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QUEENSLAND

DEPARTMENT OF AGRICULTURE AND STOCK



QUEENSLAND AND ITS PLANT INDUSTRY



Issued by Direction of the Hon. T. L. WILLIAMS, Secretary for
Agriculture and Stock

Queensland and Its Plant Industry.

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THE permanent settlement of Queensland commenced somewhat more than a century ago and, during the intervening years, agricultural and pastoral pursuits have become firmly established throughout the State. The degree of development achieved in the different branches of plant industry has varied appreciably, however, and a survey of the present status and distribution of crops and pastures in the State should be useful and interesting both to Queenslanders and to residents of other Australian States and overseas countries. Some aspects of the survey will doubtless deal with points familiar to many Queenslanders, but it is believed that Queensland readers will find something of interest to them in the discussions on districts with which they are not personally familiar. This pamphlet is accordingly devoted, firstly, to a survey of the State and its farm, orchard, and market garden crops and pastures, and, secondly, to a somewhat brief discussion of the organisation and activities of the Department of Agriculture and Stock and kindred institutions which function within the State.

A.—THE STATE AND ITS CROPS AND PASTURES.

The first section of this survey deals with the settlement of Queensland and its physical geography and then proceeds to discuss some of the salient features of plant industry in each of the statistical divisions of the State. The discussion, however, is not confined solely to plant industry because brief references to animal industry have been considered essential to the presentation of the required picture of plant industry development.

SETTLEMENT OF QUEENSLAND.

There are records of Europeans sailing along the coast of Queensland early in the seventeenth century, Dutch and Spanish navigators being the first explorers to do so. It was not, however, until the eighteenth century that the north-eastern portion of Australia seriously engaged the attention of Europeans. On 23rd May, 1770, Captain Cook and his associates in the "Endeavour" landed at Round Hill Head (Plate 1), which is approximately due east of where the town of Miriam Vale is now situated and, so far as is known, these were the first voyagers from England to set foot on Queensland soil. At subsequent intervals, until the year 1824, the coast of Queensland was visited by other navigators who explored it in greater or less detail. In that year, the first permanent settlement was made where the City of Brisbane now stands, and from that settlement there has grown the State of Queensland as it is known to the world to-day. In little more than a century a great area of tropical and sub-tropical agricultural and pastoral land has been cleared and improved by a population that has only recently reached a total of 1,000,000. There have been, of course, the inevitable disappointments and setbacks associated with the settling of a new continent, but, on the whole, the people of Queensland can view the record of their State with a considerable and justifiable measure of satisfaction.

PHYSICAL GEOGRAPHY OF QUEENSLAND.

The area of Queensland is 670,500 square miles, 54 per cent. of which lies within the tropics. This vast area may be regarded as consisting of the coastal plain, the eastern highlands, the western plains, and the north-western uplands.

The coastal plain, which includes some very important agricultural districts on the east coast, is predominantly a narrow strip of country in so far as that coast is concerned; indeed, just north of the Herbert River, at Cardwell, the plain is less than a mile wide. On the southern shores of the Gulf of Carpentaria, however, it extends inland for many miles until it reaches the western plains.

The eastern highlands comprise, firstly, the series of coastal ranges extending from the New South Wales border to the Cape York Peninsula, and, secondly, the main divide (Plate 2) which more or less demarcates the western edge of the eastern highlands. The main divide runs approximately due north from the New South Wales border and passes a few miles to the east of Stanthorpe, but, a little north of that town, it swings to the north-east. It reaches a very considerable elevation in this part of the State, and peaks in the vicinity of 4,000 feet in height are included in that part of the main divide which lies east of Killarney. Beyond Killarney the direction is once more changed and the divide bears to the north-west along the eastern fringe of the Darling Downs, Toowoomba and Bell lying just to the west of the divide. Beyond Bell, it swings to the west, passing north of Roma and south of Injune. A short distance beyond Injune, it turns abruptly in a general north-westerly direction, passing just to the east of Jericho and to the west of Pentland until it reaches Castle Hill at the head-waters of one of the Burdekin River tributaries. It then bears towards the coast in a general north-easterly direction and eventually reaches Herberton where it coalesces with the coastal ranges. The main divide may be regarded as resuming its separate identity north of Port Douglas, whence it bears in a general north-westerly direction to Coen. The coastal ranges and the main divide coalesce for all practical purposes in the south as well as in the north, and this eastern highlands section is widest between, but of course west of, Maryborough and Mackay, its western boundary being 300 miles inland from the former town. Agriculturally, the eastern highlands include some very important districts.

The western plains comprise a very large portion of the State and consist of either gently undulating or flat country commencing on the western edge of the eastern highlands and extending to the western and southern boundaries of the State except in the far north, where the western plains merge into the coastal plain, which stretches south from the Gulf of Carpentaria, and in the far north-west, where they impinge on the north-western uplands. The western plains constitute a most important pastoral section of the State, but they have so far witnessed practically no agricultural development whatever.

The north-western uplands constitute the fourth and final section into which Queensland may be divided for present purposes and consist of fairly elevated country which stretches from somewhere north-west of Cloncurry into the Northern Territory. They are devoted exclusively to pastoral pursuits.

The State is traversed by a considerable number of rivers (Plate 3), but many of these, particularly in the western plains, flow only intermittently. Numerous rivers flow into the Pacific Ocean along the east

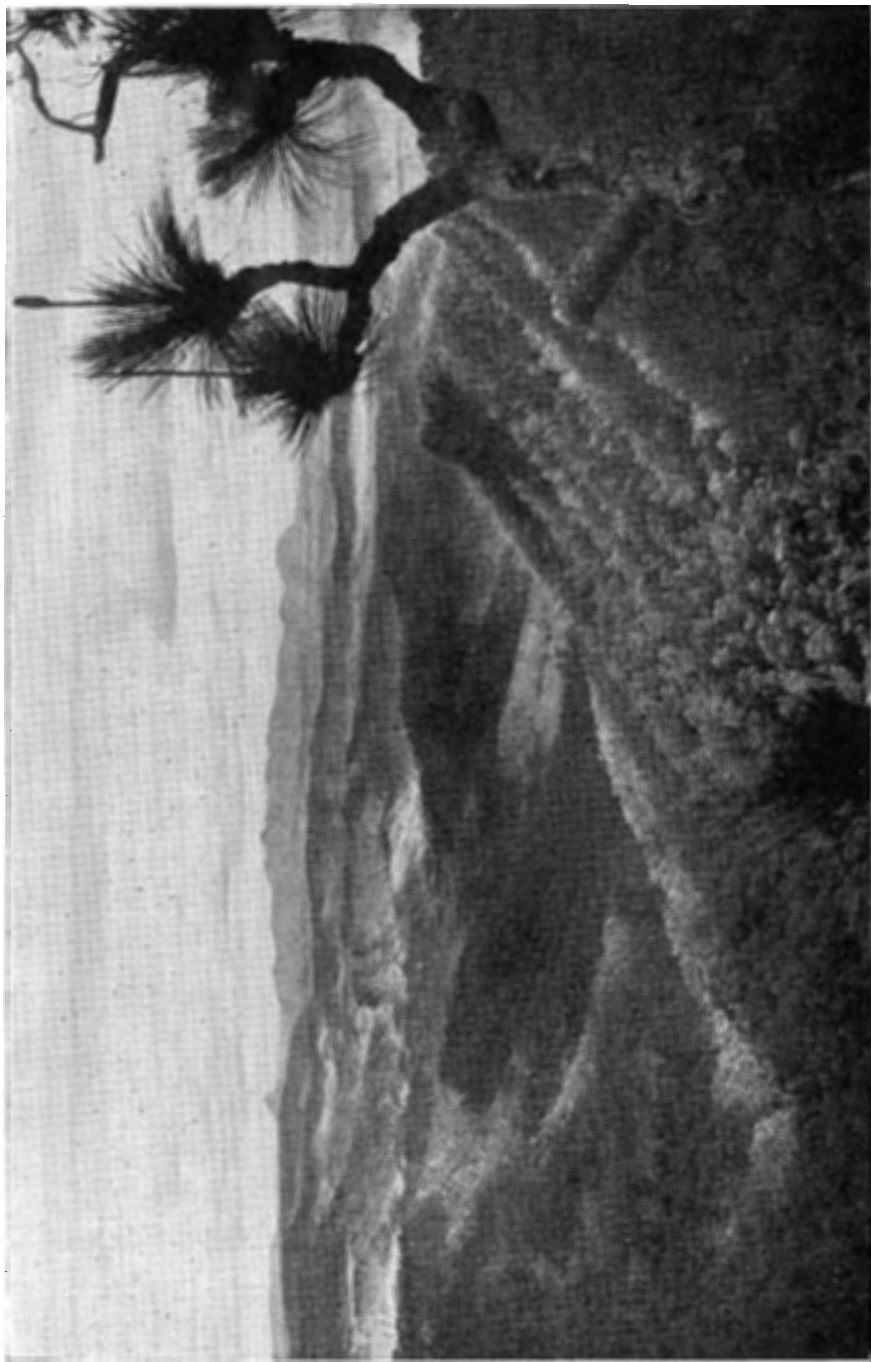


Plate 2.
THE MAIN DIVIDE IN SOUTH QUEENSLAND.

coast, but in the south and in the north most of these are short rivers carrying a relatively small volume of water. From the discussion of the main divide, however, the reader would expect to find some much longer rivers with their headwaters in those sections of the divide which lie well in from the central coast and such is the case, the rivers being the Burnett, the Fitzroy, and the Burdekin.

The Burnett enters the sea at Bundaberg after draining a large river basin, the approximate boundaries of which are Kingaroy on the south, Hawkwood and Rawbelle on the west, Monto on the north, and Mount Perry and Degilbo on the east. A still greater river basin is represented by the Fitzroy, which reaches the coast at Rockhampton. This river basin extends from Taroom, in the south, to Nebo, in the north, and from Clermont, Bogantungan, and Springsure, in the west, to the coastal ranges behind Mount Larcom, St. Lawrence, and Sarina, in the east. The third great basin in the eastern highlands is the Burdekin, which stretches from Alpha, in the south, to the country lying to the west of the coastal range at Cardwell, in the north; its western boundary is in the vicinity of Pentland, and it extends eastwards to the coastal ranges inland from Mackay, Townsville, and Ingham. The Burdekin River enters the sea near Ayr.

Beyond the main divide the rivers run in a southerly or south-westerly direction to eventually enter New South Wales and South Australia, or in a northerly or westerly direction to enter the Gulf of Carpentaria.

The Georgina rises in the ranges near Camooweal and, after crossing the western border, it re-enters the State and flows through Urandangie in a southerly direction towards the Lake Eyre basin in South Australia. The Diamantina flows in the same direction, passing through Birdsville after draining much of the territory lying south-west of Winton. The Thomson and the Barcoo constitute a large and important river basin extending from Prairie, in the north, to the South Australian border, and it includes such important districts as Aramac, Barcaldine, Blackall, Isisford, Jundah, Longreach, Muttaborra, Tambo, Tangorin, and Windorah.

The whole of the country lying north of these three river basins, but west of the main divide, drains into the Gulf of Carpentaria. Notable among the rivers flowing into the Gulf are the Gregory and the Leichhardt, entering the sea near Burketown, and the Flinders and the Norman, which meet the coast near Normanton. The Flinders and its tributary, the Cloncurry, drain a large stretch of country lying between Hughenden, in the east, and Cloncurry, in the west.

The fourth group of river basins drains the territory lying west of the main divide from Stanthorpe and Bell, in the east, to Thargomindah and Adavale, in the west. All the rivers in this group, with the exception of the Bulloo, which appears to lose itself in the Bulloo Lake near the New South Wales border, eventually flow into the Darling River or one of its tributaries in New South Wales. They include the Macintyre, flowing through Goondiwindi, the Balonne, which flows by Dirranbandi and receives the waters of the Condamine from the Darling Downs and of the Maranoa from the Maranoa country, the Warrego, flowing through Augathella, Charleville, and Cunnamulla, and the Bulloo, flowing through Thargomindah.

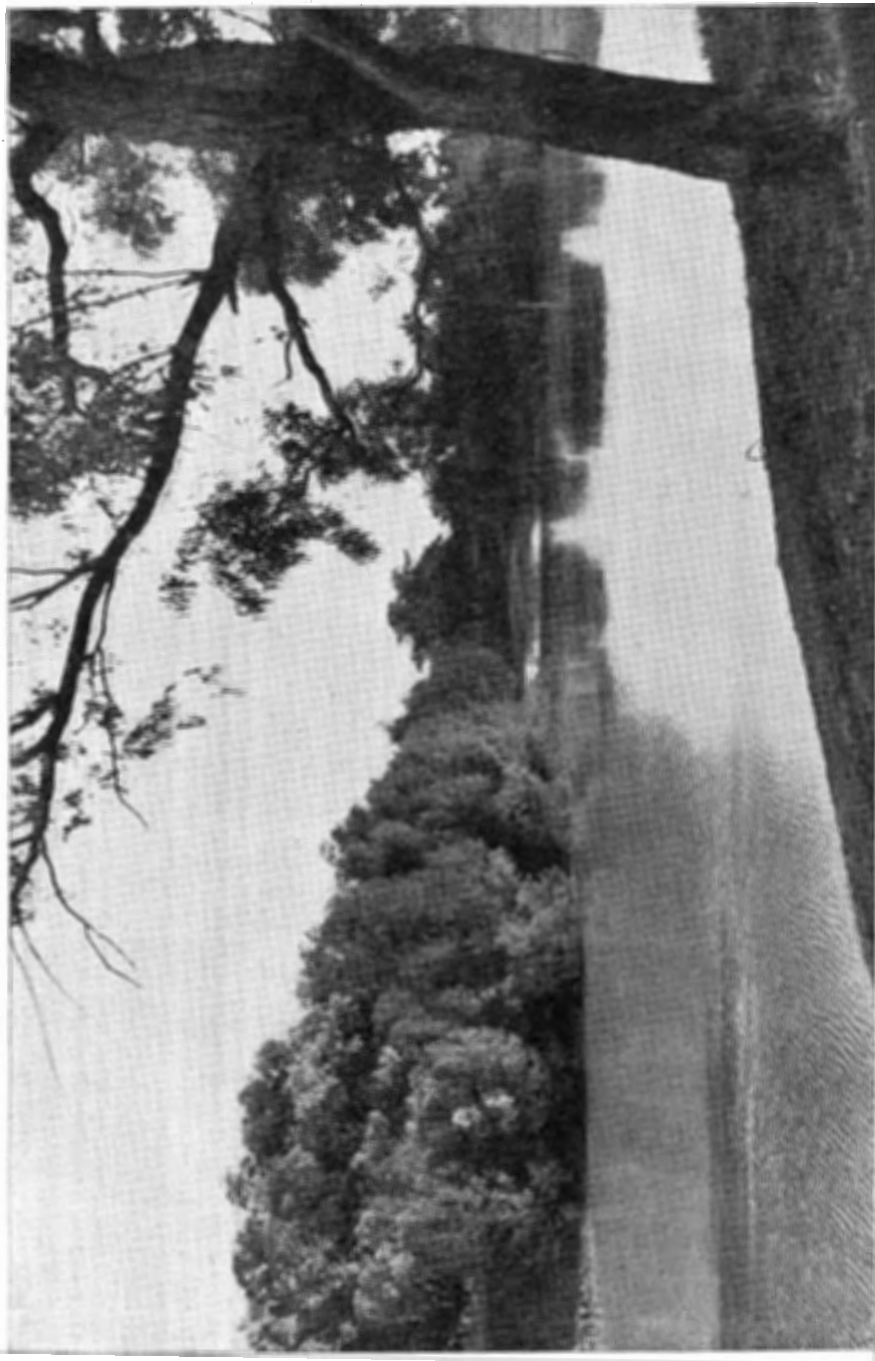


Plate 3.
THE THOMSON RIVER AT LONGREACH.

LAND TENURE IN QUEENSLAND.

It seems appropriate at this juncture to make some comment on land tenure in Queensland, and on referring to statistics it appears that in 1937, out of a State total of 429,120,000 acres, or 670,500 square miles, only 6.5 per cent. had been alienated, the balance being Crown lands. A total of 365,212,000 acres were occupied under some form of leasehold or by alienation, 2,999,000 were roads and stock routes, 18,422,000 acres were reserved for public purposes, and the balance of 42,487,000 acres was unoccupied and unreserved. A large proportion of the unoccupied and unreserved acreage is in the Cape York Peninsula, an area in which settlement by Europeans has made little progress. The balance of such unoccupied and unreserved land is mostly in the four western divisions, but even there it represents only a relatively small proportion of the total area and much of it is in the very low rainfall belt on the Northern Territory and South Australian borders.

STATISTICAL DIVISIONS.

For statistical purposes the State consists of twelve divisions—namely, the Downs, Maranoa, South-Western, Far Western, North-Western, Central-Western, Moreton, Wide Bay, Port Curtis, Edgecumbe, Rockingham, and Peninsula. The agricultural and pastoral activities within these divisions are discussed in some detail in the following pages.

Downs.

The Downs statistical division, which is an area of outstanding agricultural importance, lies just west of the main divide in South Queensland and it includes, among other districts, the Darling Downs, the Stanthorpe district, and the Texas-Yelarbon-Inglewood territory. It thus constitutes by far the largest area devoted to mixed farming in this State. In this connection it is interesting to note that in 1937 the land under crop in Queensland totalled 1,618,738 acres, of which no less than 676,165 acres were included in the statistical division of the Downs under the heading of grain crops, hay, green forage, potatoes, pumpkins, cotton, peanuts, and tobacco, the grain crops, hay, and green forage accounting for all but approximately 4,000 acres of that total. To the total already mentioned for the Downs must be added considerable acreages of fruits and vegetables, together with 17,226 acres of canary seed and several thousand acres of other miscellaneous crops, giving a grand total of 720,595 acres under crop, which amounts to approximately 45 per cent. of the State's total crop acreage. When account is taken of the fact that 348,840 acres of the other 55 per cent. were devoted to the production of sugar-cane, the predominant position of the Downs in general mixed farming at once becomes evident.

The City of Toowoomba, situated at an elevation of 1,924 feet and at a distance of about 90 miles due west of Brisbane, may be regarded as the gateway to this splendid territory. The Darling Downs extend to the south, the west, and the north-west of Toowoomba, and were discovered by Cunningham in 1827, when he reached them from the New England Tableland of New South Wales. They were again visited by him in 1828, the approach on this occasion being from Brisbane through the gap in the main divide now appropriately known as Cunningham's Gap. Stock raising engaged the almost exclusive attention of the settlers on the Downs for many years following 1840, when the first grazing property was established at Warwick, agriculture during that period being of no practical importance in what was destined to become one of Queensland's most valuable agricultural areas. The

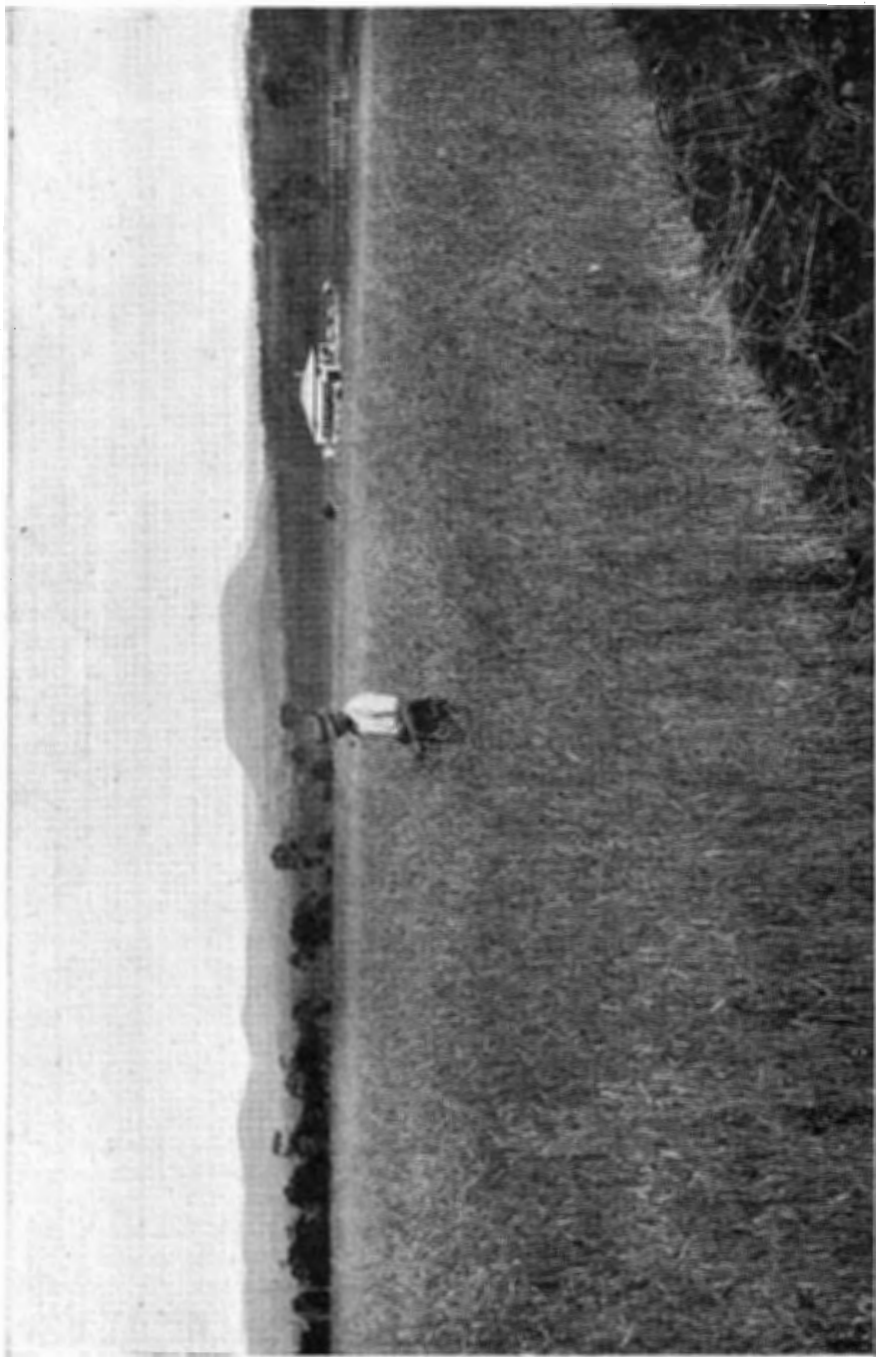


Plate 4.
WHEAT ON THE DOWNS.

progress achieved since then is demonstrated by the fact that whereas 196 acres of wheat were harvested in Queensland for grain in 1860 the wheat acreage for the whole State in 1937 was 372,935 acres, of which 343,136 acres were sown in the Downs division, these figures being for grain production only (Plate 4). The 1938 wheat crop yielded approximately 8,500,000 bushels, by far the largest proportion of which was produced in this section of the State.

The agricultural prosperity of the Downs, however, is, as already indicated, by no means exclusively based on the production of wheat, for, in 1937, Downs' farmers sowed 48,860 acres of maize out of a State total of 174,243 acres. The State's barley crop of approximately 9,000 acres in the same year was grown almost exclusively in this part of Queensland, and the 1937 statistics record approximately 50,000 acres of sorghum and 40,000 acres of lucerne as being grown on the Downs. A total of 66,000 acres were then sown to oats for green feed in the territory under discussion, that being slightly more than half the State's total acreage of oats grown for such a purpose. Wheat to the extent of almost 50,000 acres was also grown as green forage in this division. Pumpkins were represented by 1,596 acres on the Downs, but in this crop the territory lying between the coast and the eastern edge of the Downs was predominant, as it recorded a crop of 14,282 acres of pumpkins in 1937. Dairying and other branches of animal industry also contribute very largely to the prosperity of the Downs.

The average annual rainfall at the chief farming centres in this division ranges from 25 to 29 inches, about two-thirds of which falls during the months of October to March, inclusive. Although the winter rainfalls are therefore somewhat light, cultural practices, designed to conserve the summer rains, combined with the great natural fertility of the black soils of the Darling Downs, have enabled wheat to play a very important part in the agricultural economics of this territory. The hay and green forage crops are usually fed to the stock on the farms on which these crops are produced, and wheat-growing and dairying or wheat-growing and fat-lamb raising are combinations that are now much in favour, as is evidenced by the fact that in 1937 there were 141,467 dairy cattle in milk on the Downs (Plate 5), which also carried approximately 3,000,000 sheep.

So far as the pastures are concerned, the eastern section of the Downs is characterised by open grasslands, but in the western and south-western sections there are large open forest grazing areas; very considerable belts of acacia scrub, in which brigalow is conspicuous, are also a feature of the Downs landscape. The native pastures generally are of good quality, although very often inadequate during the late winter and spring months. As already indicated, large areas of crops are grown to supplement the pastures, crops such as lucerne, Sudan grass, oats, and wheat being extensively grazed. A considerable acreage of brigalow scrub country has been converted to grazing land by the sowing of Rhodes grass following the destruction of the trees.

Much of the Downs country was infested by prickly-pear, which at one time was present on some 60,000,000 acres in the State. This menace has been removed by the success of the experiment in biological control in which the larva of a moth, introduced from South America, played a very important part. Large areas on the Western Darling Downs, which were for the time being valueless, accordingly are now being steadily improved for dairying, grazing, and agriculture. It would therefore seem probable that the Downs have by no means yet reached their maximum development in either plant or animal industry.

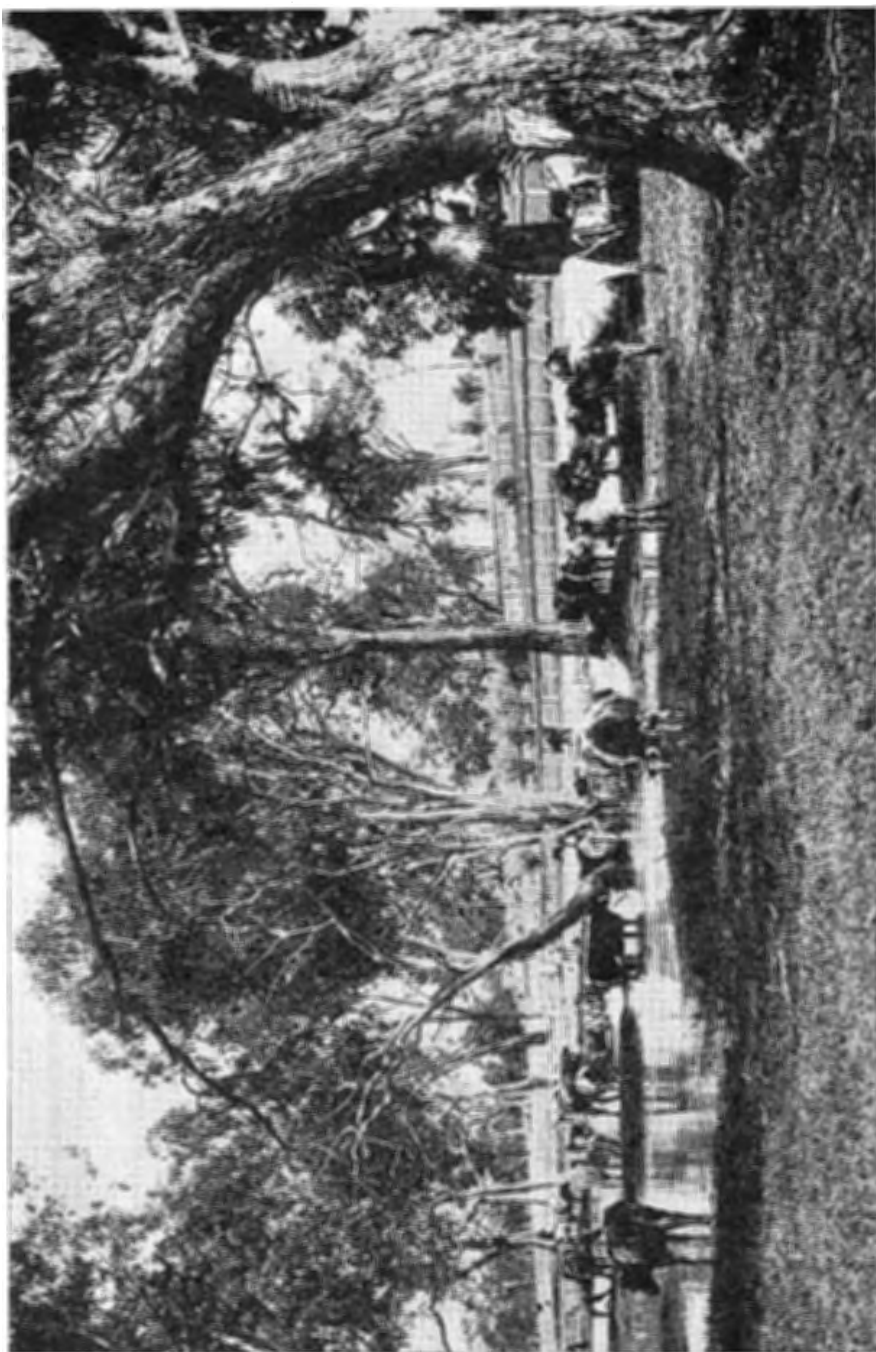


Plate 5.
DAIRY HERD ON THE DOWNS.

The Texas-Yelarbon-Inglewood territory is in the extreme south of the Downs statistical division, its southern boundary being the New South Wales border. It has little in common with the mixed farming areas of the Darling Downs, its agriculture being practically confined to the production of tobacco. The rainfall that is normally experienced in this territory is insufficient for the satisfactory growth of tobacco, and that crop is accordingly produced exclusively under irrigation, being grown on alluvial flats along the banks of the Dumaresq River and its tributaries. There were 644 acres under tobacco in the Texas-Yelarbon-Inglewood tobacco belt in 1937, the State total then being 3,812 acres. The country under discussion has an elevation of somewhat less than 1,000 feet and is interested largely in sheep and cattle, and in this respect it resembles the Goondiwindi district (Plate 6), which lies to the west of Yelarbon.

The Stanthorpe district is also in the Downs statistical division, but, in so far as plant industry is concerned, it bears no resemblance whatever to the other sections of this division. It enjoys an annual rainfall in the vicinity of 30 inches, and has an altitude ranging between 2,300 feet and 3,000 feet above sea-level, the soil being decomposed granite. The winters are severe and the climatic conditions generally are favourable to the growing of deciduous fruits. The district is accordingly unique in Queensland in that it is the centre of an extensive deciduous fruit-growing industry, apples, grapes, peaches, plums, and pears being represented by 5,389 acres, 1,679 acres, 1,198 acres, 1,156 acres, and 306 acres, respectively, in the 1937 returns. Tomatoes, beans, cabbages, and cauliflowers also add appreciably to the income of the orchardist, the 1937 acreages of these crops in the Stanthorpe district being 1,611 acres, 1,121 acres, and 524 acres, respectively, the last figure being the combined acreage for cabbages and cauliflowers. It might here be mentioned that when statistics are quoted for a district, they refer to the particular petty sessions district indicated; furthermore, that a number of such petty sessions districts constitute a statistical division, of which there are twelve in the State. The western section of the district is largely devoted to sheep-raising and tinmining has also contributed to the prosperity of Stanthorpe. As is the case with the Texas-Yelarbon-Inglewood territory, the Stanthorpe district adjoins the New South Wales border.

Maranoa.

The Maranoa division lies due west of the Darling Downs, the country gradually falling off in altitude as the Maranoa is approached, the town of Roma, one of the most important centres in this division, being 981 feet above sea-level. The average annual rainfall is somewhat less than on the Downs, the figure for Roma being in the vicinity of 23 inches. Open grasslands carrying Mitchell grasses, open forest grazing areas, and mulga scrub are well represented in this division. The prosperity of the Maranoa is based predominantly on its sheep, which in 1937 numbered over 4,000,000—i.e., 1,000,000 more than on the Downs. Its cattle, however, numbered only 185,281, whereas the Downs cattle totalled 535,567, including a much larger proportion of dairy cattle than in the case of the Maranoa. Wheat is the only grain crop that is grown to any extent in the division, the 1937 acreage being 22,782 acres; green forage was represented by 3,115 acres, hay by 766 acres, cotton by 120 acres, and grapes by 466 acres. The acreage of artificially-sown pastures in the Maranoa is steadily increasing, large areas of Rhodes grass and lucerne being sown each year.

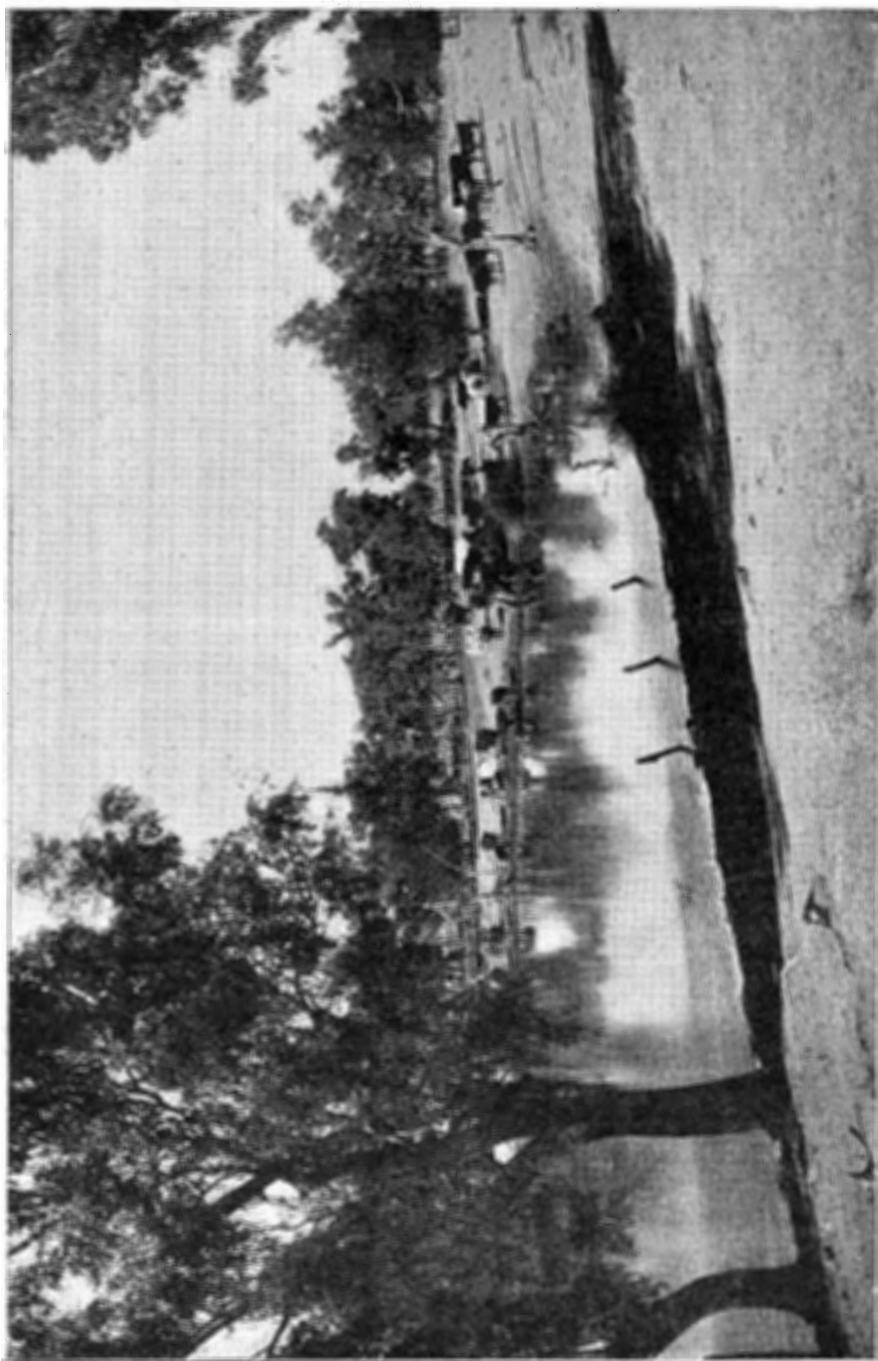


Plate 6.
CATTLE ON THE SOUTH-WESTERN EDGE OF THE DOWNS.

South-Western, Far Western, North-Western, and Central-Western.

The South-Western, Far Western, North-Western, and Central-Western statistical divisions may be regarded as exclusively pastoral, agriculture and fruit-growing being practically non-existent in these divisions. It is true that citrus, grapes, and date palms are grown in that vast territory in very small isolated areas, and that a few field crops are similarly grown. Nevertheless, it is substantially correct to state that the wealth of the four western divisions is derived almost exclusively from sheep and cattle; indeed, the 1937 returns show less than 1,000 acres under crop within their boundaries. The South-Western division lies due west of the Maranoa, it extends to the western border of the State, and is entirely included in the section of Queensland designated the western plains. The Central-Western division lies north of the Maranoa and South-Western divisions, and is partly in the western plains and partly in the section designated the eastern highlands. The Far Western division stretches west from the Central-Western division to Queensland's western border, and is wholly within the western plains section. The North-Western division extends north from the Far Western and Central-Western divisions to the Gulf of Carpentaria and westwards to the State boundary. It consists partly of the western plains, and of the coastal plain and the north-western uplands sections of the State.

By far the greater portion of the territory within the South-Western and Far Western divisions has an average annual rainfall of 20 inches or less and much of the country, as it stretches away towards the South Australian and Northern Territory borders, receives less than 10 inches annually. The Central-Western division has a somewhat higher rainfall, particularly towards the east, where, at Clermont, Emerald, and Springsure, the annual precipitation is in the vicinity of 25 inches. Important centres such as Aramac, Longreach, and Muttaburra have between 15 and 20 inches, while Barcardine and Blackall are slightly above the 20-inch level. The annual precipitation in the North-Western division is, as a whole, rather higher than in the other three divisions at present under discussion. Only a very small corner on the Northern Territory border has less than 10 inches annually, while at Normanton, in the Gulf Country, the rainfall is between the 35- and 40-inch levels. Such important centres as Cloncurry, Hughenden, and Richmond have rainfalls averaging between the 15- and 20-inch levels, but approximating to the higher level. The effectiveness of the relatively low rainfall in these western divisions is unfortunately influenced adversely by the fact that much of it occurs during the summer months and loss by evaporation is high. The total annual rainfall varies considerably from year to year and long periods of excessively dry weather are not uncommon.

Much of the territory with a rainfall of less than 10 inches is desert country, but a large proportion of the area enjoying a somewhat higher annual rainfall is open grassland on which the Mitchell grasses are conspicuous (Plate 7). These open grasslands extend from the New South Wales border to just south of the Gulf of Carpentaria, but not in a continuous belt. Open grasslands and spinifex country occur in the South-Western division, but mulga scrub predominates therein. In the Far Western division open grasslands of the Mitchell grass type are commonly met with. The Central-Western division has

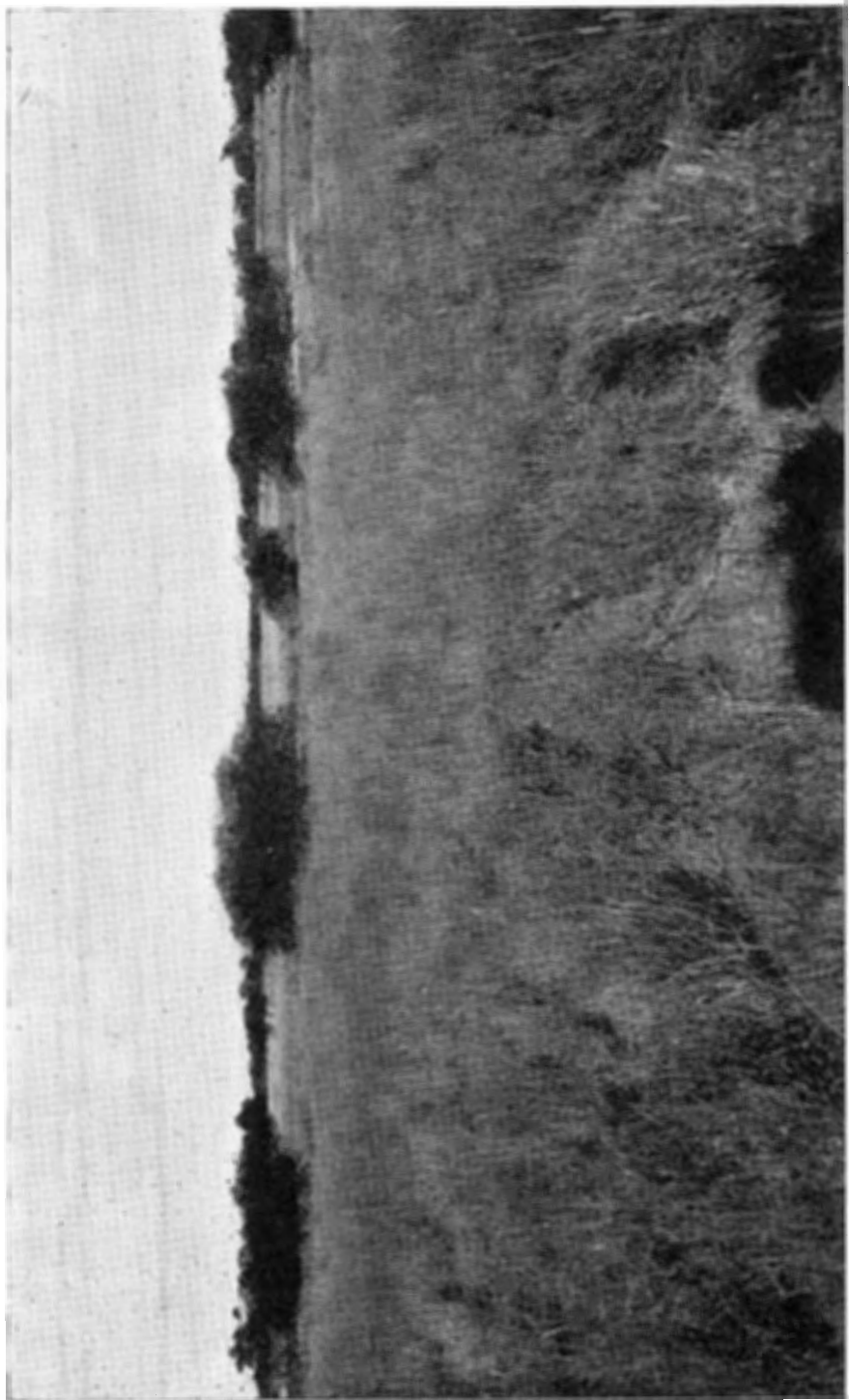


Plate 7.
MITCHELL GRASS IN THE WEST.

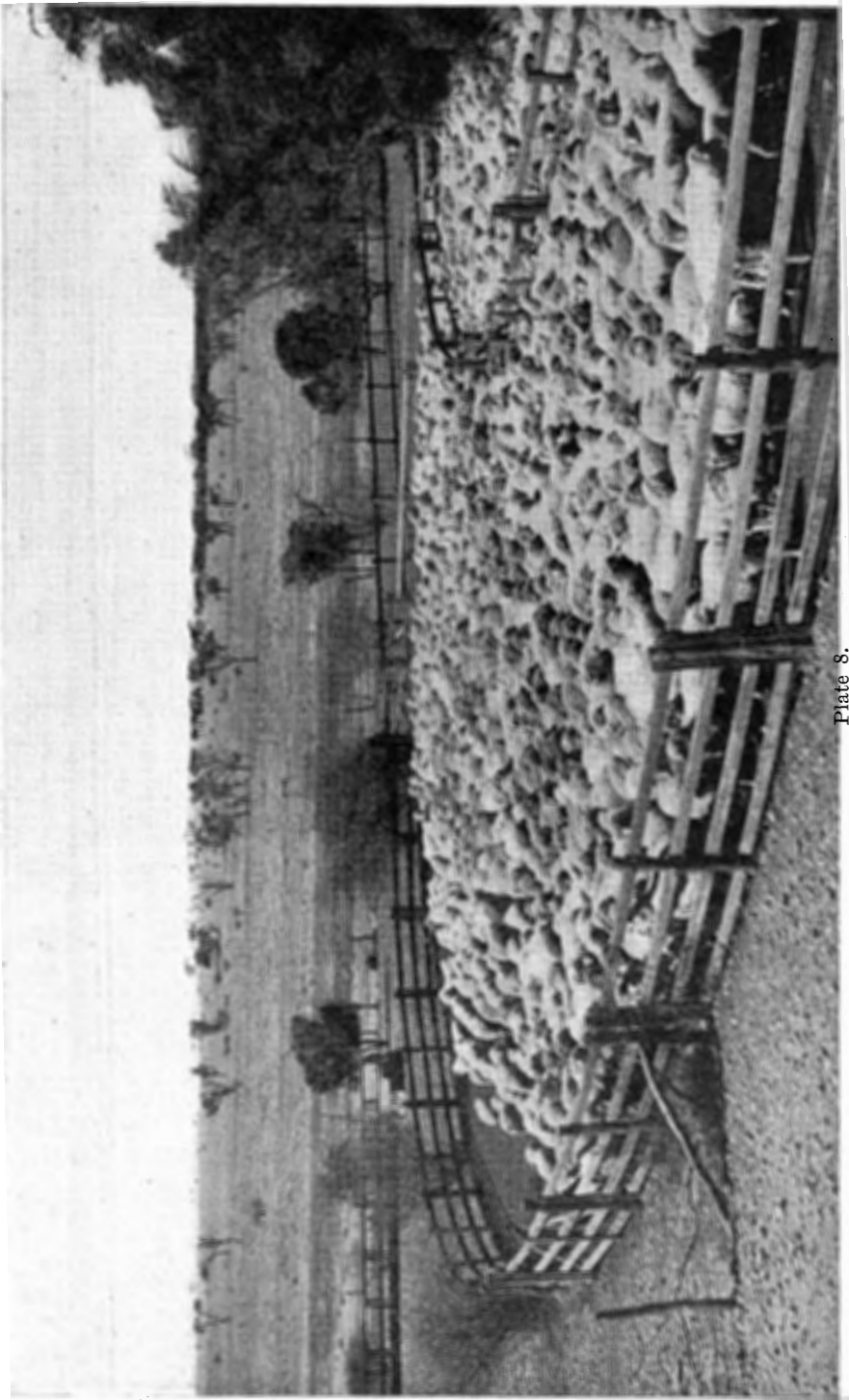


Plate 8.
SHEEP IN THE WEST.

large areas of open grasslands of Mitchell grasses, as well as open forest grazing, brigalow scrub, and spinifex areas. The North-Western division, again, has great tracts of Mitchell grass country extending close to the Gulf and on to the Barkly Tableland. Open forest grazing areas are conspicuous in the north-eastern section of this division, and indeed they extend along practically the whole of the edge of the Gulf Country. Spinifex is also present.

These four divisions constitute the great sheep belt of Queensland (Plate 8), for in 1936 almost three-quarters of the sheep of the State, which then numbered just over 20,000,000, were within their boundaries, the order of importance of the divisions, as determined by their sheep population, being Central-Western, South-Western, North-Western, and Far Western. The remaining quarter of the sheep population was then located almost exclusively in the Maranoa and Downs divisions. An examination of the statistics shows that the western divisions do not maintain the leadership in cattle population, for in 1936 the cattle in these four divisions numbered 1,693,449, as compared with a State total of almost 6,000,000. It is also interesting to note that more than half the cattle population of the four western divisions was located in the North-Western division.

Moreton.

The Moreton statistical division is the smallest in Queensland, but it is actually one of the most important in so far as plant industry is concerned. It comprises a roughly rectangular block of country situated in the extreme south-eastern portion of the State. The statistical returns for 1937 show that 232,377 acres were then under crop in the Moreton Division, which is also one of the most important dairying divisions in Queensland. The number of dairy cattle in milk in 1937 totalled 214,407, as compared with 212,591 in the Wide Bay division, and 141,467 in the Downs division, these being the three divisions in which the greatest numbers of dairy cattle in milk are to be found, the total for the State being 701,258.

Proceeding due west from Brisbane to Murphy's Creek, at the foot of the range which more or less forms the western boundary of the Moreton division, the traveller passes through one of the most important agricultural sections in Queensland, the chief crops grown therein being maize, lucerne, pumpkins, potatoes (Plate 9), and green forage. Other crops, such as cotton and onions, are also grown in this portion of the division, which, however, is of little importance as a fruit-producing area, although it contains a number of citrus orchards, particularly towards its western boundary. This section of the Moreton Division includes the Gatton, Helidon, Ipswich, Laidley, Marburg, and Rosewood districts.

The Harrisville district, almost due south of Ipswich, is an extensive producer of maize, lucerne, pumpkins, and green forage. The Dugandan district, which comprises territory between Harrisville and the New South Wales border, including the fertile Boonah areas, is also an important producer of these crops, as well as being an established potato-growing centre.

The Esk, Lowood, and Toogoolawah districts are all in the Brisbane River Valley and are maize producers, Toogoolawah leading the other two in the acreage devoted to this crop. Lucerne is grown to a considerable extent at Lowood and Toogoolawah, but it is cultivated

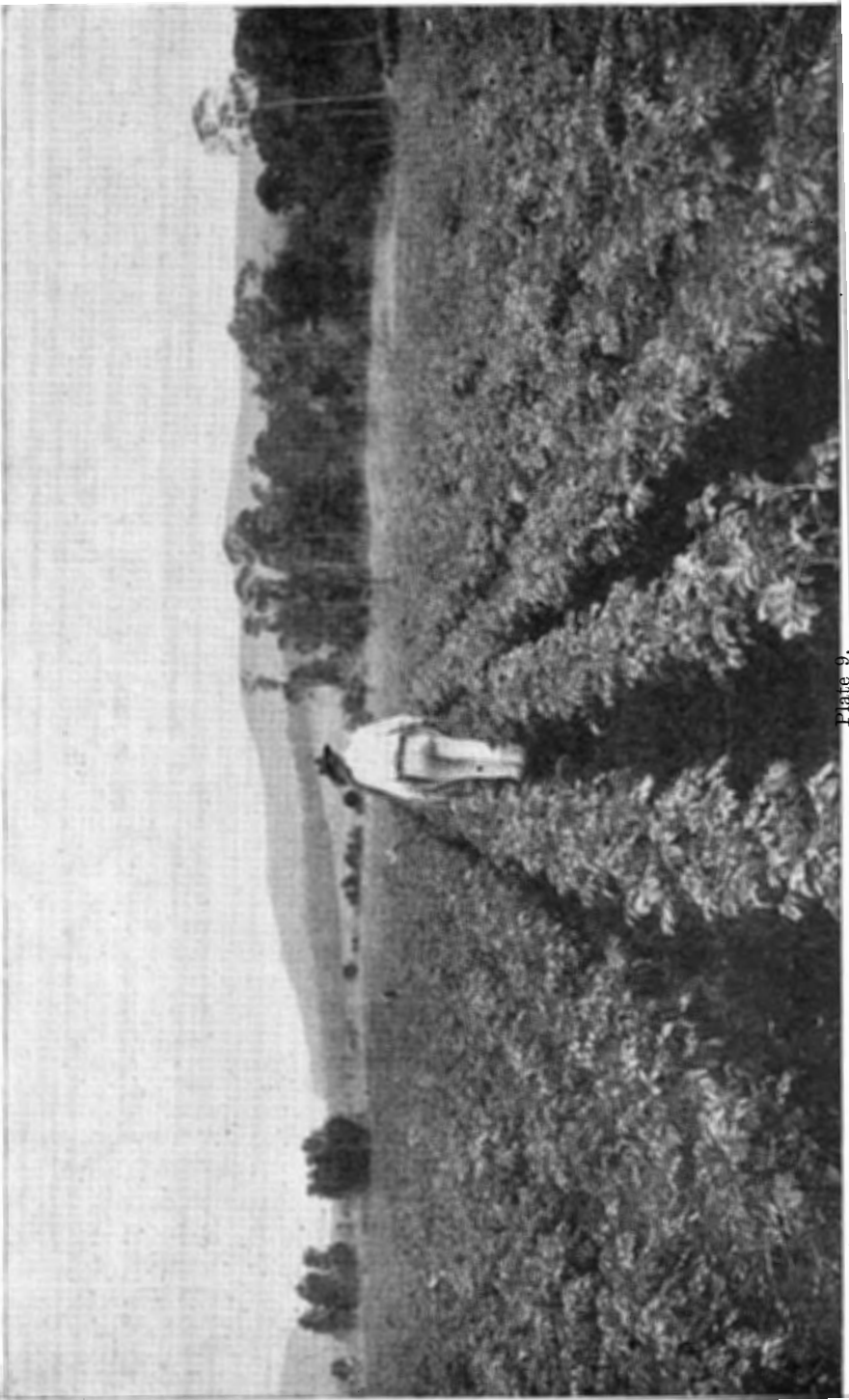


Plate 9.
POTATOES IN SOUTH QUEENSLAND.

on a much smaller scale in the Esk district. Lowood is an important producer of potatoes, and pumpkins are grown extensively in this and in the Toogoolawah districts, both of which have extensive areas under green forage.

Maize, lucerne, pumpkins, and green forage are the crops featured in the rural economy of the Beaudesert district, which lies close to the New South Wales border.

The Brisbane and Cleveland districts, serving as they do a large metropolitan population, specialize in tomatoes, cabbages, peas, beans, cucumbers, strawberries, melons, papaws, pineapples, custard apples, figs, and bananas, whereas the Wynnum district plays but a small part in primary production in this division. The Redcliffe district has considerable acreages of bananas and pineapples and the Woodford district of maize and bananas. The Kilcoy and Caboolture districts are both interested in dairying, the former also producing maize and the latter bananas and pineapples.

The Logan and Southport districts are devoted very largely to dairying, but bananas, maize, potatoes, and green forage are produced on a considerable scale. Sugar-cane is grown on some 1,300 acres in the Logan district, and the two districts combined grow about 500 acres of the arrowroot plant, thus constituting themselves the main centres for arrowroot production in Queensland. The Southport district is one of the State's most important banana-growing centres and the Logan district also has a considerable area under that crop.

Crow's Nest is largely interested in maize growing and has considerable acreages of lucerne, pumpkins, and green forage. It records almost 1,000 acres as being under wheat for grain production, and this is an indication of the fact that the Crow's Nest district really has more in common with the Downs than with the Moreton division. The township of Crow's Nest is situated at an elevation of 1,788 feet and the climatic conditions in the district are in general somewhat similar to those experienced in the Downs division.

The Maroochy district can justly claim to be one of the most important fruit-producing areas in Queensland. Pineapples (Plate 10) are grown extensively at Woombye and Palmwoods, and indeed, in 1937, 2,806 acres of pineapples out of a total of 6,549 in Queensland were located in this district, of which Palmwoods and Woombye constitute an important part. Again, in the matter of citrus the Maroochy district in 1937 claimed 1,057 acres out of a State total of 4,720 acres. The district, situated as it is in a rain-forest belt, enjoys a reasonably heavy rainfall—indeed, it has a much greater rainfall than is encountered again on the northward route until Mackay is reached. Sugar-cane is grown on the river flats on the Maroochy River and elsewhere and is crushed at Nambour. Pineapples are cultivated not only on the low-lying country at Woombye and Palmwoods but also on the Blackall Range, a few miles to the west, where an altitude of 1,460 feet is reached at Montville. Citrus is a feature of the Range and of Buderim Mountain as well as of the lower levels; and bananas are grown extensively on the steep slopes between these lower levels and the Range. Strawberries are a popular crop in this district, which is also a producer of papaws, avocados, and Australian nuts. Coffee and ginger are grown on a small scale on Buderim Mountain.

The discussion of crop production in the Moreton division clearly indicates that a much greater variety of crops is produced on a



Plate 10.

PINEAPPLE PLANTATION IN SOUTH QUEENSLAND.

commercial scale in it than in any other division. In 1937 it devoted 43,210 acres to maize, 26,226 acres to lucerne hay, 15,978 acres to lucerne as green forage, 6,809 acres to potatoes, 1,532 acres to sweet potatoes, 14,282 acres to pumpkins, 722 acres to cotton, 7,798 acres to sugar-cane, 654 acres to arrowroot, 146 acres to peanuts, 389 acres to grapes, 6,513 acres to bananas, 232 acres to custard apples, 1,776 acres to citrus, 563 acres to papaws, 4,681 acres to pineapples, 179 acres to strawberries, 325 acres to melons, 910 acres to beans, 929 acres to cabbages and cauliflowers, 338 acres to cucumbers, 1,374 acres to onions, 539 acres to peas, 1,545 acres to tomatoes, 114 acres to turnips, 988 acres to mangolds, 158 acres to broom millet, besides smaller acreages of a number of other crops. This division normally enjoys a reasonably satisfactory rainfall and it possesses a very definite asset in having a large population within its boundaries to which many of its products can be sold. Some of the districts discussed in the Moreton division, such as the Maroochy district, are amongst the most closely-settled rural areas in the State.

With respect to grasses, a notable feature of the Moreton division is the extent to which paspalum, an introduced grass, has been used in the coastal dairying pastures lying between Coolangatta, in the south, and Tewantin, on the northern boundary of the division. Open forest grazing areas, carrying native grasses, predominate elsewhere, although extensive belts of rain-forest, which totally inhibit the growth of pastures, are still to be found at the higher elevations in the south. Elsewhere in the division the rain-forest areas have largely been cleared and grassed or converted into agricultural farms or orchards.

The rainfall on the coast is higher than in the rich agricultural districts lying between the coast and the foot of the main divide near Toowoomba, representative annual averages on the coast being 45 inches at Brisbane, 55 inches at Southport, and 65 inches at Nambour, compared with 34 inches at Ipswich and 29 inches at Gatton.

Wide Bay.

The Wide Bay division lies due north of the Moreton division and north-east of the Downs, and includes such important centres as Bundaberg, Maryborough, Gympie, Kingaroy, Nanango, Gayndah, and Eidsvoll. It had an area under crop totalling 252,065 acres in 1937, and thus had slightly more land under cultivation than the Moreton division.

Gympie is the first large centre reached when travelling north in the Wide Bay division, and it enjoys the reputation of being one of the few goldmining centres in Australia which has been successful in effecting a transition from goldmining to agriculture and dairying when mining ceased to be profitable. Running south-west from Gympie for a comparatively short distance is the Mary Valley, in which there is a reasonably good rainfall; the average annual precipitation at Gympie itself is in the neighbourhood of 47 inches. Maize is extensively grown in the Mary Valley, which also produces considerable quantities of pineapples, beans, and bananas, as well as deriving portion of its income from dairying. In the immediate vicinity of Gympie, dairying is a conspicuous feature in the rural economy, but bananas, which were once very extensively grown on the slopes of the ranges near that town, have declined considerably in acreage in recent years. They, however,

are still grown extensively south of Gympie, and indeed, the banana industry, at least in so far as supplying the interstate and Brisbane markets is concerned, may be regarded as being confined to a narrow strip of country close to the coast, extending from Gympie southwards to Coolangatta, on the border of New South Wales.

Proceeding northwards from Gympie by rail, the traveller soon reaches the junction for the South Burnett, a near coastal valley in which agriculture has been very extensively developed. The headwaters in this valley rise close to the watershed of the Brisbane River, but they travel in a northerly direction to eventually reach the coast at Bundaberg, whereas the Brisbane River flows to the south-east to enter the sea in Moreton Bay. Much of the agricultural land in this district lies between 800 and 1,500 feet above sea-level and is devoted to the production of a wide range of crops, the chief of which are maize, peanuts, cotton, and lucerne. The peanut industry has developed rapidly in the South Burnett, with Kingaroy as the chief centre of production, 10,370 acres having been planted to this crop in 1937 out of a State total of 12,370 acres. The Wide Bay division grew maize on 50,722 acres in 1937, more than four-fifths of that acreage being in the South Burnett, which also had some 15,000 acres under lucerne for hay making and green forage. Approximately 2,500 acres were under cotton in 1937, and dairying was also a feature of primary production in this fertile and closely-settled valley. The average annual rainfall at Nanango, an important centre in the South Burnett, is approximately 31 inches.

A little north of Maryborough citrus is grown on a considerable scale at Howard, and in passing still further north the traveller enters the Bundaberg district, where sugar-cane overshadows every other crop. The rainfall in this area, averaging 43 inches per annum at the town of Bundaberg, is much less than in the sugar-cane growing districts north of Townsville, and in this respect Bundaberg somewhat resembles the Lower Burdekin. Irrigation is accordingly resorted to by quite a number of growers, and some 4,000 acres were under irrigation in the Bundaberg district in 1937, practically the whole of which was planted to sugar-cane. Tobacco is grown on a small scale by a few farmers, but it is a crop that is really only in the experimental stage in so far as Bundaberg is concerned. The predominant position of sugar-cane in the rural economy of this district is indicated by the fact that, in 1937, this crop was represented by 34,254 acres in a total of 36,983 acres under crop in the district.

The Central Burnett is another section of the Wide Bay division in which there has been much agricultural development, cotton being the crop most commonly cultivated in this district. The 1937 returns show that 6,285 acres of cotton were grown in the Central Burnett in that year. Here mention might be made of the fact that Monto, which is in the Upper Burnett, is in the Port Curtis division and accordingly its agricultural crops will be dealt with in the discussion on that division. Maize is the only other agricultural crop that is grown extensively in the Central Burnett which, apart from cotton and maize growing, is interested in dairying and cattle. Gayndah and Byrnestown, however, grow citrus on rather an extensive scale under irrigation on the banks of the Burnett River, the former centre having an average annual rainfall of 30 inches.

There were 212,591 dairy cattle in milk in the division in 1937, and it is interesting to note that slightly more than one-quarter of these were in the Gympie district. Sheep were represented by only a few thousand head.

Paspalum and Rhodes grass are conspicuous among the introduced grasses in this division, which also has very large areas of native grasses in open forest grazing country. Small areas of rain-forest occur in the coastal section of the division.

Port Curtis.

The next division for consideration is Port Curtis, which extends northwards from the Wide Bay division to slightly north of St. Lawrence and includes such important centres as Gladstone, Miriam Vale, Monto, Mount Larcom, Rockhampton, Wowan, and the Callide, Dawson, and Dee Valleys.

The coastal plain in this division, from St. Lawrence to Miriam Vale, is in the main devoted to cattle. At Mount Larcom, 46 miles south of Rockhampton, however, there was a considerable development in agriculture some years ago, several thousand acres of cotton then being grown at that centre. Conditions, unfortunately, were not so favourable for cotton-growing as in the near coastal valleys of Central Queensland, such as the Callide, the Dawson, the Dee, and the Upper Burnett, and but little cotton is now grown at Mount Larcom. Interest has accordingly turned to other crops and tomatoes have been receiving increasing attention there during recent years, while maize-growing is also included in the cropping programme. The Mount Larcom district, however, is interested in dairying rather than in crop production. Tomato and papaw growing have expanded appreciably at Targinnie and Ambrose, both of which centres are close to Mount Larcom. Miriam Vale is an important cattle centre, 111 miles south of Rockhampton, where tobacco-growing has been undertaken by a few settlers during recent years. In the vicinity of Rockhampton itself there are a considerable number of dairy farms supplying the fresh milk requirements of the city's population of some 30,000 inhabitants. Citrus, pineapples, and bananas are grown to some extent in the district, but it is not an important centre of production for any one of these crops. Peanuts, however, are produced on a considerable scale, 623 acres having been planted in the Rockhampton district with this crop in 1937. Maize and cotton are also featured in the country near Rockhampton, but it is, nevertheless, a district in which animal industry plays a more important part than plant industry.

Passing now to the Callide, Dawson, and Dee Valleys, which lie inland from and south-west of Rockhampton, an area is entered which has witnessed a great measure of development during the last twenty years, such development, until recently, being associated almost exclusively with the production of cotton and the pursuit of dairying. This country lies from 25 to 125 miles south-west of Rockhampton, and it contributes a large proportion of Queensland's production of cotton, the yield of which was 12,447 bales of seed cotton in the 1938-39 season. Cotton in these valleys is grown very largely on newly-cleared land, which is subsequently sown to Rhodes grass and devoted to dairying. There is also now a notable tendency to rotate cotton and Rhodes grass on the older cleared land, many of the settlers thus being both cotton-growers and dairy farmers. Wheat is grown to a considerable extent

during the winter months and grain sorghums are being experimented with as a crop which may give better results than maize in this area of relatively low rainfall. Cotton in the Callide and Dee Valleys is grown mostly at an elevation of from 350 to 650 feet above sea level and is produced without irrigation, except in the case of a few farmers who have been experimenting with irrigation plants in recent years; in the Dawson Valley, however, cotton is extensively grown on the Theodore Irrigation Area and the acreage of irrigated cotton, throughout the State, has risen from 237 acres in 1937 to close on 2,000 acres in 1940-41. This, however, still constitutes only a small proportion of the State's cotton acreage which, in 1937, reached a total of 52,692 acres. Of that total, 47,720 acres were sown in the Port Curtis division. The Callide, Dawson, and Dee Valleys have long been cattle country, and were so practically exclusively until the large-scale settlement schemes were initiated some twenty years ago.

If, instead of returning to the coastal plain at Rockhampton, the range is crossed at the southern end of the Callide Valley the traveller reaches the Upper Burnett, another district in which cotton features largely in the agricultural programme, but not to such a marked extent as is the case in the Callide Valley. Monto, the district in question, is at the railhead in the Upper Burnett, and the township is situated at an altitude of 774 feet above sea level. It is a district in which dairying, cotton, maize, and lucerne growing constitute the foundations of rural prosperity, the maize and lucerne being grown to a large extent along a series of very fertile creek banks. The 1937 returns give 2,836 acres, 3,156 acres, 3,981 acres, and 800 acres as the areas devoted to maize, lucerne, cotton, and pumpkins, respectively, during that year.

The status of dairying in the Port Curtis division is indicated by the fact that the 1937 records show 78,853 dairy cattle as being in milk during that year. Cattle are responsible for much of the prosperity of the division, but, as in the case of Wide Bay, sheep contribute but little to it in the Port Curtis division.

There is a considerable difference between the rainfall on the coast and that experienced in the near coastal valleys, as is evidenced by the fact that, whereas Rockhampton records an annual average of 40 inches, Biloela, in the Callide Valley, has an annual precipitation of only 29 inches.

This division consists largely of open forest grazing country, but considerable areas of brigalow scrub are included in its boundaries, and rain-forest also occurs in restricted areas. Rhodes grass is the most important of the introduced grasses.

Edgecumbe.

The next division to be discussed is Edgecumbe, a division in which sugar-cane is overwhelmingly predominant in plant industry, for, in 1937, the area devoted to that crop was 147,941 acres, whereas the total area under all crops in the division was 154,253 acres. Tomatoes were represented by 1,536 acres, tobacco by 458 acres, pumpkins by 516 acres, mangoes by 286 acres, citrus by 354 acres, and pineapples by 339 acres.

Tobacco is grown at Bowen, Sarina, and Woodstock, but on a much smaller scale than on the Cairns hinterland. Tomatoes constitute the most important crop at Bowen, where mangoes and pineapples are also



Plate 11.

SUGAR-CANE PLANTATIONS NEAR CAIRNS.—Photograph by Chargois Studios, Cairns. Published by permission of the Queensland Government Tourist Bureau and Chargois Studios.

included in the cropping programme. The Lower Burdekin, which grows sugar-cane on a large scale under irrigation, has recently interested itself in pineapple production and is also growing cotton, lucerne, bananas, potatoes, and onions on a small scale. There are a number of citrus orchards in the Charters Towers district, the town itself being situated 83 miles south-west of Townsville at an elevation of 1,008 feet in a low rainfall belt. Dairying is being carried on to an increasing extent in the Mackay district, but only 13,246 dairy cattle in milk were recorded for the whole division in 1937. The cattle population for the division, however, is in the vicinity of three-quarters of a million, but the sheep population numbers only a few thousand.

The coastal rainfall in this division is rather variable, and it ranges from 40 inches at Bowen and 42 inches at Ayr, on the Lower Burdekin, to an average precipitation of 67 inches at Mackay. Inland at Charters Towers it averages only 25 inches.

Much of this division is comprised of open forest grazing country, with belts of rain-forest on the coast and of brigalow scrub further inland. Towards its western boundary it includes spinifex country.

Rockingham.

The Rockingham division lies due north of the Edgecumbe division and extends from slightly north of Townsville to the vicinity of the Daintree. Here again sugar-cane (Plate 11) is of outstanding importance in agriculture but, unlike the Edgecumbe division, Rockingham grows other crops on quite a large scale, maize and tobacco being the mainstay of agriculture in the Cairns hinterland. Sugar-cane is grown practically exclusively on the coastal plain, the milling centres being at Halifax and Macknade on the Herbert River, at South Johnstone, Goondi, and Mourilyan on the Johnstone River, and at Tully, Babinda, Gordonvale, Edmonton, and Mossman. There is thus a fairly continuous belt of sugar-cane from Halifax to Mossman, and in that stretch of country practically no other agricultural crop is grown, although there are a few citrus orchards and banana plantations at Cardwell, where the sugar-cane belt is broken for a few miles, and papaws, granadillas, bananas, mangoes, and vegetables are grown on small areas in the vicinity of Cairns to supply the requirements of its population of approximately 14,000 people. Sugar-cane has played an extremely important and indeed invaluable part in the settlement of the tropical coast of North Queensland, but there are certain obviously unsatisfactory aspects involved in relying almost entirely on one crop for the full development of such a large stretch of territory. Furthermore, there are definite limits to the amount of sugar-cane that can be profitably grown, and these limits do not permit of the effective utilisation of all the really good land in the sugar-cane districts. Alternative avenues of production, including cattle-fattening on planted pastures, are therefore being explored in an effort to achieve diversification of production in the sugar-cane areas of the Far North.

The coastal plain in this division receives a variable rainfall. In the vicinity of Townsville it averages 47 inches, but it increases markedly when the Herbert River is reached, and in the Tully, Johnstone River, and Babinda districts it is still greater. At Innisfail, on the Johnstone River, the average annual precipitation is in the vicinity of 143 inches, but in some years, at this and other centres on the coast, the total may reach the 200-inch mark. Proceeding further north to Gordonvale and

Cairns, a zone of lower rainfall is reached, but even at these centres it is very high compared with most Queensland districts. The coastal summer temperatures are accompanied by a high humidity, but in winter the nights are cool and the days are pleasantly warm.

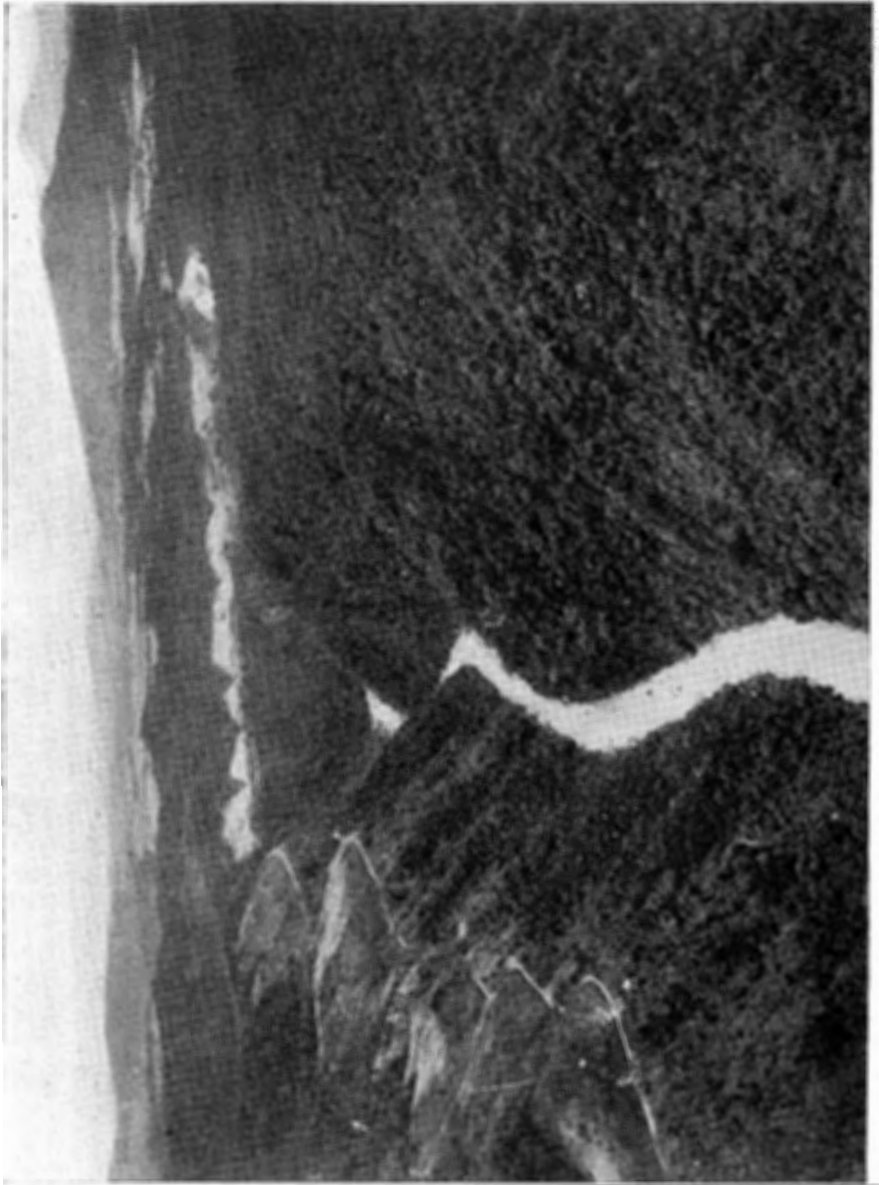


Plate 12.
RAIN-FOREST IN THE BARRON GORGE NEAR CAIRNS.—Photograph by Chargois Studios, Cairns.
permission of the Queensland Government Tourist Bureau and Chargois Studios. Published by

A very conspicuous feature of the division under discussion is the great mountain range which culminates in Bartle Frere, the height of which is 5,438 feet. This range is clad with dense rain-forest (Plate 12) and is close to the coast, Bartle Frere lying to the west of the Johnstone River sugar-cane lands. To the west and north-west of the range lies the Cairns hinterland, which includes the Atherton Tableland and the Mareeba and Dimbulah districts.



Plate 13.

DAIRY FARM ON THE ATHERTON TABLELAND.

The town of Atherton is situated 2,469 feet above sea-level, but Tumoulin, on the Upper Tableland, lies at an elevation of 3,165 feet. The whole of the Tableland country, which has large areas of red volcanic soil, enjoys a reasonably good rainfall, the annual average at Atherton itself being just on 52 inches. The climate is pleasantly cool in winter and Atherton is less humid in summer than the coastal plain. Maize, dairy products, and timber are the chief sources of wealth on the Tableland. As a consequence of the reliable summer rainfall, the average yield of maize per acre is higher than in any other district in the State, and in 1937 a total of 22,410 acres of maize was grown for a yield of slightly less than 1,000,000 bushels, thus constituting somewhat more than one-third of the State's production of that crop. Peanuts and potatoes are also grown on the Tableland, but on a very much smaller scale than maize. Dairying (Plate 13) predominates in the Millaa Millaa, Malanda, and Ravenshoe districts, the rainfall therein being definitely heavier than at Atherton and Tolga, the districts in which the maize crop is chiefly grown. Timber for cabinet-making is obtained in large quantities from the rain-forests, the cabinet-making woods of the Atherton Tableland being renowned for their great beauty.

The Mareeba and Dimbulah districts lie slightly north of the Tableland at a rather lower elevation, and in a much drier belt, the town of Mareeba being only 1,327 feet above sea-level. Until recent years, agriculture was virtually non-existent in these two districts, but tobacco is now grown extensively therein, and in 1937 the two districts combined produced approximately one and a-half million lb. of cured tobacco leaf.

The statistical returns for 1937 show that there were 28,198 dairy cattle in milk in this division, almost 20,000 of these being on the Atherton Tableland. Other dairying centres include the Daintree, which is on the coast north of Mossman, and Silkwood, which is also a coastal district, situated 16 miles south of Innisfail. Returns indicate that the total cattle population of the division is approximately a quarter of a million, and that sheep number only a few hundreds.

This division possessed the largest belt of rain-forest country in the State, much of which, however, has now been cleared, both on the coastal plain and on the Atherton Tableland. On the former, sugar-cane has taken the place of the rain-forest, and on the latter it has been supplanted by maize and pastures—paspalum, Kikuyu, molasses, Para, and Guinea grasses being the introduced species most frequently planted. Outside the rain-forest belt the division consists almost exclusively of open forest grazing country.

Peninsula.

The Peninsula division extends from north of the Rockingham division right to Cape York and is one in which agriculture and fruit-growing are practically non-existent. Peanuts were grown in 1937 on 122 acres, maize on 54 acres, citrus on 60 acres, and beans on 24 acres. The whole of the coconut area recorded in the State in 1937, however, was located in this division, and amounted to 360 acres. Dairying is conducted on a very small scale and the cattle population of this large stretch of territory is only slightly in excess of 100,000.

The rainfall at Cape York averages 68 inches, at Coen 47 inches, at Mein 48 inches, and at Moreton 52 inches. As elsewhere in the State,

most of the rain falls in the summer months, the months of May to October, inclusive, being characteristically dry months in which bright sunshine normally prevails.

Isolated areas of rain-forest occur on the east coast of this division, but open forest grazing areas predominate. Spinifex country occurs on the Gulf coast of the Peninsula and also in the northern section towards Cape York.

B.—AGRICULTURAL INSTITUTIONS WITHIN THE STATE.

The agricultural institutions in the State of Queensland to which reference may be made in this pamphlet are the Department of Agriculture and Stock, the Queensland Agricultural High School and College, the Faculty of Agriculture in the University of Queensland, and the Commonwealth Council for Scientific and Industrial Research.

DEPARTMENT OF AGRICULTURE AND STOCK.

The Department of Agriculture and Stock was established in 1887 and is thus the oldest government agricultural institution in the State of Queensland. The department commenced activities as a "Department of Agriculture," a "Stock and Brands Department" having been established at a much earlier date, actually in 1868. The latter, however, was incorporated in the Department of Agriculture in 1904, and the combined organisation has since been known as the "Department of Agriculture and Stock." As has been the case with all public departments in Australia, it commenced operations with a very small staff, but with the passing of the years there have been very material additions to its personnel, which now exceeds 500, a large proportion of these officers being stationed at various centres throughout the State. So far as plant industry is concerned, the sections of the Department which are of major interest, for present purposes, are the Division of Plant Industry (Research), the Agriculture Branch, and the Fruit Branch.

The Division of Plant Industry (Research) was constituted approximately four years ago, and now has a staff of forty-six officers, each of whom, with a few exceptions, is engaged either exclusively or predominantly on investigational and field experimental work. These officers are located either at the head office laboratories in Brisbane or at appropriate centres throughout the State, representatives of the Division being stationed at Atherton, Rockhampton, Biloela, Nambour, Toowoomba, Stanthorpe, and Blackall. The investigational programme handled by these officers embraces field crop, pasture, orchard, market garden, forestry, and soil problems. Many of the experimental projects are carried out on farms, orchards, and market gardens in co-operation with the owners thereof, but at the Biloela Research Station, in the Callide Valley, several hundred acres of land are available for experimental work. The research centre at Biloela was inaugurated for the purpose of investigating cotton problems associated with the opening up of the Callide and Dawson Valleys for cotton-growing and dairying. It has, however, been giving an increasing amount of attention, in recent years, to other crops, such as sorghums and wheat, as well as investigating problems associated with cotton and grassland rotations. At this research station, the staff of officers investigating the various problems

has been provided with adequate laboratories for the work at present being handled, and full use is being made of the land available for field experimental work. Another important centre, at which a considerable number of officers of the Division of Plant Industry (Research) are stationed, is Nambour, and this field station really functions as the headquarters for the investigation of Queensland's horticultural problems. Laboratories have been provided at Nambour and at all other centres at which officers of the Division are located. "*The Plague Grasshoppers Extermination Act of 1937*" and "*The Apiaries Act of 1938*" are administrative responsibilities of the Division of Plant Industry (Research).

The Agriculture Branch has a very considerable number of officers located both in Brisbane and throughout the State, the Branch being represented at Atherton, Mareeba, Dimbulah, Ayr, Mackay, Rockhampton, Biloela, Monto, Bundaberg, Gayndah, Kingaroy, Toowoomba, and Chinchilla. These officers handle a great volume of advisory work and are also associated with much of the field experimental work of the Department, part of their experimental programme being carried out in co-operation with officers of the Division of Plant Industry (Research). Another important feature of the Branch's activities is the provision of supplies of seed of certain crops for sale to farmers—e.g., tobacco and maize. The branch has little association with the administration of Acts, but it is responsible for the application of "*The Tobacco Industry Protection Act of 1933*." Mention must here be made of the Bureau of Tropical Agriculture at South Johnstone, which was established by the present Secretary for Agriculture and Stock. One of the chief objectives of this Bureau is to assist in the solution of the problem of diversifying primary production on the far northern tropical coast which, at present, is devoted almost exclusively to the growing of sugar-cane.

As is the case with the Agriculture Branch, the Fruit Branch has many of its officers stationed at appropriate centres throughout the State, being represented at Cairns, Townsville, Bowen, Rockhampton, Maryborough, Nambour, Toowoomba, Stanthorpe, and Wallangarra. It also carries a very considerable staff at headquarters in Brisbane. The officers of the Branch handle a great deal of advisory work and are associated with a certain amount of field experimental work in the same manner as the officers of the Agriculture Branch. Another activity of the Fruit Branch is the Banana Industry Protection Board, which is represented by banana agents stationed at Gympie, Pomona, Nambour, Woodford, Dayboro, Brisbane, Beenleigh, Southport, and Coolangatta. These agents are thus located in the great banana-growing belt between Gympie and the New South Wales border. The activities of the Banana Board are financed partly by Government contributions and partly by growers' subsidies. The Fruit Branch is responsible for the administration of "*The Diseases in Plants Acts, 1929 to 1937*," "*The Banana Industry Protection Acts, 1929 to 1937*," and "*The Fruit and Vegetables Acts, 1927 to 1939*," and certain officers of the Branch are associated with the administration of "*The Quarantine Act, 1908-1924*," acting in this respect on behalf of the Federal Government.

The department issues a monthly publication, "*The Queensland Agricultural Journal*," and is also responsible for the production of an extensive series of bulletins, pamphlets, and leaflets dealing with many phases of plant industry.

This brief review of the departmental organisation so far has been confined to those sections which are concerned exclusively with plant industry. Mention, however, must be made of the Agricultural Chemist's Branch and the Seeds, Fertilizers, Stock Foods, Veterinary Medicines, Pest Destroyers Investigation Branch, both of which have very decided interests in plant industry. The staffs of these two branches are located exclusively in Brisbane and are provided with adequate laboratories for their work, which in many cases is carried out on behalf of other sections of the department. The Seeds, Fertilizers, Stock Foods, Veterinary Medicines, Pest Destroyers Investigation Branch is responsible for the administration of the provisions of "*The Fertilisers Act of 1935*," "*The Seeds Act of 1937*," "*The Pest Destroyers Act of 1939*," and "*The Agricultural Requirements Control and Conservation Act of 1939*."

Finally, reference has to be made to the Marketing Branch, which is associated with the operations of the various marketing organisations built up under "*The Primary Producers' Organisation and Marketing Acts, 1926 to 1939*." These organisations are a very important feature in primary production activities in Queensland.

THE QUEENSLAND AGRICULTURAL HIGH SCHOOL AND COLLEGE.

The Department of Public Instruction is responsible for the administration of the Queensland Agricultural High School and College, which is situated at Lawes, some 57 miles west of Brisbane. This institution was founded in 1897 and now has an annual attendance well beyond the 300 mark. It functions as an Agricultural High School and as an Agricultural College which grants diplomas in agriculture, horticulture, stock, and dairying, and it is associated with the Faculty of Agriculture in the University of Queensland in that the students in that faculty spend one year of their academic course at Lawes. A considerable proportion of the officers in the Agriculture Branch and in the Fruit Branch of the Department of Agriculture and Stock were trained at Lawes.

UNIVERSITY OF QUEENSLAND.

The Faculty of Agriculture in the University of Queensland was founded in 1927, and since its establishment it has produced a considerable number of graduates, a good proportion of whom are now on the staff of the Division of Plant Industry (Research) in the Department of Agriculture and Stock.

COMMONWEALTH COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH.

Mention must finally be made of the Commonwealth Council for Scientific and Industrial Research, a Federal organisation, which, in plant industry, is represented by five officers permanently located in Queensland. Three of these are stationed at Lawes, where they are engaged in plant breeding, plant introduction, and weed pest control investigations. The fourth is located at Fitzroyvale, in the vicinity of Rockhampton, and is employed exclusively on plant introduction work. The fifth officer is stationed at Stanthorpe, and is responsible for extensive root stock investigations at that centre.