REPORT ON WALLACEVILLE LABORATORY BY C. S. M. HOPKIRK, B.V.Sc., OFFICER IN CHARGE.

The year has seen considerable changes in both staff and buildings at Wallaceville. There is now in sight a team of workers for release on the problems presented by animal diseases as they occur season by season in cattle, sheep, pigs, poultry, and dogs, and there is also more accommodation for workers in their various spheres of activity. The new division of labour is based on the work of bacteriology, pathology and blood chemistry, and nutrition and dietetics. Field-work is in the hands of the Divisional Field Veterinarians and Stock Inspectors, and chemical analyses in those of the Chemistry Section. A new policy has also been inaugurated in the form of a permanent diagnostic laboratory at Hamilton for material from the Auckland Province, and in fitting up a room in New Plymouth for the use of officers on special investigational duties in Taranaki. The method of taking temporary fittings from Wallaceville into the field when necessary is also of great use, and will gradually be built up until such time as a motor laboratory can be financed.

Staff.

Mr. D. A. Gill spent nine months abroad, travelling through America to Great Britain, where he was greatly assisted by the Empire Marketing Board, and was able to visit the principal institutions in Great Britain and the Continent. He returned via South Africa and Australia, and in those countries also met the principal workers, so that the latest work from most parts of the world has been seen on the spot, and made known to the Wallaceville staff. The visits to big institutions in other countries has placed Wallaceville in direct touch with them, and the personal touch will no doubt prove very useful and beneficial to New Zealand workers in animal diseases. Increases in staff have been made as follows: Mr. T. A. Blake was appointed in place of Mr. C. V. Dayus (who became a District Superintendent) for investigation into dairy-cow diseases. Mr. J. Hill Motion was chosen in Britain to join the staff as Animal Bacteriologist. He was given six months travelling through the principal British and Continental laboratories before coming to New Zealand, so that he might obtain the latest information on cattle-diseases and on technique from older countries. Mr. Josland was employed as a Bacteriological Assistant, but owing to his knowledge of biochemistry he has since been given work in the new biochemical laboratory. The Officer in Charge has been appointed official correspondent to the Bureaux of Animal Health and Agricultural Parasitology.

Building Operations.

Four laboratory rooms and a library museum were added during the year. At the same time a storeroom was arranged and a photographic room built from two small converted storerooms. The acetylene plant was also extended.

Diagnostic Work.

Wallaceville Laboratory examined 6,457 samples and specimens during the year; Hamilton Laboratory, since its commencement in November, 2,073; and New Plymouth, 808—making a total of 9,338, against 9,347 for last year. Excluding milk and blood samples, 1,532 specimens have been examined in the three laboratories. 663 of these were received in sterility work in dairy cows.

Cattle-diseases.

Contagious Mammitis.—The greatest number of samples were, of course, received in connection with mastitis. This disease does not seem to increase or decrease to any great extent, being always present in all herds, but differing in virulence and amount in each herd. It is noticeable that in hand-milked herds there are fewer cases than in those herds milked by machine. Of the 5,332 milk-samples received for examination 2,318 were reported upon as being positive, while 3,014 were to all appearances normal. The examination of all samples of milk from herds for those owners who can appreciate the help which must be derived by this method of attack upon the disease is not being taken advantage of by farmers to the extent it might be at the Central Laboratory, but it is made much more use of at Hamilton, where many of the farmers can and do make an effort to visit the Laboratory and see for themselves how they stand from month to month.

Some doubt is exercising the minds of workers in mastitis as to the correct interpretation of a slight catarrhal condition of the udder. Is it the result of past streptococcal invasion or invasion by *B. abortus*, or is it due to continuous injury at milking? The problem being undertaken is one bearing largely on correct diagnosis where farmers are attempting to cull cows acting as carriers of the mastitis streptococcus.

Experimental work during the year was conducted on—

(1) Methods of diagnosis by skin test. Results negative.

(2) The effect of injections into the udder of (*a*) acid solutions, (*b*) specific dye, (*c*) treated culture of streptococci, (*d*) the streptococcus causing souring of milk.

(3) An attempt to raise the virulence of *Streptococcus lactis*, the result being entirely negative.

Contagious Abortion.—2,085 blood-samples were put through the agglutination test during the year. Of these, 1,404 were negative and 681 positive. A number of instances have been found where the blood-samples sent in just after the act of abortion have yielded a negative reaction, whereas those sent in some weeks later have been definitely positive. It is just such experiences which throw a test with known limitation into disrepute. It has been disappointing also to find how few owners will contemplate eradication of abortion from their herds. One must agree that prevention and eradication are somewhat difficult, but in breeding from pedigree animals it would seem to be a necessity where competition is so keen. With increasing undulant fever in man the time may come when eradication will be demanded, and it would seem advisable to attempt to organize some scheme of eradication in suitable districts to see just how practicable the scheme would be.