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MR. CANDY: That may be so, but it will be 25 per cent by the end of the season.

DR. McMEEKAN: Even so, when one considers that no pasture existed from the middle of December to the middle of March, to me it seems to suggest that the hook-up between feeding efficiency and production is not as close as might be expected. It also puts Dr. Hamilton's correlation well out of joint. My second comment is: the experiments which we are conducting at Ruakura, in which we are attempting to measure the sort of differences that are likely to exist between very good feeding on the one hand and very bad feeding on the other, are such as not to lead one to believe that daughters from a 300 lb. bull would have much appeal to a herd which at present is averaging 250 lb. I will not mention the figures, because they are still preliminary, but the suggestion is there that the differences are not nearly as great as one would anticipate.

MR. CANDY: I have nothing quite definite to say on the matter. I do not want it to be thought that anything I say now will be one against Dr. Hamilton and one for Dr. McMeekan, or vice versa. But I think Dr. McMeekan was inclined to pull the wool over our eyes just now when he started to talk about there being little correlation between production and feeding. Altogether, I think he is over-affected by the position in his institution, where he has been more seriously affected by feed than others. I would stress the point that if you are going to have a constructive look at the picture as to the fall in production associated with the feeding situation, it must be borne in mind that until Christmas of this year, production was practically on a line with last year. The relative drop in the Auckland province for the three months referred to by Dr. McMeekan was 27 per cent. in January, just on 50 per cent. in February, and about 65 per cent. in March. That gives the true correlation between production and feeding.

DR. McMEEKAN: But the herd average is not going to be down for the season - on your own figure of 25 per cent.

MR. CANDY: Quite true, but those are the figures for the period affected by the feeding.

THE PRESIDENT: The bulk of the cows pulled out and dried off in January were more likely than not those lower producing herds which were already producing little when the dry weather struck them.

THE INHERITANCE OF "PARROT-BEAK" IN NEW ZEALAND
MILKING SHORTHORNS

Summary of paper by J. M. Ranstead, Matangi.

(The full paper will appear in The Agricultural Section of the N.Z. Journ. Sci. & Tech.)

Parrot-beak is inherited as a simple recessive autosomal lethal factor, and the condition is briefly described and illustrated.

The inheritance of parrot-beak in the author's strain of pedigree milking shorthorns is traced back to the bull "Hippo" whose immediate ancestors were imported from England.

It is suggested that the cases in U.S.A. reported by Snyder, and by Heizer and Hervey, inherited the factor from the same source.

The possibility of unwittingly distributing lethal factors through bulls used at artificial insemination centres is stressed.

DISCUSSION ON MR. RANSTEAD'S PAPER:

DR. McMAHON: Are any of the possible carriers still alive?

MR. RANSTEAD: I do not know of any certain carriers. I think I had the last one in 1935; I had the first one in 1928. I got the one from Mr. Hall in 1936, and I have not heard of any more since. But you cannot get the information from any of them - they will not say anything about it, because they do not want to lower the value of their own stock. I sold Miss Wother- spoon the little bull; she did not say anything about parrot- beak at her sale, and a number of the progeny were sold and went all over New Zealand. I had a dispersal sale last year - instead of 60 I now have only 8 stock. Well, there might have been 52 carriers in those, for all I know. I do not think I can hurt anybody, because everybody is in the same box now.

DR. McMAHON: I thought this was a case where Mr. Buddle should be called in, in an experimental capacity.

MR. RANSTEAD: But we first have to have a calf with parrot beak, and as they will not live for more than one or two days - they are usually knocked on the head - then unless we can convince the breeders that they can "tell", what are we going to do?

COL. MATSON: Was any record kept of the sexes of the parrot beak cases?

MR. RANSTEAD: I have recorded the sexes. On the chart before the Conference, the circles represent females and the squares represent males. On this other chart of Mr. Hall's stock, the only one he recorded was the one I went to see, and I recorded it. He just knocked the others on the head, and did not keep any information at all. The only one I can find out about in the case of Miss Wotherspoon is the one she had the year before. The thirteen cases shown on this sheet are the whole of the cases I have heard of; but as they are both male and female, there is no chance of it being sex-linked in character.

MR. HANCOCK: Can you make an estimate of how widely this factor is now distributed amongst Shorthorns in New Zealand?

MR. RANSTEAD: I sold 65 sons of the bull I told you was a known carrier - all called Matangi Superfine. I must have sold 70 bulls by that bull. You talk about the son of a good bull. Well, if that bull was any good for distributing parrot beak, I sold 65 of his sons.

DR. DRY: I think Mr. Ranstead has been a little too much impressed by this single gene. He has also sold a lot of mighty good genes for production. It has been possible to lay this by the individual tail, and therefore he may underline this one knotty gene unduly. Lethal factors have been rather a disappointment to me, personally. I know how farmers can be worried. If they face dramatic losses, then they will listen to what science may say. It may be rather convenient, therefore, if some noxious insect eats its way into the pockets of the farmer. I thought at one time that lethal factors might play a helpful part in genetics. Five years ago, I was led to do a little figuring. Suppose you have a herd in which all the cows are free from the lethal factor, and you bring in a bull that is a carrier, and keep his daughters at random, as to whether they have the lethal factor or not, and then mate them with a bull that is not a carrier. Keep their daughters again at random, and then next time use a bull that is a carrier - alternatively, bulls that are carriers and bulls that are not carriers. Before long, you will reach a balanced state where in every other generation you will have born about 7 per cent. of mal-formed calves, killed