

During the season Mr. Kidd was given travelling facilities in order to visit herds utilizing the Department's scheme of control of mastitis. It was hoped that by giving encouragement and advice on the farm the control would show a marked improvement.

Treatment for Mastitis.—Treatment with 5 per cent. prontosil intravenously, with 1 per cent. prontosil by quarter infusion, with entozon by infusion and with three types of alleged cures have given varied results. In none of the experiments carried out by Mr. T. A. Blake, M.R.C.V.S., can we claim any special benefit. A few individual cows seem to have recovered, but the percentage is small.

Low-vacuum machines which do not require the stripping of cows are being used in two sheds under observation. Both owners have commenced with heifer herds which will remain under observation for a period of years. At the end of the first season each owner has one case of mastitis in his herd.

In last year's report mention was made of brom-thymol-blue testing being introduced on a large scale by the herd-testing association.

The staff of the Wallaceville Laboratory engaged in mastitis work, Mr. J. P. James, M.R.C.V.S., B.Sc., and Mr. T. Palmer-Jones, B.Sc., has been employed very largely in gaining some knowledge of the reason for the anomalies shown in the use of the brom-thymol-blue test. Frequently the test does not pick up an obviously infected animal. This matter was the subject of report in conjunction with Dr. McDowall, of the Dairy Research Institute, and with Mr. A. H. Ward, of the New Zealand Dairy Board staff, in which the authors found that the brom-thymol-blue test was only about 50 per cent. correct when the leucocyte assessment was used in the diagnosis of mastitis. Check-testing carried out in three laboratories other than Wallaceville gave even poorer correlation figures.

The factors which made any form of colour testing inaccurate were:—

- (a) The fact that many cases of mastitis do not give an alkaline reaction.
- (b) The reading is upset by quantity of cream, by the interval of time between taking samples and reading, by quantity of milk used in the tubes when taken by the farmer, and in the same way quantity of brom thymol blue used in the test.
- (c) By the personal factor, many officers not being able to distinguish colours or shades of one colour, even though an ingenious colour standard was prepared by Mr. James for their use.

A table prepared by Mr. James giving a comparison between leucocyte counts and brom-thymol-blue tests carried out weekly in three herds is given *in toto* :—

Herd and Length of Test.]	Brom Thymol Blue.	Leucocyte Assessment.							Totals.			Percentage.	
		0.	1.	2.	3.	4.	5.	6.	0, 1, and 2.	3.	4, 5, and 6.	0, 1, and 2.	4, 5, and 6.
St. Patrick's College : 17th November, 1938, to 18th January, 1939	+ %	..	2	3	15	31	34	40	5	15	105	} 4.5	95.5
	— %	..	0.4	1.2	6.0	19.0	46.0	83.0	0.5	6.0	36.8		
	+ %	131	534	254	240	132	40	8	919	240	180	} 83.6	16.4
	— %	100.0	99.6	98.8	94.0	81.0	54.0	17.0	99.5	94.0	63.2		
Massey College : 5th Decem- ber, 1938, to 9th March, 1939	+ %	4	27	50	157	192	134	83	81	157	409	} 16.5	83.5
	— %	0.95	2.0	6.0	20.0	35.0	57.0	75.0	3.2	20.0	44.9		
	+ %	416	1,267	757	616	351	101	27	2,440	616	479	} 83.6	16.4
	— %	99.05	98.0	94.0	80.0	65.0	43.0	25.0	96.8	80.0	55.1		
Veterinary Laboratory : 8th August, 1938, to 6th March, 1939	+ %	4	20	7	38	57	32	33	31	38	122	} 20.2	79.8
	— %	1.0	3.0	3.0	20.0	39.0	44.0	69.0	2.5	20.0	45.7		
	+ %	356	650	222	150	90	40	15	1,228	150	145	} 89.4	10.6
	— %	99.0	97.0	97.0	80.0	61.0	56.0	31.0	97.5	80.0	54.3		
Totals	+ %	8	67	60	210	280	200	156	117	210	636	} 15.5	84.5
	— %	0.9	2.2	4.6	17.2	32.8	52.5	75.7	2.5	17.2	44.0		
	+ %	903	2,451	1,233	1,006	573	181	50	4,587	1,006	804	} 85.1	14.9
	— %	99.1	97.8	95.4	82.8	67.2	47.5	24.3	97.5	82.8	56.0		

A very detailed interest has been taken in the Laboratory herd over the year. Owing to dryness and lack of feed the numbers had to be reduced, but since August, 1938, nineteen animals have been under constant observation. Cultural work has been carefully mapped against leucocyte assessment, and the results tally very well. Similar work has been carried out regularly in a clean herd owned by the Dairy Research Institute, and intermittently for some of the Ruakura cows and for St. Patrick's College animals.

In the Wallaceville herd Mr. Palmer-Jones reports a steady deterioration as regards quarters infected with staphylococci and streptococci.

	Staphylococci.	Streptococci.	Micrococci.
1938	Six quarters (7.9 %).	Six quarters (7.9 %).	..
1939	Eleven quarters (14.6 %).	Eleven quarters (14.6 %).	Two quarters (2.7 %).