

II. WALLACEVILLE VETERINARY LABORATORY.

REPORT OF C. S. M. HOPKIRK, B.V.Sc., OFFICER IN CHARGE.

During the past year appreciable progress has been made in the investigation of the various animal-disease problems. The full benefit of the additions to the building has been very apparent throughout the year. The institution of a biochemical section for analyses of blood and urine has been most useful, particularly in work on sheep diseases where upset of metabolism is the chief source of trouble. This report will deal with the activities of the staff not only in routine examination of specimens, but in the more specialized work on problems in animal ill health. It is mainly due to shortage of senior officers that feeding-trials and much other work cannot be attempted. The Hamilton Branch has done particularly good work in the examination of large numbers of routine samples of milk and blood and also in the assistance given to the officer dealing with dairy-cow diseases for that district.

The Laboratory lost the services of Mr. J. H. Motion, B.Sc. (Agric.), B.Sc. (Vet. Sc.), M.R.C.V.S., D.V.S.M., Animal Bacteriologist, in September, when Mr. Motion entered practice at New Plymouth. No appointment has yet been made in his place, but it is hoped that this will soon be brought about. However, the appointment of Mr. Peddie as Bacteriological Assistant relieved the situation, more especially as Mr. Peddie has had considerable bacteriological training in hospitals and also has his science degree. Routine work now largely falls on the shoulders of this officer. As far as is possible the staff is specializing each in some particular branch. At the same time each officer is expected to become conversant with all lines of work.

ROUTINE SPECIMENS.

The following is a short summary of routine and experimental specimens for the year examined at Wallaceville, Hamilton, and New Plymouth Laboratories:—

	Milk-samples.		Blood-samples, Contagious Abortion.		Composite Milk-supply for Bovine Tuberculosis.	
	Positive.	Negative.	Positive.	Negative.	Positive.	Negative.
Hamilton	1,917	2,791	260	452
Wallaceville	686	760	751	1,631	..	121
	2,603	3,551	1,011	2,083

Hamilton.—Cattle specimens: Sterility, 130.

New Plymouth.—Cattle specimens: Sterility, 736.

Wallaceville.—Cattle specimens: Sterility, 71; blackleg, 77; actinomycosis and tuberculosis, 19; others, 232. Sheep, 231. Pigs, 40. Horses, 11. Poultry, 63. Odds and ends, 252.

Wallaceville.—Biochemical: Cattle-blood, 104; sheep-blood, 408; urine, 58; others, 82: total, 642. Tumours: Epitheliomata, 100; endothelioma, 2; adenocarcinoma, 4; sarcoma, 3; leiomyoma, 4; osteoma, 1; chondroma, 5; papilloma, 4; fibroma, 10: total, 133.

Totals for Year.—Hamilton, 5,550; New Plymouth, 736; Wallaceville, 5,720: grand total, 12,006.

STERILITY IN DAIRY COWS.

There have been very encouraging developments in the work on sterility for the year. Messrs. Webster and Blake have given considerable time to the examination of bulls known to be normal and those from infected herds, and have demonstrated without doubt that the bull is a factor in the high percentage of temporary failure to conceive in certain herds. The seminal fluid is found to be infected usually in the early stages of trouble, mainly with a streptococcus of the viridans type. Later the morphology of the sperm head alters considerably, and these malformations have been found directly associated with breeding inefficiency; later still, histological work has revealed changes mainly in the testes, but occasionally in the accessory glands as well, which have reduced spermatogenesis and motility of spermatozoa. Considerable work has also been done on the pH of male and female genital secretions, showing that the alkalinity of the female is more conducive to continuous and increased motility than are the various secretions of the genital tract of the male.

Re-examination of the cervix and uteri of cows in affected herds has shown that there is an inflammatory condition of the cervix and that a streptococcus similar in its cultural and morphological characteristics is found in the cervix. Forceful treatment of the cervix with holding fluids has overcome the infection to a very large extent, and this line of treatment will be repeated in the coming season to find just how efficient it may be in controlling an outbreak.

ABORTION IN DAIRY COWS.

Mr. Gill, on his return from his study travels, brought back an excellent technique for examination of milk for *B. abortus*. This technique has been used since by the staff on composite supplies from herds where the milk is sold to the public, and in work on individual quarters to find what percentage of quarters are affected, the position of the agglutination test of wheys as against the *B. abortus* content, and the position of leucocytosis of milk as it may be affected by *B. abortus*. Some of this work is also being carried out at Hamilton. Where herds are suspected of having been responsible for cases of undulant fever, the routine examination of blood and milk has now been established to find just what percentage of abortion may occur in the suspected herd. It is as yet impossible to give any detailed information on the subject, but the work is proving interesting and of value. Where owners are willing to eradicate abortion from the herd blood-samples are being repeatedly examined from the cows, and the results are most encouraging. It is hoped to extend this service considerably.

Two hundred heifers in Taranaki have been used as an experiment to find whether intradermal vaccination is of any use as a preventative of abortion. Results will come to hand in due course, but other forms of vaccination with variously killed organisms have been useless in our hands.