Sheep

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THE SHEEP INDUSTRY OF WESTERN AUSTRALIA

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Introduction:-

The economy of Australia depends more on the sheep industry than on any other, there being in March, 1951, a total of over 111 million sheep in the Commonwealth and of this number it was estimated that 10,923,167 were in Western Australia. The story of the development of the industry is a romantic one, and from a very small beginning it has grown to its present dimensions.

History:-

In 1827, Lieutenant James Stirling, commanding H.M.S. Success visited the Swan River locality and according to a letter written by one A. H. Gilbert, Clerk of H.M.S. Success, left at Garden Island a cow, three goats and three sheep. There is no record of the breed of these sheep, nor of the ultimate fate of the animals but as there was little, if any fresh water on the island, it is doubtful whether they survived very long.

From 1829 onwards as settlement took place, sheep were brought to the colony and depastured along the Swan Valley, a total of 1,096 being landed during the first year.

Thirty-five years previously Indian sheep had been brought to New South Wales from Calcutta and during the last decade of the eighteenth century, Spanish Merinos were imported and crossed with these. Many of the progeny formed part of the early Western Australian flocks. In addition, it is recorded that in June 1829, several Merino sheep were shipped from Cape Town direct to the Swan River colony.

In "Early Memoirs of the Great Nor'West" by A. R. Richardson, it is stated that "Mr. Henty, the first settler at Portland, Victoria in 1834, took with him some pure Merino ewes, the off-spring of the pure Merinos that his father, Mr. Thomas Henty had first imported into Western Australia in 1829, from his own farm in Sussex and which were descended from Merino ewes that he purchased between 1796 and 1800 from George III's Kew flock. Thomas Henty, not being favorably impressed with the appearance of the country in Western Australia south of Perth, re-shipped a large portion of his sheep and other stock and sailed for Tasmania. It is probable, therefore, that some of these noted pure stud Merinos, direct descendants of the historical flock of George III remained in this State".

In course of time settlement extended inland to York and in 1835 Captain Irwin in his "State and Position of Western Australia" wrote of the great value of the York district for grazing purposes.

In 1839 a flock was travelled to the Albany district, and in the same year another settler stocked his holding there with sheep from New South Wales. Thus within ten years of the first settlement at Swan River sheep were being raised over an area several hundred miles long and extending inland for about fifty miles.

Also in 1839, after exploration in the Shark Bay area, pastoral settlement extended north and south of the region and by 1842 there wc over 60,000 sheep in the State.

In 1863 a few hundred sheep were landed at Cossack in the North West, quickly followed by others, and the industry was then firmly established. The first flock was taken to the Kimberleys in 1880 and before the end of the century large flocks were established in the Murchison districts.

With the later opening up of lands for wheat growing and the general adoption of mixed farming, the South West portion of the State ha become prominent and there are now more sheep in the agricultural districts than in the rest of the State.

Topographical and Climatic Factors:-

Topographically Western Australia is well suited for sheep raisin the Great Western Plateau providing large areas of well-drained, relatively open country. The plateau, which has an average height of 1,200 feet, is by no means level. The Kimberley, which is the most northern portion, has an elevation of over 2,000 feet and, deeply dissected by many short streams, is very rugged.

Further south between the Ashburton and De Grey rivers, in what is known as the North West , is an area of rough high upland where there are several peaks over 3,000 feet. It differs from the Kimberley however, in carrying less timber and having a greater number of loose-scree-covered slopes. Inland is an area of arid and semi-arid country.

South of this region the topography changes to residual ridges with broad plains having much loose rock scattered over them.

The South Western portion of the State consists of an inner region of open red loamy and sandy plains with occasional low ridges, passing westward to the edge of the plateau scarp which here consists of smoothly undulating plains and valleys. In the extreme south there is an area of more rugged country where one peak rises to 3,600 feet and in the extreme south-east is the Eucla country, part of the southern Nullarbor Plain.

With a latitudinal range of 14°S to +35°S the State embraces climates ranging from tropical to warm temperate. In the north the temperatures are always high and the rainfall in the Kimberleys comes with the monsoon. The coastal section receives between thirty and forty inches (with often twelve inches in January) while most of the region receives at least twenty inches.

The vegetation consists of heavy timber in the mountainous area, passing into the savanna type of woodland. Associated with the monsoon are a series of cyclones and occasionally cyclonic storms move across the country in a south easterly direction bringing very heavy falls. Apart from these storms the only other rain in the North West and inland region comes from local thunderstorms which develop as the result of convectional heating.

The vegetation in the North West consists of grasses, scrub

steppe and semi-arid scrub, Mitchell and Flinders grass, soft and buck spinifex, salt bush, blue bush form valuable fodder.

The semi-arid region which includes areas known as the Gascoyne and the Murchison experiences unreliable rainfall varying from less than ten inches to less than twenty inches with typical salt bush, blue bush, some Mitchell grass and mulga (a stunted tree) predominating.

The South Western portion of the State enjoys a fairly reliable winter rainfall decreasing from over forty inches in the extreme south west coastal part through a wide belt of between twenty and thirty inches to less than ten inches inland. This is the agricultural area, heavily timbered in the wetter part but eastward becoming relatively open mallee country. The natural winter grasses have in many places been supplemented by the cultivation of clover. The Eucla country in the South East is on the margin of the 10 inch isohyet, with salt bush and kindred vegetation.

Sheep are not grazed in hilly rugged country. There are several reasons for this, among which is the fact that the highlands are heavily timbered due to the orographical rainfall, or else are stony barren areas. Clearing the land sufficiently would be economically unsatisfactory owing to the expense involved and the rugged nature of the land provides shelter for wild dogs and foxes which attack the sheep.

Water supply is an extremely important factor and as there are very few perennial streams in the State, much money has to be spent in securing and conserving both underground and surface water.

In the Kimberley country there are abundant natural supplies, while in the north west coastal areas extending for some hundreds of miles north of Hamelin Pool are plentiful artesian supplies.

Further inland and on the Murchison and the southern districts, wells equipped with windmills, and large dams supply requirements. In the eastern agricultural areas where both sheep and wheat production are combined subsidiary supplies are drawn through the Goldfields Water Supply from Mundaring Weir in the Helena Valley and water requirements in the lower south west are satisfied from government weirs, as well as privately constructed wells and dams.

The climate most suited for sheep is one with an annual rainfall of from ten to thirty inches but there are in Western Australia many thousands outside these limits, those in the drier areas being Merinos which are raised exclusively for wool, while in the heavier rainfall districts, British breeds and cross-breeds supply both wool and meat. The Merino, under wet conditions is predisposed to diseases such as foot-rot and worm infections, hence their being largely restricted to the semi-arid areas, while the heavier British and cross-breeds seem less vulnerable to attacks and are in large numbers in the South West.

However, most of the leading Merino studs are also in this division and here the best quality wool is produced. A stud ram from Wagin was recently sold at auction for six hundred and twenty guineas.

Temperature is not a controlling factor of much importance provided there is a low humidity during the summer months. Proof of this is contained in the fact that places with wide temperature ranges and some diversity of rainfall have for many years been representative of successful sheep raising areas. The figures in Table I relative to the named places, although referring specifically to 1947, are typical of climatic conditions in those localities (Rainfall in 1947 was above average in most localities).

TABLE I

		Shade Temperatures, 1947						Humidity	
Place	Latit.	Mn. Max.	Mn. Min.	H'st.	Date	L'st.	Date	Saturation=100	
		°F	°F					9. am.	3. pm.
Port Hedland	20.23°S	90.8	69.5	116.5	Jan. 6	51.9	July 26	50	49
Wiluna	26.36°S	82.6	56.9	111.0	Feb. 2	33.0	July 21	44	27
York	31,48°S	76.2	50.7	107.0	Feb. 5	30.0	Aug. 10	67	46
Mt. Barker	35.70°S	67.5	48.1	102.0	Feb.25	32.0	July 30 Aug. 22	77	not av.

TABLE II

Rainfall

	1947				Previous years: Av. to end of 1942	
Place	R'fall in inches	No. of wet days	Heaviest fall in one day (inches)	Date	Av. ann. r'fall-inches	Period of record in years.
Port Hedland	19.0	30	6.45	Dec.30	12.56	45
Wiluna	16.77	53	3.80	Feb.26	9.80	44
York	18.03	99	1.19	Jun.13 Oct.25	17.98	30
Mt. Barker	40.40	160	5.48	Apr. 7	30.23	30

Source of Tables I and II:- Statistical Register of Western Australia for 1947-48. Part V.

Distribution of Sheep:-

Broadly speaking, the flocks are distributed over three regions each of which is associated with one aspect of production. Bearing

in mind the topography, vegetation and climatic conditions of Western Australia it is easy to understand why these regions are the northern pastoral area, the main wheat belt, and the southern and south western clover belt.

The first named embraces the extensive area surrounding the Ashburton, Gascoyne and Murchison rivers. Here the Merino reigns supreme and yields a particularly fine wool, although often dusty and sometimes containing grass seeds. Because of the unreliability of the rainfall and quality and quantity of herbage which varies with the seasons, pastoral properties are large and the sheep well dispersed. The carrying capacity is estimated at one sheep to over thirty acres.

The bulk of the State's sheep population is in the main wheat belt where the maintenance of small flocks is well suited to the economy of wheat farming. Fodder supplies are more reliable here as natural grasses and herbage can be supplemented by the residue of cereal crops. In this area the sheep are raised for both wool and meat. In some cases a crop of oats is grown entirely for sheep fodder, the animals being turned on to this during winter. In the summer after the wheat has been stripped, the sheep are fattened on the residue remaining in the paddocks and although the Merino carcase is much inferior to that of heavier breeds, there is always a market available, the meat being used largely for canning purposes. However, fat lambs are also produced in this area the type being usually a cross-breed resulting from the mating of British rams and Merino cross-breed ewes.

The southern pastoral region which enjoys a higher and more reliable rainfall than the main wheat belt is better suited to grazing than to cereal cropping which has become of secondary importance. By top-dressing pastures with superphosphate, and the cultivation of clover and legumes, the carrying capacity of many properties has been steadily increased during recent years and now averages more than a sheep to the acre.

Table III shows the numbers of sheep in the different districts as at March 31st, 1950. Out of a total of 10,923,167 sheep, 9,666,603 were Merinos, the balance being British and cross-breeds. Table IV shows the respective numbers of the different breeds.

TABLE III

Sheep on Rural Holdings - March 31st., 1950.

West Kimberley	177,191	Northampton	152,043	Metropolitan Division	699
Broome	44,752	Nullagine	89,789	Bunbury	1,888
Hall's Creek	891	Menzies	54,545	Dardanup	7,465
Marble Bar	151,772	Kalgoorlie	17,383	Capel	1,286
Port Hedland	137,716	Coolgardie	14,122	Preston	19,447
Roebourne	136,089	Yilgarn	82,369	Balingup	4,646
Tableland	56,214	Dalwallinu	232,719	Greenbushes	1,136
Ashburton	310,666	Perenjori	120,767	Woodanilling	63,573

TABLE III

Sheep on Rural Holdings - March 31st., 1950

Gascoyne Minilya	501,770	Upper Chapman	102,949	Wanneroo	302
Upper Gascoyne	327,723	Geraldton	47,430	Kununoppin-Trayning	80,697
Meckatharra	224,749	Greenough	43,720	Kondinin	114,985
Shark Bay	95,745	Irwin	18,375	Narembeen	116,744
Murchison	246,305	Mingenew	86,012	Kulin	130,104
Cue	76,940	Morawa	94,674	Lake Grace	128,062
Wiluna	127,390	Three Springs	65,579	Kent	83,344
Mt. Magnet	42,523	Mundaring	4,037	Gnowangerup	181,625
Black Range	76,064	Darling Range	330	Albany	13,603
Leonora	155,110	Armadale-Kelmscott	3,572	Phillips River	7,637
Mt. Margaret	126,803	Gosnells	57	Esperance	15,128
Yalgoo	197,000	Rockingham	555	Dundas	36,522
Mullewa	123,200	Serpentine-Jarrahdale	12,257	Carnamah	117,549
Dandaragan	57,640	Chittering	29,187	Northam	91,150
Moora	224,754	Toodyay	75,811	York	131,109
Wongan-Ballidu	169,982	Goomalling	129,286	Beverley	167,996
Koorda	80,387	Dowerin	143,790	Quairading	143,885
Mt. Marshall	106,181	Wyalkatchem	110,326	Bruce Rock	191,364
Nungarin	38,287	Merredin	121,329	Corrigin	165,870
Mukinbudin	64,080	Kellerberrin	105,364	Brookton	125,539
Westonia	40,652	Cunderdin	226,144	Wandering	60,741
Victoria Plains	120,375	Northam	91,150	Pingelly	91,821
Gingin	41,583	Swan	16,335	Murray	42,944
Drakesbrook	10,852	Narrogin	122,890	Harvey	14,250
Morradong	24,424	Dumbleyung	140,927	Sussex	1,525
Williams	132,164	Wagin	153,155	Upper Blackwood	185,554
Cuballing	72,320	West Arthur	133,564	Kojonup	274,977
Wickepin	121,296	Collie	4,434	Katanning	145,286
Broomehill	131,770	Tambellup	102,790	Cranbrook	128,538
Plantagenet	125,585	Denmark	976	Manjimup	8,406
Bridgetown	41,583	Nannup	2,218	Augusta-Marg.River	1,211

TABLE IV

Sheep Population, March 31st., 1950

According to Breeds	Rams	Other Sheep	Total
Merino	127,153	9,539,450	9,666,603
Corriedale	7,858	377,304	385,162
South Down	6,467	12,736	19,213
Dorset Horn	5,353	13,703	19,056
Shropshire	659	2,826	3,485
Ryland	193	947	1,140
Border Leicester	1,991	16,319	18,310

TABLE IV

Sheep Population, March 31st, 1950

According to Breeds	Rams	Other Sheep	Total
English Leicester	714	3,786	4,500
Romney Marsh	2,231	37,419	39,650
Other Recognised Breeds	334	5,807	6,141
Merino Comeback	74	139,790	139,864
Cross-breds	245	619,808	620,053
Total	153,272	10,769,895	10,923,167

Source of Tables III,IV,V,VI:- Government Statistician, Perth.

TABLE V

Sheep Population Continued

According to Sex and Age Group	
Rams (over one year)	153,272
Breeding ewes	5,097,323
Other ewes (one year and over)	824,606
Wethers (one year and over)	2,881,238
Lambs and Hoggets (under one year)	1,966,728
Total	10,923,167

Lambing:-

The relative fertility of the Merino is remarkably low, therefore, with 90% of the total sheep population being Merino, the average percentage of lambs marked is rarely higher than 60%, and frequently lower. One reason for low fertility or birth of dead lambs is that many ewes have been fed a heavy clover diet. There is in subterranean clover, a potent substance which causes a progressive decline in lamb production, which in a few years can fall as low as 20%. It is however, only green clover which has such a deleterious effect, clover hay and dry clover being completely harmless in this respect. "Clover disease" is not confined to Western Australia, being fairly prevalent in lower South Australia and in parts of Victoria. Table VI gives the lambing figures for year ended March 31st., 1950.

TABLE VI

Lambing

Lambs marked:-		
Merino	1,892,128	
Other Recognised Breeds	130,196	
Cross breds (including Comebacks)	476,485	
Total	2,498,809	
Ewes mated	4,327,755	
Percentage of lambs	58	(approximately)

Areas of Holdings and Conditions attached thereto:-

The size of holdings varies according to the districts in question. Where carrying capacity is low, i.e. in the pastoral areas of low and unreliable rainfall, holdings range from approximately 100,000 acres to 1,000,000 acres, whereas in the wheat belt, 1,000 to 5,000 acres is typical and in the clover belt, holdings are considerably smaller.

Those in the Kimberleys, North West and Murchison districts are held under leasehold, which in some cases is for fifty years and in others ninety nine years. In the wheat belt and southern districts properties are acquired under leasehold, conditional purchase, and freehold conditions.

Wool Production:-

Wool production varies from year to year according to sheep population and seasonal conditions. Many factors influence the growth of the wool. They include those which act from within the sheep and those which are due to the external environment. Of those inherent in the sheep, breed, age and sex must be considered, as well as the way the animal is fed and the efficiency with which it converts food to wool. The wool grown by British breeds is markedly different from Merino wool in staple, length, crimp formation, colour, fibre diameter and the arrangement of the folds on the outer cuticle sheath.

The age of the sheep affects wool growth by influencing the number of wool growing follicles which are functioning. There is some evidence to suggest that some of the follicles cease to function as the sheep gets older.

The wool follicle is a minute "factory" in which each fibre of wool is formed. At birth the lamb has all the essential features for the arrangement of its adult fleece. Weight of fleece depends primarily upon (a) the ratio of fibre population to skin area and (b) the fineness of the fibre. In a study conducted by the Council of Scientific and Industrial Research it was found that under similar environmental conditions the fibre population of the different breeds varied greatly, also that fibre thickness within the staple showed considerable difference in some breeds.

Fibre population of the Merino averaged 49,000 per square inch, of the Polworths 33,000, the Corriedales 20,000 and the Lincolns 10,000 per square inch. Both Lincoln and Corriedale fleeces contained a proportion of "medulated" or hairy fibres which were absent in the Polworth and Merino.

Body surface measurements showed that despite their great difference in size and weight, Lincolns and fine-wooled Merinos in this experiment had about 11½ square feet of skin. A plain bodied fine-wooled Merino has such a great wool-producing skin area because of its many tiny wrinkles seen only when the wool is clipped very closely. Corriedales and Polworths had 11 and 10 square feet of skin respectively. Even on the stud Merino rams which carry a very dense and heavy fleece, the percentage of total skin area carrying wool fibres ranges between 1.45 and 2.9.

Of the environmental factors, nutrition is of paramount importance. Wool is largely composed of protein and an adequate and even supply in the diet is a necessary precursor of normal wool growth. Most feeding standards suggest that for maximum wool production most adult sheep require 2 lbs of protein per week.

Pasture is the sole diet of the vast majority of sheep in Western Australia, hand feeding being rarely adopted except in cases of drought emergency. Plants vary in their protein content. Generally speaking, the available protein in the plant is concentrated in the seed, e.g. clover burr, and unless a large number of these are available to the sheep, their diet may be protein deficient which is the case in times of drought when there is an over-all shortage of food. During times of protein shortage the sheep decreases the amount of wool keratin which is secreted from the follicles. This may be done by (a) decreasing the wool growth with consequent decrease in staple length, (b) decreasing the size of the aperture of each follicle resulting in smaller fibre diameter, (c) decreasing the number of follicles which are functioning and which leads to a decreased density of fleece. When there is a rapid decrease in the diameter of the fibres a break in the wool is apparent.

In 1907 from 3,684,974 sheep shorn, the wool clip was 18,508,561 lbs with an average weight per fleece of 5 lbs, while in 1942, from 10,886,000 sheep and lambs, 92,697,000 lbs were shorn with an average weight per fleece of 8.5 lbs. For the ten years ending 1949, the average weight per fleece was 7.8 lbs, 91,000,000 lbs being produced by an average total of 10,816,100 sheep. Improved methods of sheep husbandry are responsible for the increased quality and quantity of the clip.

The Woollen Industry:-

Attention given to breeding, feeding and shearing the flocks, classing and preparing the clip for sale all contribute to the success of the industry in Western Australia. Sheep Research Stations have been established at Wongan Hills, Salmon Gums, Avondale, Chapman and Merredin. Because of the large range of climatic conditions experienced from north to south of the State, sheep are being shorn practically throughout the year. In the Kimberleys shearing is done in March; in the North West, from May to September; in the Central or Murchison districts, from July to September; in the South West, from September to November and in the extreme South, in October and November.

All wool after classing and being pressed into bales is transported to Fremantle where it is sold by auction. Transport costs are high for those clips which come from long distances and efforts have been made by growers to have other selling centres established at Geraldton and Albany. Shipping freight rates on wool from North West ports to Fremantle are now up to 450% more than they were in 1939 and a selling centre at Geraldton would greatly decrease transport costs.

Shearers and classers receive high wages, classers being paid about £15/-/- per week plus an extra £5/-/- per week wool value allowance. Shearers are paid at the following rate:-

If Rations "Not Found"	£	s.	d.	
For flock sheep (wethers, ewes and lambs) machine	7	2	9	per 100
For rams (other than special stud rams) machine	14	5	6	" "
For stud ewes and their lambs (other than special studs) machine	8	18	5	" "
For double-fleeced sheep, machine	9	10	4	" "

For hand shearing 7½% additional to the rate for each class of sheep.

If Rations "Not Found" - piece work rates.

Daily Rate £4.8.2

A fast shearer gets through approximately one hundred and twenty sheep a day.

Marketing the Clip:-

Prior to World War I only a few thousand bales were marketed locally, the bulk of the season's clip being purchased privately or shipped to the Eastern States or London for realisation. In 1916-17 the British Imperial Government scheme came into operation, whereby a portion of the clip was received into stores at Fremantle, Albany and Geraldton where the wool was appraised under the jurisdiction of a Central Wool Committee on behalf of the Commonwealth Government. At the termination of the appraisement scheme, wool selling by auction was instituted at Perth, the opening sales being held on December 6th 1920. Each season following showed appreciable increase in the quantity of wool submitted for realisation at the Perth auctions.

Under the appraisement system it was necessary to erect commodious wool stores and these have been added to in order to accommodate the wool for auction. The most up-to-date methods have been adopted for receiving and displaying the wool - comparing more than favorably with others in the Commonwealth, and many hundreds of men are employed in disposing of the clip.

In 1924 the Western Australian Woollen Mills Ltd. began operations at Albany. This was a company formed by a great number of small investors and in the initial stages key personnel were brought from England. For some time the output consisted mainly of blue serges.

During the depression years, about 1929-30, it was only because of intervention by, and assistance of, the State government that the mill was able to carry on. However, since then production has expanded greatly, and the output now includes knitting yarns, worsteds, woollen goods of many varieties, blankets and rugs. A second mill has been established at Fremantle and here large quantities of yarn for knitting and weaving are produced. In addition to these two mills controlled by the Western Australian Woollen Mills Ltd., there is a smaller one owned by another company and which concentrates on top making.

The net profit of the Western Australian Worsted and Woollen Mills Ltd. for the year ended June 30th, 1951 was £61,345, almost three times that of the previous year.

The local mills secure their requirements at the wool sales which are held in Perth and in other Australian states.

In addition to local buyers most wool deficit countries are represented at the Perth sales. Prices received at these sales have compared very favorably with those of the Commonwealth generally, the average price for the Commonwealth in March 1951 being 281.46 pence per pound for greasy wool. However, in common with the downward trend of prices in the Eastern States, New Zealand and South Africa, the highest price received at the opening sale of the new season held in Perth on September 10th, 1951 was 102 pence for greasy Merino in contrast to 200½ pence received at the opening sale of the same season in 1950. It is considered that most countries have largely overtaken their accumulated requirements and stockpiling has been effected so that bidding is no longer so keen. In the event of a continued decline in wool prices attention will again be focussed on the export fat lamb industry of the southwest and agricultural districts in Western Australia.

The Fat Lamb Industry:-

A branch of industry, slow in development but which later became well established, is the raising of fat lambs for local and export trade. In 1905 land in the Serpentine district, south-west, was top-dressed with superphosphate and sown with clover with the result that the carrying capacity of the land was doubled to 1½ sheep to the acre. As the Merino is not well suited to rich pastures and wet conditions a British Merino crossbreed was produced and the result was a lamb of fine export quality.

Export of frozen lamb from Western Australia to the United Kingdom commenced in 1906 with a trial shipment of 422 carcasses, the lambs being drawn from Wagin, Beverley and Toodyay districts. The meat reached London in excellent condition and realised up to 6¾ pence per lb - a satisfactory figure in those days. The export trade expanded rapidly in the next two or three seasons, mainly under the stimulus of low wheat prices. However, between 1914 and 1929 trade declined and it was not until 1930 that regular shipments were recommenced. At that time sheep in the agricultural areas had become equal in numbers with those of the pastoral areas and with a surplus of sheep in the Southwest, the fat lamb trade revived.

Rapid expansion of the industry from 1930 until 1939 was due to relatively attractive prices for lamb compared with wheat and Merino wool, and to the increased sowing of subterranean clover in areas favorably situated for lamb raising.

In the agricultural districts there are well defined seasonal changes from cool wet winter to hot dry summer and farming practices necessitated by these conditions are favorable for the incorporation of lamb production. Lambs dropped in the autumn leave

the farm in late winter or early spring, the greatest number of sheep being carried when there is plenty of grass feed.

The Merino being essentially a wool producer is not a satisfactory fat lamb mother - is slow maturing, of low fertility and insufficiently fleshed, but a British Longwool Merino crossbred ewe is highly satisfactory, and in addition to producing a fat lamb, yields a fleece of high quality fine crossbred wool which always commands a good market. The British longwools crossed with the Merino are Border Leicester, English Leicester and Romney Marsh.

The ewe progeny of such a cross again crossed with a British Southdown ram produces an excellent type of lamb which has given Western Australia the reputation in England of a high quality lamb producer. In 1938, 370,000 carcasses were exported to the United Kingdom which was, and still is, the main market for the world's export trade in lamb. By 1939, competition with Argentina was very keen. However, the market today is quite different and Western Australia is unable to supply even her prewar tonnage to Great Britain. This State's production, although high, is not sufficient for the available export trade, the reason being a steady rise in population plus the high prices obtained on the local market.

In 1939-40 Great Britain took 260,000 tons of meat from Australia, much of it being Western Australian lamb and could now take two or three times as much. In 1948, Western Australia exported 220,000 carcasses, i.e. only about 3,000 tons of lamb, and if the meat were available Great Britain would enter into a long term contract for all types, including low quality Merino meat of "manufacturing" grades.

Mount Barker, Beverley, York, Bridgetown, Donnybrook, Moora are districts between Geraldton in the north and Albany in the south, where fat lambs of high quality are being raised. Consignments of Western Australian lamb have over many years been highly commended by authorities and referred to as equal to the world's best, including those from New Zealand.

Problems of the Sheep Industry:-

The main problem is not in increasing carrying capacity but in maintaining present carrying capacity. In the pastoral areas, especially that portion known as the Murchison, drought is an ever-recurring possibility. If dry conditions are prolonged the pastoralist must move his stock to other pastures. As during good seasons there is a tendency to overstock properties in relation to the food available during drought. Heavy losses are suffered if fresh pastures are not available.

Overgrazing not only destroys many valuable plants, but exposes the surface soil to erosion, which if sufficiently serious will prevent the regeneration of pastures.

Further deterioration of pastures is caused by increasing prevalence of rabbits, particularly in the wheat belt areas, and farmers have to wire-net their properties and maintain a steady poisoning campaign in an effort to combat the pest.

In wet seasons blow fly strike is very bad and ceaseless vigil is necessary if loss is to be avoided. Blow flies strike only those sheep which have in some way become attractive to them e.g. in the wetting of the skin by heavy rain during the warmer months or in the soiling of the wool by urine or faeces. Removing the soiled wool is termed 'brutching" and shearers are paid a daily rate of £4.8.2 or at rates varying from £1.8.6 to £2.8.6 per hundred sheep according to the area of wool removed.

Foot-rot is a specific disease of the sheeps' foot. It occurs chiefly in winter rainfall districts or in irrigation areas where conditions of soil moisture are favorable. The only part of the State where this is at all prevalent is in the Southwest but its presence necessitates careful eradication treatment during the summer months because if present under wet conditions it rapidly spreads among the flock.

Some Western Australian soils are mineral deficient, more particularly lacking copper and cobalt, the greatest deficiency being copper. The principal areas which are markedly copper deficient are the Margaret River district in the extreme Southwest and the southern coastal districts. It is in winter when the pastures are lush and seemingly at their best that the untoward effects are more evident in the flock. The most striking symptom of copper deficiency is to be found in depreciation of the wool which changes from the normal evenly-crimped form to a straight hair-like growth lacking bulk, Merinos being more noticeably affected than British breeds.

The prevention or treatment of the foregoing disabilities adds considerably to the cost of production of both wool and mutton and the sheep farmer or grazier can give the necessary attention to these matters only if he receives a sufficiently high price for his produce.

Trade:-

It is interesting to note that as far back as in 1891, though sheep were being imported to the Colony from the Eastern States both for breeding and slaughtering purposes at the same time there was a small export trade with Singapore, while in 1898-99 eighty sheep were exported to Guam. (See Tables VII and VIII). Trade now however, is centred on the export of wool, sheep and lamb skins and sheep and lamb carcasses, the principal buyers of wool being the United Kingdom and the United States; of sheep and lamb skins, the United Kingdom and France; while of 126,607 lamb carcasses exported in 1949-50 and valued at £A204,367, the United Kingdom received 123,995 at a total value of £A199,881, the balance of 2,612 carcasses being divided among British Borneo, Christmas Island, Kenya, Singapore and Indonesia. (Tables IX, X and XIA, XIB)

TABLE VII

Imports, 1891

Sheep for Breeding	Number	Value in £'s
Rams from Victoria	5	85
Ewes " "	25	75
Rams from South Australia	52	125
Sheep for Slaughter		
From Victoria	685	274
" South Australia	1285	514

Exports, 1391

Number of Sheep	Destination	Value in £'s
2148	Singapore	1288.16.0 (average price 12/- each)

Source of Table VII:- Western Australian Blue Book, 1891, No. 351-2941 (Public Library)

TABLE VIII

Imports, 1898-99

Sheep for Breeding	Number	Value in £'s
Rams from United Kingdom	3	150
" " Victoria	65	402
Ewes from Victoria	31	27
Rams " South Australia	1209	5250
Ewes " South Australia	1616	728
Sheep for Slaughter		
From Victoria	26,227	29,003
" South Australia	50,109	43,494
" New South Wales	12,002	13,239

Exports, 1898-99

Number of Sheep	Destination	Value in £'s
1,053	Singapore	395
80	Guam	75

Source of Table VIII:- Western Australian Statistical Register 1899. No. 319-41, Public Library.

TABLE IX

Export of Fat Lambs, 1949-50

Number of Carcasses	Destination	Value in £A's
123,995	United Kingdom	199,881
373	British Borneo	469
9	Christmas Island	39
465	Kenya	896
1,584	Singapore	3,014
181	Indonesia	68
126,607	Total	204,367

TABLE X

Exports of Sheep and Lamb Skins, 1939-49

Year	Number of Skins	Value in £A's
1939-40	1,020,497	233,848
1940-41	404,144	135,872
1941-42	1,115,394	216,118
1942-43	532,513	93,012
1943-44	587,785	186,835
1944-45	774,620	131,816
1945-46	1,862,969	440,611
1946-47	2,454,723	795,356
1947-48	1,416,488	821,674
1948-49	1,424,250	852,442

¥ For Table XIA please see page 18.

TABLE XIB

Oversea Export of Sheep and Lamb Skins, 1949-50

Number of Skins	Destination	Value in £A's
463,627	United Kingdom	348,154
7,410	Canada	2,295
1,210	Eire (Ireland)	609
80,787	Belgium	91,486
740,265	France	494,644
10,606	Italy	8,267
32,627	Netherlands	13,473
4,271	Switzerland	6,436
65,422	U.S.A.	33,432
1,406,225	Total	998,796

Source of Tables IX, X, XIA, XIB:- Government Statistician's Office, Perth.

TABLE XII

Early Figures for Western Australia

Year	Number of Sheep	Wool Exported (In lbs)
1829	1,469	-
1840	30,961	50,000
1850	128,111	309,640
1860	260,136	656,815
1870	608,892	1,787,812
1880	1,231,717	4,342,606
1890	2,524,913	6,969,380
1900	2,434,311	9,094,743
1910	5,158,516	26,197,209

TABLE XIII

Wool Exported from 1938 to 1948

	Greasy		Scoured	
Year	Quantity in lbs	Value £A's	Quantity in lbs	Value £A's
1938-39	68,408,797	3,035,899	3,605,920	234,681
1943-44	68,663,427	5,420,995	4,618,630	458,592
1944-45	52,057,796	4,041,137	4,885,497	512,302
1945-46	108,180,425	8,567,873	11,746,396	1,389,157
1946-47	75,186,771	7,780,467	17,456,798	2,479,906
1947-48	80,204,830	13,900,549	16,072 580	2,721,435

TABLE XIV

Wool Production from 1938-48 - including Wool Exported on Skins
Quantity Estimated in Thousands of lbs.

Season	Quantity
1938-39	78,802
1939-40	80,657
1940-41	76,170
1941-42	78,500
1942-43	99,731
1943-44	105,226
1944-45	86,841
1945-46	86,986
1946-47	90,255
1947-48	95,410

Source of Tables XII, XIII, XIV:- The Western Mail, August 11th, 1949.

The total exports from Western Australia in 1949 were valued at £A55,593,840 (including ships' stores) and of that amount £A22,721,729 represented export value for wool, sheep and lamb skins and sheep, i.e. approximately 40.8 per cent of the total exports were from the sheep industry. It is quite evident that the economy of the State depends in an extraordinarily large degree upon the sheep producers.

Conclusion:-

The size of Western Australia - which is approximately one-third of the whole continent - and the diverse nature of its climate, topography and vegetation, communications and transport conditions, mitigates against a uniform outlook on the part of sheep producers. At present the trend seems to be in the direction of intensive rather than extensive methods and there has been an increase in sheep numbers in the southern part of the State, while numbers have dwindled in the North.

In its Post Joint Organisation Wool Marketing Plan (upon which in September 1951 a referendum was conducted among wool producers throughout Australia,) the Commonwealth Government, in conjunction with the governments of New Zealand, South Africa and the United Kingdom, proposed a Minimum Reserve Price scheme, whereby a limit would be set to a sudden major decline in the market for wool. This plan was to be effected by the respective governments of Australia, New Zealand and South Africa purchasing in approved auction markets such wool as could not be sold at the reserved price; and by the holding and subsequent disposal of that wool. The funds necessary for the operation of the plan would be provided jointly by the growers and the governments concerned. All growers who produced a minimum of five bales of wool were entitled to vote, each grower, irrespective of the size of his clip being restricted to one vote. The proposed plan was rejected at the referendum, Western Australia being the only State in favour of it. However, it was noticeable that in their approach to the plan the producers of the northern pastoral areas were against the scheme while those of the southern agricultural areas were in favour of it, the affirmative majority being due to the greater number of producers in the smaller area of the South.

In the interests of national defence as well as of the State's own economy it is necessary that the northern part of the State be further developed and in this respect encouragement should be given to the sheep industry there. This could be done in part by decreased transport costs and nearer selling centres for both wool and meat. With more intensive working of the iron ore deposits at Yampi Sound further development of the blue asbestos mining at Wittenoom Gorge in the Hamersley Ranges and the construction of a dam across the Ord River for irrigation purposes leading to closer settlement, the population of the North would be greatly increased with consequent scope and outlet for the sheep producers of the northern hinterland. There is a vast potential market nearby in South-East Asia, not so much for wool but certainly for meat and although the burden of developing the North will be heavy on the State's present economy, well co-ordinated plans must be put into

operation if the industry in the North is to be maintained and developed with the South as an integrated whole.

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TABLE XIA

Oversea Export of Lamb Carcasses, 1939-50

Year	Number of Carcasses	Value in £A's
1939-40	316,063	265,275
1940-41	304,721	245,334
1941-42	232,232	212,258
1942-43	230,626	214,668
1943-44	315,374	294,839
1944-45	194,300	165,142
1945-46	141,056	126,048
1946-47	178,982	150,209
1947-48	246,202	245,938
1948-49	211,976	274,591
1949-50	126,607	204,367

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