farms. It would appear that the larger holdings tend to favour the young ewe in both groups.

#### 2. Sheep Wintered

Item 2 in the table gives the average winter stocking; all the figures from now on are the **average annual** result over five years in each group of farms. Note that again there is a similarity of pattern between 2-tooth and cast-for-age ewes.

In both north and south groups the 2-tooth farms carry more dry sheep and nearly double the cattle of the cast-for-age farms. Dry sheep comprise rams, of course, plus as a rule some late lambs held over, or in a few cases some bought-in hoggets or wethers. Often there is quite a variation from season to season in numbers of dry sheep. To discuss cattle would involve considerable time at the expense of the question at issue, the ewes. Over the various groups they are representative of cattle practices associated with fat lamb farming.

# 3. Ewe Mating and Lambing

Ewe mating and lambing statistics are given in item 3. The lambing percentages are what I would expect in my experience: A differential of some 7 or 8 per cent in favour of cast-for-age; and southern lambings some 7 or 8 per cent better than northern.

Lambs lost after docking means from docking until the following 30 June. This wastage is seldom less than 2 per cent and it needs only the occasional farm with facial eczema or pulpy kidney to step this percentage up considerably.

Own lambs sold fat needs no elaboration; other lamb sales cover own lambs sold as stores plus boughtin lambs turned over either fat or store. The docking tally cannot be reconciled with the sum of all lambs sold plus percentage loss, because of the intake of bought lambs which I have not tabulated.

## 4. Ewes Sold

There is virtually no difference in the average per head return of ewes sold in the north groups. In the south groups there is a somewhat better return, particularly from 2-tooths.

## 5. Ewes Bought

Observe that the north groups pay about 6s. more on average for their 2-tooths and 4s. more for their old ewes than the south groups. But the relative difference between the buying of young and the buying of old ewes is very much the same for north and south, say 30s. and 28s. From left to right the average cost of ewes bought in is 86s., 59s., 80s., and 53s., prices that would be expected over the years considered.

The differences between sales and intake from left to right work out at

6 per cent, 8 per cent, 8 per cent, and 10 per cent. These figures represent the average annual wastage that occurs in these flocks, inclusive of dog tucker and home consumption.

A check of the total sheep wintered at the beginning and end of the fiveyear period for each group showed that the north groups remained perfectly steady, but that the south groups increased their winter sheep carried by 6 per cent in 2-tooth and 7 per cent in aged; a per cent a year, say, so that really the group wastages are north 6 and 8 as before, but south 7 and 9. This is about what I would expect.



R W. V. HADFIELD, Farm MR W. V. Department of Advisory Officer, Department of Agriculture, Timaru, who recently spent two months in Japan assisting the Japanese Government in the planning of grassland development projects. The Japanese are building up a dairy industry in the north of their country and Mr Hadfield assisted in the development of grassland projects on a considerable area of poor land, much of it hill country, the islands of Honshu and on Hokkaido. New Zealand has already given some help in this field through the Food and Agriculture Organization of the United Nations, and Mr Hadfield's assignment followed a Japanese request to FAO for some further expert assistance.

Of great interest are the differences revealed in replacement rates of the old ewe groups. In the north group the replacement rate is about onethird, while in the south group it is nearly three-quarters. In the south a complete clearance is sometimes made annually and a 50 per cent clear-

ance is common. To put it another way the north tends to make the castfor-age ewes last for two or three years and south only one or two years. The 2-tooth groups show little difference between north and south and on average a quarter of the ewe flock is replaced each year. This seems a high replacement rate and shows that the 2-tooth that starts on fattening country generally has a short life, certainly does not go to six or seven years.

#### 6. Meat Weights

The weight of meat produced in terms of per ewe and per lamb is shown in item 6. The stocking rates of these farms vary, not unexpectedly, as is shown in item 9, and per acre carrying capacity has not necessarily anything to do with the fact of buying young ewes or old ewes for intensive country. Therefore to start talking in terms of production per acre would be quite confusing and indeed erroneous in this case. Hence, production is in terms of per ewe mated, since this is the unit being compared. In item 6 therefore, we find that the average lamb weights are a little better further south per lamb and a good deal better per ewe mated. I associate this with the substantially less cattle activity on those farms coupled with the better lambing results that always seem to be achieved in the south districts.

Other meat per ewe mated refers to all other stock sales that are not "own fat lamb"; that is, own store lambs, bought lambs or sheep turned over, the cast-out ewes, and the cattleturnover. This is a net figure derived in our statistical calculations of meat production and takes account not only of the disposals I have just referred to but also the intake stock and stocks on hand at beginning and end of each season.

Though lamb meat per ewe is so much better in the south groups, the other meat is very much less. By adding together the last two items in each column of item 6 the total net meat per ewe mated is found to be 44, 42, 42, and 40 lb. In total meat production the north groups each show 2 lb per ewe more than their south counterparts, which highlights the fact that what the north drops in lamb it more than makes up for by cattle in meat output.

In both north and south the 2-tooth group shows 2 lb more meat in aggregate than the cast-for-age group, such extra being mainly associated with the cattle and not the sheep.

## 7. Wool Clip

In item 7 the wool clip per head discloses nothing significant as between 2-tooth and aged groups. This may raise a storm of protest and doubt, but I can only point out that