Soils and Crops

Address communications to Agronomist, 73 Adelaide St. West, Toronto

Deadly Germs Breed in Filth.

We want every reader of this colum to recognize the danger of filth-germ infection and adopt measures for the protection of animals. Similar precautions should be taken to prevent infection of wounds on man, for many a death occurs from blood-poisoning and tetanus (lockjaw) that might readily be prevented by prompt cleansing and disinfection of the wounded part.

A mischievous germ known as "Bacillus necrophorus" is present in all places contaminated by hog manure. This germ is the cause of canker of the mouth in little pigs; bullnose or snuffles, which distorts the bones of the snouts of swine and causes difficult, loud breathing in those animals, an intestinal disease akin to hog cholera and known by veterinarians as necrotic stomatitis, and the skin disease termed necrotic dermatitis of hogs.

This bacillus also causes the worst form of foot-rot in sheep and cattle; causes the tails of pigs and calves to drop off; makes black, scabby sores on the lips and legs of sheep; infects the hoof-heads of horses, causing the most severe form of boils or furunculosis. Then, too, it may invade little abrasions or lacerations of the teats of the cow, sow or ewe, and induce a serious condition that is difficult to cure, or even ruin the parts invaded.

To prevent diseases due to these germs, stock barns must be kept clean, sunny and perfectly ventilated, for all germs hate cleanliness, sunshine and oxygen; indeed, germs are killed quickly by the direct rays of the sun and by free action of the oxygen of fresh air; cheap remedies, surely. Dirty teats cause mouth canker in new-born pigs. Navels may also become invaded by germs and pus abscesses result. Feed must come from clean troughs and other utensils. Hogs fed ear-corn from dirt-covered yards contract necrotic enteritis, and getting the infected filth upon their bodies develop necrotic dermatitis, which causes sores and makes patches of skin slough off. The old filthy hog-wallow is a fertile source of such diseases.

Sheep wound their lips and muzzles eating dry or frozen corn-stover, then the Bacillus necrophorus gets in its work and causes sores.

All feeding-floors, pens and yards used by livestock on farms should, where possible, be made of concrete, so that they can be kept clean.

Test Every Egg Before Setting.

If there is one rule above all others to be followed in hatching, it is this: Test every egg before setting. Set only the eggs that are clear when held in front of the tester. Thirty-six hours after the eggs are put under the hens, test out all infertile eggs which look fresh.

It is not hard to tell which eggs are fertile and which are infertile. A yolk will show in the fertile egg, but it will look somewhat separated and to one side, and will resemble a half-moon in shape, though not distinctly. If you can see a yolk when you roll the egg in front of the tester lens, that egg is fertile and will probably hatch.

In a thin, white-shelled egg, such as a Leghorn egg, you can sometimes see a yolk in a fresh egg, but there will be a change after the eggs have been under the hen or in the incubator for a few days. If a thermometer is laid on the eggs in the incubator, the fertile eggs will have a higher temperature than the infertile ones. It takes more heat for infertile eggs, and if enough heat is applied to bring them up to the required temperature, the fertile eggs will be overheated. Hence the importance of testing out infertiles (which are cold eggs) at an early date. An infertile egg is not hurt by three days of incubation, but a fertile egg is spoiled for food purposes at this stage.

Set two or three hens at the same time you start the incubator, and as the infertiles are tested out of the trays, replace them with fertile eggs from under the hens. Trays should always be kept full of eggs.

In ten days test again, taking out all spoiled eggs, dead or weak germs, and replacing again with good eggs from under the hens. If in ten days the germ does not move freely in the shell of a warm egg, it is too weak to be saved, and will never live to hatch. Full trays of strong, live eggs will hatch strong chicks that, barring an accident, will live. It is a waste of time to care for an incubator one-half or one-third full of good eggs for three weeks (the rest being unhatchable). In the end there will be trays full of spoiled eggs, chicks dead in the shell, just pipped or half out; those that hatch may seem all right, but begin dying in two or three days with bowel trouble, for which the incubator is not to blame. The trouble comes from spoiled eggs left in the incubator. These eggs throw off a poisonous gas, destroying and weakening good eggs. There are often half-developed chicks which die in the shell. If not tested out, a single egg will poison an entire hatch.

To detect a dead chick, look for the red veins running from the germ to the different parts of the egg; if only a black blotch is seen, without red blood veins, it indicates a dead chick. In an egg subjected to ten days or two weeks incubation, a dead chick looks just like what it is—a big, black, lifeless body in the shell, when seen through the lens in the tester.

If the unhatchable eggs are tested out carefully with a tester which reports correctly, and the temperature kept between 103 and 104 deg., very few chicks will die in the shell at pipping time, and there will be no bowel trouble among the flock. That impure eggs left in the incubator will poison the good eggs, I have learned by actual experience, and almost all incubator people will bear me out in this assertion. With a good egg-tester the chick can be seen to move around in the shell, like a fish in water, after seven or eight days of incubation, provided the germs are strong enough to be saved. If the egg is warm and the germ does not move freely, reject it; the egg will never hatch.

Were these directions carried out, two incubators would be sold where one is sold to-day, as the only objections to the incubator would be removed, these objections being: Chicks die in the shell at pipping time, and of bowel trouble after hatching, which often takes the entire flock.

A little practice and experimenting will enable one to test out all infertile eggs in thirty-six hours after the egg reaches the temperature of 103 deg. Have a good egg-tester, with a magnifying lens attachment, which can be used in daylight. A pasteboard box with holes in it and a coal-oil lamp, which must be used in a dark, hot room, are only an excuse, as this tester does only part of the work necessary to a successful hatch.

People will never know what the modern incubator can do until they attend more carefully to this important feature of testing the eggs, in a reliable way. They will never be successful in hatching and raising strong incubator chicks, unless more stress is put on keeping the trays full of good eggs, during incubation. A poor hatch means poor chickens, which, if grown to maturity, will be unprofitable.

Hogs

There are many ways of destroying the lice which are sure to be present wherever hogs are, unless some effective measure is adopted to prevent. We used to think that if we could once eliminate them entirely we would be free from them ever after but the job of eliminating is still going on. I sometimes thing they may be a blessing in disguise, for in the process of destroying or preventing them, the hog's body and his bed gets a renovating that, in the absence of such an instigator, might be neglected. It matters little the method one uses, just so he gets the lice. I have tried the dipping tank, and found it effective but almost impossible to get the hogs through it after the first experience. I have seen dozens of patent hog oilers in operation, and where one of them has been giving service the other eleven have been dry. Some people fix a rubbing post and wrap it with gunny sacks which are saturated from time to time with dip or oil. I find an ordinary watering pot with the holes in the nozzle enlarged with a small nail, and a can of good coal tar dip handy to the water supply about the easiest and surest method. One can do a thorough job in a good-sized herd of hogs in less time and with less effort than it would take to put one willful pig into the dip tank, or clean up and reload one patent hog oiler. I like to go over the shoats while at the trough, or in a close pen. The big heavy hogs will flog down to rub themselves when the dip begins to bite and give one a good opportunity to do a thorough job.

Most sinners are cynics, and most cynics are sinners.

Smoke

OLD CHUM

The Tobacco of Quality

½ LB. TINS—and in p'k'gs.

THE SUNDAY SCHOOL

MARCH 5

Jehovah's Mercy to a Heathen City, Jonah 3: 1-10 Golden Text—Isa. 55: 7.

Lesson Foreword—It is difficult to say exactly when the Book of Jonah was written, but all the evidence points to a date after the exile, that is, after B.C. 586. This book deals with Israel's attitude toward the heathen. The Jews seemed never to be able to adopt the proper religious attitude towards their heathen neighbors. They prided themseives on having the knowledge of the true God, Jehovah, and on being his peculiar people, but on the other hand, the heathen still ruled the earth. This proved a stumbling-block to Jewish faith and created a bitter and intolerant spirit toward other nations. In the story before us Jonah appears as the type of his narrow and exclusive nation, as a good Jew who refused at first to preach repentance to Nineveh because they were his heathen enemies, but when in the end he was forced to do so he saw that the gospel "works" in Nineveh as well as in Israel. Thus the purpose of the book was to lift the Jewish nation to a higher viewpoint where they could see that the one God is the creator of the heathen as well as of Israel.

I. Warning, 1-4.

V. 1. **Jonah;** is the hero, but not necessarily the author of the book. It is nowhere said that Jonah himself wrote the book. There was a prophet by this name in the reign of Jeroboam (2 Kings 14:25), but as he lived long before the events described in this book, he could not have been the hero of our story. **The second time.** The first command to preach to Nineveh is given in ch. 1:2. Jonah disobeyed this command because he feared the effect of preaching repentance to Nineveh; the Ninevites would repent and the Lord would have compassion on them, whereas Jonah preferred to see them destroyed. The punishment recorded in ch. 1, however, brought him to his senses, and this time he obeyed.

V. 2. **Nineveh;** the capital of the great Assyrian Empire was situated on the eastern side of the Tigris, northward of the Greater Zab. Under Sennacherib the city was greatly enlarged, strengthened and beautified. "All the spoils of Asia were lavished on its adornment and fortification; pure drinking water was introduced into it in place of the rain water on which the inhabitants had depended; and stately palaces arose in the neighborhood of the Tigris." "Its markets were thronged with merchants and traders, and its library was stored with thousands of clay books" (Sayce). Nineveh fell in B.C. 607, before the Medes.

V. 3. **An exceeding great city.** The Hebrew means literally "great for God" that is, great even according to a divine standard. The city occupied about 1,800 acres and was surrounded with walls surmounted by towers and pierced with gateways. These walls rose to a great height and were in circumference about 7½ miles. **Of three days' journey.** The reference is to the diameter rather than to the circumference. It required three days to go through the city from one end to the other.

V. 4. **A day's journey.** Jonah had penetrated almost to the heart of the city when he began to preach. **Yet forty days,** etc. The Ninevites were not told the reason for this startling announcement but they would feel instinctively that the reason lay in their sinfulness. "For this teeming humanity he claims the universal possibility of repentance,—that and nothing more" (G. A. Smith).

II. Repentance, 5-9.

V. 5. **The people of Nineveh believed God.** They believed that God would carry out the threat and so they repented. Notice that their repentance was immediate and all-inclusive. The Ninevites contrasted favorably with the Israelites who had many prophets and a long term of grace and yet had not fully repented. One main point in the story is that the knowledge of Jehovah awakens an instinctive response even among the heathen. **A fast . . . sackcloth.** These are the outward signs of grief and self-abasement. The people of the East show their feelings with far less reserve than we do.

V. 6. The report of Jonah's terrifying announcement penetrated into the royal palace so that the king also repented and abased himself. **Sackcloth** was a rough cloth made of the hair of camels and goats. It was worn in times of great trouble such as mourning for the dead, and along with fasting was a visible expression of penitence as here. (See 1 Kings 21: 27; Neh. 9: 1). **Ashes;** were also used to express mourning and penitence. They were thrown up in the air so as to alight on the head and sometimes the penitent or mourner sat on them (see Job 2: 11). That the king himself should have repented so deeply shows the profound effect Jonah's preaching had on Nineveh.

Vs. 7, 8. Not content with merely setting a precedent, the king, by his edict, commanded a national repentance. As head of the state he was in charge of the religion of the state and could enjoin or modify religious observances. Even the domestic animals were to have a part in the general repentance, and were to be denied their fodder and drink. Herodotus alleges that the Persians made their animals share in the mourning customs. The Ninevites were instructed by the edict that they were first to pray that the calamity should not come upon them and then they were to amend their **evil way**—their general sinfulness—and **the violence that is in their hands;** the social oppression that was practiced among them, such as the maladministration of justice or the pilfering of the poor by the rich.

V. 9. These people who stood outside the covenant with Israel had a conscience, and that conscience, once awakened, told them that God was under no obligation to spare them from the deserts of their wrongdoing.

III. Forgiveness, 10.

One of the leading ideas of the book of Jonah is that God is full of compassion not only for Israel, but also for the heathen. The faintest trace of repentance on the part even of the heathen softens God's heart and causes him to turn aside from the punishment that should have been meted out for their sin.

Jonah was indignant that his preaching had awakened the Ninevites, his nation's foes, to repentance, and that as a consequence God had spared them, and in his anger he quit the city. God caused a gourd to grow and shelter him where he sat but the gourd soon withered and died, and Jonah was thrown into grief at its decay. His foolish grief provided an occasion by which God could teach him the real significance of his pardon of the people of Nineveh. If Jonah had shown so much concern for a short-lived and comparatively worthless gourd, would not God show a far greater concern for a whole city of living men and women, even though they were heathen? Jonah typified his narrow, prejudiced, Jewish race who were anxious to keep the knowledge of their God to themselves, but God shows him here that his compassion is not for Israel only, but extends to all men, even to the heathen and to Israel's enemies. The book of Jonah was, therefore, an ancient missionary tract.

Application.

1. **The sad fate of the Book of Jonah.** This marvellous and tender book of Jonah has suffered ridicule and contempt because it has been so pitifully misunderstood.. It has been thought that the chief value of the book lay in the amazing story of the sea monster that swallowed the prophet, but this is like setting a higher estimate on the box or case containing the jewel, than on the jewel itself.

The jewel in the book of Jonah is the truth that God, the Creator of the ends of the earth, was concerned not only with the Jews, but with all men and nations, regardless of their beliefs and customs. He takes up all men in his fatherly and loving embrace Ninevites as well as the children of Abraham Read the last touching verse in the book.

2. **The book of Jonah is thus an anticipation of the wide sympathy of Jesus.** Luke has preserved for us the immortal parable of the Good Samaritan. Whom did Jesus commend in this parable? Certainly not the "priest," or the "Levite," but the outcast "Samaritan." Thus the Master protested against the narrowness, intolerance, and blindness of his own fellow-countrymen, and endeavored to show them that God cared for sincerity and human service wherever he found it.

Jonah himself was petulant, bitter, actually sorry that the foreigners—the Ninevites— were repenting under his preaching. The Lord was compelled to reprove him for his frightful intolerance and pettiness, and to show him that there was "a wideness in God's mercy like the wideness of the sea." Thus the book of Jonah is a powerful missionary book, its aim and purpose is to reveal God's love for all nations and peoples.

THE CHILDREN'S HOUR

Honesty Wins.

At School of the Woods a great competition was in full swing. The head teacher, Miss Browne, had, one month previous, received a letter from Sir Stephen Langton stating that the best composition written on "A Bird's Life" would be rewarded with $500 and a gold medal. Of all the girls, Roseleen Monarch was the most excited, for composition was her hobby. Immediately the girls set to work with great energy.

The rules were few, but strict. Each girl must not get help from another. Each competitor must every night keep her composition in her desk, securely locked.

Roseleen at once hunted up books on the subject. Her intimate friend, Lenore Gray, found it hard to keep from dropping hints of what her essay contained.

Roseleen's and Lenore's only enemy in the school was a sneaky, shy girl about one year old than the two. She was Rose Green, who hated Roseleen for her riches, pretty clothes, and because she was the school's favorite. Lenore was disliked by Rose because she was Roseleen's bosom friend.

It was the day before "Competition Day." Roseleen went to her desk in the schoolroom, locked up her composition and went away after exchanging a few words with Miss Browne, who was busily piling books inside of the schoolroom cupboard.

A few minutes after she left, the lean face of Rose peeped in the door. She glanced hastily around and, as Miss Browne was inside the roomy cupboard, completely hidden, gave a sigh of relief. Immediately she went to Roseleen's desk, unlocked it with a duplicate key, took out the precious essay, and soon had copied it all out in an old work book. Miss Browne had seen it all and she gave a gasp of amazement. At first she decided to tell her assistant and get advice, but on second thought she knew it would be wise to keep the news to herself until after Rose's competition had been read next day.

Next day dawned bright and clear. Only a few lazy, fluffy clouds hung over the surface of the sapphire sky. At half-past two the compositions were to be read before an assembled crowd. Soon after two o'clock Roseleen, wearing a dainty, simple muslin dress, went arm in arm with Lenore down to the auditorium. Then Miss Browne rang the bell and the first girl called read her essay. All this time, Rose, in the waiting room, was copying down and adding to her notes as the other girls read. When Roseleen read the applause was great. She went blushingly down the aisle to where Lenore was sitting. Then she whispered to Lenore: "Oh, I hope I get the money. Jennie, the gardener's daughter, is almost blind and the $500 will just cover the cost for an operation.

Then came Rose's turn and the applause was deafening. She cast a triumphant glance at Roseleen, who smiled back in congratulation. Of course the people expected Rose to get the prize, but just then Miss Browne in a clear voice called order. She told of what she had seen and the audience murmured against the sneak.

The prize was then given to Roseleen and the cheers circled, echoed and re-echoed through the room for her.

Meanwhile Rose was hastily taken from the school by an angry and indignant mother and was seen no more at School of the Woods.

Two weeks later Jennie was taken to a specialist, the operation performed, and she recovered her sight, much to the joy of Roseleen.

"Oh, I'm glad I won the prize. If I hadn't Jennie would still be blind," said Roseleen, a month later.—Florence Dare.

Red cedars and apple orchards are poor bedfellows. Cut out red cedar windbreaks around apple orchards, unless you want rusty apples.

The man who is bothered with his horses gnawing the mangers should go to the drugstore and get some horse rosin. Put some in the feed box and pound it to pieces with a hammer. A few feeds will cure the horse.

The Leading Life Company of the Dominion

1921

THE MOST PROFITABLE YEAR IN THE HISTORY OF THE COMPANY

Results for Year Ended 31st December

ASSETS	$129,372,127.33
Increase for year	14,532,682.85
CASH INCOME	31,107,149.16
Increase for year	2,355,570.73
SURPLUS over all liabilities and capital	10,383,909.10
Increase for year	2,019,241.95
PROFITS paid or allotted to policyholders	1,849,089.95
PAYMENTS to Policyholders, Death Claims, etc.	11,967,069.62
ASSURANCES IN FORCE	536,718,130.53
Increase for year	50,076,895.36
NEW ASSURANCES issued and paid for in cash	90,030,035.66

SUN LIFE ASSURANCE COMPANY OF CANADA

HEAD OFFICE MONTREAL