Chapter 2

1894 to 1940: changing roles – adapting to need

Establishment of the Bureau and Department of Agriculture

The Bureau of Agriculture began as a small organisation servicing a small, slowly expanding industry. That changed with the discovery of the value of superphosphate and the availability of new innovative machinery.

Halted by World War I, rapid expansion resumed in the post-war years only to be stopped by the Great Depression, which began in late 1929 and was followed by slow recovery through the decade.

In response, the department grew slowly, responding to the needs of the expanding agriculture with the best advice available, and financial and physical assistance. After the war it began to move towards becoming a science-based research and extension organisation. By 1940 this had been largely achieved.

The Report of the Commission on Agriculture, 1887-91 clearly describes agriculture in Western Australia. The agricultural areas at that time were the Avon Valley, New Norcia, the Swan Valley, the Greenough area between Dongara and Geraldton, the south-west towns of Pinjarra, Harvey, Brunswick, Bunbury, the Vasse, Bridgetown, Preston, Dardanup, Williams, Marradong and Wandering. The Avon Valley was regarded as the ‘Eastern District’.

The Commission on Agriculture’s report referred to new machinery becoming available—particularly the two or three furrow ploughs and stump-jump ploughs. The stump-jump plough was seen as very important as it reduced the cost of clearing by eliminating the need to remove all stumps before ploughing. There was also discussion of the merits of the stripper and winnower combination as opposed to reaping, binding and thrashing for harvesting crops.

The commissioners concluded that there was opportunity for a greatly expanded agriculture. They noted the importance of concessional finance, and the need to establish ‘school farms’ where experiments could be carried out and where students could study. They also considered the farmer associations should provide information through meetings where papers could be read to members, and to provide information to new settlers.

While farmers were aware of the need for artificial fertiliser, guano, which was being mined in the Abrolhos Islands, was seen as very expensive, precluding its use for many. Much of the guano mined was exported and the commissioners were critical of this. Animal manure remained a major source of fertiliser.

In evidence to the Commission in 1888 a prominent farmer in the Northam district, Thomas Wilding, stated that his animals produced some ‘25 acres of manure’. Surprisingly there was no mention of superphosphate, which was manufactured in Victoria from 1876.

In April 1893 the first conference of pastoralists, agriculturists and fruit growers was held. Associations of farmers with common interests, and local agricultural societies, had never met previously to consider policy issues. They met under the auspices of the Swan District Vine and Fruitgrowers’ Association. These conferences were to become an annual
event and an important interface between the government and the farming community.

A major request from the first conference was for the establishment of a Bureau of Agriculture, similar to organisations established in other colonies.

In response, Premier Sir John Forrest set up the Bureau of Agriculture. The bureau was formally proclaimed in the *Government Gazette* of 19 January 1894.

Forrest established a board made up of prominent farmers to manage the new organisation. The chairman was well known citizen and farmer, Charles Harper. The other members were AR (Alexander Robert) Richardson, JGH Amhurst, G (George) Throssell, W (William) Paterson, and FH (Frederick Henry) Piesse. The Secretary was Mr Lancelot Lindley-Cowen, who was also the Executive Officer of the Bureau of Agriculture. Mr Piesse resigned in October 1894 and was replaced by Mr F Craig.

The bureau became the Department of Agriculture in 1898, when it was placed under the control of the Minister for Lands, Forests and Agriculture. Mr Lindley-Cowen became the first Secretary of the Department of Agriculture and held that position until his early death in 1902.

The objectives of the Bureau of Agriculture as set out in the 1894 *Government Gazette* were to:

- bring the pastoral, agricultural and viticultural associations under the bureau at the earliest date
- establish experiment stations throughout the Colony - and quickly disseminate the results of work done there to the community
- analyse typical soils of the Colony and disseminate meteorological information
- analyse manures to certify their content
- advise farmers on the dairy industry (which they forecasted would become very important in the Colony)
- import new crop varieties, fruit trees and fodder plants
- prevent the introduction of noxious weeds and eradicate existing weed species
- prevent the adulteration of foodstuffs
- eradicate insect pests
- achieve the correct nomenclature of fruits; fruit was apparently being grown under different names throughout the Colony
- encourage the introduction of new mechanical appliances and carry out field trials to demonstrate their use
- improve market outlets and information for both sellers and buyers.

These objectives were clearly aimed at the needs of the early days of farming in a strange land, on unusual soils and in a climate quite different to that experienced previously.

The capacity of the new bureau to provide advice and guidance to the farmers and pastoralists of the day has to be measured against its resources of people and knowledge. Science was yet to make a significant contribution and most ‘good agricultural practice’ was based on experience. In the early days of the Colony most of that experience had been obtained in the United Kingdom and had to be modified to fit local conditions.

In the developing agriculture of the next 25 years the Bureau/Department of Agriculture was also required to take on a series of administrative roles. This need was doubtless a major reason leading to it becoming a government department in 1898. In his communication to the Minister recommending this change, Mr Lindley-Cowen remarked: “It is better to be accused of being far ahead of the times than behind them. The average agriculturist is slow to learn and I would suggest that it is better to instruct the people boldly in the possibilities of the future and let the present, which is prosperous, take care of itself”.

The Hon George Throssell commented: “The education of the people is our first duty, and must be regarded as one of the main factors leading to national wealth”.

The Hon George Throssell commented: “The education of the people is our first duty, and must be regarded as one of the main factors leading to national wealth”.
The role of the bureau changed very quickly. Its role was perhaps better described by the then Under Secretary, AJ Despeissis, in his annual report of 1907/08:

While the function of the Lands Department is to put people on the soil and open the country to settlers, those of the Agricultural Department are to see them settled and turning their land to account, and generally looking after their interests.

The population was small until the gold discoveries from 1890. The movement of population in response to gold was aided by the long drought of the 1890s in eastern Australia and a bank crash in Melbourne in 1893. In 1889 the WA population was only 44,000, but it grew to 138,000 by 1896 and 180,000 in 1900.

Mechanisation

This chapter covers one of the most dramatic periods in the history of agriculture, and the work of the bureau/department has to be seen against these changes. Until the mid-1800s a single furrow mouldboard-type plough was mostly used followed by light cultivators. Seed and fertiliser (where it was used) were spread by hand or through an early type drill.

In WA the fertiliser was animal manure, guano or bone dust. But the last 40 years of the 19th century and first 40 years of the 20th century saw a major revolution in mechanisation and the development of a new phosphate fertiliser vital to the development of agriculture. These inventions, which are briefly referred to below, progressively changed agriculture around Australia and the world.

The stump-jump plough

Richard Smith, a blacksmith/farmer in South Australia, invented the stump-jump plough in 1876 when he produced a three-furrow version. This was too heavy and after modifications it was shown in 1877. Clarence Smith set up a factory to make the plough in Ardrossan and started production in 1880, continuing until 1930.
The harvester
From the 1840s inventors were trying to combine the stripper and the winnower. In December 1883 a competition was held at Dookie College in Victoria which James Morrow won and collected a prize of seventy-five pounds. He harvested one acre and obtained six bags of a perfect sample. Morrow won against HV (Hugo Victor) McKay in 1885/86 when McKay exhibited his first harvester. However, McKay was the first to commercially manufacture and supply machines of reasonable quality.

The header
Around 1886 Hedley Taylor, a farmer at Henty in New South Wales, invented the header. It was a major advance for harvesting heavy crops and was widely used across international wheat growing areas.

Superphosphate
Superphosphate was first manufactured in Australia in 1876 by James Cumming. Little was used in WA before 1900. In 1905, 2855 tons of fertiliser was imported, largely superphosphate. In 1906 the quantity imported was 18 566 tons. Usage increased rapidly and James Cumming opened the first manufacturing plant in WA in 1911.

Motor trucks, cars and better roads
Motor trucks gradually replaced wagons both on the farm and for grain carting. At the beginning of the 1930s much of the crop was still carted to the sidings on horse-drawn wagons. By the end of the 1930s most was carried by trucks.

Equally, cars revolutionised the social life of the country. In the early 1930s, life focused around small close-knit communities within a 10 to 15 mile radius. As roads improved and cars became more sophisticated the radius extended to 30 miles or more.

Tractors
The production of wheeled and track tractors in the post-World War I period progressively changed the method of farming and the size of farms. Their adoption was doubtless delayed by the Great Depression, but by the mid-to-late 1930s tractors began to dominate as the main power source on farms.

Pneumatic tyres
Until the early to mid-1930s wheeled tractors were fitted with steel wheels with lugs for traction. Manufacturers experimented with low pressure (15 pounds per square inch) aircraft tyres and developed tyres suitable for fitting to tractors. These were demonstrated in 1933 and by 1937 an estimated half of new wheeled tractors were fitted with rubber tyres.

Bulk handling
Bulk handling of grain was developed in the early 1930s. It had been discussed in 1913/14 but it was 1931/32 before legislation was passed and the Cooperative Bulk Handling company was formed. Bulk handling of wheat commenced at five receival points. By the 1937/38 harvest the facilities were universally installed across the wheatbelt.

The shearing handpiece
Shearing handpieces replaced hand shears and made shearing much more attractive. Originally they were mechanically-driven off a motor driven shaft. Electrically-driven handpieces were developed later.

The railways and land release
The work of the bureau/department should also be seen against the background of the experience and financial resources of the settlers. Many new settlers came from overseas, other colonies or non-farming occupations within the Colony. Sheep and cattle could be run extensively on the scrub and grass of the semi-arid pastoral properties and on the limited native pastures on the unused cleared land of the settled areas. Horticulture and viticulture could be carried out in much the same way as in England.
Camel teams used to transport wool bales. Transport was a costly problem before the advent of large trucks.

On the other hand, crop production on the strange and largely infertile soils needed a great deal of innovation to be successful. Until the mid-1890s most ploughing used a single furrow mouldboard-type plough, followed by light cultivators. Seed and fertiliser (where it was used) were spread by hand or through an early type drill. The fertiliser was animal manure, guano or bone dust.

The stripper harvester does not appear to have been generally used in WA before 1900. In this early period (really through to the mid-1930s) much of the crop was cut for hay to feed livestock, particularly horses.

The development of railways also had a marked impact. The first substantial railway, from Albany to Beverley, was built by a private company in 1889. This was on the basis of the sale of land granted to the company on either side of the line. The line was bought by the government in 1896 and later connected to Perth through Spencer's Brook.

Separately, in response to the development of forestry and some agriculture in the South West a railway had been built from Bunbury south-east to Boyanup in 1891. Perth was connected to Bunbury in 1893. This line was extended to Collie and the Boyanup line was extended to Bridgetown in 1897.

The Midland Railway Company built a short line east from Midland Junction in 1891 and later from Midland Junction to Geraldton on a land grant basis. The gold rush focused the government mind on the need for rail transport both for goods and passengers. The line to Southern Cross was finished in 1894 and extended to Kalgoorlie in 1897.

Both the Bureau of Agriculture and the Agricultural Bank were established in 1894. The bank followed the enactment of the Homestead Act of 1893 which allowed any citizen who did not own 100 acres of freehold land to apply for a free Homestead Farm of 160 acres. In 1898 the Land Act provided that the settler could apply for Conditional Purchase land at 10 shillings per acre, with 20 years to pay.

Much land was released for settlement in the decade following 1889. Land was surveyed in 40 locations from Northampton to Albany and from Jandakot to Southern Cross. The Meckering area was released in 1889, Doodlakine and Baandee were opened in 1894 and 1895, and the Yilgarn area near Southern Cross in 1899.

While the rail network provided the framework for development, some farmers were as much as 100 miles from a railway line. The conference of farmer associations in 1903 resolved that no farmer should be more than 15 miles (24 km) from a railway and pressed the government to adopt this policy.

In 1905 the government decided that no farm should be more than 25 miles (40 km) from a railway. This resulted in a major expansion of the rail system over the next 13 years. However, much of the system was on light tracks with high maintenance cost and had to be progressively upgraded and consolidated by CY O’Connor who had been appointed Government Engineer in 1891.

As the easily-won gold was exhausted and the government opened land along the railway lines, many miners turned to farming. These new land allocations attracted settlers from the city. Most new farmers had little knowledge and few resources. This was the real challenge for the government and the bureau/department became its main agency for providing advice and help to the new farmers.
There were major increases in land sown to crop between 1906 and 1910, carrying through until World War I stopped expansion in 1916. Development did not start again until the early 1920s, with the alienation of land for soldier settlement after the war, coupled with satisfactory prices.

The areas sown to various agricultural industries are shown in Table 1 between 1901 and 1918. Figures for some early years were not recorded.

**Staffing resources – 1894 to 1920**

A major activity of the bureau was to carry out inspections under the *Insect and Destructive Substances Act*. Much of this work was at the ports to prevent the entry of damaging insects and to monitor the introduction of dangerous substances. As a result inspectors made up the majority of staff during this period. Professional input was much greater after the 1910/11 reorganisation of the department.

The staff of the bureau in 1895 (no record was found for 1894) was the Secretary, a clerk, a caretaker and a messenger, plus five experts. These were a viticultural and horticultural expert, an entomologist, a biologist, a consulting veterinary surgeon and consulting dairy expert. There was also a Chief Inspector under the *Destructive Insects and Substances Act* and probably one inspector. All expert staff were gazetted as inspectors under that Act.

In 1896 an artist and two additional inspectors were added. The two inspectors were stationed at Albany and Geraldton. By 1898 the artist was gone but a botanist and an agricultural analyst had been employed, together with inspectors for Busselton, Bunbury, Esperance and Hamelin.

By 1901 the department had lost its entomologist and biologist but had been given control of cold stores, and had 18 pest inspectors. In 1902 the Chief Rabbit Inspector and six inspectors were added, together with the Chief Veterinarian and his assistant, and a number of stock inspectors.

From 1905 to 1911 the department had two senior positions of Under Secretary and Director. Before this the senior position was titled either Secretary (1898–1902) or Director (1902–1905).

<table>
<thead>
<tr>
<th>Season</th>
<th>Cereals</th>
<th>Hay</th>
<th>Other crops</th>
<th>Vines</th>
<th>Orchards</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Area in acres</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1901</td>
<td>82 569</td>
<td>104 254</td>
<td>5 894</td>
<td>3 325</td>
<td>5 296</td>
<td>201 338</td>
</tr>
<tr>
<td>1906</td>
<td>215 930</td>
<td>124 906</td>
<td>9 301</td>
<td>3 541</td>
<td>11 026</td>
<td>364 704</td>
</tr>
<tr>
<td>1910</td>
<td>532 242</td>
<td>158 629</td>
<td>12 689</td>
<td>2 917</td>
<td>15 609</td>
<td>722 086</td>
</tr>
<tr>
<td>1911</td>
<td>648 841</td>
<td>175 432</td>
<td>11 218</td>
<td>2 795</td>
<td>16 738</td>
<td>855 024</td>
</tr>
<tr>
<td>1913</td>
<td>933 931</td>
<td>231 690</td>
<td>12 206</td>
<td>3 010</td>
<td>19 154</td>
<td>1 199 991</td>
</tr>
<tr>
<td>1914</td>
<td>1 230 818</td>
<td>246 640</td>
<td>37 026</td>
<td>2 864</td>
<td>20 595</td>
<td>1 537 923</td>
</tr>
<tr>
<td>1915</td>
<td>1 472 097</td>
<td>332 037</td>
<td>39 115</td>
<td>2 920</td>
<td>21 278</td>
<td>1 867 547</td>
</tr>
<tr>
<td>1916</td>
<td>1 849 502</td>
<td>290 036</td>
<td>20 496</td>
<td>2 751</td>
<td>21 805</td>
<td>2 184 590</td>
</tr>
<tr>
<td>1917</td>
<td>1 701 080</td>
<td>240 726</td>
<td>32 517</td>
<td>3 031</td>
<td>21 152</td>
<td>1 999 106</td>
</tr>
<tr>
<td>1918</td>
<td>1 350 456</td>
<td>265 899</td>
<td>33 881</td>
<td>2 996</td>
<td>21 137</td>
<td>1 674 369</td>
</tr>
</tbody>
</table>
The position of Under Secretary was established in 1905. It was occupied by AF Crawford until 1906, by WB Hooper from 1906 to 1907 and by Adrian Despeissis from 1907 to 1909. CF Chaplin was Director from 1905 to 1906 and Adrian Despeissis in 1906 and 1907. Professor William Lowrie, a well credentialed agricultural scientist was listed from 1909 to 1910. He travelled widely through the agricultural areas and wrote an important analytical report on the department. However, he only remained for a short time, leaving to take a senior position in the South Australian Department of Agriculture in early 1910. This frequent change in senior positions doubtless provided little opportunity for leadership.

In 1909 there were only five professional officers listed, two of whom were veterinarians, with 29 general division officers (mainly fruit and stock inspectors) and 28 clerical officers. By 1910 staffing positions for 12 professional officers were listed. Five of these were in the stock section and four in the general area. There were 25 general and 33 clerical staff. In 1911 there were 14 professional officers listed. In that year Commissioners for the Wheatbelt, South West, Horticulture and Tropical Agriculture were listed. Six veterinarians were part of the 14 professionals. This structure was largely retained until Trethowen was appointed as Under Secretary in 1920.
In 1920 there were 36 general division and 57 clerical officers. The number of clerical officers reflects a big accounting section in that year, which did not appear before or afterwards.

**The bureau starts to function**

The Bureau of Agriculture was gazetted in January 1894 and almost immediately began to publish a fortnightly journal “... in order to place it in direct and frequent contact with the agriculturists of the Colony”.

The first series of the *Journal of Agriculture* was published in April 1894 and continued to be published until 1909 when the Under Secretary of the day decided to cease its publication. During the period it changed from being published fortnightly to being published quarterly. It was resurrected in 1924 and continued to be published in various forms until it was overtaken by the new media outlets in 2000.

The *Journal of Agriculture* was the key to communication with farmers in the early years and an important method in later years.

In the first issue the bureau set out its immediate objectives, noting that it would take some time to become fully operational. The editorial stated that the chief objective was to act as a board of advice to agriculturists of the Colony on matters related to the welfare and management of their land, crops, trees and stock.

It said the bureau had information from all parts of the world and imparting this to the agriculturists in an acceptable form would be one of its chief roles. Farmers were encouraged to seek its help when an expert opinion was required. Certainly the fledgling bureau received a lot of early assistance from comparable organisations which had been established in other Australian colonies, particularly New South Wales.

In the first six months of the bureau’s existence more than 16 000 copies of the *Journal of Agriculture* were distributed. It was available free to members of associations. Non-members were charged an annual subscription of 2 shillings.

Money was received from advertising and this was used to increase the size from eight to 12 pages after six months. The 1894 issues totalled 284 pages - a remarkable achievement. The journal continued to be very popular and in 1895, 29 numbers were published. It was further enlarged so that the average size was 14 pages over the year. In all, more than 46 000 copies were issued during 1894/95.

The *Journal of Agriculture* continued to be a valuable communication tool and in 1896, 51 450 copies were distributed.

Much later, the Under Secretary reported in 1905/06 that there continued to be a big demand for the journal. While considerable savings had been made in printing, and revenue was received from advertising, the net cost to the department was around £14 per month.

In the September 1894 issue the bureau published its first ‘annual’ report covering the period from its establishment in January to 30 June. Further reports were issued in mid-1895, 1896 and 1897. These reports dealt with the major issues facing the bureau and action taken to deal with them.

The potential importance of the fruit and viticultural industries to the Colony was
 recognised. In the first few months the bureau was able to employ a viticultural and horticultural expert, Mr Adrian Despeissis, from the NSW Department of Agriculture. By June 1895 Despeissis had visited many districts, giving advice on the full range of horticultural activities.

Despeissis was to become an important professional officer of the bureau and the department. Obviously a person of considerable knowledge and energy, he prepared a book of 350 pages on horticulture and viticulture, first issued in 1895. Assistance was received from the NSW Department of Agriculture. It was reprinted as a revised second edition in 1896 and enquiries for copies came from outside the Colony. Later it was decided to issue the Settlers Guide and Farmer’s Handbook. A copy of this comprehensive handbook is held in the Department of Agriculture and Food library.

At the time the bureau was formed, legislation titled the Destructive Insects and Substances Act required the disinfestation and disinfection of all fruit trees entering the Colony and was enforced by the new bureau despite objections from importers. This legislation did not provide power to prevent the spread of a disease or pests already in the Colony and when requested by the bureau, the legislators passed a new Insect Control Act in the following year. The bureau took responsibility for its implementation.

The control of pests and diseases in orchards became a major activity. In 1896 the bureau commented on resistance from orchardists to the inspection and disinfestations required under the Act, and it was modified to make the restrictions more acceptable. The control of the introduction of vine cuttings was amended to allow cuttings from any part of the world provided they were held by the bureau in quarantine for one year. Strict control was maintained over pome fruit imports for fear of introducing codlin moth.

In 1896/97 a serious attempt was made to eradicate the Mediterranean fruit fly (Medfly). Apparently it had been first reported three years previously but was not initially seen as a serious threat to the stone fruit crop. The attempted eradication was unsuccessful; Medfly remains a significant pest today.

The bureau also sought amended legislation to better control the spread of noxious weeds. The existing legislation only provided for control of Spanish mustard and stinkwort. It took some time for appropriate legislation to be enacted but this was finally achieved. The bureau imported seeds of a range of crops and fodder plants for possible use in the Colony. Little was known about what was suitable and what was not. In its first year experimental plots were established in various districts in cooperation with farmers. In 1895 an experimental planting of sandalwood was made at Pingelly as a possible future plantation crop.

Realising the potential value of having its own property for experimental work, in 1895 and 1896 the bureau requested funds to establish an experimental farm. In the 1896 submission it proposed that the farm have a comprehensive technical training role. Separately, the bureau wrote to agricultural societies and associations recommending that land be reserved in their areas for a possible future agricultural college or experimental farm. There were 43 such organisations at the time.

There was an early demand for legislation to empower the bureau to require the testing of all fertilisers and manures. While artificial fertilisers were not used, various manures including guano and bone dust were sold and farmers were aware of differences in the ‘quality’ of these materials. The bureau also asked that the proposed legislation provide for control over feedstuffs even though they only had the resources to deal with fertilisers.

In 1896, concerned at the continued adulteration of food, the bureau also sought amendment of legislation controlling adulteration of foodstuffs and liquors. A particular problem was the continued adulteration of milk with water, and the
addition of other animal fat to butter. The greatest problem was water added to milk where it was drawn from a well which might be close to drains or other sources of contamination.

In its first year the bureau approached the Education Department to persuade it to introduce a book on agriculture to State-run schools to give students some background in agriculture. Unfortunately this request failed. The bureau was concerned that suitable arrangements should be made to conserve the Colony’s forests. It identified a suitable consultant from the east coast to provide an objective assessment of the nature and extent of the State forests. He needed surveying help to carry out this work so the funds provided for his employment were transferred to the Lands Department.

The bureau was in contact with machinery manufacturers, seeking the introduction of new machines on an agency or trial basis. It saw the need to encourage the importation of improved machinery and imported two spray pumps for testing.

In its first year it also examined of the quality of Western Australian flour. There had been claims, particularly from the north of the State, that WA flour had inferior keeping quality to imported flour. The December 1899 *Journal of Agriculture* contained favourable objective reports on the quality of WA flour from Coolgardie, eastern states agricultural shows and an American analysis.

The bureau also set up sub-branches throughout the Colony and by 1896 there were 41. These were avenues for communication in both directions.

In 1896, the bureau moved to the fourth floor of the West Australian Chambers building. This enabled it to establish an area called the Museum and to give its expanding library more room. The library was already becoming very useful, with some 430 books on its shelves. The books were mainly annual reports and journals (66), botany (64), horticulture (36) and viticulture (33), but livestock, veterinary and dairy issues were also represented.

The Museum was the repository for ‘an expanding collection’ of insects and also housed samples of soil types, with attached analytical data. A herbarium had been started and included a large number of native plants, together with introduced species of economic value. It also housed a collection of native grasses seen to be likely to have some economic importance. The bureau was also cooperating with the Perth Museum to educate farmers on the value of insectivorous birds.

The library (Museum) of the Bureau of Agriculture in 1897 – a small but important beginning.

Other actions taken by the bureau in these early days were to:
- provide a soil analysis service for farmers, meeting half of the cost
- test the toxicity of various shrubs and other native plants on rats and mice
- ask to have the *Dog Act* made more effective in the interests of stock owners
- request legislative authority to inspect for possible diseased poultry being introduced into the State
- appoint another veterinarian as a consultant in order to maintain a generally healthy animal population and in particular to monitor tuberculosis in dairy cattle
- establish a labour branch, quite separate from its inspectorial and advice role, to
help men obtain employment in rural areas

- advocate to producers that they form cooperative arrangements as the means of marketing their products (amid concerns that small producers could not market their products successfully)
- seek funds to catalogue the poison plants in the Colony
- recommend a method of collecting agricultural statistics to the government.

A sample of articles in the 1894 *Journal of Agriculture* follows:

Cultivation; potato spacing; feeding pigs on wheat; picking, packing and marketing of fruit; vermin control; preventing rust on tools; adulteration of milk and cleanliness in the dairy; the choice and use of artificial fertiliser (this continued through a number of issues); spraying insects using insecticides such as an emulsion of kerosene, soap and water, or resin, caustic soda, fish oil and water at various strengths; rickets in cattle (zamia palm poisoning); lemon growing; concern that imported apples may be retailing in Perth; the food taken from the soil by an acre of fruit; treatment of wine in the cellar; protein food for cattle; use of arsenicals for fruit spraying; advice on setting a hen; analysis of night soil manure; hints on stable building and fitting; ring-barking; experimental crops; cottony cushion scale; control and identification of codlin moth; spraying for fungus on fruit; pruning and budding of fruit trees and vines; analysis of bone dust; wheat growing in the world; ploughs and ploughing, recommending a short-breasted digging plough rather than a long shear mouldboard plough; cost of wheat growing; saving farmyard manure; hives and frames; a grub which was destroying tomatoes; how to clean harness; how to poison wild dogs; home-made soap; how to cure bacon; butter making; visits by the horticultural expert; lice and ringworm in calves; the cultivation of peanuts and cowpeas; the claimed poor keeping quality of WA flour in the northern areas.

The fifth conference of societies, associations and sub-bureaux was held in April 1897. Some items discussed are listed below as an indication of the issues seen as important by farmers of the day:

Water boring (farmers were interested in underground water being found in the agricultural areas); establishment of an agreed basis for measuring 1 ton of chaff; the need for a zone system of railways; the making of timber reserves for settlers; the suppression of noxious weeds; prevention of the introduction of phylloxera; the cost and management of pastoral rents; the destruction and eradication of vermin; problems with the adulteration of food; concern at the continued export of guano; the need for shed accommodation at railway sidings; the question of cooperation among viticulturists and horticulturists; the use and control of poisons; the preservation of wild duck and kangaroos; supervision of dogs; drainage; concern about the immigration of Chinese; a proposal to introduce the two-bushel bag; plus a range of other issues.

**The beginning of the Department of Agriculture**

In 1898 the Bureau of Agriculture was seamlessly converted to a State Government department responsible to the Commissioner for Colonial Lands. Mr Lindley-Cowen, in recommending the change, made the following remark: “It is better to be accused of being far ahead of the times than behind them. The average agriculturist is slow to learn and I would suggest that it is better to instruct the people boldly in the possibilities of the future and let the present, which is prosperous, take care of itself”.

The Hon George Throssell commented: “The education of the people is our first duty, and must be regarded as one of the main factors leading to national wealth”.

Mr Lindley-Cowen became the first Secretary of the Department of Agriculture but was not successful in having the department report directly to a minister. It
began part of an enlarged Lands Department. This arrangement was in place until 1903 when it was separated from the Lands Department and became responsible to a Minister. While no published annual reports can be found for the department during its period as part of the Lands Department, it reported to the Parliament and its reports are among the parliamentary papers of the time. The board of the bureau became an advisory committee.

The first field station was established at Hamel in 1898. The Chapman State Farm and the Narrogin Experiment Farm were established in 1903. Early in 1906/07 a portion of land in the Brunswick area was vested in the department “for the purpose of creating a Dairy Farm”. It was intended that the farm be stocked with pure bred dairy cows and pigs. The cows would be milk-tested so that the potential value of any surplus stock would be known at the time of sale.

In 1907 the Nangeenan (Merredin) State Farm was transferred from the Lands Department to the Department of Agriculture. In 1913 the Commissioner for the South West was instructed by the government to establish a Model Dairy Farm at Denmark. In 1902, after much discussion and some delay, a decision was taken to build a rabbit-proof fence following reports that rabbits had reached Eucla. There was not universal support for the idea but eventually three fences were built. The No. 1 fence started at Twilight Cove, some 125 miles west of Esperance, and stretched for 1145 miles to a point south-west of Broome and about 20 miles north of Condon on the north-west coast. The No. 2 fence stretched from Point Ann on the south coast for 730 miles to join the No. 1 fence at Gum Creek in the Murchison.

The No. 3 fence started from the No. 2 fence about 20 miles north of Yalgoo and ran due west to the Indian Ocean. It was built east-west to protect the northern areas from rabbits invading from the south. In 1912/13 a new wing was built, extending into the interior from a point 840 miles north of Burracoppin. This was aimed at stopping the rabbits from reaching the northern regions. In addition during that year 158 miles of fence were made ‘dingo and fox proof’.

A rabbit ‘barrier fence’. Maintenance of some 3300 km of rabbit-proof fences was a difficult undertaking for the department.

Because by the time building of the fence started rabbits had been seen near Coolgardie the fence was started at Burracoppin.

The initial erection was started by the Department of Agriculture, but following a dispute over a contract the task was transferred to the Public Works Department. The maintenance of the fences became a major undertaking for the department.

Because of the importance placed on the development of a dairy industry, the department employed a man who had extensive experience in Canada, New Zealand and South Africa to advise farmers.

The Cold Storage Facility had been managed by the Public Works Department until it was transferred to Agriculture in 1902. The 1906/07 report by the manager of the Refrigerating Works was his tenth, indicating the Cold Stores had been established around 1896. He also had responsibility for the markets and abattoirs.

At the beginning of the 1909/10 financial year the department took on the responsibility for providing water supplies and road clearing in advance of settlement and as an aid to settlement in the new
outlying’ areas. In the first year some 60 earth tanks and wells were constructed. The tanks ranged in size from 1000 to 2000 cubic yards.

Also 300 miles of roads were constructed. As the new areas expanded there was a continued call for this service. Land was also set aside for catchments for possible future railway or town supplies. The 1912 report stated that management of the road clearing and water supply activities continued apace. Because of the expansion of the settled areas “there has been a big demand for this service, which has been difficult to meet”, the report said.

The department was also involved for a short time (about 1910) in providing initial capital to civil servants who were allocated blocks in the Tammin area. This area had been reserved for retrenched civil servants and blocks were allocated to them. In earlier years the department had made loans to settlers for stock purchase but there was little demand from the new farmers who were focused on cereal production.

During 1910 the Donnybrook fruit growers sought a loan to help develop a small factory to process excess fruit. The Minister granted this loan, then a small additional loan in 1911.

In 1911 the department took on a new function to help settlers. A branch was established with eight traction engines to pull trees. The comment was made that using the ‘powerful’ engines greatly sped up the clearing process through forest country. The 1912 report shows that the majority of the work was done in the South West, where 4122 acres were pulled. A technique had also been developed to use the engines for scrub rolling. This service was charged for and extended terms were offered where first mortgage was available, but it appears other arrangements were made where it was not available.

A very dry year was experienced in 1911. Many of the settlers who had taken up land only a few years before, lost all their crops including their seed. The WA Government decided to supply seed from the State farms and a Grain and Foodstuff Act was passed to allow seed wheat to be purchased by farmers. The sales were under the direction of the Seed Wheat Board which consisted of the Under Secretary for Agriculture, AJ Monger and A Gorrie.

In more ‘normal’ activities, the period from 1904 to 1909 was one in which the department was largely involved in inspectorial work in the plant and stock industries, limiting entry of insects and diseases and monitoring the state of pests and diseases in fruit and animal industries. It was doubtless promoting the use of modern equipment and, after 1903/04, the use of superphosphate. As the State farms developed after 1907 there were annual reports on progress, some experimental work, and some wheat breeding. Young potential farmers also received some training and experience at the Chapman and Narrogin State Farms. These were part of the everyday activities of the Department of Agriculture.

Other activities were periodically added to its responsibilities. It was, for example, required to manage a horse breeding project at Jigalong Station, a farming and meat production enterprise at Yandanooka, and after 1902 a growing enterprise of abattoirs, cool stores, butter factories and a bacon factory. Towards the end of this period it took
over the role of maintaining the central stables for the horses required by government departments. This proved to be very time consuming.

The development of the wheat industry was very important to the State. In 1905/06, for example, the cost of wheat imports was £2587 but flour imports cost £86 313 and the import of bran and pollard, chaff and hay, and malt and oats cost a further £200 000. The same applied to the dairy, pig and poultry industries.

In 1905/06 bacon and ham imports cost £116 000. The failure of the pig industry to develop was blamed on the failure of the dairy industry. In 1904/05 imports of cheese cost £27 500 and imports of butter £340 000.

The poultry industry was also slow to develop and in 1911 egg imports cost £80 050, leading to a comment that farmers were more interested in showing birds than in their egg-laying ability. In 1906/07 the department was planning to import young ewes from the east coast to improve and increase the sheep flock. It was planned that these would be on-sold to farmers at concessional rates. The increase in sheep numbers had been slow.

Professor William Lowrie, a highly respected agricultural scientist, took up a temporary appointment as Director of Agriculture in January 1909. He carried out a major review of agricultural development and travelled extensively in the wheatbelt in the months before writing his 1910 report. He concluded that the department should focus on trying to raise the general level of farming practice rather than on development of scientific knowledge based on experimentation and analysis. However, he did not see these as alternatives but as two arms that needed to go on together with the main effort initially devoted to developing better farm practice.

After analysis of the potential of the Chapman, Narrogin and Merredin State Farms, he recommended they all be closed. The reasons were interesting. He felt Chapman was too isolated, Merredin was a hay-producing property and therefore not really suitable as an experimental farm, and Narrogin was unsuitable due to soil variability and drainage difficulties.

Lowrie also considered it was a waste of money to provide training for potential farmers, which he claimed would be better done on private farms. He favoured the continuation of Brunswick as it would provide both the potential farmers and the department with sound information about the development costs of such a farm. He was doubtless influential in getting new appointments of professional officers.

Professor Lowrie resigned in January 1910 to take up an appointment in South Australia. Immediately he left it seems that the new Under Secretary, TS (Thomas Sydney) McNulty, took the opportunity to reorganise the department.

McNulty had been appointed Under Secretary in mid-1909 to replace Adrian Despeissis, who had occupied the position from 1907. Despeissis was moved to the new position of Commissioner for the Tropics. He was given the task of assessing the potential of the vast North West area and undertook the work with characteristic vigour. After a second visit he reported favourably and the Under Secretary saw an opportunity for a very much expanded tropical agriculture. Despeissis’ report on tropical agriculture was so voluminous that a special group was appointed to study it.

At that time the department became responsible to the Minister for Agriculture and Industry, and its name changed to the Department of Agriculture and Industry. Doubtless in consultation with the Minister, McNulty immediately set about revitalising the organisation.

The 1910 Public Service List shows positions for a horticulturist, a botanist and horticulturalist, an irrigation expert, and an officer-in-charge of a new information section. This preceded major changes at the beginning of 1911.

In 1910 the Minister decided that the vast areas of the State, the diversity of
agriculture, and the multitude of problems facing the new settlers made it appropriate to split up the work in the expert field and secure senior specialists in three distinct spheres. Three Commissioner positions were created for the southern part of the State and the position of Director was abolished. The Commissioner for the Tropics had already been appointed in 1909. The four Commissioner positions were:

- Commissioner for the Wheat Belt
- Commissioner for the South West
- Commissioner for the Fruit Industries
- Commissioner for the Tropics.

The three southern positions were filled by applicants from the eastern states. The appointments were:

- Mr GL Sutton as Commissioner for the Wheat Belt
- Mr JMB Connor as Commissioner for the South West
- Mr JF Moody as Commissioner for the Fruit Industries.

Sutton had had an outstanding career in NSW. He was initially appointed as experimentalist at Hawkesbury Agricultural College. He was then placed in charge of a station at Cowra where he worked on wheat breeding in association with William Farrer. He then took charge of the whole of the wheat breeding in NSW after Farrer’s death in 1906.

Moody had managed a very large orchard in Victoria and had extensive horticultural experience.

Connor had been Agricultural Superintendent for the Victorian Department, a gold medallist at Dookie College, and farming recently in his own right.

At the same time the expert staff was further strengthened by the appointment of a botanist and pathologist from Birmingham, two new veterinarians and a sheep and wool instructor. Additional clerical support was needed to deal with added work associated with potato import restrictions and a reported outbreak of codlin moth. The potato restrictions were due to an outbreak of ‘Irish blight’ in potatoes in the eastern states.

The three new commissioners took up their appointments on 1 July 1911. All three spent their first year travelling extensively in their areas of responsibility, and prepared comprehensive reports.

Sutton reported that in his first year he travelled 17,488 miles by train and 1,773 by road or water. The main points in Sutton’s report were:

- The land was not uniformly good but good results had been achieved on better class sandplain.
- Most areas were in a pioneer stage of development.
- Most settlers had had no farming experience but were anxious to learn.
- A vigorous information service was needed.
- Wheat seed used was poor quality of mixed and unknown varieties.
- On the Minister’s instructions quality seed wheat was to be distributed.
- It was preferable to export flour as the valuable bran and pollard is retained along with the majority of the minerals in the wheat.
- The State farms should be retained for demonstration and experimental work, to produce supplies of reliable seed wheat, to develop new wheat varieties, to test imported varieties and to test alternative crops.
- It was unlikely that a variety of wheat would suit the whole wheatbelt.
- Narrogin should focus on providing education at secondary level teaching both skills and practice to potential farmers.
- Specific conditions should be placed on money made available to farmers in the Salmon Gums area.
Connor’s first report made the major points that:

- There were great opportunities for intensive agriculture; particularly dairying and intensive activities such as vegetable and fruit production. Dairy products and vegetables cost the State £600 000 ($1 200 000) to import in 1911.
- Insufficient land preparation prevented production of valuable fodder crops, and this reduced the capacity of the land for dairy production.
- Little of large properties had been cleared and smaller properties more intensively worked would be more productive.
- Areas on both sides of the Perth to Busselton railway line needed drainage and liming, which was also needed on the large areas of clayey flats near Brunswick.
- Lime deposits were available between Pinjarra and Bunbury.
- The State should favour the South West as the settlement area rather than the wheatbelt.
- The absence of a pig industry was a reflection of the absence of a dairy industry.
- More care should be taken to select and breed quality dairy cows.
- Much of the South West was suitable for dairying and vegetable crops, particularly potatoes. He forecast the potato crop for 1912 would be 15 000 tons compared to 5500 tons in 1911.

Moody agreed with Connor and was enthusiastic about the future of the South West, particularly as a fruit growing area. Moody recognised that:

- Export was necessary in view of the periodic gluts on the domestic market and the large mark-up at retail level.
- A standardised packing case and packing order was required. The Fruit Growers Association was apparently working on this.
- Mt Barker and Bridgetown were important future fruit growing areas.
- A small demonstration orchard was needed and being established at the Brunswick State Farm.

The reports of Sutton, Connor and Moody and their subsequent work, coupled with the increased professional capacity they provided, resulted in a major shift in the department’s work. The arrangement of three commissioners appeared to work well, particularly for the wheatbelt where Sutton was proving to be both innovative and decisive and the problems and solutions were much clearer.

The position in the South West and the horticultural industry proved more complex and in due course Connor and Moody resigned during 1916/17. This resulted in the Commissioner for the Wheat Belt taking responsibility for the South West. He was assisted in this work by the transfer of an officer from the Lands Department who acted as ‘Agricultural Expert Generally Assisting’. He appears to have been given responsibility for the South West and reported to Sutton.

By the middle of 1916 the department had a mixed role. It was concerned with experimental work, advice on insect or disease control and on the general technical aspects of farming, as was addressed by the three commissioners’ reports. In this area concern was expressed about issues such as the impact of septoria on early sown crops, or the extensive growth of wild mustard. On the positive side it was noted that the practice of running sheep on wheat farms was growing and should be encouraged. It was noted that there was interference of the war with experimental work, particularly wheat breeding, due to the absence of staff.

Separately the department continued to be involved in a range of industry development and administration roles. The main ones were:
• Its role in maintaining the rabbit-proof fences continued but this work was severely hampered during World War I by staff leaving to join the army.
• The Rabbit Branch also maintained the horse breeding station at Jigalong.
• The department continued to run the cold stores, abattoirs and markets for the State. Abattoirs were operating at Wyndham, Kalgoorlie, Midland Junction, South Fremantle and North Fremantle. Cold stores were operated at Albany, Perth, West Perth and North Fremantle. Markets were operated at West Perth and Perth City. In addition the department was involved with the Denmark Bacon Factory and the Albany Butter Factory.
• The Yandanooka Estate was operated by the Stock Branch. This very large property supplied meat to the meat stalls which operated in the Metropolitan Markets.
• The Stock Branch was also involved with arrangements for the movement of cattle from the North West to Perth for slaughter because of the shortage of shipping.
• The department was still carrying out tree pulling, scrub rolling and ploughing, using steam engines.

In addition, Sutton was involved in a number of related issues:
• an advisory board looking at extension of the railway north from Toodyay to Piawanning and beyond
• developing a cooperative marketing arrangement for eggs, which was put in place during the previous year
• appointment to a board to examine the problems of areas known as Wodjil lands
• member of a joint committee on agricultural education which resulted in the development of a proposal for an education spectrum stretching from primary school to university
• member of a board established in 1913/14 to report on the possibility of bulk handling of wheat. The board had recommended that bulk handling be introduced gradually. In 1916 it was noted that while it had not proceeded, it could be used later if shipping was in short supply to export grain
• required to visit Melbourne to make arrangements for the marketing of the 1916/17 wheat crop and basic arrangements for the 1917/18 harvest.

By 1918/19 a number of substantive staff items had fallen vacant and one had been transferred out of the department. The positions of Commissioner for the South West, Commissioner for Fruit Industries and the Botanist had fallen vacant and the Plant Pathology Branch had been transferred to the Agricultural Chemist and Government Analyst Section.

These changes, coupled with the resignation of Under Secretary for Agriculture (TS McNulty), provided an opportunity for the new Under Secretary, HC Trethowan, to implement a further major reorganisation of the department.

As part of this change the Minister arranged to periodically chair a meeting of senior departmental staff.

The objectives for the new organisation were the promotion of the agricultural industries, including the prevention and suppression of pests and diseases, the successful operation, on commercial lines, of business undertakings and trading concerns controlled by the department; and the observance throughout of strict economy.

Eleven salaried positions were not filled, saving £2061 ($4122). In addition the work of the three officers dispensed with was more efficiently carried out at a lower cost, saving an added £1176 ($2352).

Two new professional positions of OIC of Fruit Industries and Economic Entomologist were created.

The inspection responsibilities in the South West were catered for by the creation of a position of Chief Inspector of Agriculture for the South West.

A Dairy and Pig Expert was employed.
A new position of Sheep and Wool Inspector was created to cover the whole of Western Australia.

A new branch was established styled the Meat and Produce Trading Concerns Branch. The Metropolitan Abattoirs and Saleyards, Kalgoorlie Abattoirs, Perth Markets, Perth Refrigeration Works, Albany Cold Stores, Busselton Butter Factory and the Wyndham Abattoirs were placed under this branch. It was headed by a general manager and assistant general manager.

The Wyndham Meat Works became the responsibility of the department.

The position of Controller of Abattoirs was abolished.

The independent experts were responsible directly to the administration and not through another officer.

A committee was formed to advise on the establishment of a State College of Agriculture. The members were the Director of Education, the Commissioner for the Wheat Belt, Mr AJ Monger, and the Agricultural Chemist and Government Analyst. Professor Paterson was initially a member but resigned.

In 1918 Sutton suggested that consideration be given to settlement east of Merredin, which was then regarded as the eastern margin of the wheatbelt. He went further and said that if such settlement was undertaken the department would need a cadre of graduate agricultural scientists to advise the potential settlers. He favoured this new staff being Western Australians as they would be more likely to remain in the State. He considered that these men should start training immediately as it would take time to complete their training. He favoured students being recruited in a cadetship scheme in which the department paid for their training.

In 1918, the department was for the first time asked to inspect grain for export. This was done at the request of the South African Government. The work was carried out by an assistant field officer under direction of the Commissioner for the Wheat Belt.

It was against this overall progressive development of Western Australia’s agriculture that the department’s work was undertaken.

**The Department of Agriculture, 1920 to 1930**

World War I finished in late 1918 and the return of the soldiers and their demobilisation occurred largely in 1919.

---

The Honour Roll from two wars. Ninety-seven officers (50 per cent of the male staff) enlisted in WWI. They won seven Military Medals and one Victoria Cross. The records show that Private Edward Albert Gaby VC enlisted from the department.
The settlement of the ex-servicemen onto farms was one of the major post-war reconstruction initiatives of governments around Australia. In WA some were settled in new districts while others were settled on farms created by the government buying up existing large estates and subdividing them. Virtually all these properties had not been cleared. Their development, coupled with the further expansion of existing properties, saw the State’s agricultural industry launched on another period of rapid expansion which continued until the Great Depression in 1929.

The renewed expansion and large number of new settlers, many of whom again had little or no farm experience and limited resources, was almost a repeat of the experiences of the previous decade. However, there were better roads and general access than in the previous decade, and there was a body of more experienced farmers from whom new settlers could obtain advice or merely observe. Communication was aided by the progressive increase in motor transport and telephones.

In addition, tractors were beginning to appear and farm machinery was being further developed.

By 1925 it was reported that there was “a rapid increase in the use of tractors on farms even though their use has not been shown to be more economical than the use of horses”. It was however acknowledged that this new device could cover a greater area in the same time, “which would allow more fallow to be prepared” and therefore a greater cropped area. The increased use of trucks was commented on favourably as allowing faster movement over longer distances, and the possibility of “establishing farms further from a railway line”.

However, later in the decade some questions were being raised about the reliability of tractors. Where breakdowns occurred at critical times, farmers who were solely dependent on them could incur big losses. It would be the mid to late 1930s before tractors became the dominant form of power on the farm.

There was a renewed interest in the development of ‘light land’ areas. To this end a conference was organised in early 1921 to discuss light land development. Some of the better light land would be developed in this decade but most would be left until the big expansions which followed World War II.

Table 2 shows the increase in cereal and other crop production during the decade.

A major development in the dairy industry began in 1922 with the establishment of the Group Settlement Scheme in the high rainfall timbered areas. This was seen by the Minister for Agriculture as the equivalent to

<table>
<thead>
<tr>
<th>Year ended February</th>
<th>Wheat, oats, barley</th>
<th>Other grain crops</th>
<th>Hay</th>
<th>Other crops</th>
<th>Vines</th>
<th>Orchards</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>1 242 925</td>
<td>763</td>
<td>327 498</td>
<td>34 176</td>
<td>2 975</td>
<td>19 817</td>
<td>1 628 163</td>
</tr>
<tr>
<td>1921</td>
<td>1 479 847</td>
<td>932</td>
<td>266 824</td>
<td>34 604</td>
<td>3 209</td>
<td>19 570</td>
<td>1 804 986</td>
</tr>
<tr>
<td>1922</td>
<td>1 506 988</td>
<td>1 099</td>
<td>335 561</td>
<td>35 069</td>
<td>3 951</td>
<td>19 012</td>
<td>1 901 680</td>
</tr>
<tr>
<td>1923</td>
<td>1 776 380</td>
<td>1 653</td>
<td>431 633</td>
<td>41 069</td>
<td>4 858</td>
<td>19 405</td>
<td>2 274 998</td>
</tr>
<tr>
<td>1924</td>
<td>1 907 196</td>
<td>1 797</td>
<td>329 534</td>
<td>60 527</td>
<td>5 235</td>
<td>18 782</td>
<td>2 323 070</td>
</tr>
<tr>
<td>1925</td>
<td>2 198 202</td>
<td>2 736</td>
<td>397 591</td>
<td>88 471</td>
<td>5 331</td>
<td>18 525</td>
<td>2 710 856</td>
</tr>
<tr>
<td>1926</td>
<td>2 403 682</td>
<td>4 082</td>
<td>391 142</td>
<td>133 204</td>
<td>5 270</td>
<td>18 358</td>
<td>2 932 110</td>
</tr>
<tr>
<td>1927</td>
<td>2 819 839</td>
<td>3 296</td>
<td>358 488</td>
<td>142 901</td>
<td>5 274</td>
<td>18 512</td>
<td>3 324 523</td>
</tr>
<tr>
<td>1928</td>
<td>3 236 130</td>
<td>1 880</td>
<td>357 065</td>
<td>115 016</td>
<td>4 959</td>
<td>18 393</td>
<td>3 720 100</td>
</tr>
<tr>
<td>1929</td>
<td>3 683 786</td>
<td>2 551</td>
<td>414 866</td>
<td>158 116</td>
<td>4 943</td>
<td>18 735</td>
<td>4 259 269</td>
</tr>
</tbody>
</table>
the development of the wheatbelt in the previous decade.

In his report in June 1921 the acting Under Secretary outlined a new policy for the department. He repeated that its functions were primarily advisory, educative and protective to the agricultural industries. He noted that to assist in carrying out these activities the government had decided to appoint an agricultural expert as permanent head and to employ a limited number of highly qualified technical officers “whose duties will keep them entirely in the field advising farmers”.

It was also decided to appoint a number of university cadets who would be attached to the various branches for the times they were not studying at university. These officers would receive a thorough technical and scientific training at a university level. They would then take their place in the department, required to serve a minimum of three years after completing their training.

He advised that the Narrogin School of Agriculture had been transferred to the Department of Education in accordance with the government policy that all education activities should be with that department.

Despite the expectations of the 1920 report that the business functions of the department would be transferred to another department set up to manage such activities, the Department of Agriculture retained a number of business undertakings. These were the Metropolitan Abattoirs and Saleyards, Kalgoorlie Abattoir, the City Markets, Cold Stores and Butter Factories. Wyndham Meat Works had been transferred to the Department of the North West.

The heads of branches and other responsible officers at this time were:


In accordance with the earlier proposals to appoint a technical rather than an administrative person as the head of the department, GL Sutton was appointed Director of Agriculture in July 1921. Sutton had joined the department in May 1911 as Commissioner for the Wheat Belt.

In 1918 Sutton had recommended that university graduates be appointed to the department and to ensure that such people were available he also proposed that the department set up a cadetship scheme to increase the supply of graduates.

In his first report as director in 1922 he advised that two agricultural advisers with the necessary training had been appointed. These were GK Baron Hay and CD Sharp. Sharp was attached to the dairy industry to become familiar with the manufacturing side of the industry. Baron Hay was appointed to the southern areas to cooperate with the Agricultural Bank inspectors and to advise farmers in order to reduce defects and improve farming methods. While a position was available in the north, Sutton had been unable to obtain a suitable graduate.

(SGK Baron Hay was to take over as head of the department in 1941.)

Sutton also reported that six cadets had been appointed to undertake university training over the next four years. Two more cadets were appointed in 1923 and four in 1924. He stated that two of the four in 1924 were to be veterinary cadets, but this does not seem to have occurred, possibly due to difficulty in arranging training.

The decision to employ graduates to staff the ‘expert’ positions and introduction of the cadetship scheme was one of Sutton’s greatest contributions to Western Australian agriculture.

In 1922 he negotiated the return of the Botanist and Pathologist and his assistant to the department from another department. Just as this was achieved the Botanist and
Pathologist left for an overseas position. This vacant position was filled a year later by WM Carne, who became important in WA, first with the department and then with CSIR after it was established in the late 1920s.

Another appointment was to replace the manager of Chapman State Farm. The appointee was Mr ‘ike’ Thomas, who would later become an important senior officer of the department.

The policy of having the field advisers cooperating with the bank inspectors is interesting. It had been discussed with the bank and was the subject of a conference in early 1922, and was based on the view that the bank was likely to be dealing with people of limited resources and/or new to farming.

In this initial report, the structure of the department, which was largely to last to the mid-1970s, started to take shape. To limit his own involvement in detailed administrative matters Sutton appointed a senior clerical officer, LSTJ Jones, as Secretary to the Director. He then divided the department into a number of branches:

- The Stock Branch, which was headed by Alistair McKenzie Clarke and consisted of two veterinarians and two stock inspectors, the Poultry Inspector and the brands registry. Its duties were disease control, advice to farmers and prevention of disease entering the State. In addition to controlling brands they were required to register stallions as a way of improving the quality of horses in the State. They were responsible for the administration of eight Acts of Parliament.
- The Fruit Branch, headed by George Wickens as Officer-in-Charge of Fruit Industries, contained 12 orchard, market and fruit inspectors operating at the ports, markets and orchards. They administered seven Acts of Parliament.
- The Dairy Branch was headed by PG Hampshire, the Dairy and Pig Expert. It included two agricultural advisers, two herd testers, the Busselton Butter Factory staff and the Denmark Stud Farm manager and staff. It was responsible for encouraging expansion of the dairy industry through advice on a wide range of issues. The branch was also responsible for herd recording and the administration of the Dairy Industry Act which regulated manufacture and grading of dairy products. It administered the Dairy Cattle Improvement Act through the registration of bulls used in the industry.
- The Irrigation and Drainage Branch was headed by ARC Clifton, the Irrigation Expert, who had one assistant. They were responsible for advice to farmers on irrigation and drainage and the pumping of water from streams. They also surveyed potential irrigation paddocks for farmers and organised grading at cost. These officers also had responsibility for determining the possibilities of growing tobacco in the South West.
- The Wheat Branch was under the control of the Superintendent of Wheat Farms, Mr Thomas, and included a newly appointed wheat experimentalist and an agricultural adviser plus the staff of the experimental and seed farms. It was responsible for disseminating information to farmers, organising experiments and demonstrations, export grain inspection and management of the experimental farms. Thomas is also listed as the manager of Chapman Experiment Farm. The experiment farms had particular responsibility for producing pedigreed seed for sale to farmers, and for cereal breeding and testing.
- The Sheep and Wool Branch was under the control of Hugh McCallam, the Sheep and Wool Inspector. He was responsible for giving lectures on sheep management and demonstrations on preparation of wool clips and making visits to settlers’ holdings to give advice on selection and culling to improve flocks.
- The Potato Branch was headed by the Senior Potato Inspector, GN Lewis, assisted by two potato inspectors. It was responsible for advising farmers on all...
aspects of potato growing, including pest and disease control. It was also responsible for the administration of the Plant Diseases Act within its industry and the production of certified disease-free seed for farmers.

- The Botanical and Pathological Branch was headed by the Botanist and Pathologist, WM Carne, who had one assistant. The branch was responsible for advising farmers on plants of economic importance; particularly poison plants. He was also responsible for advising on methods of weed control, and the identification of plant diseases and the best methods of controlling them. The branch also provided seed testing services to industry and farmers.

- The Entomological Branch was headed by entomologist Mr LJ Newman, who had one assistant. The branch duties included forest entomology. It was responsible for the identification of beneficial and destructive insects and, where appropriate, methods of control. It was also responsible for developing biological control methods.

- The Vermin Branch was headed by the Acting Chief Inspector of Rabbits, and included an assistant, three rabbit inspectors, 31 boundary riders and gangers. The branch was responsible for maintenance of the rabbit-proof fences and control of major breeding areas. Their work was assisted by district vermin boards.

- The Agricultural Chemist Branch appears to have worked in the Government Analytical Laboratory, outside the department. The main work in the department was the analysis of flour yield and bread-making quality of new varieties and promising selections.

- The Abattoirs and Refrigeration Branch was headed by the Controller of Abattoirs, Mr EH Golding, who controlled the staff at the abattoirs, refrigeration facilities and the city markets.

Government policy was that all slaughtering for the Metropolitan Area was carried out at the government abattoirs at Midland and South Fremantle. The Perth Markets and the Refrigeration Works were also controlled by this branch.

- The Experiment Farms contained the State Farms at Merredin and Chapman. Each had a manager and five other staff.

- Tropical Agriculture included Tropical Adviser Mr FJ Wise. His duties were to obtain information about land suitable for development in the north of the State and to advise settlers on the best methods of cultivating their land.

- The Publicity Branch was headed by Mr J Buzza, whose duties were to publish the Journal of Agriculture and to inform the press about the activities of the department.

In addition to this overall organisation, the department operated a cadetship scheme and worked in close contact with the Education Department and the University of WA’s Faculty of Agriculture.

Sutton also considered there was a need for an in-house agricultural chemist, but at that stage that had not been approved and it was never accepted.

The outstanding feature of this structure was the very small number of people in each area.

In 1923 another two graduates and a diploma holder were recruited. One was LJH Teakle, who was to become the first Commissioner of Soil Conservation in WA, and later Professor of Agriculture and Vice Chancellor of the University of Queensland. At the same time an agricultural adviser had been appointed to the Geraldton district for five months to stimulate interest in dairying. This proved so successful that it was decided to place three graduates and the diplomate in the country. One was located in Wagin, one in Bridgetown, one in Bunbury and one in Geraldton. This was the beginning of the regional extension services.
Teakle only worked with the department for five months before taking leave without pay in 1924 to take up an Exhibition at the University of California, Berkeley. While the exhibition was for only one year, he completed his PhD before returning to duty. At the same time Sutton recruited WM Carne from New South Wales as Botanist and Pathologist, and in 1924 CA Gardner was employed as Carne’s assistant. Although not a university graduate, Gardner would become a giant in botanical research in WA and served his entire career with the department. He became an expert on WA flora but unfortunately did not record all this knowledge before his death.

It was also decided to appoint an Apiculturist (Mr Cailes) and Viticulturist (Mr Johns). Unfortunately FJS Wise resigned for ‘private reasons’ during 1925. He appeared again as a temporary officer in 1930.

On the veterinary side McKenzie Clarke had joined the department in 1916. He would become the Acting Director in the 1950s. In 1924/25 he was joined by JF Filmer and HW Bennetts, both of whom would be important veterinarians.

In 1924, when the position of Superintendent of Wheat Farms was established, this position was intended to focus on the work of the experiment farms at Chapman and Merredin and the developing Light Land Farm at Wongan Hills, but its role expanded over time. Mr I Thomas, who had been manager of Chapman, was appointed to the superintendent position. In 1926, five cadets were attached to the position. This presumably was to give them some on-farm experience.

In 1925 the position of Superintendent of Dairying was created and PG Hampshire, who had joined the department in 1919 as the Dairy Expert, was appointed. Four of the young advisers who had been previously recruited or had finished cadetships were made responsible to this position. This was a challenging time for the dairy specialists and their support staff due to the development of the Group Settlement Scheme.

In his 1925 report Hampshire states: “… the Dairy Branch has been unsparing in its efforts in assisting in their (the farmers) sound establishment, especially in the laying down of 23 000 acres of virgin country to permanent pasture, the application of fertilisers, sowing of fodder crops and the erection of dairy buildings and the supply of plant”.

The Veterinary Pathologist, Bill Bennetts, established a research capacity in that field. Bennetts had an outstanding career. JF Filmer was also important in the resolution of the cause of nutritional problems of cattle in the Denmark area.

The 1926 report recorded that the cadets appointed in 1922 joined the department as professional officers. The names TC Dunne, N Davenport and AS Wild appear for the first time. Veterinarians AF Flood and CR Toop also appear for the first time. HJ Hughes, who was appointed as Principal of Muresk in November 1925, was also listed. He took over the development of the school immediately. Toop was later Chief Veterinary Surgeon for many years. Both Bennetts and Toop were inducted into the Royal Agricultural Society’s Hall of Fame.

In 1927 a decision was taken to appoint a stock inspector at Broome and a veterinary surgeon at Wyndham. G Gauntlett and GL Throssell joined the staff, having completed their cadetships in that year. Another graduate joined and was sent to Muresk as an experimentalist.

By 1928 the structure of the department was largely settled. However, it was decided to split the Botanical and Pathology Branch into two—the Botany Branch and the Pathology Branch. The opportunity was taken to negotiate the transfer of the small herbarium held by the Forests Department to the Botany Branch and CA Gardner was placed in charge of that, which became the State Herbarium.

LJH Teakle, who had completed his PhD in California, rejoined the staff as Plant Nutrition Officer. He worked at the university because of lack of laboratory facilities.
Also in 1928 three further cadets finished their courses and joined the staff. They were B O’Connor, HR Powell and EJ Underwood. Another veterinary surgeon, EF Twaddle, was appointed. In 1929 WM Carne resigned to take up employment in CSIR but remained in WA.

Employment of cadets as they finished their courses continued. In 1929 H Andrewarther and P Roberts were appointed and HA Pitman replaced WM Carne.

In 1930 the staff was further strengthened by the addition of cadets GH Burvill and KT Lutz, who had finished their courses. In this year GK Baron Hay was appointed Superintendent of Dairying.

In a statement for the Minister, Sutton summarised the actions the government had taken to strengthen the department from 1923/24 to 1928/29:

- The budget had been increased from £60,050 to £92,580.
- Muresk College had been established.
- Staff had been increased by the appointment of a veterinary pathologist, four veterinarians, three stock inspectors, a viticulturist, eight agricultural advisers, a plant nutrition officer, an apiculturist and several cadets.
- Three experiment stations had been established at Salmon Gums, Ghooli and Dampawah.
- The area under wheat had increased from 1.6 to 3.0 million acres.
- Ten Acts of Parliament had been enacted, including an amendment to the Plant Diseases Act aimed at improving control of Mediterranean fruit fly.
- Cooperation with the Commonwealth had been initiated to undertake study of the buffalo fly in an endeavour to devise a control measure.
- Overall, the decade to 1930 had been a good one in terms of building resources. It had also seen a shift to a professional, scientifically-trained cadre who would drive the organisation in the years ahead. The downside was the start of the Great Depression as the decade closed.

**Educational (extension) work**

Sutton described the disseminating of information through visits, lectures and experimental work on farmers’ properties as ‘extension’. In 1921/22 there were 14 trials of wheat or oat varieties, nine fertiliser trials, four depth of ploughing and four drainage trials on farmers’ properties.

In that year 13 Bulletins were issued, and it was decided to again publish the Journal of Agriculture, after a break of 15 years. The first of the new series was seen in April 1924. Articles in the journal were reprinted as Bulletins, which were available on request to farmers or members of the public. The Bulletins covered subjects such as vermin, poison plants, control of the ‘stickfast’ flea, and cultivation of minor crops, fertiliser use etc.

A new medium became available in 1924 when Westralian Farmers Cooperative Limited established a radio broadcasting station (6WF) in Perth. They invited the department to arrange for officers to give talks every second Monday to the radio audience. Specialists within the department took this offer up very readily. This arrangement continued for many years.

In 1924 the government also decided to establish an agricultural college in a farm setting. The department purchased a 2220 acre property at Muresk and began the development of the Muresk Agricultural College as part of the Department of Agriculture. (The history of Muresk is dealt with later.) This was a surprising change in policy, in contrast to the transfer of Narrogin farm school to the Education Department. The files show that this was a government decision as Sutton wanted the college to be closely associated with the University of WA.
**A developing agriculture**

While the pastoral, horticultural and grain cropping industries were relatively established at this time, there was interest in alternative crops and fodder crops. In 1920/21 there was a Sudan grass competition. At the same time there was some experimentation with sugar beet. The sugar beet grew quite well and was considered as a fodder plant. This was in a period before the true value of subterranean clover was realised. Today, fodder crops are of less interest in south-west agriculture, where subterranean clover is the dominant pasture legume.

The 1920s saw the continued extensive development of the wheatbelt and continued development of the horticultural industries.

Up to 1920/21 the dairy industry had been slow to develop and large imports of dairy products continued. An agreement was signed with the British Government in 1919 to develop dairy farms in the heavily timbered high rainfall districts of the South West.

It is doubtful if the British Government understood the nature of the undertaking. They had a big unemployment problem and saw the migration of potential farmers as part of the solution. The plan was for farmers to be gathered in groups of around 20 who would jointly develop part of 20 separate, 160 acre blocks per group. When sufficient area had been cleared and pastured on each block, the settlers would move to their blocks and dairy cattle would be supplied for them to start farming. This arrangement caused the scheme to be known as the Group Settlement Scheme. The scheme continued from initiation in 1921 into the 1930s.

A sheep and wool inspector employed in 1920 as a temporary officer was appointed to the permanent staff in 1921 and reported annually on the state of the industry. In his 1925 report he referred to having travelled some 7500 miles during the year and had contact with over 1400 people. This was a remarkable performance for the time. In addition he gave demonstrations and lectures at the Narrogin School of Agriculture and ran a ‘winter course’ for farmers at the school.

In his 1926 report Sutton refers to agriculture as being buoyant, with favourable rains and good market outlooks for most products. That year proved to be outstandingly favourable climatically, with production records in the sheep, wool, wheat, apple, dried fruit, wine, dairy, poultry and potato industries.

Sutton pointed to the success of crops sown on ‘well prepared fallow’. His motto was ‘fallow early and thoroughly’. For comparative purposes the wheat harvest was around 926,000 tonnes.

The centenary year of 1929 brought a record wheat crop from a record acreage. Again, early promise had been affected by dry weather early in the year but the crop had been saved by late spring rainfall. Medals and certificates were awarded to farmers who achieved outstanding results. In all, 280 awards were made across eight industries. The wheat, wool and dairying industries dominated with 259 awards across the three industries.

Surprisingly, there was little mention in the 1930 report to the depressed price outlook for the coming harvest. The only reference was the comment that due to the fall in wool prices there was increased interest in the production of fat lambs. To assist this switch, experiments had been set up at Avondale to investigate the best rams to use across Merino ewes.

**The experiment farms (previously State farms)**

After Sutton’s promotion to Director, the experimental and plant breeding programs at the experiment farms were continued under the direction of the experimentalist. Sutton outlined the main functions of the wheatbelt experiment farms as:

- The growing of pure pedigree seed of the main varieties of wheat for sale to
farmers, to ensure farmers had a supply of seed which was true to name and free of impurities. It not only ensured farmers had access to seed of the varieties they wanted to use, but it focused farmers’ attention on the recommended varieties and away from varieties which had little merit.

- Crossbreeding and selection of new varieties of cereals and fodder crops suitable for the wheatbelt.
- Experimentation aimed at improving the yield of wheat and/or reducing the cost of production. Such experiments dealt with cultivation methods, fertiliser rates, seeding rates, and comparison of varieties.
- The farms were to be conducted solely for educational and experimental, not commercial purposes.

This reflects the progress after 1910 away from the original purpose of these farms, which was to demonstrate that wheat growing was possible in the districts where they were established.

In 1925 the Wongan Hills Light Land Farm was officially opened. Very little experimental work was done initially, with most of the cleared area planted to wheat and oats to determine how the crops grew. The seed was sold as pedigreed seed to farmers.

**Dairying**

Despite low prices in the first three years after World War I, dairy output continued to rise. At that time there were butter and bacon factories at Bunbury, Narrogin, Northam and Gnowangerup. New factories opened during the year at Geraldton and Harvey. The department also had factories at Busselton and Denmark (on the stud farm).

The 1922 report states that “matters are well in hand for the establishment of a butter and bacon factory at Ravensthorpe”. This reflects the enthusiasm for dairy farming at the time, but the factory did not get beyond erection of the building because of a shortage of cows.

The Group Settlement Scheme dominated and effectively developed the dairy industry in the 1920s and early 1930s. The first group was formed at Manjimup in 1921. This was followed by Pemberton, Denmark, Northcliffe, Walpole, Normalup, Bridgetown and Margaret River. By 1924, 120 groups had been formed. With 15 to 20 members to each group this amounted to 1800 to 2400 farms. Even with only 10 cows per farm there were a further 18 000 to 24 000 dairy cows required. In his 1924 report the Dairy Expert refers to 2500 farms in the course of preparation.
Once established, this made a very big impact on dairy supplies in Western Australia. However, history shows that by 1924, 42 per cent of the original settlers and their families had left the settlements. Nevertheless, over time a dairy industry was developed which serviced the State for the next 40 to 50 years. In due course it developed an export capacity to supply the United Kingdom. The areas cleared for dairying at that time are today the basic infrastructure for the wine grape and associated tourist industries of the South West.

The Group Settlement Scheme placed a great deal of pressure on the limited departmental staff. Planning, advice and supervision were all required. Subsequently the department was involved in quality control in the factories and on farms, in herd recording, general advice and exercising control under the Dairy Improvement Legislation. Advice to settlers was a major task comparable with the work earlier in the century in the wheatbelt.

‘Other’ crops
In the early 1920s there was interest in growing cotton. It was decided that Broome presented the best opportunity for dryland cotton but unfortunately the pink bollworm was already established. It was decided to proceed with the experiments but no industry was established.

In 1925 tobacco was grown successfully by a group settler. As a result the government decided to fund a commercial planting of five acres in the Manjimup district.

The fruit industry
Over-supply during World War I resulted in falling prices for fruit as the industry matured, even with some exports and off-season storage. This resulted in marginal orchards becoming unprofitable and a fall in the area under orchards from around 1916. This decline was probably exacerbated by labour and shipping shortages during the war. By 1921 the decline appears to have peaked and plantings were keeping pace with any loss of area.

A dried fruit industry developed in the Swan Valley due to the immigration of Southern European settlers who had experience of this form of production. Exports of currants and lexias increased through the period. Grapes were exported both as fresh and dried fruit.

Vermin
By 1921 rabbits were widespread and foxes had been sighted throughout the agricultural areas. The Chief Inspector of Rabbits was clearly frustrated by the lack of interest in rabbit control by settlers. By 1925 the fight to keep rabbits out of WA had been lost. Good rains through the 1924/25 summer and autumn resulted in “vastly increased numbers” through the autumn and winter.

Livestock
The Stock Branch was concerned mainly with the inspection of imported animals either from overseas or interstate. There was particular control of cattle imports to prevent pleuro-pneumonia being brought in from South Australia. Kimberley Horse Disease remained an unsolved problem.

Also, there was the routine monitoring of endemic diseases and problems such as pleuro-pneumonia and cattle tick in the north, and tuberculosis of dairy cattle, lice and tick on sheep and problems of internal parasites, particularly of sheep.

Outbreak of rinderpest in dairy cattle in 1923 was a serious crisis, but successfully dealt with using firm action.

An extensive outbreak of swine plague was diagnosed along the Great Southern railway and branch lines in late 1927. A very large area was quarantined. The disease had been largely eradicated by the following April.

Research became a significant role of the branch with the appointment of Bennetts in 1924/25 and Underwood’s return from PhD
studies. In the latter part of the decade a considerable amount of research was carried out. In 1925 the department agreed to jointly fund a study of the life cycle of the buffalo fly with the Commonwealth. Reports of wasting and deaths of calves in Denmark from an unknown cause were of concern. After his appointment Bennetts started to study the cause of some obscure stock diseases.

Initially he focused on the ‘braxy-like’ disease, which was causing serious trouble for stock owners in the Great Southern and Avon Valley. The investigation was difficult, partly because the animals decayed quickly after death, making it difficult to determine the cause. The solution came early in the 1930s when the causal organism was identified and a vaccine to control the problem developed (see Chapter 6).

Bennetts also worked on the toxicity of native plants. He carried out tests of some 17 native plant species, 11 of which belonged to the *Oxylobium* or *Gastrolobium* genera. He was able to show that the toxin was water soluble.

One of the branch’s more mundane activities was to maintain and manage horse resources for other government departments. In one instance a change in policy by the Main Roads Department resulted in 400 horses being returned to the government stables, causing considerable problems.

The provision of dairy cattle for the expanding industry associated with the Group Settlement Scheme was also a big issue for the Stock Branch. In 1924 Avondale State Farm was transferred to the Department of Agriculture from the Lands Department. Its intended role was to produce seed of selected pedigree varieties of wheat and oats. In 1925 it was also used as a depot for assembling dairy animals for despatch to the Group Settlement Schemes.

**Biological services**

A great deal of work was done by the entomologists to find parasites of introduced insects for biological control. Some successes were achieved.

The Plant Pathology Branch was transferred back from the Government Chemists Laboratory in 1922. It also took over management of the library and seed testing. The branch was responsible for finding solutions to plant pathological problems encountered in all industries in Western Australia, the recording of important pathogens and the development of a collection of ‘type examples’ of these pathogens. Its botany section was responsible for the collection, identification and curation of the native vegetation of WA.

**Cold storage and abattoirs**

In 1922 the department controlled the Metropolitan Abattoirs and Saleyards, the Kalgoorlie Abattoirs, the Perth Refrigeration Works and the Perth City Markets; it also arranged shipments of livestock and fodder to Singapore. During 1924/25 the North Fremantle abattoir was closed, followed by two private abattoirs, the Union and the Anchorage abattoirs at South Fremantle, in September 1925. In 1927 the Perth Refrigeration Works were closed and demolished, having outlived their usefulness. The Midland Abattoir was enlarged to cater for the increasing kill. The Perth City Market was closed in 1929 or 1930.

**The Great Depression and following years**

Effects of the Great Depression varied across industries. In WA the big industries of wheat and wool were the worst hit. For both, the Depression did not really end until after World War II. The dairy, pig and fruit industries did not suffer the same severe price depression as the two major industries and survived the decade in reasonable shape.

Many wool producers turned to production of fat lambs for the UK and European markets, with wool becoming a sideline. In fact, the fat lamb export industry in WA owed its
development to the onset of the Depression. There was no market for mutton, which had been a by-product of the wool industry, and an alternative had to be found. The change was largely led by the Department of Agriculture.

The Kimberley beef industry struggled until after World War II. The British Government had agreed to take virtually all the export beef available at the beginning of the war. However, once Japan entered the conflict, the Kimberley became isolated due to transport difficulties.

In many ways the onset of the Depression was an unexpected disaster for the wheat and wool industries. Many returned servicemen from World War I had taken up new land in 1921 or 1922. They had really just begun to reach their potential when they were faced with prices below the cost of production. Their potential was reflected in the production in 1930. In his 1931 annual report Sutton states: “... in the past year there has been a general advance in agricultural productivity and development. Records have been established in the Sheep, Wool, Wheat, Dairying, Pig, Poultry, and Dried Fruits Industries. Unfortunately this magnificent achievement of productivity resulting from the enterprise of agriculturists and pastoralists has not received its proper pecuniary reward”.

The figures speak for themselves. Sheep increased by over 300 000 to 9.875 million. Dairy cattle increased by 11 000 and pig numbers by 36 000 to reach over 100 000. The area in crop was 390 000 acres greater and the wheat crop was 53.5 million bushels - an increase of nearly 1.5 million bushels. This was the largest wheat crop until the late 1940s, planted on 3.996 million acres.

By 1935/36 plantings had dropped to 2.5 million acres. Encouraged by higher prices, acreages again started to increase and reached 3.4 million in 1938/39 but fell again in 1939/40.

The wool clip was 711 million pounds, an increase of 4.4 million pounds. The apple crop increased by 300 000 bushels to 749 450 bushels and the grape harvest by 21 000 pounds to 297 000 pounds. Butter production increased by nearly half a million pounds. There were also increases in egg production.

The price of wheat in mid-1931 was about $14.51 per tonne and top quality wool was selling at 42.2 cents per kilogram. Sutton felt these prices were so low that an increase could be expected. History shows they went lower.

In 1933 wheat remained low but wool prices improved. In 1934 wheat had a period of good prices but wool fell to only about 1 shilling per pound (22 cents per kilogram). In 1935 and 1936 both wheat and wool prices were reasonable and at times good. In 1937 and 1938 the prices for both were very poor. By the end of June 1938 the price of wheat at the siding was 2 pounds 15 shillings a ton ($5.50 per tonne). In the 1938/39 sales wool averaged about 1 shilling per pound (22 cents per kilogram).

On the other hand, prices for export apples were satisfactory and the dried fruits sold quite well on the UK market. The dairy industry was largely focused on the local market.

In 1932 Sutton wrote that the attitude of wheat farmers had improved. They had moved from a feeling of despair to hope for better times. He saw this as the outcome of close cooperation between the government, financial institutions, merchants and the farmer. While this was also partly due to a slight improvement in the prices for wheat and wool and a Federal Government bounty for wheat, he put the main thrust as the dogged determination of the farmer to win through despite the current difficulties. He pointed out that one measure of the nature of the 1930/31 collapse was that if the record crop and wool clip of that year had been sold at the prices of the previous year, a further £7 million would have been spread over the agricultural areas.

The results through the decade were also affected by seasonal conditions. Although these did not directly affect the department,
they affected the environment in which it operated. The prices received on world markets had a similar impact.

A major climatic event was the prolonged drought in the Murchison and Gascoyne. It began in 1933 and continued to at least the middle of 1938, perhaps to 1941. This resulted in heavy stock losses. One figure was that two million sheep were lost of the five million in the areas at the beginning of the drought. Overstocking resulted in long-term damage to the perennial native vegetation and the stocking rates before 1933 were never repeated.

The seasons were variable for wheat. While 1930 was a good year with record production, 1931, 1932 and 1933 were generally average; 1934 was good in the south and south-east but dry in the east and north-east; 1935 was a repeat of 1934 with the east and north-east having their worst year since 1914; 1936 and 1937 were again poor in the east and north-east but average in the south and south-east.

Some late rains in 1937 resulted in higher yields than in the previous two years. Then 1938 was a mixed year with the central and southern portions of the State having good to excellent yields. However, the northern districts were only fair and the eastern and north-eastern were poor with some crops being a total failure and hay yields below requirements.

At Yilgarn (Ghooli), Dampawar, Avondale and Wongan Hills Research Stations, the rainfall in the 1938 growing season was the lowest recorded. At Chapman the growing season rainfall was the lowest since 1914. These years in the east and north-east appear very much like the 1970s, 40 years later. The 1939 season began well with heavy cyclonic rain in January and February. After a dry March and April, rains in late May and June started the cropping year well; 1939 finished well and the yield per acre of 13.8 bushels was a record. While the area sown was down, the high yield resulted in the largest total crop since 1933.

One important feature of the decade was the move to sown pasture. This was made possible through the identification of subterranean clover as a suitable pioneer legume with a range of naturally occurring cultivars which extended its range into the medium rainfall districts.

The number of sheep in agricultural areas was increasing, with the western part of the Great Southern focused largely on sheep. The area sown to pasture increased from 60 000 acres in 1925 to an estimated 450 000 acres in 1934, 635 806 by mid-1937 and an estimated 870 000 in mid-1939.

This change was due to increased sheep numbers and growing awareness of the potential feed value and soil improvement that a legume-based pasture could bring. Much of this awareness had come from the pasture demonstrations established by the Department of Agriculture, either independently or in association with the fertiliser companies. The sown pasture was largely topdressed with superphosphate to achieve the best results.

**Organisation of the department**

**Staff numbers 1930 to 1940**

The major changes in professional capacity which had started in the 1920s continued through to 1940. In 1930 there were 46 professional officers, of whom seven were veterinarians in a total staff of 108. They were supported by 38 general and 24 clerical officers. By 1935 there were 55 professionals employed out of a total staff of 117. They were supported by 38 general and 24 clerical officers.

In 1940 the total staff recorded in the Public Service List was 146, of whom 60 were professionals, 52 were general (largely inspectors) and 34 clerical officers.
Staff organisation and policy

Sutton, in his 1935/36 report, written about 12 months before his retirement as Director, reviewed the development of the department in his 15-year term. His general comment was that “it is apparent that there has been a complete change in the organisation through the establishment of a scientifically trained advisory staff and a strong team of specially trained research officers”.

One can only agree with his conclusion. The development was slow in the early period because the professional advisers were not available, were gaining experience, or still being trained. However, from about 1929, the impact of the cadetship scheme and the training of some officers to PhD level became obvious. This is reflected through the performance of the department through that period.

Sutton also outlined some of his philosophy in developing the department and summarised his view of where it was as 1937 approached when he wrote:

The practical value of the work of the department is largely determined by the effectiveness of the extension services in disseminating information and advice in the farming areas … an endeavour has been made to keep farmers informed with respect to the most effective methods of managing their holdings … and also to keep them in touch with the latest advances in agricultural techniques. The general work is in the hands of a group of field officers located at key positions throughout the agricultural areas, and this is supplemented by specialist advice from head office. The country personnel includes 14 agricultural advisers, three veterinary officers and 32 officers engaged in herd recording, orchard inspection, stock inspection and other work affording an opportunity for the dissemination of advice by means of personal contact.

In order to make technical advice and assistance available to the district bank managers and inspectors of the Agricultural Bank, the headquarters of agricultural advisers are located as far as possible in the wheat and sheep districts near the bank's offices. This is supplemented by field days, attendance at agricultural shows and by field demonstrations. The heavy demand for their service is testimony to the high value placed on them by the farming community.

Sutton's 1935/36 report also refers to officers in the dairy areas helping bank officers to plan development for farmers who sought relief from some of the bank's charges.

At the time agricultural advisers or instructors were stationed at Geraldton, Carnarvon, Northam, Katanning, Bunbury, Harvey, Roelands, Manjimup, Albany, Narrogin, Bridgetown, Denmark, Gosnells, Mundaring, Northcliffe and Vasse, while veterinarians were at Beverley, Bunbury and Derby.

In 1935 the department was asked to help the university with lectures pending the arrival of the new Professor of Agriculture. When the professor arrived he reorganised the courses and asked the department to provide 150 lecture periods and 100 laboratory periods and to set and mark the exams in the courses given in Agricultural Chemistry II, Plant Pathology, Agricultural Botany, Dairying and Horticulture.

Sutton was concerned at suggestions that a university agricultural research institute should be established. He felt that this possibly arose from a misconception that departmental researchers were distracted by administrative requirements or that the department could not undertake long-term projects. He rejected both of these contentions.

His concern arose from the possibility that scarce funds would be directed away from the department. This proved to be the case almost 20 years later and there was a further major change 70 years after Sutton expressed his concern.
He said the department was in a unique position (to carry out relevant research) in that it was committed to research to aid the agricultural industry and had professionally trained field officers in contact with farmers, who were able to assess the nature and importance of an issue. They were then in a position to supply a directive force to the research process. He went further and stated that “there is no doubt that the Department of Agriculture is a research organisation. It is probable that no institute or similar organisation anywhere is doing more (research) per unit of expenditure”.

The overall organisation was quite stable from 1930 to 1940. This would be expected, as Sutton remained Director of Agriculture until his retirement in 1937. He was followed by LStJ Jones as Under Secretary until 1941. Jones had been Sutton’s senior administrator for virtually the whole of his period as Director. In 1941, GK Baron Hay took over as Under Secretary.

The combination of trained staff, Sutton’s personal attitudes, and the downturn in agricultural development in the post-Depression years, saw the department become more involved with problem solving and increased productivity at farm level. There was a reduced need for servicing the needs of farmers developing new properties from a virgin state.

As the Depression started to bite, government expenditure had to be reduced and this was reflected in areas such as the experiment farms which had to operate on reduced and in some cases skeleton staffs. There were also long delays in maintaining existing or providing additional infrastructure on these farms. However, over the decade to 1940, there was an easing of the financial environment. It was possible to increase field staff and experimental farm staff and to start the maintenance of the essential infrastructure.

The problems brought on by the Depression created a greater demand than ever for departmental services. In 1931 Sutton bemoaned the fact that, even making every effort at reorganisation, it had not been possible to meet this increased demand.

As the years passed, the reports display the increasing emphasis on experimental and advisory work. The department’s capacity was increased by not only a steady increase in professional staff, coming from the cadet scheme and direct employment, but the postgraduate training of some officers. Three graduates who had gone overseas for postgraduate training returned with PhDs in 1928, 1930 and 1931. They were LJH Teakle, TC Dunne, who would follow Baron Hay as Director (Under Secretary), and EJ Underwood, who would become the outstanding Professor of the Faculty of Agriculture at the University of WA for the 20th century.

As part of the changing focus Sutton obtained Ministerial permission in 1936 to change the names of the ‘experiment farms’ to ‘research stations’.

Expansion was stopped by the low prices for wheat and other grains and many farmers looked for other ways of surviving financially. Some who were particularly exposed, or perhaps did not have the protection of being soldier settlers, had to leave the land. It was common to hear that someone had ‘walked off’ their property. This meant they had not taken anything except their personal belongings, and had left everything to satisfy their debts, normally to the Agricultural Bank, which became a major landowner. This situation continued to the end of World War II. Many ‘abandoned’ properties were leased by neighbours while others were left to become refuges for vermin and breeding grounds for locust plagues.

On the brighter side, the experimental work and plant breeding continued at the experimental farms. There was some reduction in experiments on farmers’ properties because of the need for economy, and a drop in interest by farmers due to the economic situation.

Two wheat varieties were released at the 1930 Merredin field day. One was called Sutton, a late maturing variety. The other
was Bencubbin and described as a mid-season variety. Both had resistance to flag smut. Bencubbin became one of the most extensively planted varieties in Australia and was used in all states.

In 1932 the plant breeders were able to release another new wheat variety with flag smut resistance. Named Totadgin after a railway siding near Merredin, it was early maturing and should have been successful in the lower rainfall areas. It did not become popular with farmers, which is surprising because it should have been better than Bencubbin for the eastern and north-eastern wheatbelt.

There were no more releases of new wheats until 1938, when a selection from Bencubbin called Bungulla was released. It became quite popular. Experiment farms established at Yilgarn and Dampawah Springs appear to have been closed at the end of the decade. The 1940 drought probably convinced the administration that they were too far east.

In 1931/32 a major innovation was the bulk handling of wheat at five receival points. Legislation was passed and the Cooperative Bulk Handling company was formed under the auspices of the Westralian Farmers Cooperative. By the 1937/38 harvest the facilities were installed across the wheatbelt.

There had been a steady reduction of area sown to wheat from 1931 through to 1933. The 1931 crop produced 53.5 million bushels; the 1933 crop was 37.3 million bushels.

As mentioned earlier there had been a major increase in the planting of pasture and its topdressing with superphosphate. While this had occurred initially in the high rainfall areas there was a growing interest in a legume-based pasture in the medium rainfall areas. The work of TC Dunne at Muresk had provided the foundation for the publication by Dunne and Shier of the paper on *An Alternative Rotation for the Wheatbelt* in 1934. This became the basic text for development of ley farming, which was to be the crop rotation from the 1950s to the early 1980s.

In the mid-1930s a cereal research laboratory was set up in the department to examine the bread-making characteristics of flour from WA wheat varieties.

The poor prices for wheat and wool resulted in a decision to foster a move to fat lamb production using a crossbred ewe (Merino x Border Leicester) and British breed ram. A small number of lambs had been sent to the London market in 1929 and production developed from that. In this way, the drop in the price of wool led to the development of the fat lamb industry.

By 1934 there was growing concern for the cattle industry in the Kimberley. International beef prices were low. The southern market was well supplied by beef, mutton and lamb from southern areas. While the east Kimberley had access to Wyndham meat works there was a problem in getting the cattle to the works in condition for slaughter. This situation continued until after World War II, with the opening of the American beef market.

**Animal disease research**

By 1931 the research on the 'braxy-like' disease had been successfully completed and a vaccine prepared for commercial use. More detail of these investigations is in Chapter 6.

In 1933 the investigation of 'Denmark wasting disease', started earlier, was continuing. Dr EJ Underwood and veterinarian JF Filmer were in charge. There had been some indication that iron in the form of limonite may be involved. Analysis of the limonite showed the solution lay in a group of elements described as the zinc group. Further testing showed the problem was caused by a deficiency of cobalt in the animal's diet.

In 1933 an investigation of the problem of enzootic ataxia at Gingin was continuing under the direction of Dr Bill Bennetts. By mid-1937 it had been shown that the addition of copper to the diet overcame the problem.
There was concern about the high incidence of botulism or toxic paralysis among sheep in the inner wheatbelt. It was shown to be due to the sheep developing a depraved appetite and eating carrion in the form of rabbit carcases. The final solution came through a vaccine prepared by CSIR which was shown to protect sheep from the toxin under field conditions. While protein deficiency had been identified as the cause, supplementary levels of hand feeding which would control the problem were not economic. The achievement of higher protein summer feeds by the introduction of a legume into the pasture, and the control of rabbits, were management options which became progressively available to the farmer. Nevertheless, occasional occurrences of botulism occurred throughout the wheatbelt.

Tuberculosis in the dairy herd caused concern. The problem was that the disease was transmissible to humans, particularly children, through unpasteurised milk. Testing had been continuous for at least 20 years but reactors continued to be found. In 1933/34, 169 reactors were detected and slaughtered, which was about 2 per cent of the animals tested; this appeared to be the ‘normal’ level in the herd.

In 1936/37 the problem of ‘falling disease’ of cattle was identified in the Margaret River area. High producing cattle would just fall down and die from no apparent cause. Investigation showed that there was a tendency for the cattle to be anaemic and it was decided to treat a herd with copper. Anaemia had been a characteristic of sheep affected by copper deficiency at Gingin. No further cases were experienced with cattle treated with copper but the incidence of the disease did not permit definitive work to be carried out until some time later.

‘Coast disease’ was the name given to the very poor performance of cattle grazing pastures on the south and west coastal soils. Following reports from South Australia that an identical problem could be controlled by providing stock with both copper and cobalt, experiments were started in susceptible areas to test the same treatment here. The results were the same.

In 1938/39 a test for contagious abortion was made available by the department’s veterinary pathologists. Using this test it was thought it would be possible to free a herd of the problem.

Dairying

There was a lot of emphasis on the dairy industry through the decade. The industry was described as having taken phenomenal strides during the late 1920s and early 1930s. The increase in production was 12 per cent in the 12 months ending in 1930. This was almost exactly equal to the increase in cow numbers from 74 200 in 1929 to 89 700 in 1930. But it was after this that major increases in productivity were achieved.

To improve the genetic base of the industry the government had enacted the Dairy Cattle Improvement Act in the mid-1920s. This established bull zones in the South West. The government paid a subsidy of 15 guineas ($31.50) per head for the purchase of pure bred bulls provided it was of the correct breed for the zone where the farmer was located. It was argued that the accepted theory among dairymen was that the best rate of herd improvement came from mating successive generations to the same breed. The Zonal Scheme aimed to make it easier to keep to the same breed without in-breeding, which was seen as undesirable.

In 1934/35 an Australian price of around one shilling per pound of butterfat to farmers was set by the Federal Government.

During 1934/35 the first Dairy Products Marketing Board was set up. Consumers, manufacturers, producers and licensed dealers were represented. The Superintendent of Dairying was an ex-officio member and Sutton was Chairman. Its role was to:

- regulate and organise the sale, distribution and storage of dairy products
and related plant and equipment; and plant inspections
- enforce quotas
- issue and cancel licences
- fix the maximum rate for the road transport of milk and cream to factories
- regulate the duties of inspectors
- deal with any other incidental matters.

The department then implemented an intensive program of inspection aimed at improving the quality of butter. It was also decided to enforce certain health regulations covering the requirements for dairy premises on farms. These were:
- concrete floor to the dairy and milking shed
- facilities for supply of boiling water to the dairy
- adequate drainage from the milking shed
- provision of a suitable dairy for storing cream.

Soil surveys
There had been concern about poor crops in the Salmon Gums area from early settlement. The Royal Commission into the Esperance Mallee Lands was set up to look at this problem and reported in 1917. In evidence to the Commission the recently appointed Professor of Agriculture, Dr Paterson, stated that after visiting the area and collecting soil samples he concluded that excess salt in some soils was the underlying problem.

Other evidence was given that the problem was due to laziness and poor farming methods among the settlers. The Commission broadly accepted that view and ignored Paterson’s advice.

In the years which followed there appears to have been no definition of the problem. The government instead proceeded with an ambitious plan to develop 3500 farms between Salmon Gums and Lake King and included land west of Lake King around Lake Camm and Lake Carmody. By 1929 the area had been largely surveyed and there had been some development of farms west of the rabbit-proof fence.

The funding for this project was to come largely from the British Government. In 1922 the Empire Settlement Act was passed by the Westminster Parliament, providing authority to fund, in association with Dominion Governments, the settlement overseas of British citizens on land identified by Dominion Governments. In Australia such proposals had to be approved by a commission set up for the purpose. This commission was aware of the problems at Salmon Gums and asked for further advice.

When Teakle returned from his PhD studies in 1929 he was asked to look at the soils within a triangle with its apices at Salmon Gums, Newdegate and Southern Cross. After a general survey and collecting samples from 650 sites, Teakle advised that as much as 37 per cent of the better class soils of the area were unsuitable for wheat growing. He advised that a more thorough survey was needed before a definitive answer could be given.

Soil surveys were undertaken in the Lake King district and areas around Lake Carmody and Lake Camm. The areas west of Lake King around Lake Camm and Lake Carmody had just been settled. The surveys were concentrated on the forest and mallee country, as it was known that there was no accumulation of salt in the sandplain. They showed that almost 40 per cent of the soils carrying forest and mallee were affected by high salt, which made them unsuitable for cropping.

By late 1933 the department was heavily involved in a redesigned scheme for the settled area. The need for some farmers to leave under the redesign arrangements made Teakle unpopular. There were some side effects, with some railways, such as that from Newdegate to Lake King, not being built. An area around Lake Brown, north-west of Southern Cross was also surveyed. The soil surveys of all these areas covered an area in total of 615 000 acres. It is
assumed that these results meant the Commission could not accept the project for funding.

With the onset of the Depression the proposal was abandoned. When the light land was considered later, the affected area was probably only 10 per cent of the total. But that technology was not available in 1930.

Soil survey team camped in the wheatbelt. Extensive surveys by the department were a vital part of determining whether some areas were suitable for development.

The Salmon Gums soil survey, on the eastern edge of the 3500 farms scheme, began in 1932. By mid-1935 it had covered 565 100 acres, with the final total area surveyed being 583 018 acres. Some 70 000 samples were tested in the field laboratory. These gave similar results to those obtained further west.

Based on these results and in collaboration with the Agricultural Bank, a redesigned scheme to rehabilitate the district was drawn up. It was calculated that 150 farms could be developed in the area on the following premises:

- that the district be developed for mixed farming
- a farming unit should have at least 800 acres suitable for wheat growing
- fencing, water supply and plant must be adequate for the task
- evaluation of the value of the asset should be based upon the producing capacity of the cleared land which would be indicated by the soil survey
- £400 should be provided for each farm for fencing, water supply, new machinery etc.

Other soils issues

In 1936, in conformity with other states in the Commonwealth, a Soil Conservation Committee was formed within the department. No real action was taken until after World War II.

With the growing interest in pastures in this post-Depression period, extensive experiments had been established looking at different species in the South West, the irrigation areas, the Great Southern and wheatbelt.

With the soil survey work largely completed, the Plant Nutrition Branch turned its attention to use of trace elements. In an early experiment carried out in cooperation with the Conservator of Forests, pines were injected with a number of nutrients. In 1937 a response to zinc in pines was seen.

In 1938/39, experiments were established on ‘swamp’ lands in the Albany district. While many were flooded due to heavy rain, this showed responses to copper on some acid swamp soils, some sandy soils and the Grasmere and Lake Sadie soils. Response to copper was also obtained at Wagin on a gravelly low fertility soil. This work is dealt with in more detail in Chapter 7.
Biological services

The primary blowfly, *Lucilia cuprina*, which was first recorded in Australia in 1913, was found in WA for the first time in 1934. However, its range extended into the Murchison, suggesting it had been in WA for some time. Biological control was tried but failed.

The importance of insect pests ‘comes and goes’ depending on seasonal conditions. In 1937 concern was expressed about the predations of the bryobia mite. An arsenate-based spray was tried against it, unsuccessfully. There was also concern about a suite of scale insects. Negotiations were in place to obtain a parasite of wax scale from the NSW Department of Agriculture. The apple weevil had reappeared and was causing concern.

In cropping areas webworm continued to cause damage where crops were sown on land which had been in pasture and was ploughed and sown after the first rains. Redlegged earth mite was a major pest of pastures for the whole decade. In 1936 and 1937 under dry conditions early in the year it caused considerable crop damage. A grant for a study was made by CSIR and a committee of CSIR, the department and the University of WA was formed to oversee the study. The lucerne flea also caused problems where the bdellid mite was not established. The branch was also distributing other potential parasites.

The little plague grasshopper (*Austroicetes cruciata*) occurred in plague proportions in 1937/38 for the fourth year in succession. An outbreak of 'black spot or apple scab' in 1930 was declared eradicated by 1934, with great savings to the industry. This disease reappeared in early 1936 at Mt Barker and Manjimup. By late summer of 1937 only traces could be found at Mt Barker and none at Manjimup. In late June 1937 the disease was found in a small nursery in Albany and all the apple trees involved were destroyed and burnt. This outbreak caused closer inspection of nursery imports from the eastern states which were found to be heavily infested.

Separately, the Dairy Laboratory had prepared 52 cheese starter cultures. Cultures were introduced from overseas in order to maintain the vigour of the culture held in WA. The laboratory also examined a large number of milk samples for bacteriological content and for cream content and solids-not-fat.

During the year experimental work seeking the best way of eliminating mastitis began. The research concentrated on mastitis because of evidence that it was the causative organism for an objectionable odour in some milk.

The Botany Branch established a seed certification program in 1934. The branch certified the purity and germination of a sample of seed of a particular cultivar of a species. The seed was also certified to be of the specified cultivar. This program was applied to subterranean clover in particular and 63 tons of the Dwalganup variety were certified during the summer of 1934/35.

The fruit industry

The fruit industry began the decade with good domestic and export markets and maintained this position. In 1938 there was concern that quotas would be introduced in the London market. In the event there were no restrictions, which was fortunate as a record crop was produced and 1.3 million cases of apples were exported.

An outbreak of 'black spot or apple scab' in 1930 was declared eradicated by 1934, with great savings to the industry. This disease reappeared in early 1936 at Mt Barker and Manjimup. By late summer of 1937 only traces could be found at Mt Barker and none at Manjimup. In late June 1937 the disease was found in a small nursery in Albany and all the apple trees involved were destroyed and burnt. This outbreak caused closer inspection of nursery imports from the eastern states which were found to be heavily infested.

An outbreak of codlin moth occurred in Collie in 1935. In 1937 it was found again at Mumballup and effectively eradicated by
1938/39. In 1938 apple scald was found in one orchard and was considered to be eradicated by 1939.

The department investigated a problem of ‘die back’ or ‘wither tip’ of apple trees, particularly in the Bridgetown district. Sprays and injections of a range of elements were tested and a response was obtained to copper sprays. It was concluded that copper deficiency was the cause of ‘wither tip’.

Tropical fruit production at Carnarvon began in the early 1930s. The department conducted fertiliser and variety trials there and in 1938/39 plans were being developed to establish a research station.

Other issues

The production of eggs exceeded domestic needs early in the decade, resulting in exports to England. The eggs were of high quality and well received. Approval was obtained in 1933 to mark them as a product of WA, as opposed to only being able to mark them as from Australia.

The Manjimup district became the focus for the developing tobacco industry and the department provided strong technical and other support. The issues were selection of the right soil type and plant variety, and avoiding disease in the seedbed. Keeping downy mildew (blue mould) out of the seedbeds was a particular issue. Growers also needed help to design and build drying and curing sheds.

All the leaf sold quite well on the national market. By 1936/37 the crop had increased to slightly over 1000 acres. In view of what happened in later years (when buyers stopped attending sales in WA) it is interesting that in the late 1930s the buyers found the WA leaf of good quality with good burn characteristics and competitive with other Australian-grown leaf.

In the early 1930s the irrigation areas were beginning to take shape and the Irrigation Commission was reconstituted during 1934/35. Harvey No. 1 and No. 2 areas had started and the Public Works Department was building the main channel from the Wellington Dam. The first water was released in 1933/34, when about 500 acres of new land were irrigated. By 1938/39 the area had increased to 11 032 acres. This rapid development of a new industry for farmers with little or no previous experience placed considerable pressure on the irrigation experts of the department.

The first reference to vermin in annual reports for the decade was in 1933/34, where concern was expressed about the increase. Dogs were a serious problem and bounty was paid on 12 720 scalps. Foxes and eagles were also a concern, with bounties paid on 24 120 scalps and 5614 eagle beaks. Rabbits were causing serious damage in many places west of the No. 2 rabbit-proof fence. With some seasonal variation vermin were a continuing problem during the decade.