

The New Public Health.

The Farmer's Advocate Bureau of Public Health Information.
QUESTIONS, ANSWERS, AND COMMENTS.

Conducted by Institute of Public Health, London, Ont.

[Questions should be addressed: "New Public Health, care of 'The Farmer's Advocate,' London, Ont." Private questions, accompanied by a stamped, self-addressed envelope, will receive private answers. Medical treatment for individual cases cannot be prescribed.]

The Farm Water Supply.

Water is absolutely necessary to the maintenance of life, and pure water aids towards a general state of good health. On the other hand, impure water may actually carry disease, if the disease germs get into it. In the cities and larger towns, it is the duty of the Board of Water Commissioners to see that the water supply under their control is safe for domestic use. To the person who lives in the country or small town where there is no public water supply, the question of the purity of the well or spring upon which he is dependent for his individual supply, becomes one of great importance.

The term, "pure water," as used here, means a water of good sanitary quality; that is, a water free from all kinds of animal contamination, and from disease germs. Animal contamination consists of drainage and washings from stables, hogpens, etc. For aesthetic and economic reasons, it is desirable to have a clear, colorless, soft water, for domestic use, but it is of far more importance, from a standpoint of health, to use a harder and more highly-colored water, if it be of better sanitary quality.

The two most common sources of water for individual supplies, are springs and wells. Upon the larger farms, the question of an absolutely pure-water supply is one that is often easily solved. In many instances, pure spring water is available. This is generally clear, often almost colorless, and is usually softer than deep well water.

Spring water can be pumped to a storage tank by means of an hydraulic ram. If a fall of water of 18 inches is available to supply power. This fall, or "head," can be increased by sinking the ram into a pit, if a drain can be secured to keep the pit free from water. With an increased head, the water can be forced to greater heights, and for longer distance from the spring. A hydraulic ram can be installed at small cost, it runs automatically and continuously, and therefore supplies a constant stream of water. Not the least of its advantages is that it requires but little attention, it being an exceedingly simple machine, and all of the wear being confined to two valves. If pumped to an elevated tank, the overflow water can be used to run a water-motor, and this used in many ways to save hand-labor. No set rules can be laid down to pro-

tect every spring from contamination, because each individual spring furnishes its own problem. A few general rules, however, apply to all cases. The stables, hogpens, and privy, should be located several hundred yards away from the spring, and should never be located on the slope above the spring itself.

A concrete wall built around the spring, extending several feet into the ground, and at least a foot above the surface of the ground upon the up-hill-side, will serve both as a collecting basin and to prevent surface wash from entering in stormy weather. Before the concrete has set, an outlet-pipe can be introduced in the most convenient place.

A tight board fence, or spring-house, will prevent cattle and dogs from wading in the water. It must be remembered that in lime-stone regions polluted water can travel many miles through fissures or crevices in the earth without receiving any purification. Therefore, in such a region, the purity of any spring-water should not be taken for granted, regardless of its distance from any visible source of pollution.

The deep well, with or without the windmill for power, is comparatively simple to keep pure. The principal cost is the cost of installation, for the power is free, and the cost of upkeep is slight. The well casing must be kept tight to prevent surface drainage from entering. The ground around the well should be kept clean, and, if possible, should be turfed. The windmill will pump large quantities of water, and if used continuously, will draw upon the ground water supply for considerable distances. All sources of contamination should be located as far distant as possible, although, with a sandy or gravelly soil, the most probable source of contamination would either be around the casing or through a leaky casing.

The real problem is that of the small farmer, with limited means at his disposal, who must rely upon the shallow, dug well, for his water supply. His work is hard, and his hours are long, and too often when buying a farm, he accepts conditions as left by the former owner, or when building a new home, plans to make everything compact, and thus save himself as many steps as possible. The result, in either case, is that the barn is located within a stone's throw of the house, and a privy, a well, and a sink-drain, are to be found somewhere between the two. All these we admit are necessary, and the problem is to have the greatest amount of convenience with perfect safety. The barnyard drainage, if from animals alone, does not constitute a serious menace to the health of the family from the dread water-borne disease, typhoid fever, which does not occur amongst animals. But it often happens that there is more or less human waste along with the barnyard drainage. The well should, therefore, have a water-tight wall of concrete extending for several feet under ground, and one foot above ground. The well platform should be made of concrete or tightly-fitting planks, with tongued and grooved edges, and fit the pump tightly, so that there will be no danger of waste water running back into the well.

The privy can be made safe and sanitary by many simple methods. The vault may be made of concrete, built high enough so that storms cannot wash the excreta out. Probably the simplest way to make a sanitary privy is the bucket method. Here a large, water-tight bucket, partly filled with dry earth, is employed, and each time after use, a scoopful of dry loam is thrown in. This tends to destroy foul odors, is not so attractive to flies, and has the advantage that it is very readily cleaned, which surely is one great disadvantage of the vault system. Every privy, re-

gardless of its type, should be carefully screened to keep out flies.

You may feel reasonably sure that if you are drawing your water supply from a dug well within twenty or thirty feet of the house, that any kitchen or chamber slops which are thrown into the yard will eventually find their way into the well. To what extent they are purified before reaching the well depends on the character of the soil through which they have to pass. Because a water is clear and cold and sparkling, is no sign that it is pure. You doubtless have heard people say: "There is nothing the matter with my well-water. My grandfather dug this well, and he and my father drank this water all their lives, and they both lived to be over eighty." But suppose this same man was induced to take summer boarders, and one young city man who was feeling "overworked," availed himself of the privilege of spending a vacation on the farm. Let us suppose his "overworked feeling" proved to be incipient typhoid fever. Then it might be several days before the doctor really decided what was the matter with him, and in the meanwhile his undisinfected typhoid wastes might have been contributed to the family privy, and from there to the well. As a result, probably some of the family would contract typhoid fever, and the only reason why the same thing did not happen in the grandfather's time was because no one happened to come along with the necessary initial case of typhoid.

It is well known that many country wells are improperly located, and poorly constructed, yet they are not an important factor in the spread of typhoid fever, because of the limited number of people who use any one well, and because any well must be contaminated with the discharges from a typhoid patient before it can cause the disease.

Every precaution should, however, be taken to make the individual well so safe that if any individual member of a family should develop a case of typhoid fever, there would be no danger of giving the disease to all of the users of the water supply. A. J. SLACK.

QUESTIONS AND ANSWERS.

Are there not places in Canada to which farmers may send bottles of water for analyzing? A. M.

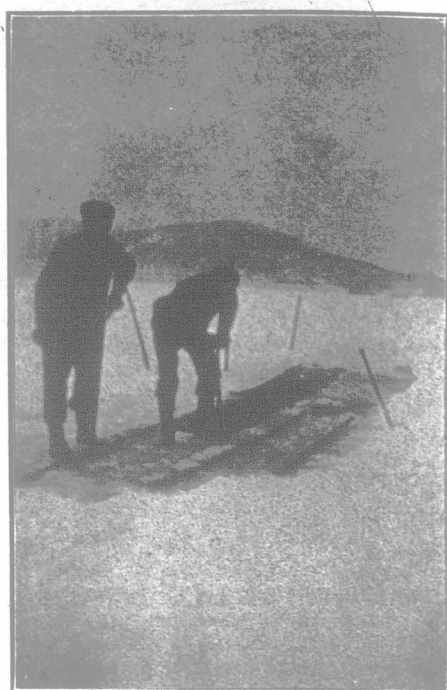
The Institute of Public Health, London, Ontario, is now ready to make analyses. Certain of these analyses are made free, i. e., if, in accordance with the rulings of the Provincial Board of Health, the samples are sent through the local Health Officer, but only if such analyses are for sanitary purposes. The proper bottles for collection may be had through the local Health Officer.

Analyses for other purposes, such as for the determination of iron, hardness, or medicinal qualities, etc., may also be made at the Institute, but in such cases a fee is charged. It is always well to write to the Institute for full directions before sending samples; also explain fully why you want the analysis; this saves mistakes and valuable time. Any questions relating to water supply, milk, or sewage disposal, etc., sent to the Institute, accompanied by a stamped, self-addressed envelope, will be answered free.

Examinations of sputum for tuberculosis germs, of cultures from the throat for diphtheria, or of blood for typhoid, are made free also, if the same are sent through the attending physician. The proper outfits may be obtained from the local Health Officer also.

H. W. HILL.

Note.—Analyses are also made in other places, e. g., at the Central Experimental Farm, Ottawa.—Ed.



Cutting the Hole in the Ice.

Smelt-Fishing in the Bay De Chaleur.

(By M. Mackenzie.)

It is with a chilly feeling that we sometimes read the accounts of the hardships and privations endured by the fishermen of Labrador; how, amidst snow, ice, and where the thermometer registers far below zero a great part of the year, the majority have to make a brave fight in order to exist, depending entirely on fishing for a living.

But do we ever stop to think of the hardships endured by those engaged in smelt-fishing during the winter season in our own Bay de Chaleur? Although we might say they have no deprivations in comparison with those of the people of Labrador, yet the work calls for a great amount of energy and drudgery; at the beginning, it involves considerable expense, and life is often risked in the attempt to set nets as soon as the fishing season begins.

The cost of one small net is no small item, but ranges from sixty to one hundred dollars, according to the size, the average being about sixty feet long, thirty-four feet wide, and twenty deep. Then two pickets forty to seventy feet long, and a brail, have to be procured; also a number of articles of minor importance. The nets being set usually in the middle of the bay, a break-wind about twenty-five yards long is absolutely necessary, for without such it would be impossible during a blizzard to fish; the opening in the ice would fill up with snow, and loss of the net might be the result.

Being several miles from shore, and having to remain on the ice a great part of the time, a roof over the fishermen's heads also is necessary, so they build little houses about eight feet by eight feet; a stove is placed therein, and on one side of the wall, two bunks made of boards, are fastened so they can lie down and rest when an opportunity presents itself. Necessary utensils for cooking, water, and food, are also taken from their homes once or twice a week, also wood and coal, for a fire is kept burning a great part of the time; and although they do not depend entirely on fishing for a living, being engaged in other occupations during the year, such as farming, lumbering, etc., yet many depend on a good run of smelts to meet current expenses.

The fishing season beginning before the ice makes in the Bay, those engaged in