

River, in New Mexico, or in the hills to the west of the Pecos River, where they could roam at will in their native elements, with plenty of good grass, it might prove a very instructive experiment. It might not do to turn sound cattle in with them at first, but, after the infected ones had recovered from the change in the climate, I do not think they would transmit the disease to the healthy cattle.

If my theory is correct, it is not likely that the calves would have pleuro-pneumonia, unless confined to the close, filthy stables where these diseases originate. My opinion is that, for the welfare of the cattle-owners, sanitary conditions should be strictly enforced, and animals kept clean, with plenty of ventilation, and a certain amount of cubic feet of pure air to each head of stock. We see such men as Bernard McFadden, of Chicago, and Sandow, of London, both consumptives, who are now amongst the strongest men of the times, and they claim that all that cured them was pure air and exercise. If those two things will do that for men, and it acted as it did to my own knowledge in New Zealand, on cattle, would it not be wise to try my suggestion and see if we cannot save some of these valuable dairy and beef cattle that are being destroyed. I believe that many would get better right here in Alberta's good climate. DAVE COLVILLE.

Alta.

Obstructed Milk Flow.

Editor "The Farmer's Advocate":

Of the many good things published recently in "The Farmer's Advocate," the seasonable series of letters on the common troubles of the cow at this season has been one of the best, and easily worth to any dairyman, particularly, ten times the subscription price. In fact, I would like to say just here that the paper stands in a class by itself. I have found no other farm paper to compare with it in practical value, arising from the fact, no doubt, that its staff are actually men of the farm, and in constant touch with its real problems. Knowing the needs of the stockman, the orchardist, and others, they are on the alert, and, of course, in a position to secure information of the most helpful sort, and readers can do no better service to one another than to contribute of their experience through its pages. That is why I liked the letters on the spring troubles of the cow, and how to avoid them, so far as possible. But these letters prove once more that the Wise Man of old was right when he declared that in a multitude of counsel there is wisdom. There is hardly any limit to what may happen, and no one has a monopoly of experience. So far as I read, none of these writers described an udder trouble just like the one which I noticed recently. The cow was in good health, vigor and condition, and dropped a healthy calf. Though apparently full, the udder and teats showed no sign of caking, nor, for a time, of any inflammation, but the calf could secure only a little milk, and that from one quarter. Hand-milking was equally futile. The cow's secretions were quite natural, but she was given a couple of doses of salts, and the udder was fomented with hot water, and rubbed with vaseline, but no milk could be extracted, and the udder became greatly distended. Finally, by the use of milking tubes, the veterinary succeeded in puncturing a curtain or growth which he said had formed underneath the gland, effectually preventing the milk from coming down into the teat, and, being so confined, was liable to cause septic poisoning. Drawing off the milk relieved the cow, but satisfactory recovery, as far as milking is concerned, is not looked for. Sometimes, it is said that the use of the tubes, persistent bathing, manipulation, and hand-milking, will bring the cow around for one season, but next spring the trouble will recur. In this case part of the udder caked, and the cow "lost her milk." Usually, owners are advised to dry up cows so affected, and turn them off for beef. No specific name was given the trouble in this case, though it was said not to be an uncommon trouble. It may be that other readers could throw light on its cause, and the advice of professionals as to its possible prevention would be appreciated. MILKMAN.

Stables Sucking Calves.

One of our subscribers, T. J. Viveash, being interested in the account of how Geo. T. Nichol reared his calves (having one cow suckle three), which appeared in the issue of March 30th, sent an inquiry to us asking if Mr. Nichol did not have trouble in getting his cows to breed while suckling calves. He had been told that so long as a cow was suckling calves she would not come in heat. The query was forwarded to Mr. Nichol, who answers as follows:

"In answer to T. J. Viveash's inquiry, whether we have any trouble getting cows in calf which are suckling calves, we find, after ten or twelve years' experience, that it is best to keep the calves stabled till the cows are served, which will usually be before the first of July, as some cows will not come in season when the calves run with them. We also think it is better for the

calves to be kept in until after that time, as they get better able to follow the cows, thereby insuring each its share of milk. We use caustic on the calves' horns when they are a week old to prevent their growth, and it may need to be applied twice."

THE FARM.

Fertilizers on Turnips.

Editor "The Farmer's Advocate":

Kindly allow me, through the columns of your valuable paper, to give the results of an experiment I conducted on turnips last season.

Having purchased a small quantity of fertilizers almost each season for the past few years, and many times experimenting with same, I was recommended by a friend to the Potash Syndicate, with whom I might co-operate in an experiment during the season of 1910.

The fertilizers were promised gratis, provided I would use them as directed, and keep a strict account of results obtained, and report same to the Potash Syndicate. This I agreed to do.

An acre of ground was chosen, and divided into three plots of one-third acre each. The plots received an equal application of barnyard manure. Plot 1 was unfertilized; Plot 2 received nitrate of soda, acid phosphate, and muriate of potash; Plot 3 was fertilized with nitrate of soda and acid phosphate. Except in regard to fertilizers, each plot received practically the same treatment. The land was plowed in the fall, and was ready for seeding on 22nd June, about eight or ten days later than the usual time for seeding. The potash and acid phosphate were applied on June 10th; the nitrate of soda was applied on July 15th. The crop was harvested on October 29th and 31st. The season was not a favorable one for turnips in this locality, owing to drouth from August 10th to September 7th, but I consider that 1,038 bushels of turnips of the finest quality would be an excellent yield under favorable circumstances. The actual results are given below:

Fertilizer applied per acre.	Yield per acre, bush.	Increase in yield over unfertilized plot, bush.	Value of increase.	Cost of fertilizer deducted.	Profit after cost of fertilizer deducted.
Plot 1 Unfertilized	767				
Plot 2 Nitrate of soda, 120 pounds Acid phosphate, 480 pounds Muriate of potash, 150 pounds	1,038	271	32.52	13.35	19.17
Plot 3 Nitrate of soda, 120 pounds Acid phosphate, 480 pounds	961	194	23.28	9.60	13.68

The turnips were valued at 12 cents per bushel. From the above results, we find that the increase in yield of Plot 3 over Plot 1 was 194 bushels, and the increase of Plot 2 over the unfertilized plot 271 bushels. The increase of Plot 2 over Plot 3 was 77 bushels, due to the application of 150 pounds muriate of potash. P. E. ISLAND.

THOS. WIGMORE.

Is Your Water Supply Safe?

Water is undoubtedly the greatest carrier of disease. There is always a definite relation between the death rate in a large city and the purity of its water supply. On the whole, it is safe to predict that those cities having the highest death rates have impure water supplies, while those cities with low death rates are sure to have pure water supplies.

Typhoid fever and intestinal disorders are the diseases most likely to be transmitted by polluted water. Excrements from typhoid patients are teeming with the bacteria which cause that disease. If, by any means, these excrements infect the water supply, that water, if drunk, will probably cause the disease. Typhoid outbreaks, whether on the farm or in the city, can usually be traced to a water supply which had become infected with sewage from typhoid patients.

There ought to be no question about the purity of the water supply on every farm. Unfortunately, a large number of farm water supplies are not safe, and are probably the cause of disease.

The United States Department of Agriculture, in co-operation with the Minnesota State Board of Health, made an exhaustive investigation of 79 carefully-selected typical farm-water supplies in different parts of Minnesota, with these results: (1) Twenty water supplies were good, and 59 were polluted. This pollution was largely due to careless or ignorant handling. (2) Of the polluted wells, 11 were so located that extreme care could not make them safe; while the others, with proper protection, such as good curbing, tight platform, and protection from surface-wash, could be made safe. (3) During the investigation, it was found that 23 farms showed a record of typhoid fever. The water on 18 of these farms was polluted, and was the probable cause of the disease, while on the other farms the cause of the disease could not be definitely located.

How can you tell whether your water supply is polluted or not? The following kind of well is safe: A deep-driven well, with tight curbing and platform, which is raised above the ground at least six inches to one foot. The ground slopes away from the well in all directions, so that no surface water can enter the pit. The well is located as far as practicable from the privy vault—100 feet, preferably more—and an equal or greater distance from barnyards, cesspools, etc.; and the drainage from these places should be away from, and not toward the well.

The following well is apt to be polluted: A shallow-dug well, curbed with rock or other material, with loose platform, allowing dirt and surface drainage to enter the well; located within a few rods of a privy vault, cesspool or barnyard, with the natural drainage from these places toward the well. Even if the natural drainage were away from the well, under these conditions, there would probably still be seepage from the barnyard, etc., into the well.

Make a careful survey of your water supply, and you can probably tell quite accurately whether it is safe or not. Do not send any samples of water to the Chemist of the Experiment Station, because he cannot make such examinations. However, if you are in doubt as to the purity of your water supply, send him an accurate and complete description of your well, and a rough sketch showing the location and distances between the well and farm buildings, barnyards, cesspools, vaults, etc. By means of arrows indicate the slope of land. On the basis of such information, all possible assistance will be given you.—Ralph Hoagland, Division of Chemistry and Soils, Minnesota Experiment Station.

COMMENT BY FRANK T. SHUTT, DOMINION AGRICULTURAL CHEMIST.

On the whole, the statements in this article are correct. There is ample proof as to the great menace to health of an impure water supply, and, though much publicity has been given in recent years to the danger in using for drinking and domestic purposes water contaminated with excretal matter, it is only too true there is still great apathy throughout the country towards this important question. We have too many shallow wells on the farm homesteads, and these, for the most part, situated dangerously near a source of pollution. Seepage and soakage find their way sooner or later into such wells, and the supply is polluted. It is seldom, indeed, that these wells can be made to yield pure water, and the better plan undoubtedly is to abandon them. One safeguard that is of considerable value is, at the outset, to line the well, say, to a depth of 10 feet, with several inches of good concrete. This insures, if surface-washing is kept out, a certain filtration of the water entering the well—a filtration that ought to have a purifying effect. But if there is no pure source available, as a spring or large lake, no doubt the best well is the driven or bored well, thoroughly protected against the entrance of surface and ground water.

It is impossible to say what may be a safe distance for a well from a barnyard, privy or other source of pollution. Drainage matter in some soils travels great distances, and there are many other factors to be considered before an opinion could be expressed as to the probable purity of the water in a well doubtfully placed.