

*Mastitis.*—For the third consecutive season the use of penicillin in the treatment of cases of mastitis has been studied. Favourable results have again been obtained in the present season where streptococci have been associated with the trouble. With staphylococcal mastitis the treatment has not been so successful, and variations of dose rate and timing are being tried to determine whether results can be improved.

*Hormone Studies.*—The relation of the thyroid gland to milk production and composition is being studied making use of thyroprotein to give conditions of high thyroid activity, and thiourea to depress the concentration of the natural hormone. The doses of thiourea required for varying effects on the thyroid have been determined from histological studies of the glands of thiourea-treated cows. This work has established a basis for the interpretation of results from feeding thiourea on the production and composition of milk.

*Identical Twins.*—In order to increase the efficiency of physiological studies in dairy cattle, a small herd of identical twins is being assembled. Seven sets of these twins have been obtained in the 1946–47 season and will be available for milk-secretion work in 1948.

*School Milk.*—The Institute has continued to pasteurize and bottle, on behalf of the Department of Health, milk supplied to schools in the City of Palmerston North and the Manawatu district.

*Dissemination of Results of Work.*—Results of research work carried out in the past and previous years were communicated by members of the staff to and discussed with over one hundred dairy-factory managers and first assistants assembled at the fifteenth Annual Factory-managers' Week held at the Massey Agricultural College from 6th to 8th May. Messrs. H. A. Foy, Director, Dairy Division, Department of Agriculture, and R. L. Hill, of the A. P. V. Co., London, kindly gave addresses at this meeting which were greatly appreciated.

Four issues of the *News Circular* have been published at quarterly intervals and sent to dairy-company directors, managers, and principal assistants during the year. Items of topical and domestic interest have been dealt with in these *Circulars*.

Many groups of farmers and others who have visited the Massey Agricultural College during the year have been shown over the laboratories, dairy factory, and experimental dairy-farm and had explained to them the nature and results of the work in progress.

The following technical papers have been published during the year:—

- No. 175: The Collection of Quarter Milk Samples by Milking-machine. (*J. Dairy Res.*, 14, No. 3.) F. H. McDowall.
- No. 176: Variations in the Carotene and Vitamin A Contents of certain New Zealand Butterfats. (In the press.) C. R. Barnicoat.
- No. 178: A Simple Agar Medium for the Growth of Lactic Streptococci: the Role of Phosphate in the Medium. (*J. Dairy Res.*, 14, No. 3.) G. J. E. Hunter.
- No. 182: Studies on the Detection of Mastitis in New Zealand Dairy Herds—VI: Mastitis Milk in Relation to Manufacture of Cheese. (*N.Z. J. Sci. & Tech.*, 27, No. 6A.) F. H. McDowall.
- No. 183: The Estimation of Copper and Iron in Cream, Butter, and Dry Butterfat. (In the press.) A. K. R. McDowall.
- No. 184: Control of Moisture Content of Butter during Butter-manufacture. (*N.Z. J. Sci. & Tech.*, 28, No. 1A.) F. H. McDowall.
- No. 185: The Effect of Hydraulic Pressing on Cheese Texture. (*N.Z. J. Sci. & Tech.*, 27, No. 5A.) H. R. Whitehead and L. J. Jones.
- No. 186: The Influence of a Diet of Separated Milk and Pasture on the Growth Rate and Health of Dairy Calves. (*N.Z. J. Sci. & Tech.*, 27, No. 6A.) S. L. Green, I. L. Campbell, Mona K. Cook, and W. Riddet.
- No. 187: Payment for Milk for Cheesemaking: Report on the Operation of the "Costed Cheese" System by a Commercial Factory during the Three Years 1942–45. (*N.Z. J. Sci. & Tech.*, 27, No. 6A.) F. H. McDowall.
- No. 188: Butter Moisture Control Chart. F. H. McDowall.