

3. Ground barley with bran or shelled corn.  
4. A mixture of 20 pounds cornmeal, 20 pounds oatmeal, 20 pounds oil meal, 10 pounds blood meal, and 5 pounds bone meal. Change to corn, oats and bran when the calf is three months old.

5. Whole oats and corn chop, the latter gradually replaced by shelled corn as the calf develops.

Among the dairymen in the United States the mixture of equal parts whole oats and wheat bran is popular, as is a mixture of 5 parts oats, 3 parts bran, 1 part linseed meal and 1 part cornmeal.

After the calf has been taught to eat the concentrates readily from a box, feed only what will be consumed at one time. At six weeks of age a calf will eat in the neighborhood of  $\frac{1}{2}$  pound of concentrates daily. At two months about 1 pound, and at three months about 2 pounds. Silage, from well matured corn and free from mold, is a very good roughage. Roots cannot be excelled and should be supplied as soon as they will be eaten.

#### Scours in Calves.

Scours is one of the worst scourges of the young calf crop. What appears like the contagious form in the young calf herd is only an epidemic due to filthy utensils or unclean and unsanitary environments. The utensils, especially the pails, from which the calves are fed should be scalded after each feeding and exposed to the sun. Trouble when it appears can often be corrected by scalding the milk or feeding lime water up to one-third the total allowance of milk at each feeding. In every case the cause of the disease should first be determined and removed. Lime water is easily made by slaking some lump lime in water. The clear liquid standing at the top of the vessel, after the operation is complete, is the material required. So long as it is a saturated solution the lime-water will always be the same strength, for a quantity of water at a uniform temperature will combine with the same amount of lime in every case. Do not stir the sediment in the bottom when taking out the lime water, for the clear liquid at the top contains the desired properties. Another recipe often recommended is as follows: Powdered chalk, two ounces; powdered catechu, one ounce; ginger, one-half ounce; opium, two drams; peppermint water, one pint. Give a tablespoonful night and morning. It is well to first mildly purge the calf with two ounces of castor oil taken in some milk and after this has acted to give the cordial as recommended. There is usually some cause for the disease; either too much milk, dirty utensils, or hot and cold drinks fed alternately. First remove the cause.

Contagious or white scours is a more difficult trouble to combat. It is infectious and precaution should be exercised in cleaning and disinfecting the stable. As a remedy give the castor oil as previously advised. Mix one-half ounce of formalin with fifteen and one-half ounces of distilled or freshly-boiled water and keep in an amber-colored bottle to prevent chemical changes. The dose consists of one teaspoonful of the mixture per pound of milk for a young calf.

#### A Few Details in Summer Rearing.

Milk fed to calves from the pail should be as near the temperature of that drawn from the cow as it is possible to get it. In hot summer weather, however, the temperature might be lowered without bad results, but it should be fed at a uniform heat on every occasion. Changing from hot to cold drink is quite likely to induce digestive troubles. Cold milk at every feed is better than hot and cold fed alternately. Scald the pails after each feeding and leave them exposed to the sun. Also, scald frequently all utensils with which the milk comes in contact. Construct feeding stalls or stanchions so the calves may be fastened individually and obliged to drink from separate vessels. It is a bad practice indeed to allow two calves to poke their heads into the same pail, and even when one calf follows another in drinking from the same vessel, it is difficult to give each the required amount and to distribute evenly the contents of the pail, especially if it contains porridge as well as milk. Keep the calves in their stalls or stanchions until they have eaten some meal or roughage and will not suck each other when liberated. During the hot months of summer spring calves are better in the stable with the windows darkened and screened to exclude flies. Some fresh clover or green feed is relished when the young animals are so confined. If convenient, they should be allowed the run of a small pasture or paddock at night. Fresh water should be supplied frequently. It is a mistake to think that milk-fed calves do not require water.

## THE FARM.

### Rural Schools and the Public Health.

EDITOR "THE FARMER'S ADVOCATE":

The present great war is destroying life with amazing rapidity. In fact, the great leaders on each side are now estimating how long the war can last by calculating how soon the man power of the enemy will be exhausted or depleted. Our pacifists praise the blessings of peace and shudder at the horrors of war. Yet the death rate in our own and in the enemy's field force is not so terrible after all when compared with the death rate from preventable diseases at home. It is quite true that if war is prevented, the killing due to war will cease. But it must not be forgotten that very many of our peace casualties are equally avoidable if proper precautions are taken.

Indeed it is more lamentable to know that hundreds of thousands of deaths occur annually in every country

which are due to ignorance or neglect. Peaceful citizens, young children and babies are killed each year by infectious diseases; they are literally murdered by microbes, and never know or see what killed them.

We are impressed by the slaughter on the battlefields and in the trenches and are terribly shocked, but the needless loss of life in cities and villages hardly impresses us at all.

The war teaches us that we need to conserve our man power. Governments appoint conservation commissions to conserve our natural resources, that is to say, our trees and minerals, fishes and fur animals, birds and beasts. But there is no agency for conserving our health and life except the school. Boards of Health do a great deal for cities, but in the rural parts of our province, the school is the only institution capable of directing attention to the prolongation of life, preservation of health and prevention of disease.

For many reasons the country is supposed to be more healthy to live in than the city. But this is not always the case in reality. For example, over the whole of the United States, the city death rate is only slightly higher than the rural death rate, whereas in the State of New York the opposite is true. There the city death rate is actually lower than the rural death rate. In other words, a person has more chances of death in the country districts than in the cities of New York State. One of the reasons for this is the careful supervision of Boards of Health and a good water supply in cities.

#### Good Water.

In country places where people are dependent chiefly on wells, the typhoid fever plague is more common than in our most crowded cities. In mountainous districts, the wells seem so clear, the springs seem to pour forth beautiful water, and form the limpid streams so dear to the poet's heart, but it is precisely there that typhoid is a terrible scourge. The reason why shallow wells, springs and small streams are very dangerous is because any water coming from the surface of the ground is likely to contain disease germs. Surface water almost inevitably causes intestinal diseases, but deep artesian wells are usually safe, and so is rain water which has been kept free from pollution.

It is important, therefore, that wells should be properly located and built. Evidently, if a barn or stable be situated on a slope above the well, the well water will be contaminated by seepage from the refuse and manure. A well sunk in the stable itself will almost certainly be contaminated in this way. It is better to have a well located on high ground and away from stables or other outbuildings. A knowledge of proper hygiene in this respect is one of the practical methods of serving the public that the rural school can employ, for it is well known that the majority of farm wells are polluted by drainage. Careful surveys in the United States have shown that, on an average, sixty per cent. are so polluted and are endangering the health of the family.

It is strange that this lesson has to be taught in our modern rural schools, because the lesson was learned thousands of years ago by the old Romans, who knew that pure water is more necessary for health than large houses or good roads, although they did not have our modern knowledge of why impure water is bad for health. They did know, however, that it certainly was injurious and so spent huge sums in bringing water to their cities from uncontaminated sources. They were so sure of the fact that water from wells near which people lived was dangerous to health that they did not use water from the very river which flowed through the heart of their city. The Claudian aqueduct, built nearly two thousand years ago, rested on arches and stretched across valleys for scores of miles to carry the delicious water of the Latin mountains to the City of Rome.

Another nation that we usually despise as being backward and unprogressive, learned this lesson long ago, but instead of going to the trouble of building aqueducts, they merely use the water at hand and boil it before partaking of it. For instance, at Tientsin, in China, which is a large city with dirty streets and no proper sewage system, all waste matter and refuse is cast into the river. Furthermore thousands of Chinese boats lie anchored and serve as dwelling-houses for families, who live all the year round on the river. All their rubbish and disagreeable products are thrown overboard. The river, also, before it reaches Tientsin, passes hundreds of towns and villages and before it reaches the sea is yellowish brown in color and really poisonous. Yet the Chinese drink the water, but take the precaution of boiling it for a few minutes before use. Rich and poor place a few tea leaves in the water to make a good drink, but the boiling process is what makes it safe for human consumption. The boiling kills the microbes and the only microbe that is a good one is a dead one.

#### Pure Milk.

Another subject of instruction in rural schools that would be a great benefit to our rural people is a proper knowledge of the value of pure milk, both from the selling end and also from the consumer's point of view. Milk is such an important food that children are brought up entirely on it and convalescent patients are practically confined to milk as a food in a certain number of diseases, but to get good milk it is necessary to have healthy cows, free from diseases—of which the most common is tuberculosis. This is most prevalent in places where animals are shut up in barns that are damp, badly ventilated and insufficiently lighted. The fact that milk contains so much water makes it certain that impure water accessible to cows will inevitably contaminate the milk. Hence cleanliness is the lesson that must be thoroughly learned: Cleanliness in food and in the animal itself, in the milkers,

in the atmosphere, and in the utensils for containing the milk. In fact, extreme care in preventing dirt from coming in contact with the milk is the most essential lesson for farmers and their families to learn. The seriousness of allowing milk to be contaminated is known by studying the statistics of infantile mortality in our large cities during the summer when the conditions for growing microbes in the milk are most favorable.

#### Infectious Diseases.

But a knowledge of all infectious diseases should be learned at school. The most common, namely typhoid fever, scarlet fever, measles, whooping cough, mumps and diphtheria are all really dangerous diseases, although some parents believe that children have to have them, and that scarlet fever and measles are really innocent temporary troubles. On the other hand, these two are really very dangerous because they are apparently simple. There are many children in our schools suffering from weakened eyes because of carelessness after measles. There are others who suffer deafness as a result of measles or scarlet fever and in at least one case in Montreal, a young boy of fourteen is dangerously ill with Bright's Disease as a result of scarlet fever five years ago. Scarlet fever and measles are dangerous not only because four per cent. of cases result in death, but they are responsible for discharging ears, sore eyes, and other troubles. Frequently they are infectious before a rash appears and after it disappears. Yet all these diseases are preventable. Food, flies and fingers are frequently the carriers. It is clear, therefore, that if children in our rural schools were taught the danger of these diseases, many old superstitions would die and much suffering and many deaths would be avoided. The modern demand that preventable deaths should be avoided, that children should not suffer from ignorance, that medical inspection should be introduced into schools to remedy or prevent such evils, makes it quite clear that the rural school is the main institution from which will spread the doctrine of health and hygienic living.

#### Tuberculosis.

The necessity of living as much out-of-doors as possible and breathing fresh air is well known to most people and yet tuberculosis is very prevalent in our country districts. Nearly one death in every eight is due to this cause and many suffer all their lives through tuberculosis of the bones or joints. This is a house disease, and has been known for hundreds of years and is one of the oldest we know. Even Hippocrates, a Greek doctor who lived about 400 B. C., said it was the most common and most fatal. Our farm houses are worse ventilated than city homes, and this is the explanation of the prevalence of the disease in rural communities. It was frequently thought to be incurable and hereditary. But now we know that it is curable and that undoubtedly it is communicated to others by sufferers. It spreads among cattle in the same way as among human beings and is to be found in dark, dirty, badly ventilated stables or houses. Therefore, fresh air, sunlight and cleanliness will prevent the development or growth of this disease.

#### Care of the Sense Organs.

Other important subjects for rural school children to learn include the care of the eyes, ears, teeth and nails. Clean teeth practically never decay and there are well known precautions which practically eliminate the cause of tooth decay, which is so dangerous to health, and is the cause of many functional and organic diseases not previously attributed to bad teeth. Our eyes are so important to us that one would think we would take few chances, and yet carelessness and ignorance and wrong use of the eyes result in short sight, astigmatism, and other troubles that are likely to grow worse instead of better with a lapse of time. The care of the ears also is an important precaution,—more particularly because the whole of the ear is not seen. Ignorant interference with pins or other dangerous instruments is likely to cause irremediable damage. Even the frequent use of some kinds of oil is unwise.

It is needless to mention the hundred and one other troubles arising from ignorance of the ordinary laws of hygiene, but public conscience has eliminated the common drinking cup and other death traps.

There are many functions of parents that have been taken over by the schools, and of these, undoubtedly, instruction in the laws of health is one of the most important duties that has been assumed by rural schools. The subject is now provided for very well in our provincial course of study, and in the textbooks prescribed either for the use of the pupils or for the use of the teacher. And, when we are told that no fewer than four hundred thousand of the rural population in the United States are killed every year by preventable and infectious diseases, it is quite clear that there is no subject so practical or that will give such handsome returns for the time spent upon it. From this point of view the rural school is of tremendous importance to the welfare of the community.

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#### Hired Help.

EDITOR "THE FARMER'S ADVOCATE":

Many farmers will do without hired help rather than pay exorbitant wages to green hands from the cities and towns. From \$20 to \$25 per month and board is considered by many farmers to be as much as or more than inexperienced men are worth, and they are not willing to pay any more for that sort of help, although they are willing to pay from \$35 to \$40 a month