

Chapter 15

AGRICULTURE

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Chapter 15

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'After taking measures to secure yourself and people you will proceed to clear ground on the public account for the cultivation of wheat and other plants. You are to inform yourself of the nature of the soil what proportions of land you find proper for the cultivation of wheat, barley and flax ... what quantity of cattle can be taken care of.'

(Part of the the order given to Lieutenant Bowen to establish a Tasmanian settlement, 29 March 1803 —)

Agriculture in Tasmania got underway immediately upon the establishment of a settlement at Risdon Cove; the cultivation and maintenance of food reserves was essential to the survival of the fledgling colony given its extreme isolation. A return, dated 27 September 1803, shows that Tasmania's total livestock amounted initially to one bull, ten cows, two rams, thirty sheep, thirty-eight pigs, eight goats and a horse.

The importance that agriculture was to assume for the State is reflected in the early history of the settlement; its history is virtually recorded in terms of the success and failure of its crops. The earliest settlers were constantly dogged by shortage, and on more than one occasion, they were to find themselves on the verge of starvation.

Once the colony had moved across the Derwent to Sullivan's Cove, a government farm was quickly established at what is now Cornelian Bay, where crops were planted to supply the settlement with provisions.

A primary attraction of Tasmania for the colonial administration was a combination of available convict labour and apparent agricultural potential. Free settlers were offered inducements by the administration to take up the land it had claimed. Apart from promises of convict labour, land grants of one hundred acres each could be made available on the recommendation of Governor Collins. Newly-arrived settlers were fed and supplied with tools and seed from the government stores for an initial period of twelve months. Thus, from the earliest days of Tasmanian settlement, what was to become a recurrent pattern of government involvement in agricultural activity was established.

Methods of agriculture were necessarily primitive. What livestock had arrived belonged to the Government; without horses the settlers were effectively prevented from ploughing their new holdings. In general, the ground was simply roughly cleared and then broken up by hoe and the seed sown or, as often as not, simply chipped in. The anticipated sufficiency of convict labour failed to materialise. Yet despite this and other obstacles the settlers succeeded in the first season in harvesting a crop which gave them a small surplus for seed. Meanwhile, on the government farm similar progress had been made. By July 1804 it consisted of 19 ½ acres of wheat, 1 ¾ acres of oats and 2 ¼ acres of rye.

Additional livestock arrived in two shipments and Governor Collins, recognising the shortcomings of purely manual clearing and sowing, sold much of it among the settlers throughout the following year.

The shortage of labour, however, was not so easily remedied and in the following year it was to almost result in the extinction of the settlement; the lack of convict labour made self-sufficiency impossible. From 1805 to 1807 hunting native wildlife was virtually the salvation of the colony but, paradoxically, it served to worsen the overall situation. With a large proportion of assigned servants out in the bush hunting there was even less labour available for field work. The situation, already serious, was elevated to a crisis with the arrival of several shipments of desperately needed provisions in an inedible condition.

The settlement was eventually relieved, and with the famine past, a period of experiment and improvement began. By 1820 wheat had emerged

as Tasmania's principal agricultural produce; the climate favoured higher yields and the price differential resulting from its higher quality was regarded as being sufficient to outweigh the higher transport costs incurred in selling to the New South Wales markets.

By the early 1820s Tasmanian agriculturalists were sufficiently confident of their progress and potential to undertake further diversification and expansion, a confidence conveyed well by an 1823 address given to the Agricultural Society of Van Diemens Land by its President, Edward Ford Bromely:

'It is said that we are twenty years behind New South Wales in civilization; that colony was founded thirty five years ago. To the former has been directed all the capital—all the labour—all the advantages of every kind. The Tasmanian colony's subsequent progress has shown its capability.'

Yet the crudeness of the methods used to obtain this progress were to eventually take their toll. Farming methods involving little capital, but high labour input, combined with little or no crop rotation from season to season persisted. This continuous practice of monoculture was to result in the progressive impoverishment of the available arable land, the effects of which were to become particularly felt a century later in the 1930s.

The growth of the British textile industry encouraged a corresponding expansion of the State's wool industry; the 1830s and 40s saw the first utilisation of the subhumid midlands for sheep grazing. By 1850 Tasmanian sheep numbers exceeded the two million mark for the first time; their numbers were not to attain this level again until 1931. As a result, the wheat industry contracted somewhat, nevertheless wheat production still regularly exceeded that of New South Wales in this period.

The second half of the nineteenth century was marked by agricultural development in the northern regions of the State, led primarily by the growing numbers of small independent farmers. Their efforts, however, were not entirely successful partly due to the usual shortages of labour and capital. Of more significance was their failure to find any crop which could establish a comparative advantage. The newly-cleared forest lands of the north proved unsuitable for wheat and eventually potatoes were to emerge as a viable alternative in these areas.

In 1875, governmental involvement in agriculture was formalised with the establishment of a department under the direction of the Chief Inspector of Stock. This department was later incorporated into the Agricultural Bureau, which was set up mainly to administer regulations concerning both animals and plants.

The 1880s and 90s brought significant developments. The successful shipment overseas of apples in the eighties and butter in the nineties led to the establishment of orcharding in the Huon region and of dairying in the north. Both industries were to become characteristic of their respective regions and were to cement trade links with Britain, the early principal consumer of these commodities.

In 1911, the *Department of Agriculture Act* established the department in its present-day form.

From 1900 to 1914 Tasmanian agriculture prospered from the newly-established free trade within the Australian Federation as well as from its expanding overseas trade. Free trade had the effect of opening mainland markets to Tasmanian specialities. Potatoes, fruit and hops benefited considerably from this new access. Hops, for instance, doubled in acreage during this period. Rising prices after 1902 opened British markets yet further to Tasmanian wool and dairy products.

The First World War intervened to put an end to this expansionary trend. In a period of wartime shortage of labour, equipment and markets, beef production took precedence over dairying in many areas. The production of wool and fruit growing, however, continued at a moderate level of prosperity.

The early twenties saw a renewed vigour in Tasmania's agriculture in the wake of the optimism created by the Allied victory. After 1925, however, farming tended to become a rather less profitable activity. In 1926 a price support scheme was adopted for dairying and, as the prices of other products continued to fall, many non-dairy farmers turned their efforts to butter production, attracted by its apparent stability. The later twenties are characterised by the growing diversification of activity on farm holdings, principally as a hedge against the growing economic uncertainties of the period. The level of governmental involvement in agriculture increased. The Department of Agriculture was reorganised in 1927 and immediately embarked on a campaign of pasture improvement.

The arrival of the depression in the early thirties wrought changes which were to permanently alter the character of Tasmanian agriculture. The progressive impoverishment of arable soils and the low carrying capacity of pastoral properties became evident as farmers experienced the effects of inefficient techniques and low production. The later thirties, with the gradual lifting of the depression, were marked by the greater use of mechanisation, the widespread adoption of new seed varieties and the discovery and remedying of trace element deficiencies. This period witnessed a substantial investment in

pasture improvement, in contrast with the methods of the preceding century.

The advent of World War Two intervened to arrest these promising developments. Despite shortages the war brought at least one agricultural benefit to the State. The increased demand by the armed forces for conveniently packaged foods for front-line troops led to the introduction of vegetable canning facilities to Tasmania (Armed Forces Food Science Establishment). It still remains a significant activity in the northern areas of the State.

In 1944-45, the Commonwealth and State Governments initiated a land settlement scheme for ex-servicemen; land was granted in perpetuity at low rentals with an option to buy after six years.

The early 1950s was a period of recovery. The wool boom of 1951 provided funds for desperately needed re-investment, and the decade 1954-64 was one of unparalleled expansion. Farms tended toward greater size and specialisation while labour input and farm numbers declined. New Asian markets for wool were opened and governmental involvement increased. 1964 saw the setting up of the Artificial Breeding Board (known since 1977 as The Tasmanian Herd Improvement Organization), and A.I. techniques found increasingly wide favour. Today, almost one quarter of the State's dairy cows are bred artificially.

Far reaching changes faced Tasmanian agriculture in 1973, for in this year Britain finally made its long awaited entry into the European Economic Community. The upshot of this was the effective closure of the important and traditional British market for Tasmanian produce. The loss of the British market had a particularly adverse effect upon apple and butter production. It is to this cause that Tasmania's gradual abandonment of its traditional orcharding activities can be attributed.

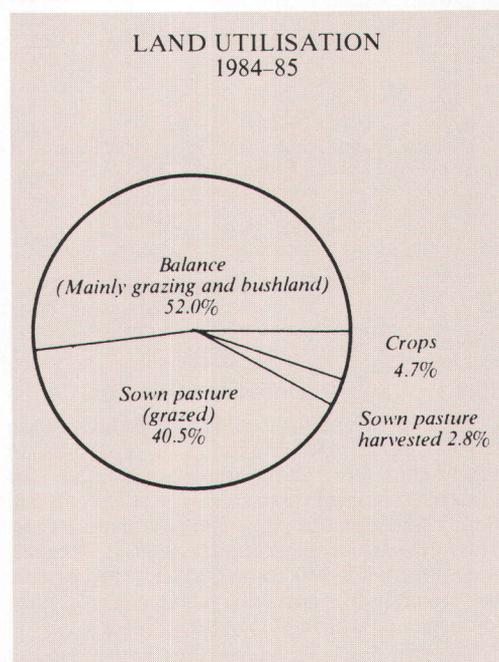
In recent years the trend has again been towards diversification of both markets and products. Attempts to reach further Asian markets have met with varying degrees of success and a number of entirely new, often experimental, ventures have been undertaken. The State's unique poppy industry is one early and particularly successful instance. Tasmania's production of alkaloids from the poppy plant for pharmaceutical preparations today runs third to that of the traditional producers, India and Turkey. Other ventures which have made considerable progress include the nascent wine industry — the State has currently some twenty vineyards in operation — and presently experiments are continuing in the areas of berry fruit of various kinds, deer farming, and the cultivation of pyrethrum.

15.1 LAND USE

At March 1985 a little over 2 161 000 hectares of land in Tasmania were being utilised for agricultural purposes. This represents some 31.6 per cent of the State's total land area of 6 833 100 hectares.

By far, the greatest proportion of Tasmania's agricultural land is given over to the grazing of sheep and cattle. This activity accounts for just over two million hectares, or 95.3 per cent of the total amount of agricultural land. Of this two million hectares of grazing land, 43.3 per cent is sown pasture, the remainder being simply cleared and fenced bushland.

The cultivation of crops covered 4.7 per cent of the total agricultural land, or some 100 000 hectares.



The area of agricultural land in Tasmania has been subject to a slight progressive decrease of some 111 800 hectares since the turn of the decade due to a number of factors including the cessation of activity on establishments due to economic reasons and the encroachment of industrial and residential usage onto agricultural holdings.

Just over 5 700 commercial farming establishments make up Tasmania's agricultural industries, a distinguishing feature of which is the high proportion of small holdings. Almost 50 per cent are under 100 hectares, and 85 per cent are less than 300 hectares. Only eight per cent of the total number of holdings exceed 1 000 hectares.

15.1 Number of Agricultural Establishments, Tasmania 1985

Area (ha)	Hobart & Southern	Northern	Mersey-Lyall	Tasmania
Under 100	588	658	1 225	2 471
100-299	403	677	696	1 776
300-999	263	381	171	815
1000+	215	195	28	438
Total	1 469	1 911	2 120	5 500

15.2 Number of Establishments Growing Principal Crops or Carrying Livestock, Tasmania 1985

	1980-81	1983-84	1984-85
Number of establishments growing —			
Barley for grain	325	453	353
Oats for grain	253	344	266
Wheat for grain	44	35	85
Hops	21	19	18
Orchard fruit	359	312	292
Potatoes	557	628	623
Carrying —			
Breeding ewes	3 100	2 853	2 747
Sheep (all types)	3 351	3 067	2 986
Breeding sows and gilts	443	303	284
Pigs	569	400	376
Dairy cows	1 524	1 452	1 302
Cattle (all types)	5 063	4 397	4 241
Total establishments	6 188	5 728	5 500

15.1.1 Sown Pastures and Principal Crops

The area utilised for the raising of crops for both stock and human consumption amounts to 1 017 300 hectares. Of this, the majority is used for the cultivation of unharvested feed; stock are simply turned out to graze upon the mature crop. This form of cultivation comprised 859 202 hectares, while a further 58 940 hectares of harvested pasture was stored in the form of hay, green feed or silage for later use.

The past five years has seen the growing popularity of silage as a form of feed storage. This can be attributed to the comparative ease with which silage can be collected and stored. Requiring only a covered pit and minimal preparation, silage eliminates the capital demands of hay baling and shed storage entirely.

15.3 Area of Sown Pasture, Tasmania, 31 March 1985 (Hectares)

Pasture	1979-80	1984-85
Pasture harvested —		
Hay	57 689	51 667
Seed	1 436	1 537
Green feed or silage	1 962	5 736
Pasture not yet harvested	849 942	859 202

The area planted to cereal grains consists mainly of barley, oats and wheat. Triticale, used principally for the feeding of poultry, continues to be a significant cereal grain crop in terms of area. The major grain growing areas are in the north of the State, centred around the Tamar Valley. The north-western regions continue to have the largest areas devoted to sown pastures. This predominance of the northwest can be related to the high proportion of the State's dairy cattle which are concentrated there. The principal green feed crops are oats and turnips, but other crops used for green feed include rape chou moellier, barley, millet and wheat.

15.4 Area of Selected Principal Crops, Tasmania 1984-85 (Hectares)

Crops	Area
Cereals for grain	26 878
Legumes mainly for grain	1 535
Hay	2 550
Orchard fruit	2 847
Berry and small fruit	319
Oil poppies	4 747
Hops	869
Vegetables	15 929

Oil poppies were initially grown on the mid-northwest coast; more recently they have been grown in other northern areas of the State, although adverse weather conditions, particularly excessive rain, have proved to be a problem in some areas. 1979-80 saw a sudden contraction in the area of poppies planted due to the closure of the United States market to the Tasmanian product. Subsequent negotiations reopened this market, thus ensuring the industry's survival.

15.2 LIVESTOCK

The total number of cattle and pigs in Tasmania has decreased somewhat in the last few years, while that of goats, deer and poultry have increased. In 1985 sheep numbers rose to a new record level, while Tasmania's goat population showed a steady, if not spectacular, increase.

15.5 Livestock Numbers, Tasmania, 1985 ('000)

Livestock	1979	1985
Sheep and lambs	4 156.6	4 780.1
Meat cattle	493.3	405.1
Milk cattle	163.6	148.5
Pigs	60.8	47.3
Goats	2.1	11.4
Deer	n.a.	2.2
Poultry	3 743.0	4 104.5
Bees (hives)	12.1	11.2

15.2.1 Sheep

The predominant breed of sheep in Tasmania is the Polwarth, accounting for 40 per cent of sheep numbers. The Polwarth is particularly suited to cool, moist areas or to sparse grazing. This makes them particularly suitable to Tasmanian conditions where sheep farming suffers from the climatic limitations of summers too dry and winters too cold for the adequate growth of pasture throughout the year. Tasmanian Polwarth flocks attracted international attention in 1985 when a Polwarth ram from the Rockthorpe Stud at Cressy, won the grand championship at the World Conference of Polwarth-Ideal Breeders in Uruguay, and was subsequently sold for a world record price.

Merino numbers have been gradually increasing in recent years; their finer wool attracting growers seeking to sell to the lucrative Japanese markets.

15.6 Breeds and Number of Sheep, Tasmania, 1982 ('000)

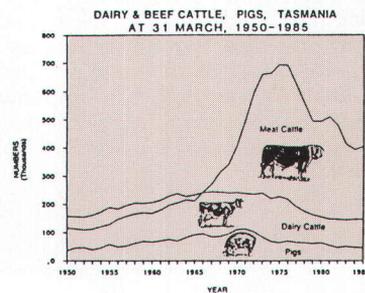
Breed	Rams, 1 year and over	Other sheep and lambs	Total
Border Leicester	2.6	62.5	65.1
Cormo	1.7	138.4	140.1
Corriedale	5.0	517.2	522.1
Dorset Horn	1.8	47.8	49.6
Merino	7.6	499.6	507.2
Poll Dorset	6.2	65.3	71.5
Polwarth	16.9	1 780.9	1 797.8
Romney-Marsh	1.5	61.5	63.0
Southdown	2.2	30.0	32.2
Suffolk	3.4	28.0	31.3
Other Breeds	0.8	18.5	19.3
Merino comebacks	1.8	489.0	490.8
Crossbreds	0.8	563.2	564.0
Other (not spec.)	1.3	95.2	96.6
Total	53.5	4 397.2	4 450.9

15.2.2 Cattle

The main breeds of cattle in Tasmania for beef production are the Hereford, the Aberdeen Angus, Shorthorn, Murray Greys and the Devon. In recent years new breeds such as the Charolais, Santa Gertrudis, Simmental and the Main Ainjou have been introduced by farmers keen to utilise the advantages offered by crossbreeding. This development is in contrast to the situation which existed previously, when beef production was not a great priority and beef cattle were generally culled from dairy herds. Even today, only about 10 per cent of beef producing properties rely upon beef as a sole source of income. Stocking

15.7 Cattle Numbers, Tasmania ('000)

	1984	1985
Milk cattle	148.5	148.5
Meat cattle	393.6	405.1
Total	542.1	553.6



rates vary greatly, ranging from one beast to 16 hectares on undeveloped country, to two and a half beasts to a hectare on improved pasture. The majority of Tasmanian beef cattle are run on improved pasture.



The distribution of the State's beef cattle is subject to considerable variation, with some 41 per cent in the north-west, 38 per cent in the remaining northern areas and only 24 per cent of the total number are found in the south.

15.8 Cattle Distribution, Tasmania, 1985 ('000)

Region	Dairy cattle	Beef cattle	Total
South	60.0	75.3	81.7
North	53.7	175.9	230.0
North-west	86.9	149.5	236.6
Total	147.5	405.1	553.6

15.2.3 Pigs, Goats and Deer

The indications of activity in the pig industry, the number of pigs slaughtered and the number of breeding sows, each show a steady, though gradual, decline over recent years. The number of agricultural establishments with pig herds however has fallen substantially. This decline in the pig industry can be attributed to increases in feed costs. Tasmanian pig farmers are forced to import wheat for feed, due to the quantities required by intensive feeding techniques not being available locally. With feed prices fixed by the Australian Wheat Board in response to international market conditions, world fluctuations in price have marked implications for the local industry.

15.9 Pigs, Tasmania

	1980	1983	1985
Number of establishments	690	403	376
Number of ('000) —			
Boars	800	600	500
Breeding sows and gilts	8 573	6 993	5 500
Other pigs (incl. suckers, weaners, and growers)	54 100	42 900	40 600
Total pigs	63 500	50 600	47 400
Pigs slaughtered	88 700	77 300	83 100

Tasmania's goat population has grown steadily, if not spectacularly, and currently they number 11 400. High prices have been received for stud animals and considerable numbers have been exported to New Zealand for Mohair and Angora production. Goat products would appear to be finding wider public acceptance, with at least one establishment marketing goat's milk commercially in Tasmania.

Commercial deer farming, while remaining very much in its infancy, continues to show potential for further development. There are

presently nine licensed farmers in the State with other licence applications under consideration. Many farmers see in deer a profitable sideline, as they can be grazed on the lush pastures which are maintained for dairy production.

15.10 Deer, Tasmania

Year	Number
1982	1 000
1983	1 700
1984	2 100
1985	2 200

15.3 LIVESTOCK PRODUCTS IN TASMANIA

In the period since 1979, Tasmanian production of livestock commodities has been subject to considerable variation in output, due to combinations of various factors, including economic, marketing and climatic conditions.

15.11 Livestock Production, Tasmania Year Ended 30 June

Product	Unit	1979	1985
Meat —			
Beef and veal	tonnes	47 421	31 701
Mutton and lamb	"	14 716	18 998
Pigmeat	"	4 834	4 752
Poultry	"	4 069	4 824
Wool —			
Sheep and lambs shorn	'000	4 319	5 000
Shorn wool	tonnes	17 442	20 295
Other wool	"	1 636	1 640
Total wool	"	19 079	21 935
Whole milk	million litres	365	346
Eggs	'000 dozen	3 188	3 396
Honey	tonnes	684	1 047

15.3.1 Meat

The beef and veal industry provides a good example of the operation of these sort of factors in relation to livestock commodity production. Tasmania's principal overseas beef markets are American, with some exportation of special and prime beef to Japan. Tasmanian exports have been indirectly affected by internal legislative measures taken to protect the US economy. Legislative intervention by Congress, in the form of an export-enhancement program, was designed to reduce US agricultural surpluses of wheat, beef and dairy products. In connection with this effort, restrictions were placed on imports and attempts made to stifle production. Thus exports of Tasmanian beef were dealt a double blow, apart from the limitations placed on imports, the US administration offered a subsidy to encourage

the slaughter of dairy herds. The resulting beef stocks were sold as hamburger beef, which has been the principal export market in America for Australian beef.

15.12 Meat Exported from Tasmania (Tonnes)

<i>Meat</i>	1978-79	1984-85
Beef	18 977	10 631
Lamb	856	2 597
Mutton	3 329	3 232
Pigmeat	265	61

Added to this are the lingering effects of the drought conditions experienced in the State over the last three seasons. Production has dropped as a result with farmers reluctant to replace stock slaughtered.

Interstate markets have not been affected to the same degree, experiencing only a slight drop in 1984-85 from the previous year. Australian consumption remains fairly stable; the Australian Meat and Livestock Corporation report that 97 per cent of Australians continue to eat meat regularly.

15.13 Gross Value of Livestock Slaughtered, Tasmania (\$ million)

<i>Livestock</i>	1980	1985
Cattle and calves	65.5	80.0
Sheep and lambs	21.4	17.9
Pigs	8.0	8.8
Poultry	4.9	8.6
Total	100.3	115.3

Interstate lamb and mutton exports from Tasmania are generally subject to highly variable mainland markets. Stocks of lamb are often sought from Tasmania by mainland supermarket chains when conditions have resulted in insufficient quantities being produced locally. Additionally, some difficulties have been experienced in gaining footholds on Japanese markets, but growers remain confident that the potential of Middle Eastern markets for processed lamb will be realised.

15.3.2 Wool

When a 90 kilogram bale of super-fine wool produced by the Kelvin Grove Merino Stud of Nile brought 17 500 cents per kilogram at the December 1985 wool sales in Launceston, Tasmania regained the world record for superfine wool prices. The record price was paid by the Japanese company, Fujii Keori, who had in February 1985 already offered a record price of 16 800 cents per kilo which was later surpassed in New South Wales.

Sales during the year were generally encouraging for the industry, with price increases not being confined to the superfine wools alone.

15.14 Wool Production and Value, Tasmania

<i>Season</i>	<i>Quantity (tonnes)</i>	<i>Gross value (\$ million)</i>
1978-79	19 079	42.0
1980-81	20 049	50.8
1982-83	21 680	58.9
1983-84	21 887	64.7
1984-85	21 935	73.3

Crossbred and Polwarth fleece brought prices between 10 and 15 per cent higher than previously, while comeback wool showed an increase of 5 per cent. The total value of wool production for the period of 1984-85 amounted to \$73.3 million.

15.3.3 Dairy Products

Dairy production in 1984-85 has been valued at some \$55 million. Although the total number of dairy farmers has dropped by 16 per cent, milk production has increased. The demand from local producers of cheese, confectionary and processed milk products has continued to expand.

15.15 Milk Utilisation, Tasmania (million litres)

<i>Year</i>	<i>Whole milk intake by factories (million litres)</i>	<i>Market milk sold (million litres)</i>
1980-81	288	43
1981-82	295	44
1982-83	323	45
1983-84	339	43
1984-85	346	44

15.15 Milk Utilisation, Tasmania, cont. (tonnes)

<i>Year</i>	<i>Butter</i>	<i>Cheese</i>
1980-81	n.p.	14 147
1981-82	3 964	15 167
1982-83	5 768	14 100
1983-84	6 191	14 080
1984-85	7 690	12 567

Source: Australian Dairy Corporation.

15.3.4 Honey

Honey bees are not native to Tasmania but were first introduced during the 1830s. They flourished, with copious amounts of honey being produced by many swarms, and within a few years bees could be found throughout many

parts of the State. It is interesting to note that the bees found today in the Tarraleah area are almost pure descendants of the first black bees introduced to the State.

Although the clearing of land made some inroads into honey production, as time went by the development of clover based pastures and the introduction of the blackberry diverted honey production from predominantly forest based flora to a mixture of forest and ground flora.

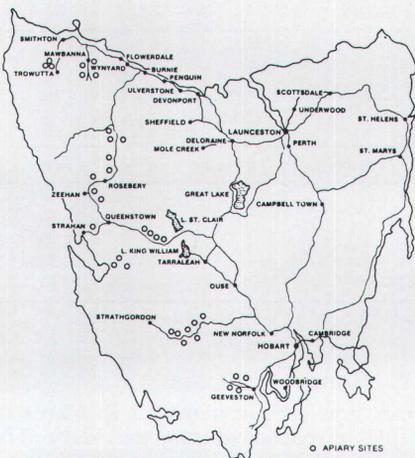
When, early this century, roads were opening up the West Coast beekeepers began to exploit the leatherwood tree to produce leatherwood honey, unique to Tasmania, and today export to many parts of the world.

Approximately 67 per cent of Tasmania's honey production is from leatherwood with blackberry and clover making up the bulk of the remainder. Tasmania's Blue Gum (*Eucalyptus globulus*) provides a honey flow every other year for Southern beekeepers.

15.16 Honey Production, Tasmania 1984-85

Variety	Tonnes
Leatherwood	721
Other	326
Total	1 047

Most of the State's commercial beekeepers are located in the north of the State where conditions are most favourable. Every summer Tasmania's beekeepers take their 11 000 hives to the leatherwood blossom on the West Coast where sites containing up to 50 hives are set up in clearings by the roads in the area.



Location of Apiaries

Source: The Tasmanian Beekeepers' Association

Elsewhere, the extensive pastures of the North-East and North-West Coasts are rich in a variety of clovers including the well-known 'Wild White' (*Trifolium repens*), and the less common 'Red' clover. Both produce a honey of a very high quality, ranging in colour from water white to pale amber, with a mild, sweet flavour which candy with an extra fine grain. Known simply as 'clover' honey, it has found a ready market in Japan.

In 1984-85 the average productive hive produced about 105 kilograms of honey at a gross value of just over \$1 million. Beekeepers, however, are not expecting such a productive 1985-86 season owing to the particularly wet summer experienced this season in the State.

15.4 PRINCIPAL CROPS

The gross value of all crops produced in the State represents about one third of the total value of Tasmanian agriculture production. Despite a fall in apple production having been experienced since the early 1960s, other crops remain important to the State's economy, particularly potatoes which today constitute one of Tasmania's principal interstate exports.

15.17 Principal Crops, Tasmania, 1984-85

Crop	Production (tonnes)	Value (\$m)
Cereals for grain	54 423	8.0
Legumes	3 299	0.8
Hay	222 226	14.0
Fruit	63 091	29.3
Vegetables	286 742	57.8
Hops	1 341	n.a.
Peas, for processing	31 293	8.1
Onions	29 383	10.9
Carrots	13 175	1.8

15.4.1 Vegetables and Hops

The principal vegetables cultivated for human consumption in Tasmania other than potatoes, include peas, both French and runner beans and onions. Additionally, hops are cultivated for brewing purposes. Such activity is situated in some areas of the north-east, adjacent to canning and processing facilities. These areas account for nearly a third of Australia's entire pea production. The main potato-growing area is on the north-western basalt plateau, where the rich krasnozem soils are particularly suitable for the production of high grade potatoes. The main varieties are Kennebec and Russet Burbank.

Falling prices over the year 1984–85 have been attributed to the Closer Economic Relations Agreement with New Zealand and a parallel lack of tariff protection against cheap European and North American imports.

15.18 Vegetable and Hop Production, Tasmania, 1984–85

<i>Crop</i>	<i>Production (tonnes)</i>	<i>Value (\$m)</i>
Potatoes	203 472	27.4
Peas, for processing	31 293	8.1
Onions	29 383	10.7
Carrots	13 175	1.8
Beans, French and runner	9 419	2.1

Hop growing has long characterised the broad alluvial terraces of the Derwent around New Norfolk. The almost universal use of the 'Pride of Ringwood' hop variety has increased per hectare yields considerably in recent years. Hops for export are dried, hammermilled, compressed into pellets and sealed in air-tight containers for shipping.

15.4.2 Fruit

Although Tasmania's once buoyant apple industry has declined significantly, particularly since the peak experienced in the mid-sixties, the orchard areas of Tasmania have been in decline for quite sometime. This trend has continued into 1985 with apple and pear production declining by some 8 000 tonnes from the previous season. Competition from countries such as Chile, Argentina and Brazil has had an adverse affect upon sales in Asian markets.

15.19 Fruit Production, Tasmania

<i>Variety</i>	<i>Quantity (tonnes)</i>	
	<i>1983 season</i>	<i>1985 season</i>
Orchard fruit —		
Apples	69 421	61 624
Pears	1 479	1 467
Apricots	?	204
Cherries	10	46
Peaches	235	8
Plums & Prunes	20	14
Nectarines	6	19
Berry & small fruit —		
Blackcurrants	832	730
Raspberries	257	269
Grapes	241	100
Strawberries	123	104
Loganberries	59	47
Gooseberries	7	7

Fruit growing is nevertheless an economically important activity within the State. Over recent years the production of fruit has provided about 23 per cent of the gross value of the State's crops. A variety of berry and small fruit crops, including grapes, have been established in recent years and have made considerable progress. American markets have been established by growers for blueberries, and raspberry production is proving successful. Although the 1984–85 season was marred to some extent by the heavy rains experienced in Tasmania, the State Government has allocated funding to ensure that development in this area continues in the future.

New Raspberry Varieties

A new raspberry industry is being developed in the State based on new varieties and new markets. In place of the jam varieties previously grown, the new development is concentrating on producing fresh fruit for the export table trade, initially interstate, then South East Asia and the United States of America.

For years the Tasmanian raspberry industry had been largely isolated from the external pressures of changing consumer demand and market forces. For decades after they had disappeared from most other production areas of the world, the Tasmanian industry had continued to use the two varieties Red Antwerp and Lloyd George. Red Antwerp was first grown in the State in 1871.

New varieties were introduced but made little impact and either faded away or remained as curiosities grown by a few enthusiasts, the American variety, Williamette being the only one to both persist and slowly increase in quantity. Thus, when external pressures finally caught up with the industry in 1982, and the demand for processing fruit slumped, growers had to look at new markets requiring new varieties and technology.

Strangely, a little known local variety called Collins Defiance which had been promoted in the forties as a canning fruit, but had subsequently almost disappeared except for a small planting at Lower Longley suddenly re-emerged as the basis for a new industry. Its firm dry fruit proved ideal for airfreight export from Tasmania and with improved packaging techniques, regular consignments to mainland capitals commenced in 1983. Plants lifted from the original two hectare planting have been used in the establishment of a further 10 hectare planting at Deloraine which will come into production in 1986, producing an estimated 500 000 punnets for export as fresh fruit.

Because of economic and consumer pressures total dependence on Collins Defiance is likely to be short lived and there is already mounting

interest in new varieties recently introduced from overseas. The first commercial sales of fruit from the autumn fruiting Heritage occurred in 1985 to a very lucrative market and Glen Cova, a particularly early variety, sold well interstate in 1983 and 1984.

Plants of new introductions Chilcotin, Haida, Nootka and Skeena are becoming available in commercial quantities and fruit should start to appear in 1987. Patent rights for new British varieties Glen Prosen, Glen Moy and Autumn Bliss have been negotiated by a private nursery and commercial release is expected in 1987.

Thus, after decades of unchanged variety structure the industry can be expected to increase its varietal base and consequently its own stability. Consumers can expect to be offered a wider range of flavours, textures and appearances as well as an extension of the period fresh raspberries are available during the year.

15.4.3 Oil Poppies

The area cultivated for oil poppies has increased greatly in the last decade. As a result production has increased fourfold from four tonnes in 1974 to 40 in 1984. The 1984-85 season returned to a record tonnage per hectare due to wet conditions at sowing and dry conditions during the growth of the crop. The result of the ideal conditions was a 22 per cent increase in the average return per hectare.

However, this expansion may be checked in the future, for Australia has been under some pressure from international agencies such as the United Nations Commission on Narcotic Drugs to cut back production in order that international stockpiles may be reduced.

15.4.4 Essential Oil Crops

Essential oils had their beginning as a crop in Tasmania in the 1920s. At that time a few grams of true lavender (*Lavandula angustifolia*) were imported by the Denny family at Lilydale. These seeds, followed by plant selection and oil evaluation, formed the basis of the present day enterprises still run by the Denny family.

Lavender was followed in the 1950s by peppermint, but the area of this crop did not expand appreciably until the late 1970s. Since that time the increasing interest in alternative crops combined with the depression in prices of other agricultural products has seen a growth in the area and number of essential oil crops grown.

Peppermint and spearmint are both members of the family *Labiatae* which produce an essential oil, extracted by distillation, in small glands on the leaves, flowers and stems. The crop is perennial and is established by vegetative propagation of stolons.

Peppermint oil is used mainly as a flavouring component in a very wide range of products, including confectionary, pharmaceuticals and liqueurs. The major component which is immediately identified upon tasting is menthol. However, components such as menthone, menthyl acetate and menthofuran go to impart the balanced flavour which is characteristic of peppermint oil.

Tasmania is ideally situated climatically for the expansion of peppermint and other essential oil crops. Mild, warm days in summer with cool evenings, and a day length in excess of 15 hours are the necessary environmental conditions required for the production of high quality peppermint oil.

The industry in Tasmania is based on establishing and maintaining a sound reputation in the market place for a regular supply of consistent quality products. To achieve these objectives crops are sampled regularly through the growth cycle to aid harvest predictions by assessments of oil quality and yield.

Fennel, which belongs to the family *Umbelliferae*, is another plant under investigation for essential oil production. This plant, together with other members of this family, produce fruits which contain a high proportion of steam extractable aromatic oil. Fennel as a crop is to be treated as a short term perennial which is initially established from seed. This crop will be complementary to peppermint as it matures at a different time and can therefore make more efficient use of harvesting and distillation equipment.

A number of other essential oil crops are at various stages of development including parsley, caraway, boronia, and blackcurrant bud.

15.5 SERVICES TO AGRICULTURE

15.5.1 Agricultural Quarantine

Agricultural quarantine is administered by Government to protect all facets of agriculture and the environment with the aim of preventing the introduction or spread of pests and diseases. Legislation by the Commonwealth and the States provide the authority for any action taken.

In 1904 authorities from each State and the Commonwealth recommended the creation of a Federal Quarantine Service. In 1906 the States agreed to hand over quarantine administration of all overseas imports to the Commonwealth, and this led to the *Quarantine Act* of 1908. On 1 July 1909 the Federal Quarantine Service commenced operation.

Today, the Commonwealth retains this responsibility for overseas imports, and it discharges its responsibilities under Section 51 of the Constitu-

tion. The Department of Primary Industry delegates the operational aspects of plant and animal quarantine to the State Department of Agriculture and reimburses them for the costs involved.

The basis for Tasmanian commercial rural production is introduced livestock and plant material. State legislation restricts the entry of such goods and stock from interstate appropriate to the pest and disease risk involved. Measures taken under the *Quarantine Act* function on a similar basis and are arrived at in consultation with the States. Commonwealth restrictions apply uniformly throughout Australia with provision made for specific State requirements.

Quarantine measures make it possible for industry to obtain the best available material from overseas with adequate safeguards as appropriate to its pest and disease status. At times, this may involve extended periods before release, but such delays are preferable to costly controls and the loss of possible market opportunities.

15.5.2 Research and Development, Department of Agriculture

On an annual basis approximately 1/3 of the resources available to the Department of Agriculture are committed to programs of agricultural research and development. The principal aims of this research is to assist the development of new industries, to foster the adoption of improved agricultural technologies and to provide solutions to current agricultural problems. As such, the research is predominantly of an applied nature.

To facilitate these objectives the Department is currently segmented into six major groups designed to reflect each area of Tasmanian agriculture. These groups are each responsible for research and developments in their respective areas, and are assisted by separate specialist units providing scientific support.

Priorities for the establishment of departmental research and development projects arise as a result of discussion and consultation from both within the department and discussion with agricultural producers and industries. Some fifteen Industry Liaison Committees meet with departmental personnel on a regular basis to discuss industry problems and the progress of departmental research.

Creative advisory projects, such as demonstrations of current lines of research, go to create a continuous process of information production, disseminated through the scientific media, the popular press, the Department's own publications unit and by personal contact with producers.

The Department has only limited physical and financial resources to conduct its research activities, and thus it is considered necessary to subject project proposals to a system of scrutiny and

evaluation at all stages of development. This ensures a co-ordinated approach to research to guarantee the most effective use of available resources.

The Department operates six research farms throughout the State for extensive animal research. Funding for the Department's activities are provided mainly by the State Government, with some contribution from industry sources. The latter sources accounted for approximately 10 per cent of the total research budget during 1984-85.

15.5.3 Veterinary Services, Department of Agriculture

The Animal Health Division of the Tasmanian Department of Agriculture supervises and maintains all Government veterinary services. It is administered by the Chief Veterinary Officer, and comprises two branches, the Veterinary Field Branch and the Veterinary Laboratory Branch, each headed by their respective chiefs assisted by senior Veterinary Officers in specialist and administrative roles.

The principal objectives of veterinary services relate to maintaining Tasmania's firmly established control of stock disease. They thus revolve around disease detection and prevention. In some instances specific policies have resulted in actual eradication. Examples are provided by bovine tuberculosis, bovine brucellosis and the sheep ked. Considerable progress has been made with the Hydatid Limitation Program and this disease could be the next to be eliminated.

Another important task of the Veterinary Field Branch is the control of rural vermin. Where poisoning is necessary, the requisite chemical can be supplied and laid by V.F.B. officers.

These same officers also inspect livestock in saleyards, monitor sheep body lice in district flocks, examine offal in abattoirs for hydatid cysts, test dogs for hydatids, collect blood samples from animals being screened for disease free accreditation, maintain swill feeding surveillance and generally assist their supervising veterinary officer.

A decline in clinical work and reorganisation of administrative tasks has markedly altered the role of Veterinary Officers in recent years. Basically, each officer is responsible for the health, welfare and disease control of the livestock in his district, and in some cases, actual treatment of animals as well. They must also supervise the Field Officers and report regularly to senior staff.

In addition to Hobart, there are 13 centres throughout the State, each responsible for its respective regions.

Special duties superimposed upon the general activities of individual Veterinary Officers include

responsibility for mastitis control, quarantine measures, supervision of artificial breeding, hydatid lecturing and the investigation of whale strandings. Additionally, in the future, every District Officer will be involved in abattoir inspections as a consequence of recently enacted meat hygiene legislation.

Backing up the Field Branch staff is the Veterinary Laboratory Branch at Mt Pleasant Laboratories, which carries out the pathological, chemical, seriological and bacteriological tests on material submitted by field and private veterinarians. The service offered is an efficient and substantial contribution to the high standard of animal disease control prevailing in Tasmania.

15.5.4 Soil Erosion

Soil erosion has come to be recognised as a significant problem facing Tasmanian agriculture today. The extent and nature of erosion is such that it demands effective measures if a gradual loss of irreplaceable topsoils is to be prevented. Soil erosion occurs under various conditions. The systematic and frequent clearing of all cover from agricultural soils, the lack of effective land drainage and the clearing of trees all lead to the erosion of topsoil by the action of both wind and rain. Additionally salinity problems are frequently experienced as a result of erosion.

With the current trend among producers towards more intensive and continuous cropping in order to remain economically viable, soils have become subject to increasing rates of erosion. This is naturally of concern to growers, as the high value of crops means that damage through soil degradation can lead to heavy financial losses. Although commercial crops generally require a topsoil depth of only 25 to 30 centimetres, it has been found that in some cases in Tasmania, erosion has reduced the available depth to as little as only 10 centimetres.

In order to counter this problem, a number of studies are being undertaken to devise conservation strategies. Additionally, various government departments have introduced measures to contain and halt present levels of erosion on lands under their charge. Agencies such as the Department of Main Roads, The Forestry Commission, The Lands Department and The Hydro-Electric Commission, all employ officers to run conservation programs on the various projects that are undertaken by the agencies. As well as their material efforts, such departments produce guidelines and provide advice where possible. In 1980 an Inter-Departmental Standing Committee on Soil Conservation was established with representatives from all government bodies with responsibilities and expertise in soil con-

servation. Advised by a Technical Committee, it is responsible for the monitoring, evaluation and coordination of policy.

The University of Tasmania recently established the first Tasmanian project to measure the degree of erosion and soil loss created through rainfall run-off, in the long term it is hoped that a Statewide soil survey directory could be compiled.

In 1984-85 Tasmania received \$185 000 through the Federally funded national Soil Conservation Program. This money assisted in financing eight separate projects including land resource surveys, demonstrations of soil conservation techniques and research and educational projects.

15.5.5 Tasmanian Rural Youth 1932-1985

Rural Youth came into existence as an amalgamation of a number of earlier youth groups which had been established within the Tasmanian farming community.

Of these, the earliest was formed by Mr Don Bennet, a schoolteacher at Preolenna, in 1932. The Calf Club, as it was known, had 14 members; the idea of rural youth groups spread rapidly along the northwest coast of the State. These early groups were based on the American model provided by the so-called 4T clubs whose motto 'Training, Trying, Testing and Triumphant' was adopted locally. By the 1940s the clubs were staging a regular program of organised competition in such skills as ploughing and tractor driving.

In 1950 these north-west clubs joined the Junior Farmers Club of Tasmania, based at Deloraine, and this increased their numbers to the extent that they attracted the interest of the Department of Agriculture. The Department appointed a supervisor and two staff to enable the clubs to maintain a statewide organisation.

In July 1966 the title of The Rural Youth Organisation of Tasmania was adopted to achieve uniformity with similar bodies which existed on the mainland.

The organisation runs on a three-tier system based on club, regional and State groupings, holding demonstrations, lectures, social events and competitions in a wide variety of rural skills. Exchange programs, funded by many of the major agricultural companies, exist and they provided opportunities for exchange of members between Australia, New Zealand, Britain and the USA.

Tasmanian Rural Youth recently purchased its own farm of 170 hectares at Carrick where, under the leadership of its current President, Russell Cripps, the organisation hopes to both continue and extend its activities.

Rural Youth — Young Farmer of the Year Award

The annual Rural Youth — Young Farmer of the Year Award for 1984–85 was won by John Bell, 30, of Carrick.



The competition sponsored by Westpac, was held at Hagley and tested the skills of the competitors in a wide variety of all agricultural and related activities ranging from ploughing through seed identification and meat judging to public speaking. Through the award Rural Youth seeks to encourage a high level of competence among that section of the rural community who will eventually be responsible for the growth and development of Tasmanian agriculture.

15.6 REFERENCES

ABS Publications Produced by the Tasmanian Office:

- Principal Agricultural Commodities, Tasmania* (Preliminary) (7111.6), annual.
- Livestock and Livestock Products, Tasmania* (7221.6), annual.
- Crops and Pastures, Tasmania* (7321.6), annual.
- Apples and Pears in Cool Stores, Tasmania* (7323.6), monthly seasonal; June to November.
- Fruit, Tasmania* (7322.6), annual.
- Agricultural Land Use and Selected Inputs, Tasmania* (7411.6), annual.
- Value of Agricultural Commodities Produced, Tasmania* (7501.6), annual.

ABS Publications Produced by the Canberra Office:

- Agricultural Industries Structure of Operating Units, Australia* (7102.0), annual.
- Principal Agricultural Commodities, Australia* (Preliminary) (7111.0), annual.
- Shearing and Wool Production Forecast, Australia* (Preliminary) (7210.0), annual.
- Sheep Numbers, Shearing and Wool Production Forecast, Australia* (7211.0), annual.
- Cereal Grains: Estimates of Area Sown, Australia* (7312.0), annual.
- Value of Principal Agricultural Commodities Produced, Australia* (7501.0), annual.
- Selected Agricultural Commodities, Australia* (Preliminary) (7112.0), annual.
- Livestock and Livestock Products, Australia* (7221.0), annual.
- Livestock Products, Australia*, (7215.0), monthly.
- Viticulture, Australia* (7310.0), annual.
- Crops and Pastures, Australia* (7321.0), annual.
- Fruit, Australia* (7322.0), annual.
- Agricultural Land Use and Selected Inputs, Australia* (7411.0), annual.

Other Publications:

- Australian Meat and Livestock Corporation, *Annual Report* Watkins and Murphy, Sydney.
- Department of Agriculture, *Annual Report*, Government Printer, Tasmania.
- Tasmanian Dairy Industry Authority, *Annual Report*, Government Printer, Tasmania.
- Reid, R.L., *A Manual of Australian Agriculture*, Heinemann, Melbourne, 1981.
- Soft Fruit Industry Board, *Annual Report*, Government Printer, Tasmania.
- Sulyak, T., *The Farmers Handbook*, The Herald and Weekly Times Ltd., Victoria, 1978.