cent. within twenty-eight days after arrival, or estimated due date of arrival if the vessel were lost.

In implementation of the foregoing contract the Board began packing for export on 26th June, 1940, and concluded on 8th February, 1941, the Ministry of Food, at the request of the Egg Supervision Committee, having agreed to extend the contract to cover eggs which could be shipped in January and February, 1941. This extension was of great benefit to the Australian poultry industry.

Throughout the season a total of 68,181 cases (30 dozen each), or 2,045,430 dozens in all, were shipped, being an increase of 31 per cent. on the previous year's figures. The average net return, including all packs, was slightly over 1s. 1d. per dozen, or 1d. per dozen increase on that of the previous year.

Although voyages between Australia and the United Kingdom were protracted, the reports received through the Department of Commerce were to the effect that the Board's eggs arrived in satisfactory condition.

The Board also exported to the United Kingdom 2,600 tins (40 lb. each) of frozen liquid whole egg, for which it received a net return equivalent to 10½d. per dozen eggs.

Early in 1941 the Egg Supervision Committee considered the preliminary proposals by the British Ministry of Food for the renewal of the contract for season 1940-41. In March the committee was advised that the position with respect to shipping had deteriorated to such an extent that it was improbable that space could be found for the shipment of eggs in shell. Steps were immediately taken to make a survey of the whole position with the objective of the installation of equipment in the various States for the drying of eggs. Dried whole egg powder requires only one-seventh part of the space which is required for the transportation of eggs in shell, and moreover, the necessity for transportation under refrigerated conditions would be eliminated. Ultimately, the Commonwealth Government was able to procure egg-drying plants in China, and it arranged for their shipment to Australia. It was decided that the plants should be installed first in the larger egg-producing States—New South Wales and Victoria—and that installations be made in the other States as soon as practicable thereafter. The Commonwealth Government will bear the entire cost of the drying plants.

It is anticipated that drying may begin in New South Wales and Victoria in September, but the drying of eggs in Queensland is not expected to take place before next year.

The position now is that the Federal Government has assumed the responsibility for the purchase of the exportable surplus, whether shipped in shell or dried, at the same price as the previous season's contract price, but because of increased costs of cases, packing materials, cold storage, labour, &c., which will have to be borne by exporting organisations, the net return to producers will be somewhat lower than that of last season.

Pending the erection of drying plants to cope with the export surplus in all States the alternative was to ship the surplus production as frozen liquid whole egg. In the meantime, however, the British Ministry of Food has agreed to make available shipping space for the exportation of eggs in shell from the States of Queensland, South Australia, and Western Australia, in which it will be impossible to erect drying plants for operation this season. Because of greater intervals between shipments, eggs will have to be held in cold storage at this end for longer periods.

So late in the season did the British Ministry of Food decide to accept eggs in shell from Queensland that great difficulty was experienced in making arrangements for the supply of cases, &c., owing to case-making firms working at capacity in the execution of defence and other orders. The Board usually invites tenders for the supply of export cases early in the year, but, because of the uncertainty of the position as set out above it was unable to make forward preparations.

Stabilisation of Egg Pulp Prices.—The agreement previously made between the pulping manufacturers in the various States was renewed for the year under review, and a further agreement has been reached for the season 1941-42. Although there has been an increase in the cost of tinplate, supplies are still available.

Credit of Growers in General Reserve.—Interest amounting to £909 8s. was paid during the year to 2,414 growers on the credits in the general reserve fund standing in their names in the books of the Board.

Branded Q.E.B. Eggs.—The sales of branded Q.E.B. eggs by the Board continue to increase steadily. These branded eggs find great favour with discriminating buyers. To keep its branded eggs under the notice of the retail trade and the public, the Board used the grocery trade journals, the screen, and the radio for suitable advertising.

Experimental Work.—The Board continued experimental work in connection with eggs in conjunction with the Egg Producers' Council and the Council for Scientific and Industrial Research, and a further programme has been arranged for future work.

FRUIT MARKETING.

1.—APPLE AND PEAR MARKETING BOARD.

Apples and pears grown throughout Australia were again acquired by the Commonwealth Government under the *National Security Act* as a necessary part of a scheme to protect the growers from the full effect of the loss of the export trade because of lack of shipping space—a trade which, before the war, had absorbed approximately 5,000,000 bushels of the Australian apple production of approximately 11,000,000 bushels and about 650,000 bushels of the total production of about 2,400,000 bushels of pears. The scheme adopted was basically altered from the scheme of the previous season. The payment of a uniform rate of compensation, which had given rise to discontent amongst growers whose fruit commanded a high-priced market, was abandoned in lieu of differential rates of compensation for certain varieties, and the produce of certain States based upon the commercial value of the naked fruit at the foot of the tree. Under the amended scheme the various varieties of apples were classified into four groups, the fourth group consisting of inferior unwanted varieties, which were excluded from participation, except for nominal compensation at the rate of 1s. per tree. Of the remaining three groups, "Good" grade of the varieties in each, ranked as "Fancy" grade in the next lower grade for compensation advance, except that compensation advance was not paid on "Good" grade of Group 3. Rates of compensation were determined by a system of appraisal, whereby all varieties in Group 3 received a common rate of compensation at the minimum figure of 1s. per bushel, and all varieties in Group 2 a common rate of compensation at 2s. per bushel. Compensation for the varieties in Group 1 was based on a rate of 3s., i.e., six units of value at 6d. per unit. This rate applied to Tasmania, Western Australia, and South Australia. The appraisal of the varieties in Group 1 provided for extra compensation in certain circumstances, particularly where anticipated market returns were such as to justify higher compensation. This was governed to some extent by the geographical location of the producing area. Consequently all varieties in this group produced in Victoria were valued at seven units, or 3s. 6d. per bushel, New South Wales ten units for Delicious, nine units for Granny Smiths, and eight units for other varieties. All Group 1 varieties grown in Queensland were valued at ten units, or the equivalent of 5s. per bushel. Of the Queensland apples marketed on consignment and by private treaty for the season up to 28th June, 1941, 95.65 per cent. were embraced by Group 1. In all cases the quantity of "Good" grade from any grower, which could qualify for compensation, was confined to 25 per cent. of his qualifying quantities of "Extra Fancy" and "Fancy" grades, except in instances where the grower delivered in excess of that percentage at the direction of the Board.

The marketing scheme for pears provided for appraisalment in a somewhat similar manner.

The administration of the Apple and Pear Acquisition Scheme was the responsibility of an Apple and Pear Marketing Board, appointed under the *National Security Act*, consisting of a chairman, a Commonwealth Government representative, and a growers' representative from each State, assisted by State committees in each State. To meet the requests of Queensland apple growers the Queensland State committee of the Australian Apple and Pear Marketing Board was reconstituted, and now consists of two representatives of the Committee of Direction of Fruit Marketing, two direct representatives of the growers, two representatives of the fruit agents, and the Director of Marketing as the State Government representative.

Of 235,019 cases of Queensland apples, delivered up to 28th June, 1941, 219,267 cases were sold within the State; 11,358 cases were sold Interstate; and 4,394 cases were exported. Apples handled by the Queensland State Committee from other States in the same period totalled 334,447 cases. Realisations per case for apples received from the various States averaged:—

New South Wales, 6s. 3d.; Victoria, 6s.; Tasmania, 6s. 4d.; South Australia, 6s. 7d.; Western Australia, 6s. 3d.; and Queensland, 6s. 7d. The averages for pears sold in Queensland were:—New South Wales, 8s.; Victoria, 6s. 2d.; Tasmania, 7s. 1d.; South Australia, 3s. 3d.; and Queensland, 7s. 1d. Deliveries of pears totalled 134,246 cases, of which 18,871 cases were Queensland-grown.

2.—COMMITTEE OF DIRECTION OF FRUIT MARKETING.

The Committee of Direction of Fruit Marketing and the five Sectional Group Committees operate under "*The Fruit Marketing Organisation Acts, 1923 to 1940.*"

PINEAPPLE SECTION.

Production.—1,456,684 (1½-bushel) cases of pineapples were produced, which represented an increase of 137,145 cases over the production of the previous year.

Canneries.—The dependence of the industry on the cannery outlet is indicated by the quantities processed, which for the two packs, were as follows:—

	Cases.
Winter pack of 1940	318,244
Summer pack of 1941	401,567
	<hr/>
	719,811

Price to Growers.—The increased price of £8 11s. 8d. per ton, f.o.r. growers' station, which had been secured for the previous summer pack, was maintained for the 1940 winter pack. Growers again adopted the principle, proved from past experience to be sound, of setting aside a sum for the purpose of creating a reserve fund to supplement the grant from the Fruit Industry Sugar Concession Committee. For the summer pack this had been 10s. per ton, but, faced with a curtailment of the British market, increasing difficulties in securing space to Canada, and the fact that heavy stocks of other canned fruits, in the sale of which no finality had then been reached with the British Government, might cause a market collapse for canned fruits in Australia, it was considered advisable to increase the deduction to £1 per ton on the winter pack. The deduction of 1s. 8d. per ton for advertising purposes also operated. These deductions, together with the Cannery Purchase Revolving Fund levy of 10s. per ton, made an initial payment for the winter pack of £7 per ton.

For the summer pack of 1941, the growers' price was maintained at £8 11s. 8d. per ton f.o.r. Deductions were again made of 10s. for export reserve fund, 1s. 8d. advertising reserve, and 10s. Cannery Purchase Revolving Fund levy, making an initial payment of £7 10s. per ton.

It was subsequently found possible for refunds to be made to growers of 15s. 3d. on the winter pack 1940, and 5s. 3d. on the summer pack, 1940. Available for this payment were the fund created by the export reserve deductions, and the fund established by the extra fresh fruit levy of 1½d. per case. A slight drawing was also made on the advertising fund, to enable payment in round figures.

Cannery Handling Charge.—A profit made above handling and freight costs was rebated to growers who supplied to the 1940 packs at the rate of 5s. per ton.

Final results to growers for the 1940 winter pack were thus:—

	Per Ton.
	£ s. d.
Initial payment f.o.r.	7 0 0
Refunds—	
Export Stabilisation Reserve	0 15 3
Rebate of surplus on freight and handling margin	0 5 0
Actually received	8 0 3
Contribution to Cannery Purchase Revolving Fund	0 10 0
	£8 10 3

Growers' Own Cannery.—For the year 1939-40, the operations of Queensland Canneries Pty. Ltd., in which the growers own a half share, resulted in a profit, the pineapple growers' share of which was £2,972 18s. 3d. This enabled a distribution of dividend to growers at the rate of 3s. 7.85d. per ton on all cannery pineapples. This distribution, although made in December, 1940, operated on supplies to cannery for the previous financial year.

The cannery for the financial year now reviewed again made a profit but the rate of distribution will not be known until after the annual meeting of the directors.

During the year, Mr. H. Fullerton, one of the grower-directors of the cannery, resigned, having joined the R.A.A.F. He has been succeeded by Mr. H. S. Franks, Chairman of the Pineapple Section.

The renewal of the cannery link-up agreement is now due for revision, having run for three years.

Export Markets for Canned Pineapples.—(a) Great Britain.—From the summer pack of 1940, there remained a balance of orders of 21,000 cases to be shipped ex the winter pack of 1940. Shipping space was found for this quantity.

Because of shipping difficulties sales to Great Britain have been negligible, only 5,000 cases of pulp being shipped ex the summer 1941 pack.

(b) Canada.—Fortunately, the Canadian market has been very responsive and has taken all canned pineapples offered. Record shipments of 53,000 cases have been made from the summer pack alone, this quantity being 18,000 cases in excess of the total quantity exported to Canada for 1940. A feature of the Canadian trade has been the growing popularity of canned pineapple juice.

F.I.S.C.C. Grant.—Prices and conditions for the 1940 packs were based on an application to the Fruit Industry Sugar Concession Committee for a grant of £5,000. The protracted nature of the dealings with the British Ministry of Food in the sale of the packs of canned peaches, pears and apricots delayed the decision of the F.I.S.C.C., which, when it was made in January, 1941, was for a grant of £2,500 to the pineapple industry for the year 1940. A higher refund to growers from their export reserve fund was therefore not possible.

Fresh Fruit Marketing.—Although the interstate markets, with increased production, absorbed a larger quantity of pineapples than in previous years, marketing was free from the anomaly of over-supply of markets with its corollary of low prices. Prices were uniformly good. This was due mainly to

a policy of education of growers to an intelligent allocation of supplies to the various markets, achieved by the issue of a pineapple bulletin each loading day.

BANANA SECTION.

Queensland banana production showed only a slight increase on that of the previous year, viz.: 550,339 (1½-bushel) cases for 1940-41, compared with 538,056 cases for the previous year. The various banana activities of the Committee of Direction all showed satisfactory progress, particularly noticeable in the instance of bunch bananas. Of the total bunches marketed in Brisbane, 20.8 per cent. were handled by the Committee of Direction in comparison with 11.42 per cent. the previous year. In cased bananas, also, the quantities handled by the Committee of Direction showed an increase of 4,000 cases on quantities handled the previous year.

The ripening rooms in Sydney, Brisbane, and Rockhampton continued to give the satisfactory service which from their installation has characterised their operations.

Bonus Distribution.—Satisfactory operations on the wholesale case and bunch floors again enabled a sum of £800 to be earmarked for a rebate of 20 per cent. of commissions to suppliers for the financial year 1939-40. This payment was made in November, 1940. The distribution absorbed the amount of £769.

CITRUS SECTION.

Factory Operations.—These were again satisfactory, the quantities of all varieties taken by canners being 522 tons in comparison with 426 tons the previous year. Although lesser quantities of Lisbon lemons were processed, the quantity of juice oranges placed with canners was nearly double that of the previous year.

Interstate Consignments.—Increased quantities of mandarins, oranges, and lemons were despatched to the interstate markets. As an encouragement in the development of interstate trade, with a view to relieving the main Brisbane market to the maximum extent, the Citrus Committee in November last, on an examination of the financial statement of the section for twelve months ended 30th June, 1940, set aside an amount of £420 from interstate freight receipts. This enabled a rebate of approximately 1½d. per bushel to be made to all consignors of citrus to the Southern markets for this period.

Fruit-Fly Lure.—The Citrus Section has advanced the major portion of the purchase price of the formula of a fruit-fly lure which, after due investigation in company with the Division of Plant Industry (Research) of this Department, the Committee of Direction proposes to purchase for release to all fruit growers by the Department.

Export Consignment.—Following on reports of a shortage of citrus fruits in the East, arrangements were made for a small trial consignment to Singapore of two cases of navel oranges and three cases of lemons, the fruit being specially selected from the Gayndah district. A very encouraging report and returns have been made on this consignment, the realisations being the equivalent of 18s. 2d. per bushel dump case Brisbane. The fruit was forwarded in ship's "cooler"; it opened in excellent condition and found a ready sale.

OTHER FRUITS SECTION.

Factory outlet to the full extent required was available for each of the varieties of "other fruits." Comparative tonnages are:—

	1940-41.	1939-40.
	Tons.	Tons.
Papaws	573½	486½
Passion fruit	47½	47½
Metropolitan tomatoes	196½	229½
Strawberries	198½	197
Figs	114½	164

Papaws.—Although there was an increase in the total papaw deliveries this was effected only in ripe papaws. Deliveries of green papaws were considerably less than the previous year. This was occasioned by the fact that the cannery which had established a market in Great Britain for papaw chutney was unable to secure shipping space for the fulfilment of orders.

Passion Fruit.—The crop of passion fruit was considerably less than required by canners, and the bulk of the purchases was made from the market. Price to growers was increased by 1d. per lb.

Strawberries.—Factory outlet up to 260 tons was available, and although growers planted to meet this demand, drought conditions seriously curtailed the crop.

Figs.—In view of the heavy crop of the previous season, growers pre-planned an advertising campaign for use if necessary. For the purpose of establishing an advertising fund, they agreed to a levy of 5s. per ton on factory figs. The crop, however, was also curtailed by drought, resulting in cannery deliveries falling far short of the previous season and removing all necessity for any publicity.

Tomatoes.—The policy of having a representative stationed in Sydney during the marketing of their crop was again followed by the Redlands tomato growers. The services of

Mr. J. H. Gregory, Instructor in Fruit Packing, were made available for this work by the Hon. the Minister. Mr. Gregory also conducted experiments in the ripening and packing of tomatoes forwarded in bulk to the Sydney market.

BEAN SECTION.

The annual conference of bean growers was held as usual in the month of February. At that time it appeared that the industry was facing a very grave danger from overproduction, and it was agreed that both the Committee of Direction and the Banana Growers' Federation of New South Wales (representing the New South Wales bean growers) would issue a warning to growers against overplanting.

It was again decided to approach the New South Wales Chamber of Fruit and Vegetable Industries for an agreement to prohibit canvassers during the harvesting period. After some conflict of opinion in respect to the commencing date for the prohibition of canvassing, the agreement was finally successfully negotiated to commence as from May, 1941.

The section co-operated with this Department in continuing the bean seed certification scheme, and in conducting fertilizer experiments:

DECIDUOUS SECTION.

Production was of normal proportions and considerably in excess of that of the previous season, which had been curtailed by frosts, drought, and hail. Consignments forwarded to the various markets as compared with the previous year, were—

	1940-41.	1939-40.
	Tons.	Tons.
Brisbane, including factory	14,664	12,345
New South Wales ..	1,913	3,311
North Queensland ..	1,314	603
	<u>17,891</u>	<u>16,259</u>

The season proved to be one of the worst on record for fruit-fly infestation, which made for marketing difficulties and adversely affected values.

Apples and Pears.—The marketing of these crops was again subject to the Commonwealth Acquisition Scheme and is reported on separately.

Packing Shed.—A combination of circumstances resulted in a forward move being made in apple marketing in the 1940-41 season. The circumstances were—

- (i.) Availability for purchase of the Thulimbah packing shed.
- (ii.) Labour shortage occasioned by the war, rendering growers more liable to appreciate the packing-house system, offering as it would some relief in packing.
- (iii.) The Apple Acquisition Scheme.

The Committee of Direction considered that the opportunity which now offered to demonstrate the value of a community packing shed should not be lost, and the shed was accordingly purchased. It was later rented by the Queensland Committee of the Apple and Pear Marketing Board, and as the Granite Belt Packing House, it was successfully operated right throughout the season, packing apples for local and North Queensland, interstate, and overseas markets.

Export.—No shipping space was available for export to the United Kingdom, but an effort was made to maintain the connection established in the East for Queensland apples. Despite considerable difficulty in securing space, the Committee of Direction was successful in forwarding a small quantity of Granny Smith apples to Eastern ports. Orders received were considerably in excess of the quantities forwarded, but with a view to retaining all contracts, proportionate reductions were made in each buyer's requirements. The quantity forwarded was 4,394 cases in comparison with 6,790 cases sent to the East in the previous season.

Successful handling of the previous season's export operations, which had been conducted solely by the Committee of Direction on an f.o.b. basis, enabled a rebate of profits to be made to grower-suppliers at the rate of 3½d. per case.

Factory Operations.—Tonnes of all varieties of deciduous fruits handled were considerably in excess of the previous season, when production had been reduced by frosts, drought, and hail storms. For the 1940-41 season a total of 633½ tons was placed with factories as against 313½ tons the previous season; 352 tons of plums and 169 tons of juice apples were the lines principally handled.

GENERAL.

Fruit Selling Agencies.—The various fruit selling agencies conducted by the Committee of Direction, notably those of Sydney, Brisbane, and Townsville, continue to show increased activity.

Sydney.—Comparative turnover figures of the past five years were as follows, viz.:—

1936-37.	1937-38.	1938-39.	1939-40.	1940-41.
£62,629	£82,959	£105,934	£110,152	£123,082

Turnover by comparison with the previous year increased by 11.7 per cent.

The following table indicates the extent to which Queensland growers patronised their own Sydney selling section during the year, viz.:—

	Total Sydney Consignments.	Consigned to C.O.D. Section.	C.O.D. Percentage.
Bananas	87,330	21,920	21.5
Pineapples	256,707	88,496	34.5
Papaws	22,051	12,405	56.3
Custard Apples	12,946	6,541	50.5
Beans	36,231	6,659	18.4

Growers send voluntarily to this section, which is operated on a competitive basis with all other fruit and vegetable agents.

Brisbane.—The satisfactory operations of this section are demonstrated by comparative turnover figures, viz.:—

1936-37.	1937-38.	1938-39.	1939-40.	1940-41.
£48,590	£63,748	£70,905	£84,894	£96,226

Although four sections have been occupied in the municipal markets for some years, ever-increasing consignments demanded increased space, both for their effective display and to assist growers and salesmen in unloading and checking in. The committee considered that expansion of the Brisbane activity should extend to the Turbot street market in order to cater for growers who prefer to have their fruit disposed of through that market.

Accordingly section space was acquired there and the Committee of Direction agency commenced business in this privately owned market on 2nd December, 1940.

Throughout the year, the Brisbane section has had to meet a series of staff difficulties occasioned by enlistment in the overseas forces and call-ups by the militia.

Rockhampton.—For many years, this branch has given satisfaction and the year under review has been no exception. Turnover for 1940-41 shows an increase of 7.7 per cent. on that of the previous year.

Townsville.—Each year since the establishment of this branch in January, 1938, progress has been such as to steadily consolidate it. Turnover for the financial year is a record, and a profit on operations will be shown. When this branch was commenced, it was recognised that losses could be expected until it was firmly established. Each of the sectional group committees subscribed to the view that the establishment of a Committee of Direction Branch in the far North was a service to the industry generally, and undertook to advance funds to guarantee it against loss during its first years of operation. Fortunately, results have been such that no call has had to be made on these guarantees, and the branch is each year standing more and more on its own feet.

Mackay.—A change in management has resulted in greater efficiency and, in spite of increased reserves, only a small loss on operations is shown. Turnover has been considerably increased. Although the branch was opened primarily as a retail store, sound progress has been made along the line of wholesale selling, and a steady market has been established between growers and the floor. The market is a small one and needs careful handling. This branch is undoubtedly another effective distribution point established by the Committee of Direction for growers' benefit.

Bowen.—Increased turnover in the merchandising section of the Bowen activities rendered it necessary to secure more space. Storage accommodation has been increased, primarily to make provision to take when available the case timber output of Northern mills during the off season. This action will ensure that Bowen growers will have sufficient supplies of case timber during their season, and at the same time leave available for Southern growers the output of mills in South Queensland. It will also obviate the uneconomic procedure of transporting case timber to the North.

During the deciduous season small consignments are sent to Bowen for sale and are handled by the Committee of Direction Branch. There is, however, no recognised wholesale selling floor in Bowen, transport and merchandise being the principal activities of the branch.

BONUS DISTRIBUTION.

Satisfactory trading results for the year 1939-40 enabled the Committee to again make a bonus distribution of 10 per cent. of commissions to suppliers to the Committee of Direction selling floors in Brisbane, Rockhampton, Townsville, Mackay, Bowen, and Sydney. In connection with Sydney consignments, the receiving and delivery charge of 1d. per case was included in the commission charge for rebate purposes. This distribution absorbed £1,795 and was made in December, 1940.

In this bonus distribution all the floors are taken as a whole irrespective of the rate of profit on any individual floor. Thus all supporters of the Committee of Direction activities benefit equally, whether their consignments have been handled by the least or the most profitable of the stores.

COUNTRY FRUIT AND VEGETABLE DISTRIBUTION SCHEME.

The Committee of Direction acts as agent for the Country Fruit and Vegetable Distribution Scheme, a service involving the co-operation of the Agriculture and Railways Departments and the Committee of Direction, inaugurated in January, 1935, by the Marketing Branch of the Department of Agriculture for the purpose of providing facilities for the purchase at reasonable rates of good quality fruit and vegetables by people in far distant country centres. The scheme retains many of its original customers and is regularly adding new customers to its list. The total number of packages railed for the year under review—15,029—is less than the 18,472 packages despatched in the previous year.

Reasons for the decline in railings are—

- (1) During the whole of the year both fruit and vegetables have been fairly high priced. Only best quality fruit and vegetables are purchased, and this has meant that the prices of the "mixed" cases, the most popular lines despatched under the scheme have been higher than in previous years. This line comprised 76.35 per cent. of the total railings.
- (2) The scheme has had to meet the competition of a distribution scheme for apples, sponsored by the Apple and Pear Marketing Board and backed by large-scale advertising of this fruit. For the conduct of the Apple Scheme the experience of the Committee of Direction staff was placed at the disposal of the Board. "The effect of the competition can be gauged in the following comparative figures of railings under the respective schemes for the period 22nd April to 30th June:—

C.F. and V. Scheme.	Apple Scheme.
3,440 half bushels	5,796 bushels

The total number of packages handled by the scheme since its inception is 112,757.

MERCHANDISE DEPARTMENT, BRISBANE.

The gross turnover of this Department was £70,596 in comparison with £73,658, the turnover for the previous year.

The year has been one of particular difficulty, shortage of supplies having been experienced in practically every line required by growers, but principally in case timber, nails, sulphate of potash, sulphate of ammonia, spraying materials, dusts, seeds, &c. For bonus distribution to growers, an amount of £1,000 was set aside, representing an increase of £300 on the amount allocated for distribution the previous year. The bonus which was at the rate of 3 per cent. on all purchases for twelve months ended 30th June, 1940, was distributed in January, 1941.

Woodwool.—This commodity is an essential for the packing of pineapples and, to a lesser extent, papaws, and for the covering of pineapples as a protection against sunburn. Increased production of pineapples led to an increased demand for woodwool, and with fire destroying the plant of Weetman in May last, it looked as if the industry might suffer the disability of a shortage of this commodity.

The Committee investigated two alternative propositions. It was finally decided to guarantee sufficient money for the rebuilding of the factory, purchase of any necessary new plant, and the reconditioning of such of the plant that would lend itself to this. The Committee of Direction also guaranteed to take a substantial proportion of the output of the plant. The action of the Committee almost immediately resulted in a price reduction of a competitive line, and has ensured that adequate supplies of woodwool will always be available to the industry.

DIRECTIONS.

The following fruits have been under the control of the Committee of Direction for the year ended 30th June, 1941, by direction:—For factory purposes—Citrus, deciduous, figs, passion fruit, papaws, pineapples, strawberries and tomatoes.

Tomatoes have been subject to control, also as a means of stabilising the Brisbane market for Stanthorpe-grown tomatoes by prohibiting the sale of "B" grade and small "A" grade tomatoes from such district when the price of "A" grade will not realise a higher gross amount than 4s. 6d. per half-bushel case.

LEVIES.

The following levies have been in operation during the year ended 30th June, 1941:—

Banana Levy.—1d. for every £1 or part thereof of the gross proceeds realised from sales in Queensland of bunch bananas and ½d. per 1½-bushel case of bananas.

Citrus Levy.—½d. per case (irrespective of size) to be expended in the interests of the Citrus Section.

Pineapple Levy.—(a) *Fresh Fruit.*—½d. per case until 28th August, 1940, for administrative purposes. From 28th August, 2d. per case, the fund so created to be used for stabilisation, administrative, and advertising purposes. (b) *Cannery Revolving Fund.*—Levy 10s. per ton or 3d. per case on factory fruit only—for the purchase of half-interest in Queensland Canneries. On completion of purchase price, the fund will revolve and the levy will be returned to growers in the order of their contributions.

Stanthorpe Levy.—3s. 4d. per ton on all fruit and vegetables marketed from the Stanthorpe district, the fund so created to be used for administrative purposes.

Hail Insurance Levy.—6s. 8d. per ton on fruit only grown in the northern portion of the Granite Belt, being the contributions of the growers concerned to a hail insurance fund.

Papaw Levy.—At the rate of 1d. for every two cases or part thereof, half the fund so created (with a minimum of £125 and a maximum of £175 per annum) to be used to subsidise the appointment by the Department of Agriculture of a papaw research officer; the balance of the funds to be used for advertising purposes.

Tomato Levy.—½d. per case, but no levy on consignments of less than four cases, to be used for administrative purposes.

Fig Levy.—5s. per ton on factory figs, gazetted in October, 1940, and operated on 1941 fig crop—fund to be used for advertising purposes.

REFUNDS MADE TO GROWERS UNDER VARIOUS SYSTEMS OF FINANCE DURING THE PERIOD OF TWELVE MONTHS ENDED 30TH JUNE, 1941.

PINEAPPLE FUNDS.

(a) *Southern Consignors.*—The previous Southern Consignors Revolving Fund, from which a total of £13,308 was returned to growers, terminated with payments made on consignments of pineapples to June, 1939. These rebates covered interstate consignments of pineapples from 1924 to 30th June, 1939. For the following financial year, ending on 30th June, 1940, the system which operated was a rebate of profits made on interstate freights. In spite of reduced rates, increased tonnages had resulted in profits. A refund of 1d. per case was made to growers in February, 1941, on consignments of pineapples interstate for the year ended 30th June, 1940. In this way £1,617 was returned to growers.

(b) *Cannery Consignors.*—(i.) *Freight and Handling Fund.*—It was again possible to make a refund from the handling charge of 30s. per ton on cannery pineapples. This was at the rate of 5s. per ton on both the summer and winter packs of 1940. This refund to growers amounted to £4,166 7s. 5d. It was made in April, 1941.

(ii.) *Factory Stabilisation Fund.*—This fund was established by the deduction of 10s. per ton from payments for pineapples of the summer pack, and 15s. on pineapples of the winter pack. The fund was to supplement the grant of £2,500 for the year 1940 from the Fruit Industry Sugar Concession Committee so as to ensure maximum exports, which in turn would mean a stabilisation of the Australian market. On both packs there was also a further deduction of 1s. 8d. per ton to be used for advertising purposes, also a measure towards market stabilisation. At the end of the year, after meeting export losses it was possible to make a refund of 5s. 3d. per ton on the summer cannery pineapples and 15s. 3d. on the winter fruit—this in effect meant that the growers' payment for the winter fruit was the same as for the summer. These refunds were made to growers in February, 1941, the total amount so refunded being £8,241 0s. 5d.

(iii.) *Cannery Profits.*—Pineapple growers hold a half interest in Queensland Canneries Pty. Ltd., payment for which is being made at the rate of 10s. per ton, the fund being operated on the revolving fund principle. Operations for the financial year ended 30th June, 1940, enabled a distribution of profits to growers at the rate of 3s. 7.85d. per ton, distributions being *pro rata* to the tonnage supplied. The amount distributed was £2,936 9s. 7d.

Summary of refunds to pineapple growers during financial year ended 30th June, 1941—

	£	s.	d.
(a) Interstate Freight Rebate	1,617	0	1
(b) Cannery Pineapples—			
Freight and handling reserve, summer and winter	4,166	7	5
Factory Stabilisation Fund, summer and winter ..	8,241	0	5
Cannery Profits	2,936	9	7
	£16,960	17	6

FREIGHT REBATES.

(i.) *Citrus.*—£326 10s. 1d. was returned to interstate consignors of citrus fruits for the year ended 30th June, 1940, at the rate of 1½d. per case.

(ii.) *Deciduous.*—Substantial consignments of deciduous fruits, comprising mainly grapes and tomatoes were sent to the Sydney and Newcastle markets during January-April, 1940. Rebates on these consignments made from August to December, 1940, totalled £1,788 12s. 8d.

(iii.) *Bowen Consignments.*—The principle of making rebates to Bowen growers on consignments to the Brisbane and interstate markets has been followed for some years. For the 1939 season there was an initial rebate at the rate of 1d. per case (all sizes) which was paid in May, 1940. On the completion of the financial statement for the year it was found possible

to make a further rebate for that season of $\frac{1}{2}$ d. per bushel case and 1d. per $\frac{1}{2}$ -bushel case. This meant a rebate at the rate of 1d. per half-bushel case, $\frac{1}{2}$ d. per bushel, and 2d. per tropical case. This additional payment absorbed £98 9s. 1d., and was made in October, 1940. Rebates for the 1940 season were paid in May, 1941, at the rate of 1d. per half-bushel case, 2d. per bushel case, and 3d. per tropical case, an increase of $\frac{1}{2}$ d. and 1d. respectively on the last two cases. In this way £821 18s. 3d. was distributed to Bowen consignors on the Committee of Direction trains.

APPLE EXPORT.

Export of apples and pears for the 1940 season was handled by the Committee of Direction on behalf of growers, sales being made on an f.o.b. basis. Profits on the transactions were rebated to growers at the rate of $3\frac{1}{2}$ d. per case, the amount so returned being £229 11s. 10d.

TRADING DEPARTMENT.

	£	s.	d.
(i.) Fruit Selling Sections.—The satisfactory operations of all Committee of Direction Fruit Selling Sections enabled a rebate of 10 per cent. of commissions to consignors to the sections in Sydney, Brisbane, Rockhampton, Mackay, and Townsville. Amount distributed	1,795	3	8
(ii.) Merchandise Department.—A bonus was paid of 3 per cent. on purchases to growers whose accounts were in satisfactory condition. This absorbed	1,041	0	4
(iii.) Green Banana Department.—A rebate of 20 per cent. of commissions was possible, absorbing	768	17	11
Total sum distributed as bonus payments	£3,605	1	11

STANTHORPE CO-OPERATIVE HAIL COMPENSATION FUND.

A second payment of $\frac{7}{2}$ d. per bushel was made in the early part of this financial year on the 1939-40 assessment of 92,442 bushels. This payment absorbed £277 6s. 7d. Hail damage for the 1940-41 season was the lightest it has been since the first year of operation. Damage was assessed at 2,666.45 bushels and compensation was paid at the full rate of 3s. 4d. per bushel, the distribution from the fund being £444 8s. 2d. Payment was made in April, 1941.

SUMMARY OF MONEYS RETURNED TO GROWERS DURING 1940-41.

	£	s.	d.	£	s.	d.
Pineapple Growers				16,960	17	6
Freights—						
Citrus	326	10	1			
Deciduous	1,788	12	8			
Bowen	920	7	4			
				3,035	10	1
Apple Export				229	11	10
Trading Departments				3,605	1	11
Hail Payments—						
1939-40 interim payment	277	6	7			
1940-41	444	8	2			
				721	14	9
				£24,552	16	1

FACTORY ACTIVITIES FOR TWELVE MONTHS ENDED 30TH JUNE, 1941.

The following quantities of the various fruits have been handled for factory:—Stanthorpe fruits, 633 $\frac{1}{2}$ tons; citrus fruits, 522 tons; figs, 114 $\frac{1}{2}$ tons; papaws, 573 $\frac{1}{2}$ tons; passion fruit, 47 $\frac{1}{2}$ tons; strawberries, 198 $\frac{1}{2}$ tons; tomatoes, 196 $\frac{1}{2}$ tons; and pineapples—

Winter crop 1940—7,656 tons supplied direct, plus 827 tons ex market	= 8,483
Summer crop 1941—9,972 tons supplied direct, plus 223 $\frac{1}{2}$ tons ex market	= 10,195 $\frac{1}{2}$
	18,678 $\frac{1}{2}$

making a grand total of all factory fruits of 20,964 $\frac{1}{2}$ tons.

INTERSTATE TRANSPORT.

The consignments of fruit and vegetables forwarded by Committee of Direction fruit train specials and by steamer to the Southern markets for the twelve months ended 30th June, 1941, were as follows:—

To—	By C.O.D. Fruit Train Specials.	By Steamer.	Total. Packages.
Victoria	401,436	884	402,320
New South Wales	1,281,782	953	1,282,735
	1,683,218	1,837	1,685,055

3.—SECOND-HAND FRUIT CASES ACT.

The call upon supplies of timber and nail wire for defence purposes has resulted in an acute shortage of these materials for the making of fruit cases, with the resultant danger to orchardists, especially growers of highly perishable fruits, of encountering serious losses through their inability to get fruit away to market. The danger is most feared by the orchardists of the Granite Belt who use approximately 1,000,000 cases each year. These cases in normal times are all bought new from the sawmillers, as such cases after first use by the fruitgrower pass to other users for holding fish, groceries, or the products of orchardists near the metropolis.

In order to meet the position, legislation of a pioneering character entitled "The Second-hand Fruit Cases Act of 1940" was passed by the State Parliament. The Act, which applies to a circumscribed area of South-eastern Queensland, provides that it shall continue in force for the duration of the present war and for such period thereafter as Parliament shall from time to time by resolution determine. The Act provides for the licensing of all dealers in second-hand fruit cases and prohibits the buying and selling of second-hand fruit cases except from or to a licensed dealer.

Other provisions of the Act effectively confine the use of fruit cases to the fruit industry until they are unsuitable for such use.

The Act is administered by a committee, of which the Director of Marketing is *ex officio* a member. The other members comprise two nominees of the Committee of Direction of Fruit Marketing and two nominees of the Chamber of Fruit and Vegetable Industries. Both of these bodies may be required to contribute in equal shares to the funds of the committee should it be necessary to supplement the committee's income received by way of license fees, levies, &c.

Twenty licenses have been issued to dealers, and a levy payable by dealers, of 3d. per dozen or part thereof, has been imposed on all cases sold. In the period that the Act has operated, viz., from 31st March, 1941, to 30th June, 1941, sales totalled 172,863 cases of all kinds. Of this total 160,644 were sold to fruitgrowers and 12,219 to others. The Committee of Direction has assisted growers financially to lay in stocks, and in this way large quantities of hitherto unpopular cases, e.g., the Canadian standard, and the long bushel flat case, have been bought and held in reserve by deciduous fruit-growers and Northern mango growers respectively.

HONEY BOARD.

The Board is empowered to function to 8th March, 1944.

Sales by the Board's selling agents during the twelve months under review amounted to 24,705 (60 lb.) tins of honey and 23,480 $\frac{1}{2}$ lb. of beeswax, the prices realised for honey ranging from 2d. to 6d. per lb., while the maximum and minimum selling prices for beeswax were 1s. 5d. and 2s. 1d. per lb. respectively.

During the greater portion of the year the Board was subjected to competition from honey from the Southern States, which, experiencing a good flow, had no immediate prospect of reducing the resultant large surplus because of the difficulty through war conditions of maintaining a regular overseas export trade. As a result of overseas shipping space having been recently made available the position has been relieved by the export of a considerable quantity of honey from those States.

In relation to beeswax, the market for beeswax has remained firm during the year and, because of defence needs, should continue to do so.

NORTHERN PIG BOARD.

The operations of the Board were extended without opposition for a further period of six years until 31st December, 1946.

The weight of the 13,656 pigs sold during the year by the Board to the North Queensland Co-operative Association Ltd. was 1,491,170 lb. The Board's sales to butchers comprised 614 porkers weighing 28,667 lb.

The total value of sales was £37,172 5s. 4d. in addition to which the sum of £948 9s. 10d. was collected from agents in respect of sales by agents to butchers.

Notwithstanding the fall in pig values in other portions of the State during the second half of 1940-41, the Board was able to maintain an average price of 6d. per lb. to growers, which continued up to the end of June.

In addition, deferred pay amounting to £713 was distributed at the rate of $\frac{1}{2}$ d. per lb. to growers who supplied pigs during the year ended 30th June, 1940.

PEANUT BOARD.

The Board is empowered to function to 27th August, 1947.

1938 Season.—The season's transactions have been finalised, the average selling price being 2.339d. per lb., while the total net payments to growers for all grades and varieties, excluding the $\frac{1}{2}$ d. lb. levy, averaged 1.441d. per lb. The administrative expenses in respect to this season averaged .769d. per lb. The crop had suffered from adverse seasonal conditions at harvest time.

1939 Season.—Complete intake figures were 5,608 $\frac{1}{2}$ tons, made up of approximately 3,402 tons of Virginia Bunch and 2,206 $\frac{1}{2}$ tons of Spanish and Valroy.

This season's transactions were also finalised during the year. Selling prices averaged 3.053d. per lb., and the total net payments to growers (excluding the $\frac{1}{2}$ d. levy) averaged 2.054d. per lb. Administrative expenses were at the rate of .870d. per lb.

1940 Season.—The quantity of peanuts received by the Board amounted to—

	Virginia Bunch.	Spanish, Valencia and Valroy.
No. 1 Pool	Tons. 2,953.2	Tons. 2,033.5
No. 2 Pool	414.6	120.8
	3,367.8	2,154.3

The receivals at Kingaroy comprised 96.1 per cent. of the total intake, while those at the Atherton, Rockhampton, and Brisbane depots represented 2.4 per cent., 1.2 per cent., and 0.3 per cent. respectively.

On present indications the balance of the No. 1 Pool stocks will be cleared, and a final payment made to growers, within the next three months.

Quotas allotted to growers, based upon the Board's estimate of Australian requirements, of peanuts for edible and planting purposes provided for total deliveries to No. 1 Pool of 3,525 $\frac{1}{2}$ tons of Virginia Bunch and 2,658 tons of Spanish and other varieties. Because the quantity of Virginia Bunch peanuts supplied to No. 1 Pool fell short of requirements, it was found necessary to meet the deficiency from No. 2 Pool, which the Board anticipates will be finalised about October next.

The area planted to peanuts was approximately 10,000 acres.

1941 Season.—Quota allocations totalled 4,240 $\frac{1}{2}$ tons of Virginia Bunch, and 2,725 tons of Spanish and other varieties. The Board's receivals to 30th June were—

	No. 1 Pool.	No. 2 Pool.
Virginia Bunch	Tons. 1,742.1	Tons. 123.4
Spanish, Valencia, and Valroy	1,083.6	63.8
	2,825.7	187.2

It is estimated that a further 2,800 tons will be delivered to the Board before the end of the intake season.

To date, a first advance has been paid on receivals in No. 1 and No. 2 Pools, the average rates in respect to No. 1 Pool being 2.089d. per lb. for Virginia Bunch and 1.625d. per lb. on all other varieties, while the No. 2 Pool first advance was at the flat rate of $\frac{1}{2}$ d. per lb on all varieties.

General.—“The Peanut Industry Protection and Preservation Act of 1939” has worked satisfactorily up to the present and, as anticipated, has been responsible for the Board's securing crop finance from its banker in respect to the 1940 and 1941 seasons without difficulty. From the 1932 up to and including the 1939 seasons the Board found it necessary to obtain guarantees in this regard from the Queensland Government.

The production handled by the Board since the passing of the Act has not been in excess of Australian requirements owing to the combined factors of deliveries below expectations and an increasing demand for peanuts beyond previous records. Consequently, the dual pooling system has not yet been called upon to function in circumstances when its anticipated benefits would be most manifest.

In the meantime there appears to be some need for the industry to guard against failure on its part fully to supply the Australian requirements of peanuts owing to a too careful attitude on the part of individual growers when planting to keep their production within the limits of their No. 1 Pool quotas.

PLYWOOD AND VENEER BOARDS (NORTHERN AND SOUTHERN).

During the year the period of operations of both Boards was extended until 2nd May, 1947.

It is with great regret that a record is made of the death of Mr. G. A. Duffy, which occurred in April, 1941. He has been succeeded as the representative of the Sub-Department of Forestry on the Northern and Southern Plywood Boards by Mr. V. Grenning, Director of Forests.

The arrangement whereby the Boards co-operate with the Sub-Department of Forestry in carrying out research work relating to the problems of plywood manufacture has proved most satisfactory and of benefit to the industry generally.

The co-operation between plywood manufacturers which the operation of these Boards connotes has been extended voluntarily to embrace plywood manufacturers and distributors in New South Wales and Victoria.

Deliveries of controlled plywood for the year on the basis of 3/16 inch thickness, totalled 78,063,643 square feet, valued at £624,480, comprising 55,396,630 square feet, valued at £443,160, delivered to the Southern Board; and 22,667,013 square feet, valued at £181,320, delivered to the Northern Board.

Sales were distributed as follows:—

	Southern Board.	Northern Board.
	Sq. ft.	Sq. ft.
Queensland	7,532,403	971,804
Interstate	41,309,599	9,625,290
Overseas	6,554,628	12,069,919
	55,396,630	22,667,013

The increased overseas shipments which in the aggregate totalled 18,624,547 square feet, as compared with 9,280,036 square feet in the previous year, consisted principally of plywood sheets for the United Kingdom and plywood shooks for rubber chests for the East.

The administrative levy throughout the year was on the basis of 1d. per 100 square feet, calculated on the equivalent of 3/16-inch thickness. Cost of administration averaged .918d. per 100 square feet, and quantity discount to Queensland distributors .136d., making a total of 1.054d. per 100 square feet.

WHEAT INDUSTRY.

The Wheat Acquisition Regulations issued by the Commonwealth Government in September, 1939, under the *National Security Act* have superseded the *Queensland Wheat Pool Acts* in controlling the marketing of wheat in Queensland. The Queensland Wheat Board, which has been continued in existence, acts as sole licensed receiver and agent for the Australian Wheat Board in Queensland in return for remuneration on a commission basis for the quantity of wheat handled. The arrangement between the Commonwealth and Queensland Governments, which has been put into effect by the respective Wheat Boards provides that during the period of wheat acquisition by the Commonwealth Government Queensland's system of wheat classification, which differs from the f.a.q. system of the other States, shall remain undisturbed. A long-established arrangement whereby the higher grades of wheat command premiums over the basis price is continued, and such premiums are collected by the Queensland Board and returned to the growers of the wheat and not paid into the Australian Pool. It is provided also that contributions may be deducted from amounts payable to growers to ensure continuance of the Queensland Wheatgrowers' Co-operative Hail Insurance Scheme.

1939-40 Season (No. 2 Pool).—This was the first of the Australian Pools to contain Queensland wheat. The total receivals amounted to 195,452,776 bushels, of which 1,300,000 bushels of New South Wales and Victorian wheat, damaged by a plague of mice, were segregated and sold separately as No. 3 Pool.

Advances paid to date by the Australian Wheat Board for bagged wheat total 3s. 5 $\frac{1}{2}$ d. per bushel, less rail freight. In Queensland, the net payment amounts at present to 3s. 1 $\frac{3}{4}$ d. for first quality milling wheat. In addition, quality premiums of 2 $\frac{1}{2}$ d. per bushel for Q1, and 1 $\frac{1}{2}$ d. per bushel for Q2 wheat have been distributed to growers by the Queensland Wheat Board, thus bringing the total for Q1 wheat to 3s. 4 $\frac{1}{4}$ d. per bushel. Deliveries in Queensland totalled 6,255,164 bushels from a sown area of 362,044 acres, in respect of which classification and payments were made as follows:—

Classification.	Deliveries.	Percentage.	Payments.
	Bushels.		
Milling—			
Q. 1	4,871,807	77.86	3s. 4 $\frac{1}{4}$ d. including Premium advance of 2 $\frac{1}{2}$ d. per bushel
Q. 2	1,118,187	17.85	3s. 2 $\frac{1}{4}$ d. including Premium advance of 1 $\frac{1}{2}$ d. per bushel
Q. 2A	225,159	3.59	3s. 1 $\frac{3}{4}$ d.
Feed—			
F1A, F1, F2	40,011	.70	2s. 9 $\frac{1}{4}$ d.
	6,255,164	100.00	..

A final payment has yet to be made to growers by the Australian Wheat Board.

The Queensland deliveries, of which 479,647 bushels were shipped to the United Kingdom, have all been disposed of. As quality premiums were not collected on the exported wheat, and £13,224 17s. 5d. of the Queensland Wheat Board's income

was transferred to the Hail Insurance Fund, the amount returned to growers on account of quality premiums fell short of the normal premiums of 3d. per bushel for Q1 and 1½d. per bushel for Q2 wheat.

Weight loss amounted to 132,902 bushels or slightly over 2 per cent. of intake weights. By their sales agreement with the Queensland Board, entered into before acquisition, the Queensland millers undertook to bear up to 1½ per cent. of any weight loss on their purchases. This proved to be approximately .8 per cent. of the intake. The Pool, therefore, had to bear approximately 1.2 per cent.

Compensation paid to growers from the Hail Insurance Fund totalled £10,098 18s. 7d.

1940-41 Season (No. 4 Pool).—Because of widespread drought, the total Australian deliveries as at 30th June, 1941, totalled only 63,105,816 bushels, of which Queensland deliveries comprised 5,265,904 bushels from an area estimated at 302,000 acres. Except for .25 per cent. of feed wheat, the Queensland deliveries have been classified as of milling quality, with 87.58 per cent. of Q1. Adequate supplies are available for milling requirements, but some importation may be necessary for feed for animals.

A first advance has been made on all milling quality wheat at the rate of 3s. per bushel for bagged wheat, less rail freight, which is the equivalent of 2s. 7d. per bushel to Queensland growers. The advance on feed wheat is less a dockage of 4d., i.e., 2s. 3d. per bushel. Arrangements are in hand for a second advance of 4d. per bushel to be paid early in July.

Position of Stocks.—The Australian Wheat Board has 67,000,000 bushels in its care, but of this quantity 25,000,000 have been sold and await shipment. Of the remaining 42,000,000 bushels, domestic consumption will absorb 26,000,000, thus leaving approximately 16,000,000 bushels for export as wheat and carry-over.

Flour Tax.—The Commonwealth flour tax has been continued, and during the year the rate of tax ranged from £1 15s. 5d. per ton in July, 1940, to £2 8s. 10d. per ton in June, 1941. The f.o.r. price of flour at Brisbane remained constant at £12 12s. 6d. per ton.

Wheat Sacks.—Supplies of sacks have been assured, the Queensland Wheat Board acting as a licensed distributor under the scheme arranged by the Australian Wheat Board and the Jute Control Board.

Seed Wheat.—The Queensland Government guaranteed the State Wheat Board against loss to an amount of £10,000 in continuance of the Necessitous Growers' Seed Wheat Scheme.

Commonwealth Grant.—A sum of £20,000 was made available to Queensland under "The States Grants (Drought Relief) Act, 1940," to be applied for the purpose of alleviating hardship suffered by wheatgrowers in consequence of drought.

Applications from wheatgrowers who consider themselves eligible for assistance are being examined by the State Wheat Board and the Director of Marketing.

Wheat Industry Stabilisation.—The question of stabilising the wheat industry, which had been the subject of many inter-Governmental conferences during the past decade, took on a new importance with the outbreak of war and the consequent limitation of shipping space. A conference, called by the Prime Minister, of State Premiers and the Minister for Commerce, and held in Melbourne in October, 1940, failed, after examining various proposals, to agree upon any scheme of control of the industry. The Commonwealth Government thereupon took the responsibility of instituting a scheme of stabilisation under the war-time powers available to that Government under the *National Security Act*. The scheme is to be based upon a guaranteed price of 3s. 10d. per bushel f.o.b. ports (out of which all costs will be met) for a maximum yield of marketable wheat of 140,000,000 bushels, which is the equivalent of a total crop of 160,000,000 bushels. Regulations issued under that Act on 29th November, 1940, provide for the registration of wheat farms and the licensing of growers. To be eligible for registration a farm must have produced wheat at some time during the three-year period ended 1st April, 1941. It is to be an offence to harvest wheat from land which has not been registered as a "wheat farm," or to harvest an area greater

than that allotted by the Wheat Industry Stabilisation Board. A basic area is to be determined for each registered wheat farm equivalent to the average area planted on such farm with wheat during a period of four years ended with the 1940-41 season. Operation of the scheme is to commence with the 1941-42 season. Whilst the scheme may, more or less, fit the circumstances existing in the larger wheat-producing States, all of which have for some years been receding from a peak of production, it fails entirely to provide for the special conditions in this State, which does not produce its own domestic wheat needs except in very favourable seasons. Furthermore, new lands recently cleared of prickly-pear are now being pioneered for wheat growing, and, as a consequence, the trend of production, by contrast with that of the other States, is steeply upward. The scheme, in so far as Queensland is concerned, also appears to be irreconcilable with the National Security Emergency Supplies of Essential Commodities Scheme.

Whilst raising these objections, Queensland, in company with the various State Governments, has agreed to co-operate in assisting the Commonwealth Government to carry its scheme into effect. Administration of the scheme has been entrusted by the Minister for Agriculture and Stock to the State Wheat Board, subject to the supervision of the Director of Marketing, who acts also as the authorised officer in this State of the Wheat Industry Stabilisation Board.

GENERAL.

The Marketing Branch has been called upon during the period under review to devote a deal of attention to many matters additional to the normal duties, which have arisen as a result of war-time conditions, and which are subject, in some instances, to the operation of the *National Security Act*. The Director has been closely associated at a series of interstate conferences with preliminary arrangements for the implementation of the Commonwealth Government's Wheat Stabilisation Scheme. Time has also been devoted, as a member of the State Committee of the Australian Apple and Pear Marketing Board, to the marketing of apples and pears under the Commonwealth Government's war-time acquisition scheme. The Director also serves as Deputy Chairman of the Queensland Emergency Supplies Committee, a representative body appointed in June, 1941, under rules issued by the Governor in Council under authority of the National Security (Emergency Supplies) Regulations to assist the Minister in Charge of Food Conservation (Hon. F. W. Bulcock) in the administration of the plan designed to provide throughout the State reserve stocks of certain prescribed essential commodities.

The question of organised marketing of tobacco leaf (which was not finally disposed of by the narrow defeat last year of a proposal submitted to the growers to extend the operations of "The Primary Producers' Organisation and Marketing Acts, 1926 to 1939," to that commodity) became an Australian-wide issue when rationing of imports of tobacco leaf was imposed by the Commonwealth Government as part of a war-time financial policy. Regulations issued under the *National Security Act* in May, 1941, provide for the sale of all tobacco leaf under a system of appraisal of value, carried out by Appraisal Committees appointed by the Minister for Commerce acting under the supervision of an Australian Tobacco Board.

The problems of the immediate future, as forecast in the statement of the Minister for Commerce at the June meeting of the Australian Agricultural Council relative to the agreement entered into between the British and Australian Governments in relation to the conversion of a large proportion of Australia's exportable surpluses of perishable foodstuffs into forms not requiring refrigerated storage afloat and ashore, are already receiving attention in Queensland in the form of planning for a major change-over, in the coming season, from butter to cheese production, and preliminary arrangements for an extensive canning of exportable pig meats.

Coincident with the latter, examination is being made of the probable extent to which organisation of the pig industry may be a necessary corollary.

H. S. HUNTER,
Director of Marketing.

REPORT OF THE REGISTRAR OF PRIMARY PRODUCERS' CO-OPERATIVE ASSOCIATIONS.

"THE PRIMARY PRODUCERS' CO-OPERATIVE ASSOCIATIONS ACTS, 1923 TO 1934."

In accordance with Rule 53 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, 1941.

During the year one additional association—Herbert Valley Co-operative Dairy Association Limited—was registered. Total registrations are now 211 associations and 2 federations.

Allowing for the fact that the registry of 20 associations has been cancelled—16 having wound up voluntarily and 4

having amalgamated with others—there are 191 associations and 2 federations remaining on the register.

To meet changing circumstances a number of associations have amended their rules in the course of the year.

Licenses to act as auditors have been issued to 10 persons during the period under review, bringing the total to 232.

The number of exemptions from the provisions of the Acts remains at 29.

A. J. EVERIST,
Registrar.

A. H. TUCKER, Government Printer, Brisbane.

