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## FURTHER ASPECTS OF FARM MANAGEMENT ON NORTH-WESTERN WHEAT FARMS

by

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### 1. MECHANIZATION.

- Farm Machinery Supplies.
- Age of Tractors, Headers and Combines.
- Types of Tractors Preferred by Farmers.

### 2. TYPES OF LIVESTOCK CARRIED.

- Disposal of Lambs.
- Dealing.

Crop rotations and soil-management practices on a random sample of mixed crop and livestock properties on the North-Western Slope were discussed in the last issue of this journal.<sup>1</sup> The survey on which the latter article was based was carried out in March, April and May, 1952, and seventy-six farmers were visited in the shires of Peel, Liverpool Plains, Macintyre and Yallaroi. As the survey was concerned mainly with practices on wheat farms, the sample was drawn from important wheat-growing districts in different parts of the North-Western Slope.

The first article included an analysis of the influence of the size of farms and different soil types on the cropping practices adopted throughout the area. In order to compare the practices of holdings of different size groups, farms of 600 acres, or less, arable, and of a total area not exceeding 1,000 acres, were classed as "small" farms and the remainder as "large" farms. A significant relation was found to exist between the crop rotations followed on farms in these two size-groups, ninety per cent. of the small holdings having a rotation of one-year-in-two, or shorter, compared with fifty-five per cent. for the large properties. It was also found that higher incomes in recent years, largely due to higher wool prices, have enabled farmers, especially those on small holdings, to introduce wider crop rotations and other soil-conserving practices.

Other objectives of the study were (a) to obtain information regarding farm mechanization and the machinery supply position and (b) to study recent trends in livestock enterprises in the area. It is proposed to discuss briefly the results of these aspects of the survey in the present article.

### 1. MECHANIZATION.

A few farmers in the North-West commenced using tractors for wheat cropping in the nineteen-twenties, but the greatest expansion in the use of tractor power occurred between 1934 and 1939. Since that time mechanization has gradually increased and has been adapted to a wider range of operations. Farmers have their own plant for cropping operations and rarely need to employ contractors for the

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<sup>1</sup> See G. C. McFarlane, "Soil-Management Practices on North-Western Wheat Farms," *Review of Marketing and Agricultural Economics*, Vol. 20, No. 3 (September, 1952), pp. 161-181.

usual cultivating, sowing and harvesting work. However, contractors are frequently employed for special purposes such as contour work, dam-sinking and hay baling. The majority of farmers also have their wheat carted by contract direct from the farm to the railhead. Seventy-three per cent. of survey farmers delivered their wheat in this way in 1951.

TABLE I.

*Tractors and Implements in Use and on Order on Survey Farms.*

Item.	District.							Total.
	PC.*	PF.	LA.	LB.	MB.	YA.	YC.	
Tractors—								
On farms ... ..	13	20	30	25	12	21	16	137
On order ... ..	...	3	3	1	...	5	...	12
Desired but not ordered	1	1	2	...	1	...	1	6
Headers—								
On farms ... ..	12	13	...	15	11	13	13	93
On order ... ..	5	5	...	6	...	2	2	28
Desired but not ordered	...	...	2	...	1	...	2	5
Combines—								
On farms ... ..	12	13	17	17	13	13	11	96
On order ... ..	...	1	1	...	...	1	1	4
Desired but not ordered	...	...	...	...	...	...	1	1
Twin-disc Ploughs—								
On farms ... ..	11	10	13	14	7	7	12	74
On order ... ..	1	2	2	2	1	1	...	9
Desired but not ordered	1	...	...	...	1	...	1	3
Disc Ploughs—								
On farms ... ..	...	1	1	2	4	1	...	9
On order ... ..	...	1	...	...	...	...	...	1
Desired but not ordered	...	...	...	...	1	...	...	1
Mouldboard Ploughs—								
On farms ... ..	8	5	...	2	8	...	1	24
On order ... ..	2	2	...	...	...	...	...	4
Scarifiers—								
On farms ... ..	7	12	13	8	9	9	6	64
On order ... ..	...	3	1	...	...	2	...	6
Desired but not ordered	...	1	...	2	1	1	...	5
Tyne Harrows—								
On farms ... ..	13	12	14	15	14	9	10	87
Disc Harrows—								
On farms ... ..	1	2	4	4	1	6	3	21
On order ... ..	...	...	...	1	...	...	...	1
Desired but not ordered	1	2	1	1	1	1	3	10
Twin-disc Seeders—								
On farms ... ..	...	4	...	...	...	1	1	6
On order ... ..	1	2	...	1	...	...	...	4
Land Tillers (John Deere)—								
On farms ... ..	...	...	2	...	...	3	...	5
Pick-up-balers—								
On farms ... ..	...	3	5	2	1	1	1	13
On order ... ..	2	...	...	...	...	3	1	6
Desired but not ordered	1	...	2	...	1	...	2	6
Stationary Balers—								
On farms ... ..	2	1	4	...	1	...	2	10

\* "PC" refers to C riding of Peel Shire. Similarly for other districts.

TABLE I—continued.  
Tractors and Implements in Use and on Order on Survey Farms.

Item.	District.							Total.
	PC.*	PF.	LA.	LB.	MB.	YA.	YC.	
Power Mowers—								
On farms ... ..	...	4	2	I	I	I	2	11
On order ... ..	I	...	...	...	...	...	...	I
Desired but not ordered	I	...	...	I	...	...	I	3
Ground-drive Mowers—								
On farms ... ..	7	6	4	3	9	I	2	32
Side-delivery Rakes—								
On farms ... ..	I	3	4	2	I	I	...	12
On order ... ..	I	...	...	...	...	...	...	I
Desired but not ordered	I	...	I	I	...	...	...	3
Dump Rakes—								
On farms ... ..	2	6	2	3	5	2	...	20
Binders—								
On farms ... ..	5	8	7	7	7	4	3	41
Rotary Hoes—								
On farms ... ..	...	I.	I	...	...	...	...	2
Trucks—								
On farms—								
6-ton ... ..	...	...	...	...	...	2	...	2
5-ton ... ..	3	2	4	...	...	...	...	9
3½-4-ton ... ..	...	...	2	I	...	...	...	3
2-3-ton ... ..	...	3	7	7	4	2	7	30
Under 2-ton ...	I	I	2	3	2	...	...	9
On order—								
5-ton ... ..	...	...	I	...	...	...	...	I
Bulldozer or Blade for Tractor—								
Desired but not ordered	...	3	...	I	...	...	I	5

\* "PC" refers to C riding of Peel Shire. Similarly for other districts.

Farmers are at present considering and experimenting with different methods of harvesting, storing and marketing wheat. A complete bulk harvesting and storage system has been in use for a few years on one survey farm, and a number of wheatgrowers have introduced some form of bulk handling or are considering doing so. Nevertheless many farmers have not yet given detailed consideration to bulk handling and are unable to clearly define their attitude to it. The high cost of bags and the prospects of saving time and labour have provided a stimulus for farmers to change their methods, and approximately one-third of the farmers visited indicated that they might later introduce some form of bulk handling. On the other hand there is a widely-held view that the change would be uneconomic on small holdings or where only a small acreage of wheat is normally grown. However, this view may change in the future when the wide variety of possible modifications becomes more generally known.<sup>2</sup>

<sup>2</sup> For a discussion of the various types of bulk handling machinery being marketed at present and a comparison of the costs associated with bag handling compared with bulk methods, see Ross Parish, "Bulk Handling of Wheat on the Farm", *Review of Marketing and Agricultural Economics*, Vol. 20, No. 3 (September, 1952). pp. 182-203.

### Farm Machinery Supplies.

Table I shows the machinery in use and on order on survey farms and also indicates plant which farmers considered would increase efficiency but which had not been ordered. It can be seen from this table that headers were the principal item of plant in short supply at the time of the survey. Twin-disc ploughs and scarifiers were also in short supply and, on a smaller scale, there was some lag in the delivery of pick-up balers. To some extent the machinery shortage was more in the nature of a lag in the delivery of particular makes than a total shortage. For instance, some farmers indicated that they would prefer to wait for a header from a particular firm rather than buy a make more readily available. There appeared to be no difficulty in obtaining tractors of the size most commonly used for wheat cropping, and the only tractors for which farmers awaited delivery were larger wheeled types or crawler tractors.

TABLE II.  
*Types of Tractors in Use and Types Preferred.*

Type of Tractor.	Farmers Using.		Farmers Preferring.	
	Number.	Per cent.	Number.	Per cent.
(a) Wheeled ... ..	61	84	65	86
Crawler ... ..	...	...	6	8
Wheeled and Crawler ... ..	12	16	4	5
No Preference ... ..	...	...	1	1
(b) Kerosene ... ..	52	71	38	50
Diesel ... ..	8	11	30	39
Kerosene and Diesel ... ..	13	18	...	...
No Preference ... ..	...	...	8	11

Shortage of machinery was not found to be an important cause of reduced wheat acreage in the area, but the demand for tractors and implements could change fairly quickly from what it appeared to be six months ago. At the time of writing it is believed that the position remains much the same, but an improvement in the relative costs and returns associated with wheat growing compared with livestock products would be likely to cause some increase in the demand for farm machinery. One reason for this is the fact that some farmers are continuing to use plant which they would prefer to replace (with new and/or larger machinery), but find it satisfactory for the reduced area they are now cropping. Secondly, new wheat land might be developed and operators of some of the larger farms might grow more wheat.

### Age of Tractors, Headers and Combines.

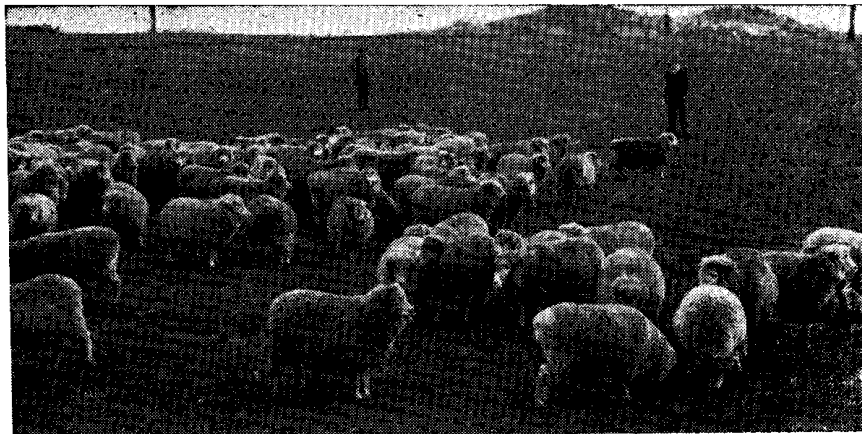
Approximately fifty per cent. of the tractors on survey farms were purchased after World War II, and one-third were only one or two years old. As a result of the lag in delivery, many old headers were in use although approximately one-third were purchased less than seven years ago. About one-third of the combines in use were also less than seven years old.

Except for the relatively new tractors, headers and combines acquired since World War II, in the proportions mentioned above, the age of plant was fairly evenly distributed up to eighteen years, with a few headers and combines over twenty years old.

### **Types of Tractors Preferred by Farmers.**

The types of tractors in use and farmers' preferences are shown in Table II. It can be seen that eighty-six per cent. of the farmers visited prefer wheeled tractors, eight per cent. prefer crawler types and five per cent. like to have both wheeled and crawler types. In Yallaroi shire, where new land is being cleared for wheat cropping, three farmers expressed preference for crawler tractors until all stumps have been removed from cultivation paddocks, but they prefer tractors on rubbers after clearing has been completed.

It will be noted that although the majority of farmers were using kerosene tractors there was not such a wide divergence between preferences for diesel or kerosene models. Seventy-one per cent. of the survey farmers were using kerosene tractors, eleven per cent. diesel and the remaining eighteen per cent. had both kerosene and diesel models. Compared with this, fifty per cent. expressed preference for kerosene tractors, thirty-nine per cent. favoured diesel makes, and eleven per cent. were uncertain. In a survey carried out by this Division early in 1951 in the shires of Goobang and Jemalong, it was found that seventy-seven per cent. of the farmers interviewed favoured kerosene tractors.<sup>3</sup> At that time there was evidence that diesel tractors were becoming more popular and this seems to be confirmed by the results of the recent survey in the North-West.



**A Typical Flock of First Cross Ewes.**

## **2. TYPES OF LIVESTOCK CARRIED.**

Sheep and cattle raising are by far the most important livestock enterprises on mixed crop and livestock properties on the North-Western Slope. Only one-fifth of the survey farmers have pigs or poultry in addition to their main farming and grazing activities. These occur mainly on small holdings in Peel Shire rather than on large properties where operators have less time available for sideline activities and, in any case, are able to maintain incomes with less diversification.

<sup>3</sup> See P. C. Druce, "Machinery Usage on Wheat Farms in the Central-West", *Review of Marketing and Agricultural Economics*, Vol. 19, No. 2 (June, 1951), pp. 71-72.



Approximately ninety per cent. of the seventy-six properties visited have cattle (steers, cows and calves) as well as sheep, the two enterprises being generally managed so that they are complementary rather than competitive. Cattle are regarded as valuable for utilization of rank or rough feed which is not preferred by sheep. The larger farms in Yallaroi and Liverpool Plains have the greatest number of cattle, but these stock have an important place in the livestock programme throughout the whole area.

TABLE V.

*Sheep Numbers—Survey Shires and North-Western Slope and North-Central Plain Divisions—1927 to 1952.*

Year.	Liverpool Plains.	Yallaroi.	Peel.	Macintyre.*	North-Western Slope.	North-Central Plain.
	'000.	'000.	'000.	'000.	'000.	'000.
1926-27	746.5	802.6	289.6	229.6	5,769.0	4,662.2
1927-28	678.3	792.4	289.0	217.2	5,450.5	4,406.9
1928-29	827.8	821.7	341.0	237.2	5,865.2	4,613.3
1929-30	756.8	913.1	313.8	264.9	5,988.9	4,580.9
1930-31	763.9	920.4	347.8	259.2	5,998.2	4,624.4
1931-32	762.5	865.8	333.8	268.3	5,893.4	4,633.7
1932-33	709.1	888.5	322.1	271.5	5,873.7	4,622.5
1933-34	734.8	857.5	342.3	263.9	5,844.9	4,661.0
1934-35	792.0	866.8	359.4	253.5	5,951.9	4,717.7
1935-36	713.3	776.1	329.0	221.5	5,621.1	4,017.8
1936-37	761.4	842.6	333.5	226.8	5,756.0	4,075.1
1937-38	667.4	925.6	350.8	262.7	5,952.5	4,401.7
1938-39	646.9	897.0	341.7	252.1	5,766.0	4,483.2
1939-40	667.3	813.0	310.5	235.5	5,509.8	4,528.4
1940-41	673.3	755.6	323.6	217.7	5,355.2	4,243.5
1941-42	744.4	792.9	364.2	364.2	5,840.2	4,337.7
1942-43	725.3	790.7	380.1	380.1	5,868.6	4,392.9
1943-44	758.2	894.2	381.5	381.5	6,170.4	4,683.9
1944-45	682.2	783.6	340.2	340.2	5,396.9	3,868.5
1945-46	623.8	724.9	289.9	289.9	4,958.3	3,846.7
1946-47	446.1	627.2	220.4	220.4	4,103.1	3,104.8
1947-48	497.2	662.6	259.5	259.5	4,384.1	3,559.1
1948-49	607.9	721.3	288.2	288.4	4,882.3	4,132.2
1949-50	681.2	720.9	338.4	338.4	5,105.0	4,246.7
1950-51	683.5	690.1	349.9	349.9	4,979.7	4,026.3
1951-52	690.0	678.8	355.1	355.1	4,951.1	4,024.6

\* Portion in North-Western Slope Division.

Source.—New South Wales *Statistical Register* and Bureau of Statistics and Economics, Sydney.

Types and numbers of livestock carried on individual properties are adjusted to meet changes in seasonal conditions, relative prices and the market outlook for different livestock products. The most conspicuous recent change on the North-Western Slope, and also the adjoining North-Central Plain, is a fairly sharply increasing trend in beef cattle grazing. Statistics of sheep and cattle numbers in these divisions and in the four survey shires are contained in Tables V and VI. It can be seen from these statistics, and Figures I and II, that there has been an



almost continuous increase in cattle numbers in this section of the State since 1939. Part of this increase is attributable to recovery from drought but cattle numbers in Yallaroi Shire reached a record level in 1948 and the increasing trend has continued at about the same rate since that time. By March, 1952, the total cattle population in that Shire had reached 55,000 compared with the previous highest total of 37,000 head in 1934-35. Many farms in Yallaroi Shire, especially in A riding, are still being cleared and developed, and the stock-carrying capacity is gradually being increased. In the other survey shires steps are being taken on several properties to increase production of lambs and beef cattle by growing larger areas of oats and lucerne for fodder but, as yet, there is no evidence of a long-term trend of increased cattle numbers similar to that noted for Yallaroi Shire and the area as a whole.

TABLE VI.

*Cattle Numbers—Survey Shires and North-Western Slope and North-Central Plain Divisions—1927 to 1952.*

Year.	Liverpool Plains.	Yallaroi.	Peel.	Macintyre. *	North-Western Slope.	North-Central Plain.
	'000.	'000.	'000.	'000.	'000.	'000.
1926-27	13.9	19.2	12.1	5.8	168.0	70.6
1927-28	20.7	19.9	13.2	6.0	185.8	82.5
1928-29	22.3	26.3	13.7	5.5	196.1	79.6
1929-30	18.4	24.2	10.9	5.5	178.6	64.8
1930-31	24.0	27.8	14.1	6.7	199.8	85.7
1931-32	22.9	27.5	15.2	8.4	212.7	86.4
1932-33	24.9	28.3	17.7	9.7	237.0	89.8
1933-34	34.5	36.6	20.6	10.0	275.4	118.0
1934-35	40.1	37.2	19.3	9.8	292.0	124.8
1935-36	37.5	35.3	19.5	9.5	273.6	110.9
1936-37	31.0	32.5	15.2	8.1	251.6	100.7
1937-38	21.5	31.0	11.2	6.9	212.1	87.8
1938-39	17.6	25.9	10.2	5.0	175.4	80.5
1939-40	13.9	17.5	8.9	5.2	147.6	67.6
1940-41	16.4	19.0	10.3	5.5	153.2	70.1
1941-42	19.3	21.7	10.9	5.9	178.2	80.0
1942-43	23.2	22.4	12.4	6.3	205.2	95.5
1943-44	22.5	28.8	13.4	7.0	229.1	100.6
1944-45	26.1	30.2	13.0	8.2	248.9	96.0
1945-46	26.5	34.5	11.8	8.4	248.9	113.2
1946-47	23.0	36.7	10.7	8.7	233.7	101.6
1947-48	28.3	40.8	11.9	8.6	253.7	115.7
1948-49	29.1	40.6	13.9	9.0	273.2	126.2
1949-50	35.3	42.8	16.9	8.5	298.7	153.7
1950-51	42.8	49.0	19.6	9.1	335.0	189.7
1951-52	40.4	55.3	18.9	8.6	334.6	189.9

\* Portion in North-Western Slope Division.

Source.—New South Wales *Statistical Register* and Bureau of Statistics and Economics, Sydney.

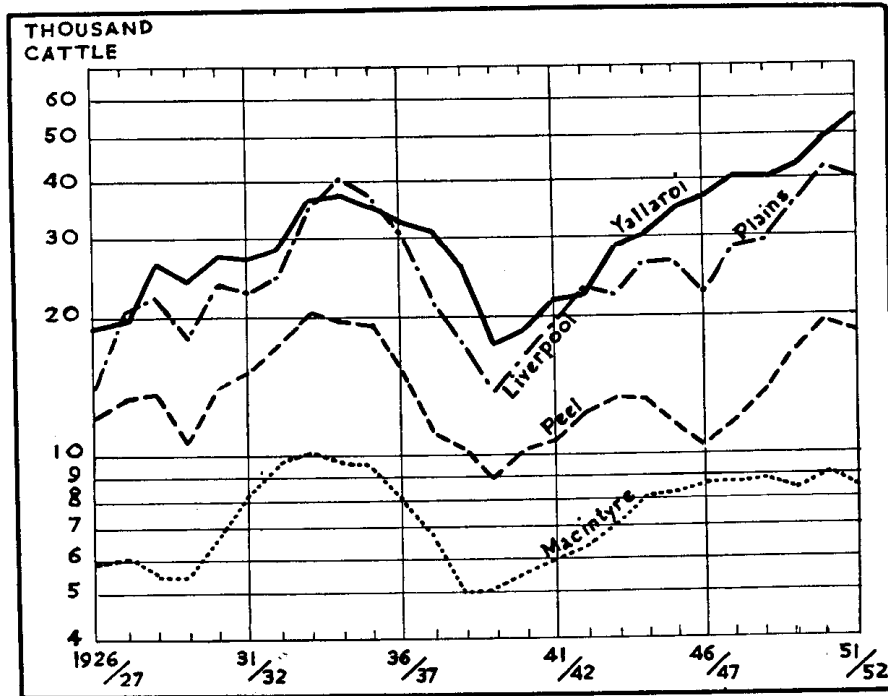


Fig. I.—Cattle Numbers, Survey Shires, 1927 to 1952.

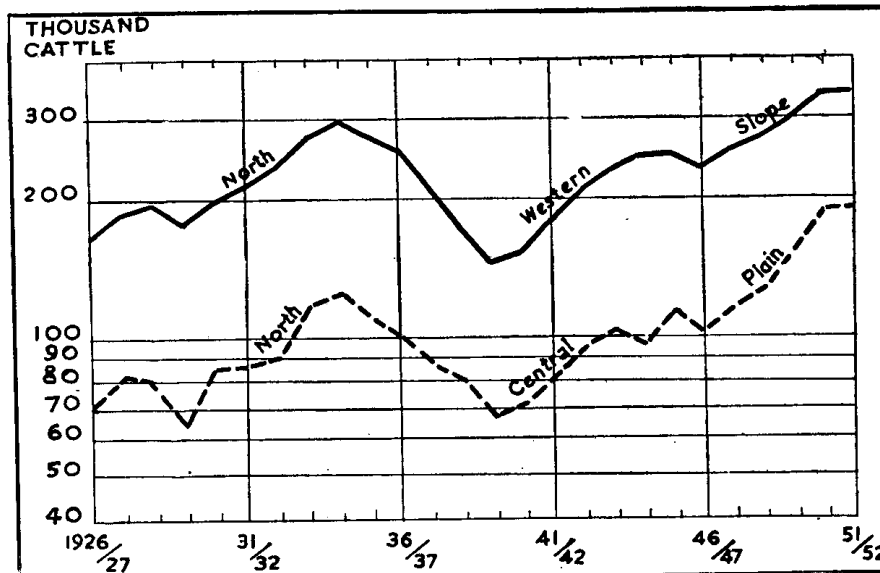


Fig. II.—Cattle Numbers, North-Western Slope and North-Central Plain Divisions, 1927 to 1952.

Although the cattle population is increasing in the North-West there is a declining trend in sheep numbers. There has been an upward trend from the low level reached after the droughts in 1944 and 1946, but Figure III, showing trends in sheep numbers for the last twenty-five years, indicates a long-term decline in Liverpool Plains, Macintyre and Yallaroi Shires. The sheep population in the North-Western Slope and North-Central Plain divisions did not alter greatly from 1927 to 1944, but droughts in 1944 and 1946 caused serious losses from which recovery is still incomplete (see Figure IV).

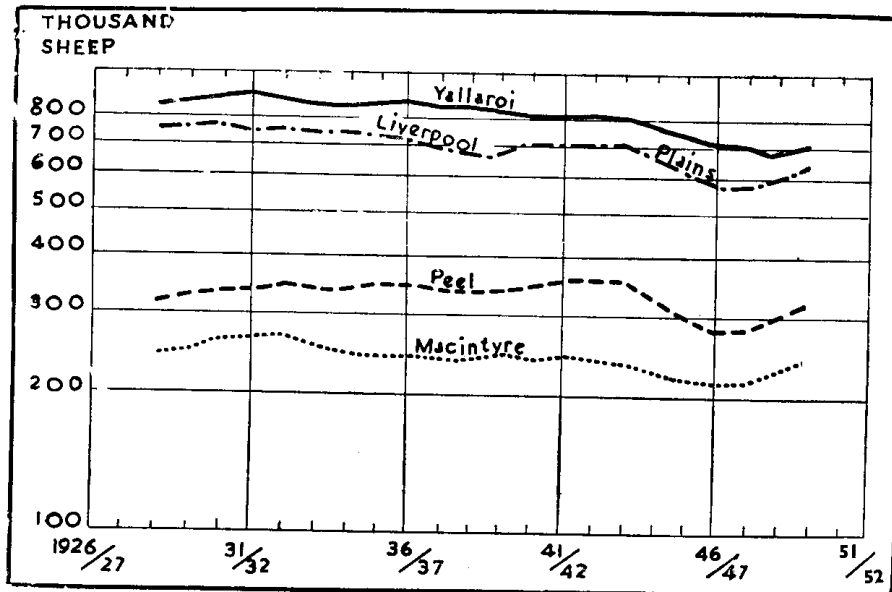


Fig. III.—5 Year Moving Average of Sheep Numbers, Survey Shires, 1927 to 1952.

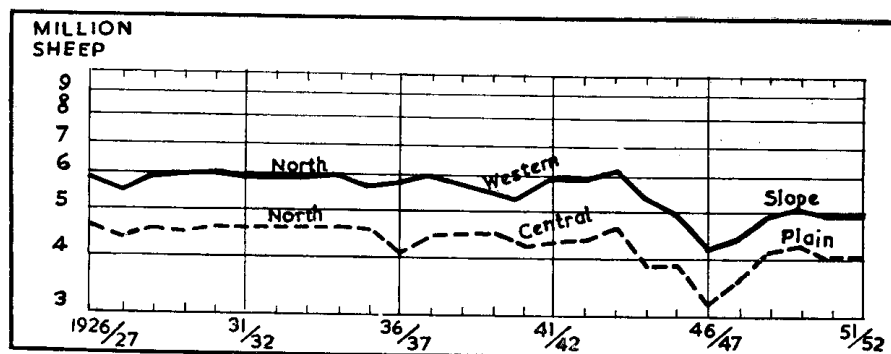


Fig. IV.—Sheep Numbers, North-Western Slope and North-Central Plain Divisions, 1927 to 1952.

Although some districts are more suited to wool production and others to fat-lamb raising, there is evidence that adjustments in the type of stock carried have been made in response to changes in market prices. High wool prices caused a number of farmers on first-class fat-lamb country in Peel and Liverpool Plains to introduce Merinos for a few years after World War II. Some of these are now reverting to fat-lamb raising. On the other hand, three wool growers in Yallaroi raised fat lambs for a short period but are now running Merino flocks.

Breeding ewes are carried on all except five of the properties visited, wethers being run on the latter. Some operators have more than one sheep enterprise to suit their particular circumstances. Examples of this are running wethers in addition to breeding stock, or raising fat lambs as well as running a Merino flock. In fat lamb districts some operators have more than one flock to enable them to breed their own ewe replacements, whereas others prefer to buy ewes.



**Hereford Cows and Calves in northern New South Wales.**

*Photo by Courtesy of "Country Life", Sydney.*

### **Disposal of Lambs.**

The main lambing period throughout the area is from April to August, and lambs are marketed from October to January or carried over to March or April. Four farmers visited in the riding of Liverpool Plains Shire like to market in August, two of these selling fat lambs born in March and two supplying carry-over lambs born in the previous July or August. Some stock are marketed in Sydney and Brisbane, but most are sold locally at Gunnedah, Tamworth and Inverell sale-yards, or by private arrangements with buyers visiting farms.

### **Dealing.**

Almost one-third of the farmers visited do some dealing when feed is available, practically all of these being in Liverpool Plains and Peel. In most cases dealing activities are spasmodic and buying and selling of stock is not generally regarded as an important source of income.

Survey farmers indicated that they usually buy the same type of stock for dealing purposes. For example, some always buy store sheep, some favour store cattle and others deal in both sheep and cattle. On two properties in Peel Shire, lambs or wethers are purchased in February or March, fattened on oats during the winter and sold in July or August. One farmer visited operates a property of approximately 600 acres in Liverpool Plains and deals extensively, and more speculatively, than any of the cases cited above. In this case Hereford cattle and crossbred lambs in forward store condition are purchased, and the farmer regards his dealing activities as a major source of income.