

Expanding Services to the Man on the Land.

ARTHUR F. BELL, Under Secretary.

War Activities and Re-organisation.

IN common with most organisations, the development and many of the basic activities of the Department of Agriculture and Stock were suspended during the war. One-third of the staff were absent on duty with the armed forces, or technical services directly associated with the war effort.

Those who remained were called upon to perform many duties far outside the normal range. The Department provided advisory personnel to assist numerous national committees and other organisations; it provided the State Executive of the National War Agricultural Organisation, while field staff acted as the executive officers of the forty District War Agricultural Committees; it undertook the rationing of fertilizer and stock foods and assisted in the allocation of the short supplies of farm machinery and materials; it co-operated with the Manpower Directorate in the provision of rural labour, the release of army personnel for rural work, and the placement on farms of Women's Land Army girls and prisoners of war; it fostered special new crop and food production drives; and it provided special technical services to the armed forces.

The magnitude of the extra duties during the years 1942-46 may be gauged from a statistical summary of some of these activities:—

More than 180,000 applications for the release of materials were received and considered, and recommendations made to the appropriate Commonwealth releasing authorities.

Sixteen thousand applications for the release of personnel from the Services for rural work were examined for recommendation to Manpower; this almost invariably required an inspection of the property in question and its activities.

Ten thousand applications for fertilizer rations received individual attention each year.

Two hundred and fifty thousand permits to buy stock food were issued to 130,000 applicants.

Twenty-five thousand applications were received for the release of tractors, engines, and other farm machinery, evaluated, and nearly 12,000 releases made.

Equipment of permanent and seasonal camps, allocation to farms, and the organisation of transport was carried out on behalf of the Australian Women's Land Army.

One thousand one hundred and ninety-seven prisoners of war were placed on farms or pastoral holdings.

Innumerable representations were made in respect of improved petrol rations, priority for goods, and many other matters affecting primary production.

In 1943 the Deputy Public Service Commissioner and the writer (then acting as Director of Sugar Experiment Stations) were directed to enquire into the organisation, staffing, and services of the Department of Agriculture and Stock, with a view to determining in advance the adjustments necessary to meet post-war needs. On the basis of the report submitted the Department was completely re-organised.

The re-organisation took cognizance of the growing complexity of the services demanded of a modern Department of Agriculture, probable avenues of development in primary production, and deficiencies in the services then being rendered. For administrative purposes the Department was divided into five Divisions, namely—Plant Industry, Animal Industry, Dairying, Marketing, and General Administration. Each Division in turn is composed of constituent branches of which there are now twenty-two.



Plate 1.

REDLANDS HORTICULTURAL EXPERIMENT STATION.—This new station, of 26 acres, provides facilities for experimental work on fruit and vegetable crops.

Recent Developments.

The purport of this short article is to give an outline of the development of *new* services to the primary producer since the re-organisation in 1945. It could not, within reasonable limits, attempt to cover the full range of Departmental activities (in this connection it might be noted that the Annual Report for 1948-1949 occupied 100 pages of foolscap size). Omission of mention of particular services should therefore be interpreted as indicating no substantial change in form and scope of activities since 1945.

Broadly speaking, the functions of a Department of Agriculture are twofold. On the one hand it should carry out continuous research and investigation into problems which adversely affect primary production and the processing and marketing of primary produce or, alternatively, into avenues of new or increased production. At the same time it must take to the farmer the information so gained, in order that it may be translated into practice. To carry out these requirements the Department employs officers trained in more than twenty professions, and has field officers stationed in more than eighty centres with a State-wide distribution.

The extension of these services since 1945 is outlined below:—

Experiment Stations.

There has been a marked advance in the provisions of experiment station facilities, particularly in tropical North Queensland. From Mackay north there are long-established Sugar Experiment Stations at Gordonvale and Mackay, a Tropical Agricultural Station at South Johnstone, and an Animal Health Station at Townsville. Within the

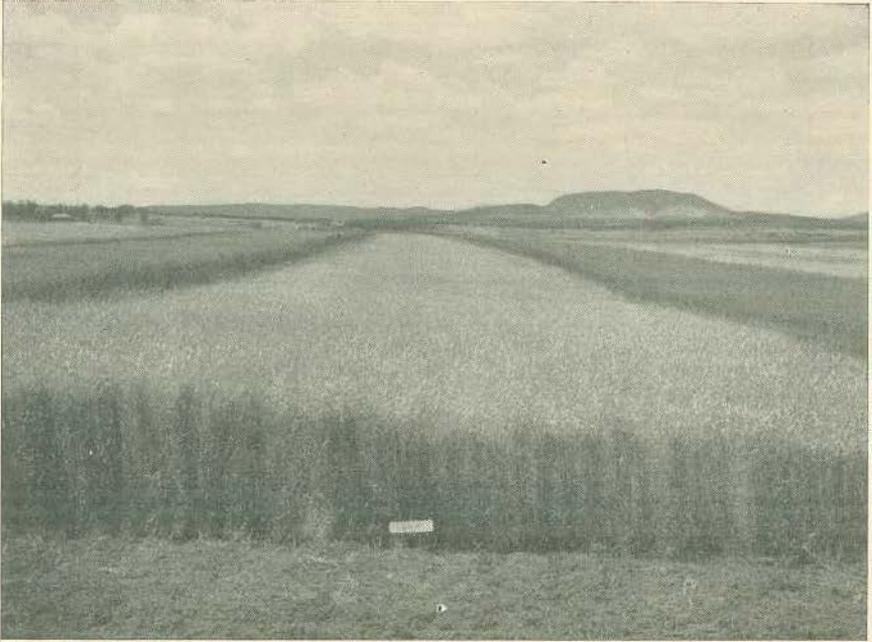


Plate 2.

HERMITAGE REGIONAL EXPERIMENT STATION.—Situating near Warwick, this station is engaged in investigations of crop and livestock production problems of the eastern Darling Downs. This view is of a wheat variety trial.

last few years there have been established Regional Experiment Stations at Kairi, near Atherton, and at Ayr; a Tobacco Experiment Station at Mareeba, with sub-stations on the Herbert and Burdekin Rivers (the latter serving as a demonstration area for soldier settlement); another Sugar Experiment Station in the irrigated area of the Burdekin, and two cane breeding sub-stations at Babinda and Mackay; a Horticultural sub-station at Cairns; and a Pasture sub-station at Utchee Creek, which will serve as an adjunct to the South Johnstone Station. In addition a Beef Cattle Research Station will be established conjointly by the Australian Meat Board, the Commonwealth Scientific and Industrial Research Organization, and the Department of Agriculture and Stock.

In Southern Queensland the cotton station at Biloela has been incorporated in a Regional Experiment Station, and a Regional Station has been established near Warwick; a Horticultural Experiment Station has been established at Nambour, and a Vegetable Station at Ormiston in the Redlands district; this Department is responsible for the technical



Plate 3.

BILOELA REGIONAL EXPERIMENT STATION.—This station has taken over the activities of the Cotton Research Station, and now devotes attention to crop and livestock production in the central agricultural areas. Linseed, shown in this picture, is one of the newer crops under trial.



Plate 4.

BURDEKIN TOBACCO SUB-STATION.—The security of ex-servicemen settlers in the Clare district is assisted by this Departmental tobacco station. The view is of tobacco seed-beds, with a curing barn in the background.

operations of the Irrigation Research Station provided by the Bureau of Investigation of Land and Water Resources at Gatton; the Sugar Experiment Station at Bundaberg, and the Animal Health Station at Yeerongpilly are expanding their long-standing services; a second jointly-operated Beef Cattle Research Station will also be developed in Southern Queensland in the near future.



Plate 5.

INTRODUCING NEW METHODS IN SHEEP HUSBANDRY.—Graziers are shown here practising the Mules operation at a Field Day organised by the Department. This operation provides a high measure of protection against breech strike by the blowfly.

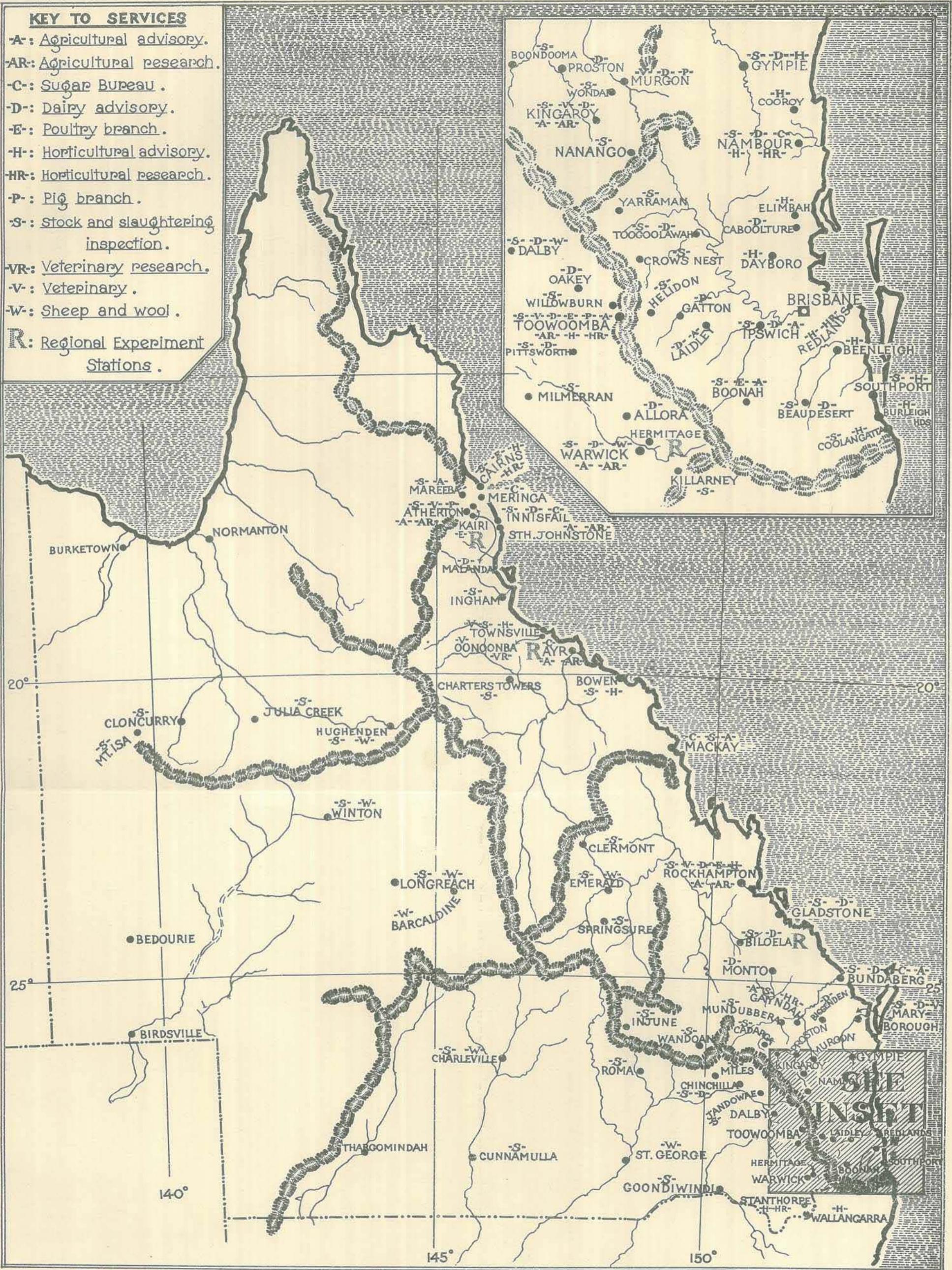
The Department is under more or less constant pressure to open new local experiment stations. However, while a certain coverage of experiment stations is necessary for investigational work, resources should not be dissipated in maintaining an excessive number. As stated in the Annual Report for 1948-1949, experiments actually carried out on the farms are the basis of progress and, while some experiment stations are a necessary adjunct to this work, they are not a substitute for it.

Sheep and Wool.

The sheep and wool industry now occupies first place in monetary earnings. From a very small section in the Department, with only one field officer stationed outside Brisbane, there has been developed an active Branch with officers stationed in eleven pastoral centres, with more staff in training. This greatly increased service has enabled the value of improved practices to be brought home to increasing numbers of sheep men. During the year 1948-1949 this staff visited 1,249

KEY TO SERVICES

- A: Agricultural advisory.
- AR: Agricultural research.
- C: Sugar Bureau.
- D: Dairy advisory.
- E: Poultry branch.
- H: Horticultural advisory.
- HR: Horticultural research.
- P: Pig branch.
- S: Stock and slaughtering inspection.
- VR: Veterinary research.
- V: Veterinary.
- W: Sheep and wool.
- R: Regional Experiment Stations.



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properties in an advisory capacity, held 21 field days, and carried out 718 demonstrations; drought feeding of stock by approved methods was supervised on 120 properties.

A scheme for subsidising the purchase of long-wool rams, so as to improve the quality and quantity of lamb meat, was introduced in 1948, and the purchase of some 400 rams was subsidised in the year. Two officers were sent to New South Wales to study the latest developments in fat-lamb raising.

Equipment has been imported, and during the current year it is anticipated that a fleece-testing unit will be put into operation; this will enable breeders to secure the information on fleece characteristics which is essential for progeny testing in sheep breeding.

As a result of energetic advocacy and demonstration of the Mules operation as a measure for blowfly control, this method has been introduced into a large proportion of breeding flocks. Vaccine for the control of scabby mouth, brought out initially by the Animal Health Station at Yeerongpilly is being increasingly used and 522,500 doses were distributed in 1948-1949.

Sugar Experiment Stations.

The Bureau of Sugar Experiment Stations was brought to a high state of development in the early nineteen thirties; the yield of sugar per acre was 40 per cent. higher in 1939 than in 1929, and the total crop 70 per cent. higher. In view of the pronounced success which attended cane breeding operations at Cairns, Mackay, and Bundaberg, these activities have now been extended by the establishment of a new experiment station at Ayr, and two cane breeding sub-stations at Babinda and Mackay. Two Bureau canes, Q.28 and Q.50, which were bred at the Mackay experiment station within the last few years, now constitute some two-thirds of the crop in the central district. More than 25 per cent. of the State's 1948 crop was comprised of canes bred by the Bureau in recent years.

A New Pineapple Section.

In view of the importance, and potentially greater importance, of the pineapple industry a special pineapple section has recently been set up within the Horticulture Branch. An officer with experience in both research and field advisory work has been placed in charge of this team and it will be his responsibility to translate the findings of research workers into the practical advice of the field officer. With headquarters at Nambour, pineapple research and field specialists will be stationed at Townsville, Ayr, Gympie, Nambour, and Caboolture, and also in the research laboratories in Brisbane.

Dairying.

Butter production in Queensland steadily declined from the record of 69,000 tons in 1938-39 to the low figure of 33,000 tons in the drought year of 1946-47, but had increased to 47,000 tons in 1948-49. Special efforts are now being made to restore production by increased efficiency and in this work the Department is being aided by a financial grant from the Commonwealth Government.

The staff of the Dairying Division has been doubled in the past four years. In order to further improve the research and investigational services two young men were sent to New Zealand in 1948 and it is expected that a third will go in 1950. On their return these

officers will specialise in butter manufacture, cheese manufacture, and whole milk production respectively.

A system of group herd recording has been developed and rapidly extended. A group consists of about 22 herds each of which is tested once per month; the promulgation of the results of the tests among the farmers of each group is assisting culling, is stimulating interest in better husbandry, is of great general educational value, and is engendering a healthy spirit of competition. Thirty-one such units, each under the control of a special officer, are now working and more are in course of organisation.



Plate 6.

BREEDING BETTER SUGAR CANE.—This is a crop of the variety Q.50, bred by the Bureau of Sugar Experiment Stations and now widely grown in central and southern cane districts.

The number of producers supplying milk to Brisbane increased from 700 in 1943 to 1,400 in 1948; whereas in 1938 some 4,000 gallons of bottled pasteurised milk were sold in Brisbane daily, the daily average in 1948 was 24,000 gallons, while a further 10,000 gallons of pasteurised milk is sold unbottled. The proportion of bottled pasteurised milk sold in Brisbane is higher than in any other State capital. The necessary inspections and examination of milk have increased correspondingly and in the year 1948-49 a total of 121,505 samples of milk was examined in the Dairy Research Laboratory, compared with 56,108 in 1943-44. The quality of milk has rapidly improved and in 1948-49 the number of samples of unsatisfactory quality was little more than half that in 1943-44.

Pasteurisation of milk is being fostered and pasteurisation plants now operate in Brisbane, Southport, Merrimac, Ipswich, Toowoomba, Warwick, Nambour, Murgon, Rockhampton, Mackay, Innisfail, Cairns and Malanda.

Pure bred herd recording, which naturally was virtually at a standstill during the war, has increased rapidly and 154 herds were tested in 1948-49. Any further extension of this rather exacting work is limited by the pressure of other duties on dairy officers.

The Division of Dairying, the Agriculture Branch and the Cattle Husbandry Branch have co-operated in an intensive drive to promote dairy efficiency.

Six organised group feeding trials are being carried out on 24 farms in major dairying districts, while two more groups will be launched shortly. These groups each consist of four farms and carefully determined rations are being fed to cows on three of these, while the fourth remains on the old feeding basis; the methods of feeding will be rotated each year to give a further check on the relative value of the different feeding methods.

Forty-two farms have been selected as "demonstration farms" and selection of another twelve will be completed shortly. The owners of these farms have agreed to carry out recommended practices in respect of pasture improvement, fodder conservation, subdivision of paddocks, care of the herd, &c. The results obtained will demonstrate the benefits and increased yields which may be expected.

Fifty-five pasture improvement trials, distributed through the main dairying districts, are now in progress. Over the past two years 215 varieties of newly imported pasture plants (grasses and legumes) have been planted on the Regional Experiment Stations, where their performance under Queensland conditions is being investigated.

A scheme for the systematic tuberculin testing of dairy herds supplying the metropolis was initiated in 1945 and during the year 1948-49 over 71,000 animals from 1,243 herds were tested. Although a heavy incidence of the disease was found in certain districts the number of affected animals found in the second round of tests has been very small. T.B. testing is also being carried out on the Darling Downs and in areas supplying Ipswich, and South Coast towns, and will be extended to other areas as circumstances permit.

An associated scheme for the encouragement of resident fully qualified veterinary practitioners in dairying districts was put into operation some 18 months ago. Approved practitioners are given "block testing" within a defined district with the proviso that the practitioner may be required to live within a stipulated area. The granting of testing rights ensures the initial steady income necessary to attract the practitioner; nine veterinarians are now testing under this scheme.

Veterinary Services.

A scheme for the encouragement of private practitioners is outlined in the preceding paragraph; this will relieve Departmental veterinary officers of routine testing and increase their concentration on disease prevention and advisory services.

Realising the need for expanded veterinary services the Department in 1945 commenced the award of veterinary scholarships at the University and there are now twenty scholarship holders in various stages of their course. Since they have entered into bonds to serve the Department upon graduation, a very material increase in veterinary staff is imminent. In addition the Premier has recently announced that the University will be given the financial assistance necessary to reopen the Faculty of Veterinary Science on a fully operative basis, thus ensuring a steady flow of veterinarians to the animal industries of the State.

Decentralisation of Pig and Poultry Advisory Services.

In the past the instructional staffs of the Pig and Poultry Branches were all stationed in Brisbane, whence they made periodical visits to country centres. However, the building up of the advisory services which has taken place since the reorganisation has enabled the stationing of officers in country centres where they can maintain better contact with the producers.

Advisory officers of the Pig Branch are now to be found in Brisbane, Toowoomba, Murgon, and Atherton, one will take up duty at Biloela shortly, while young officers in training will soon be available for other centres. During the past year these advisers paid visits to nearly 1,700 farms.

The poultry industry is to a considerable degree concentrated in or near the Greater Brisbane area and there is thus necessarily some concentration of advisory officers at Headquarters; in addition, advisers are now stationed at Toowoomba, Rockhampton, Atherton, and Townsville, while another officer has been attached to the Regional Experiment Station at Kairi in order to carry out poultry feeding experiments under North Queensland conditions.

Cattle Husbandry.

Branches providing advisory services aiming at improved methods of sheep, pig and poultry husbandry have been established for many years and, as stated above, these services have recently been markedly expanded. However, for various reasons, no similar service was provided for raisers of beef and dairy cattle.

In 1948 steps were taken to correct this position by setting up a Cattle Husbandry Branch; the technical staff of this Branch now numbers five, while several holders of Departmental scholarships will take up duties on completion of their University studies.

Up to the present the Branch has concentrated upon investigating and advocating improved methods of dairy cattle husbandry in association with the drive for greater efficiency in the dairy industry. Meanwhile steps are being taken to recruit staff for the study of beef cattle husbandry problems and the first appointee is now obtaining practical cattle management experience on a northern station property.

Improved standards of cattle husbandry are closely associated with improved levels of nutrition; pasture experiments are a most important phase of the necessary investigations and are outlined in the section dealing with dairying.

Soil Conservation.

Immediately prior to the war officers of the Agriculture Branch established a number of soil conservation experiments on the Darling Downs and in the Kingaroy district. The first step towards the establishment of a soil conservation service was taken by the appointment of a Soil Conservationist in September, 1947. In the intervening two years it has been possible to increase the technical staff to nine and field officers are now located on the Darling Downs, at Kingaroy, and at Atherton.

Steps have been taken to establish soil-conservation demonstration areas in districts menaced by erosion and to date twenty such demonstrations have been completed and stand as a permanent reminder that this menace can be overcome.

The factors influencing soil erosion in Queensland are very different from those ruling in those countries where most of the research on soil conservation has been carried out. Consequently the Departmental soil conservation service must devote a great deal of its resources to investigation and develop methods suitable to Queensland conditions as it proceeds. In this respect the Regional Experiment Stations have proved indispensable; experience gained on the Kairi (Atherton) Station, for example, where a trial contour banked area withstood the onslaught of $21\frac{1}{2}$ inches of rain in eight days, will be of great value as a basis for recommendations on the Atherton Tableland.

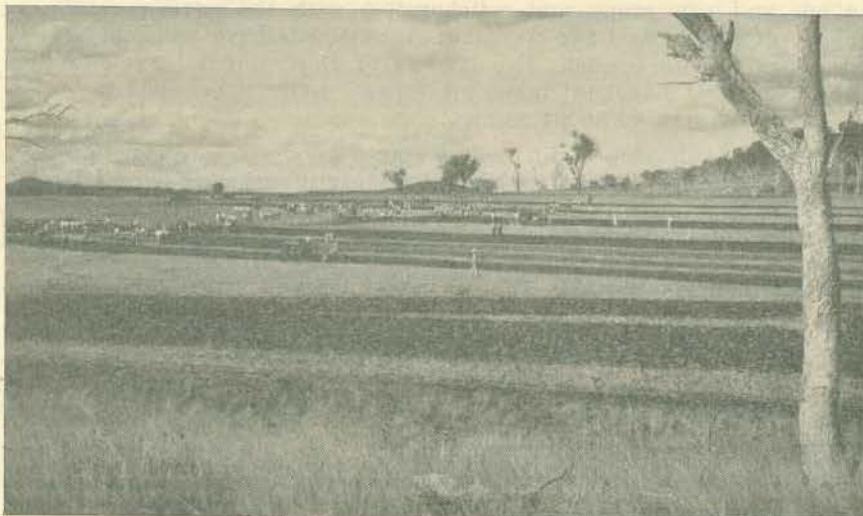


Plate 7.

BEATING SOIL EROSION.—This is a view of a Field Day gathering of farmers getting first-hand information on soil conservation practices on a Soil Conservation Demonstration Farm.

Interest in conservation practices is growing rapidly and the staff cannot as yet cope with the requests for assistance. Naturally, persons trained and experienced in conservation technique are not readily available and steps have been taken to train enthusiastic young men. At the same time, it must be appreciated by the community that the function of the soil conservation service is to demonstrate and advise upon the necessary measures of prevention and correction—not to carry them out. Queensland is a vast State with less than two persons per square mile, while the United States has nearly 50; it would obviously be difficult to provide a service on the United States pattern in Queensland.

New Crops.

Less than one half of one per cent. of Queensland is under cultivated crop and there is room for great expansion of agricultural production both by the extension of old crops and by the development of new ones. In this connection it is apparent that the diminishing gap between the wages paid to white and coloured labour, and the increasing degree of mechanisation, will make it possible for Queensland to produce an increasing number of commodities hitherto regarded as the close preserve of countries employing coloured labour.

The development of a new crop, particularly if it is markedly different from the staple crops, requires a great deal of careful investigation of its climatic, cultivation, and harvesting needs, pest and disease problems, and the storage, processing and marketing of the product. Such investigations, or the development of new methods for old crops, require concentration and specialised knowledge; they do not proceed very fast if they are merely incidental to a thousand and one jobs. Consequently there has comparatively recently developed in the advanced countries of the world a new profession, that of "Agronomist."

In order to provide the staff facilities for such investigation of new methods and new crops, and collaboration with the advisory staff, a Senior Agronomist and two Assistant Agronomists have been appointed to the Agriculture Branch; two holders of Departmental scholarships at the University have just taken up duties. Later it is hoped to build this agronomy staff to about eight.

New crops developed during the war were grain sorghum, ginger, and canning beans. An active plant breeding programme is now being pursued so as to extend the range of growth of grain sorghum; ginger cultivation followed the cessation of supplies from China and a processing factory has been established at Buderim. Linseed was expanded from less than 200 acres in 1947 to 5,500 acres in 1948 and approximately 10,000 acres in 1949. Cultivation of a dwarf-type sunflower (suitable for harvesting with wheat harvesters) shows promise on the Darling Downs and is increasing. Attention is now being given to rice production and the possibilities of tea are being explored.

Seed Certification and Pedigreed Stock.

Official testing of seeds for germination has long been adopted but, short of growing a plant, there is no means of telling whether it is true to type. Consequently there has been initiated a seed certification service whereby seed is grown and harvested under the supervision of Departmental officers who can then certify as to trueness to type. Such certification is being made for seed of hybrid maize, grain sorghum, Sudan grass, beans, tomatoes and papaws; in addition a seed selection service for wheat growers is provided in co-operation with the Wheat Board, and all cotton seed is selected by Departmental officers. A large proportion of the tobacco seed is selected and distributed by the Agriculture Branch and the bulk of Queensland peanuts is grown from selected seed.

In order to achieve uniformity of product a selection has been made of stock of the smooth-leaved pineapple and this pedigreed stock is now ready for distribution to approved propagators from the Horticultural Experiment Station at Nambour; a similar service is being developed for avocados. The distribution of certified citrus budwood has been in operation for some years.

The most spectacular advance arising from this system of selection and certification has been made in tomato production. The four certified strains now recommended for the Stanthorpe district have yielded up to six times as much as the old standard varieties when grown side by side with them. A similar investigation has been started at Bowen.

Market and Crop Reports.

There is much more to farming than growing crops successfully; farming can be a successful business only if, in addition, crops are grown

when and where needed and are marketed under the best obtainable conditions. To achieve this end it is essential that the farmer have reliable information as to supply and price trends. On the other hand, the services rendered to the farmer by merchants, financial houses, and transport agencies can be more efficiently provided on the basis of advance knowledge of production trends.

Daily market reports were instituted in 1947, and comprehensive reports on prices and quality of fruit, vegetables and farm produce sold in the metropolitan markets are compiled and issued before noon each day. These reports are accepted as standard quotations.

Monthly reports on production trends, commenced in 1946, are much in demand by farmers, Government Departments, and commercial houses. They are compiled from the reports of the many Departmental field officers, Marketing Boards, and correspondents.

Individual crop forecasts are also issued as compiled. These crop forecasts are based on an Honorary Crop Correspondent scheme and have obviously been much appreciated. Public spirited correspondents representing particular areas submit reports on the extent of plantings and progress of crops and from this information forecasts (which are proving to be very reliable) are made. So far the service has been limited to certain major crops but it is being extended gradually.

Staff Training.

The training of staff today determines the calibre of tomorrow's services to the man on the land. The training of juniors has been greatly facilitated by the development of experiment stations distributed through the State; the value of this opportunity for experience in practical farm operations cannot be over-emphasised.

Since the war organised schools for field officers have been conducted at Head Office by senior scientific personnel. These schools have covered the general subjects of agriculture, horticulture, cattle husbandry, sheep husbandry, poultry raising, and control of diseases of stock.

Central Publicity Services.

The "Agricultural Journal" has for over fifty years been the main vehicle of publicity for the Department. With the increase of research work it was felt that one Journal could not satisfactorily serve as both a research and an extension publication, and in 1943 the "Queensland Journal of Agricultural Science" was launched.

A weekly "News Bulletin" was inaugurated in July, 1949, and is issued to the metropolitan and country press and radio stations; this deals with subjects of educational and topical value. In addition, special press releases on subjects of interest to residents of city and country are made almost daily.

Field days have proved a valuable extension medium and in association with the Queensland Dairymen's Organisation and other organisations of primary producers they are now being held on an extended scale. During the year 1948-49 some 65 field days were conducted by Departmental officers.

Wireless, a modern and powerful medium for extension activities, has been exploited and each year about 60 talks are given by Departmental officers.

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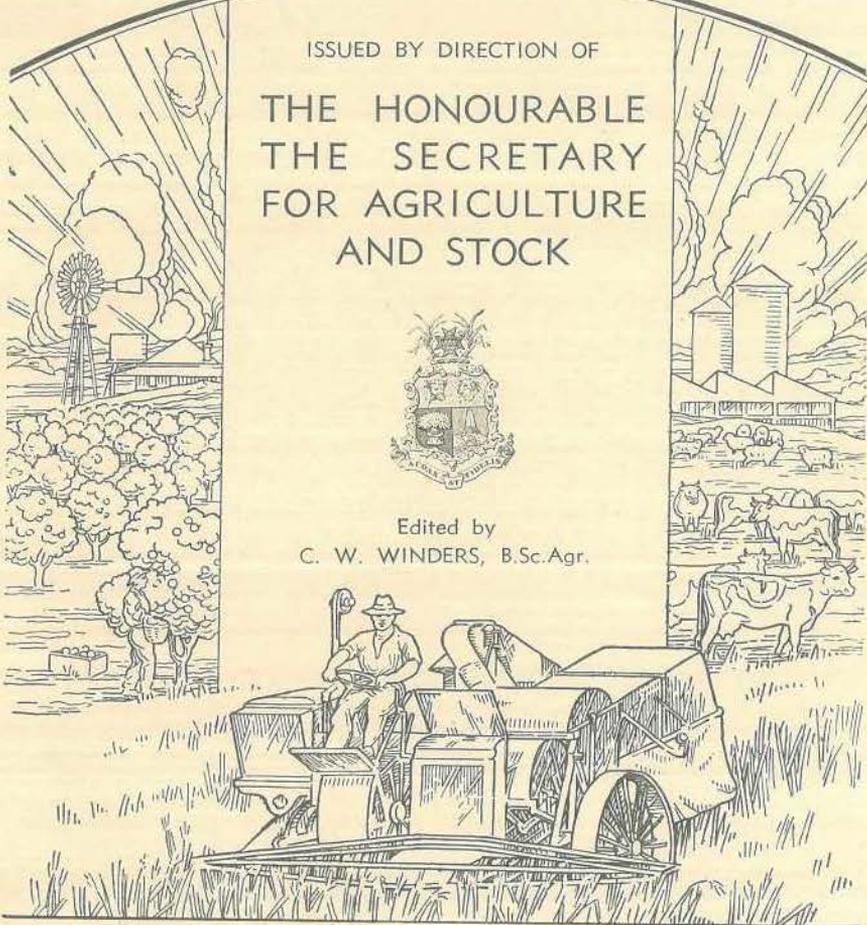
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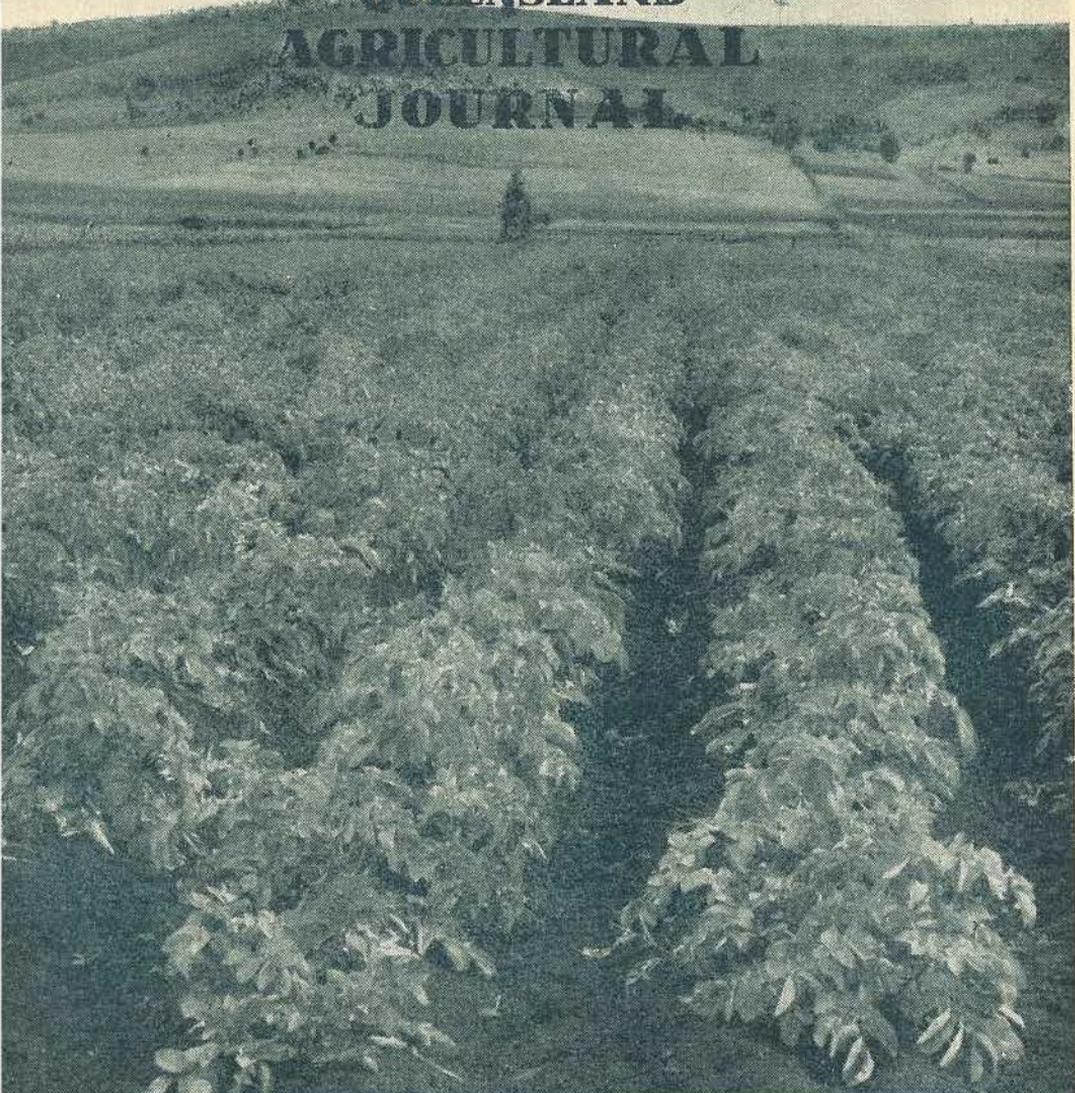
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