that the serum fatty acids of the rats fed on a fat-free diet are less unsaturated than those of the controls.

Summary. (1) The cholesterol and total fatty acids of the serum in rats fed on a fat-free diet were found to be lower than in control animals. (2) The iodine number of the serum fatty acids from rats fed on fat-free diets indicates that the fatty acids are less unsaturated than those of controls.

6858

Survey to Determine the Incidence of Bang's Disease in Minnesota Cattle.*

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Estimates of the prevalence of Bang's disease (contagious abortion) have been based on the results of agglutination tests that are available from laboratories engaged in the control of this disease. Such data do not give a true picture because the serum samples are from herds that request service. Usually testing is carried out only in herds in which there is reason to suspect the presence of Bang's disease. Also, retests of negative herds (from which the disease has been eliminated) tend to invalidate such figures as an estimate of the prevalence of this disease.

Reliable data on the incidence of Bang's disease are needed, not alone for obvious economic reasons, but also to provide a basis of estimation of the dependability of the agglutination method as a control measure for this disease. It has been shown,[1] by adequate experiments, that the test-tube agglutination test is exceedingly accurate with serums having either no specific agglutinin content or high agglutinin content (titre 1:250 or above). It has also been shown, however, that serums having a low to medium agglutinin content (titre 1:25 to 1:100) frequently give variable agglutination

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[1] Fitch, C. P., Donham, C. R., Bishop, Lucille M., and Boyd, W. L., *Minn. Tech. Bull.*, 1930, 73.

titres in different laboratories and in duplicate tests in the same laboratory. Therefore, it is obvious that the dependability of the agglutination method as a control measure, is inversely proportional to the percentage of animals having serums with low to medium agglutinin content (suspicious diagnosis).

We are attempting to obtain a more reliable estimate of the incidence of Bang's disease based on the total cattle population. The Minnesota State Live Stock Sanitary Board is cooperating in this work. The township has been selected as a representative sample of an area. At least 85% of the herds in a township are included in the study. The test-tube agglutination test, along with the age and as complete breeding history of the individual animals as can be obtained, form the basis of diagnosis. The agglutination tests were conducted in accordance with the standard adopted by the United States Live Stock Sanitary Association,[2] except that a wider range of dilutions was employed, namely: 1:25, 1:50, 1:100, 1:250, 1:500, and 1:1000. All the bovine animals in the herd are included in the study.

It is anticipated that at least 6 different areas in widely scattered sections of the state will be included in the survey. These areas are being selected to represent all of the different types of the cattle industry found in Minnesota. The work has been completed in 2 areas, namely: Oakdale Township, Washington County, and Deer

TABLE I.
Results of test-tube agglutination test for Bang's disease of cattle in two Minnesota townships.

Diagnosis	Oakdale Township Washington County		Deer River Township Itasca County		Total of both Townships	
Animals	No.	%	No.	%	No.	%
Negative	1936	86.0	875	93.9	2811	88.3
Suspicious	160	7.1	28	3.0	188	5.9
Positive	155	6.9	29	3.1	184	5.8
Total animals	2251	100.0	932	100.0	3183	100.0
Herds						
Negative	56	52.3	64	86.5	120	66.3
Suspicious*	16	15.0	7	9.5	23	12.7
Positive**	35	32.7	3	4.0	38	21.0
Total herds	107	100.0	74	100.0	181	100.0

*Herds with one or more suspicious animals but no positive animals.
**Herds with one or more positive animals.

[2] Report of 1931 Committee on Bang's Disease (Part I) of the United States Live Stock Sanitary Assn. *J. A. V. M. A.*, 1932, LXXX, n. s. 33 (3), 323.

River Township, Itasca County. The results are given in the accompanying table.

Results. Out of a total of 3,183 animals tested, 88.3% were negative, 5.9% were suspicious and 5.8% were positive. There were 181 herds of cattle with an average of 17.6 animals per herd. Of these herds, 66.3% were entirely negative, 12.7% had one or more suspicious animals but no positive animals, and 21.0% had one or more positive animals. Only one herd showed 100% of suspicious and positive animals. There were 13 animals in this herd, all more than 3 months of age.

These figures indicate that Bang's disease is much less prevalent, both in percentages of animals and herds affected, than has previously been estimated. Also, that Bang's disease does not usually affect all of the animals in a herd.

6859

Presence of Bact. Abortus Bang in Raw Milk, Butter and Ice Cream.*

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The milk ordinances of two municipalities were examined. One municipality required all milk sold as "raw" to come from cattle negative to the agglutination test for Bang's disease, while the other ordinance had no such requirement. Eighteen quart samples of milk were collected from the commercial distributors of each city, representing 17 dairies in one and 18 dairies in the other. Three to 5 cc. of gravity cream from each quart was inoculated intraperitoneally into 2 guinea pigs. The pigs surviving the inoculations were autopsied 4 weeks later. The spleen of each was cultured for *Bact. abortus* and the blood tested for agglutinins for this organism.

Bact. abortus was not isolated from any of the quart samples of milk from the 18 dairies in the city, the ordinance of which required raw milk to come from cattle tested for Bang's disease. Two guinea pigs, representing one dairy, died as a result of the inoculation before the end of the 4-week incubation period, so that satis-

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