measurable. This represented a saving of 4 days in the time taken, and 10 gallons in the feed needed, to bring a pig from weaning to pork weight.

An important question is whether the above results—4 cases out of 10 showing a small improvement—represent a recommendation for the use of antibiotics with separated milk in fattening pigs. It may well be asked just what 4 days earlier marketing and 10 gallons of milk saved per pig mean in practice to the New Zealand farmer.

The feeding of antibiotics does not increase the number of pigs carried at any one time. This number depends entirely on the amount of milk available from the dairy herd daily, milk which must be consumed as it is produced. If antibiotic-fed pigs can be marketed 4 days earlier, there is left available the milk which would otherwise have been used to feed them over that period. The saving, therefore, consists of a perishable product available daily for a few days. Where cereals are fed, as in Europe and America, the feed saved is still in the barn. It can be stored there until needed or sold. This situation does not apply with separated milk. Where the number of pigs kept on a New Zealand farm is such that they can readily and economically drink every gallon produced without overfeeding—and this is true of only a few farms today—the milk saved by antibiotic feeding could be used economically. Where the pigs are already being overfed the extra milk would be an embarrassment.

It is suggested, therefore, that where antibiotics produce results advantage can be taken of the beneficial effects only on farms where pig numbers are high and really efficient use is already being made of the milk produced. In other words, any beneficial effect of antibiotics is a useful adjunct to already high production efficiency, but is not a means of improving basically low-efficiency units. The experiments indicate that even where production efficiency is high there is only a 40 : 60 chance that any improvement will result.

As the antibiotics used cost approximately 2s. per pig at 1954 prices and 10 gallons of milk if used to produce extra pig meat would be worth about 3s. 6d. on an efficient farm, there is a profit from antibiotics of 1s. 6d. per pig.

Finally, antibiotics will not make pigs grow faster or more economically if slow growth and low efficiency are due to poor management, poor housing, and inherently poor stock. Similarly, no farmer would expect a positive response in his pastures from lime if phosphate was the element lacking.

On present theories the position may be interpreted as follows:—

1. The possibility of increased intake with antibiotic feeding may be ruled out. In any case research at Ruakura has shown that overfeeding of young pigs leads to chronic digestive upsets, so that methods of increasing intake of bulky milk diets should be avoided rather than encouraged.
2. The improvement of the value of proteins by antibiotics to a stage where plant proteins can replace animal proteins—an important feature of their use overseas—is of no interest in New Zealand, where separated milk, an animal protein of high biological value, is the main feedstuff.
3. The remaining possibility arises from the theory that the antibiotic acts on the bacteria of the gut, depressing harmful organisms and encouraging those of value to the host. If antibiotics are expected to produce results wherever tried in New Zealand, it must be accepted as fact that all pigs harbour harmful organisms in sufficient quantity to depress growth and affect feed conversion. This is unlikely.

It is not suggested that these experiments represent the last word on the use of antibiotics in pig feeding in New Zealand. As yet there is no factual explanation available on the way these materials operate in the gut. To date experimental work has merely measured gross effects. Until more detailed research at present in progress in England and America has yielded precise information on the mode of action of the various types of antibiotics there is no point in continuing experiments which measure end results without providing an explanation of the process involved.

In the meantime, however, the experiments described, interpreted on the basis of present knowledge, suggest that the indiscriminate use of antibiotics with separated milk is unwarranted.

Show Dates

THE following are dates and venues of A. and P. shows from February to mid-April:—

NORTH ISLAND

February

4 and 5 February—Rodney A. and P. at Warkworth.

*5 February—Rangitikei A. and P. at Taihape.

5 February—Woodville A. and P. at Woodville.

*8 and 9 February—Dannevirke District A. and P. at Dannevirke.

11 February—Dannevirke Ram Fair at Dannevirke.

11 and 12 February—Taumarunui and District A. and P. at Taumarunui.

11 and 12 February—Taranaki A. and P. at New Plymouth.

*12 February—Pahiatua A. and P. at Pahiatua.

12 February—Hukerenui A. and P. at Hukerenui.

12 February—Waitemata A. and P. at Waiwera.

12 February—Galatea A. and P. at Galatea.

16 February—Te Awamutu A., P., and H. at Te Awamutu.

18 and 19 February—Ohura A., P., H., and I. at Nihoniho.

18 and 19 February—Masterton A. and P. at Masterton.

*18 and 19 February—Franklin A. and P. at Pukekohe.

19 February—Northern Wairoa A. and P. at Mititai.

19 February—Waiapu P. and I. at Ruatoria.

19 February—Te Puke A. and P. at Te Puke.

19 February—Waiapu P. and I. at Ruatoria.

19 February—Tauranga A. and P. at Tauranga.

22 February—Otorohanga A. and P. at Otorohanga.

24 February—Matamata A. and P. at Matamata.

25 and 26 February—Wellington and Hutt Valley A. and P. at Upper Hutt.

25 and 26 February—Te Kuiti and District A. and P. at Te Kuiti.

*26 February—Putaruru District A. and P. at Putaruru.

26 February—Waimarino A., P., H., and I. at Raetihi.

26 February—Whakatane A. and P. at Whakatane.

March

2 March—Morrinsville A. and P. at Morrinsville.

5 March—Albany A. and P. at Albany.

5 March—Waiotira Junction A. and P. at Waiotira.

*5 March—Mangonui County A. and P. at Kaitaia.

5 March—Waikato Central A. and P. at Cambridge.

5 March—Opotiki A. and P. at Opotiki.

*12 March—Whangaroa A. and P. at Kaeo.

12 March—Hawkes Bay A. and P. at Hastings.

12 March—Kumeu District A. and H. at Kumeu.

19 March—Wellsford A. and P. at Wellsford.

SOUTH ISLAND

February

*4 and 5 February—Otago A. and P. at Dunedin.

5 February—Golden Bay A. and P. at Takaka.

19 February—Murchison A. and P. at Murchison.

19 February—Banks Peninsula A. and P. at Little River.

26 February—Kaikoura A. and P. at Kaikoura.

*26 February—Maniatoto A. and P. at Ranfurly.

March

*4 and 5 March—Buller A. and P. at Westport.

*5 March—Temuka and Geraldine A. and P. at Winchester.

5 March—Amuri A. and P. at Rotherham.

*12 March—Mt. Benger A. and P. at Roxburgh.

12 March—Cheviot A. and P. at Cheviot.

*19 March—Upper Clutha A. and P. at Wanaka.

19 March—Mayfield A. and P. at Mayfield.

26 March—Hawarden A. and P. at Hawarden.

26 March—Methven A. and P. at Methven.

April

*2 April—Oxford A. and P. at Oxford.

11 April—Mackenzie County A. and P. at Fairlie.

11 April—Strath-Taieri A. and P. at Middlemarch.

* The Department of Agriculture exhibit will be staged at this show.