

## AGRICULTURAL.

September.

All golden in the autumn sun  
The waving cornfields shine;  
Purple and full of ruddy juice,  
The grapes hang on the vines.  
A blessing hovers in the air,  
As Earth, from toil released,  
Holds, with a hush upon her face,  
Her sweet Communion feast.

### Smut on Wheat.

F. S. Goff writes from Wisconsin:—Two distinct species of smut attack wheat. In "black smut" the entire head is changed to a black dust. In the "stinking smut" or "bunt" the smut is inside the kernel. In order to have a crop of wheat free from smut, both the soil and the seed must be free from smut spores. Wheat should not therefore follow a smutted crop of wheat for one, or better for two or three years, and manure from the straw from or from stock fed on smutted straw or grain should not be used on land intended for wheat. Seed wheat known to be free from smut may be safely used without treatment; otherwise the seed should be treated before sowing.

For the treatment dissolve ten (10) pound of sulphate of copper, also known as blue vitriol and blue stone, in eight (8) gallons of water placed in a tub of convenient size. As this substance dissolves rather slowly it is well to add it to the water the day before it is desired for use. Pour as much of the seed wheat into the solution as the liquid is able to cover readily, and stir until every kernel has become thoroughly wet. Whatever rises to the surface should be skimmed off. Then pour off the solution into a second tub, and spread the wheat on a floor to dry. More grain may then be added to the solution and the process repeated until all has been treated. The grain should not be permitted to remain in the solution longer than five minutes.

It has been found that the treatment here described injures to some extent the germinating power of the seed, and experiments have shown that if wheat thus treated is afterward immersed for a short time in lime water, this damage is largely averted. It is recommended, therefore, that all wheat treated to the solution of blue vitriol be sprinkled with air-slacked lime as it is removed from the liquid, and then shovelled over sufficiently to thoroughly coat each kernel with the lime dust this will prepare the grain for sowing without much further drying. If the slacked lime is not at hand hand-plaster or road-dust will hasten the drying equally well.

As the wheat will swell somewhat in consequence of being wet, the amount sown per acre should be slightly increased.

### About Sheep.

Preparing early lambs for market is a profitable business where facility for shipment is had and the farmer understands how to handle them. In March last dressed lambs weighing thirty pounds sold in the Toronto market for \$12 each. The price indicates that such carcasses were very scarce. In this, as in all kinds of animal farming, there is a chance to get good pay for individual skill, intelligence, and energy. There is always room on the upper shelf of farming. The year 1893 will soon be here and the large cities present a great market for all the finer grades of farm produce. Don't try to compete in the production of the coarser products. The men who never think out a profit, but rather starve it, hold that ground, and you can't compete with them in the production of poor butter, poor mutton, and poor grass. The best profit is made in the production of an article where there is a chance to sell skill. There is a splendid chance for profitable study along these lines.

In handling sheep the three prime objects are wool, mutton and lambs. Upon the character of the first will depend the character of the last two. If we breed for fine wool, our mutton and lambs for market purposes will be inferior. The logic of hard events seem to indicate that the best policy is breed for medium open wool and a heavy mutton carcass. Canadian farmers have a great many things to learn in the successful handling of mutton sheep. The business needs special study and special intelligence.

Turnips and sheaf oats make a cheap and excellent combination for the winter feeding of sheep. A young man with small capital, starting into the business of farming, could hardly do better than to get some cheap land, stock it with 200 or 300 good mutton sheep, and put in these two crops for feeding. With his own labor he could grow and store enough of this forage to carry such a flock, and would get better pay for labor and better interest upon his capital than in almost any other way.

In no manner does system in English agriculture show to better advantage than in the management of sheep. Flocks are restricted to a given area, instead of being allowed boundless range. The sheep are confined within certain limits by hurdles, which are advanced daily. Thus they are given at one time only so much land in grass as they can eat off clean, and when through with that space they have thoroughly manured it, so there is waste neither of grass nor of manure.

### The World's Largest Creamery.

Ten thousand pounds of butter daily. This is the wholesale way in which the largest creamery in the world turns out the golden product that melts with delicious flavor on your hot tea biscuits.

Within a radius of twenty-six miles from St. Albans, Vt., are forty-four separator stations, where the dairy farmer leaves his milk for the Franklin County Creamery Association. After the cream is separated from the milk it is shipped by rail in special cars to the creamery at St. Albans, and by undergoing various interesting processes is transformed into butter.

The building is three stories high, with about 9000 square feet of floor surface, situated on the main line of the central Vermont Railroad. In the cellar are a 40-horse-power engine, boiler-room and tanks for buttermilk. The first floor is devoted to receiving, separating the cream, churning, working, packing and whipping. In the second story are the cream-rooms, with ten large tanks holding 600 gallons of cream apiece; testing-room, offices and living-room of the help. The third story is given over to storing tubs, salt, boxes, etc. The association is a joint stock company, with a

capital of \$100,000. The Hon. J. Gregory Smith is President. It was organized in October, 1890, and commenced operations in November.

When the cream reaches the creamery it goes into a receiving tank on the first floor; from there it is pumped into storage vats in the second story, where it is "cured." Then it is ready for the churn, and is sent through a pipe into the churning-room, where ten square-box Blanchard churns are almost constantly at work. Each churn churns 500 pounds of butter at a time.

When the butter is taken from the churn it is sent to the working-room, where four Mason power-workers are revolving. This is a novel sight. A round table about eight feet in diameter revolving under two conical rollers, also constantly turning, while between the rollers and the table is an inch of butter. Over each worker is a pan of ice and salt to cool the eighty pounds of butter on the table. There is a man in charge of each worker, who works in the salt with a paddle and sees that the buttermilk and brine are thoroughly pressed out.

Then it is taken to the packing-room and put into different sized packs, from ounce prints to fifty-pound tubs, as the trade demands. The butter is next taken to cold storage, and, when ready for shipment, is marked in the refrigerator-room by the shipping clerk and put into a refrigerator car, thus reaching Boston and other New England cities without any change in temperature.

There is a fascination in watching the work of the chemist, George H. Clafin, a graduate of the University of Vermont in 1890, by which he tells how much the milk of the different herds is worth. At the various stations are cases of pint jars, each jar having a tin tag with two numbers, one to designate the station and the other the farmer. Four times during the week the man in charge of the station puts in the patron's jar a small sample of each herd's milk, and at the end of the week sends the jars to the laboratory for analysis.

Mr. Clafin carefully measures a small quantity of the milk into a flask, adds acids to take out the curd, and puts it into a centrifugal machine to bring out the butter fat. After revolving for a few moments at a thousand revolutions a minute, the butter fat has risen into the neck of the flask, where the percentage can be read easily on a graduated scale. The average of butter fat in their milk is a trifle under 4 per cent., but the extremes are 3.25 and 4.75. This method determines almost absolutely the butter-making qualities of a herd and will raise the standard of cows wherever it is followed, as no dairyman will continue to keep cows that yield poor milk. Mr. Clafin and his assistant make about 150 tests a day, following the method recommended by the Vermont experiment station.

To show the accuracy of these tests Mr. Clafin instanced a special one recently made, where the test indicated that a certain amount of milk would make 47.7 pounds of butter. It made exactly 47.8 pounds. When the percentage of butter fat in a farmer's herd is determined, he is credited with a number of pounds of milk of such richness. Figures talk, and a few statistics will speak most eloquently of the mammoth proportions of the Franklin County Creamery Association.

The milk of 12,000 cows is made into butter at this creamery; 10,000 pounds of butter is the average daily product; it takes 400 tubs to hold this product; a car-load of salt is used every two months; 60 hands are employed by the association.

"The only trouble we have had thus far," said Mr. Deal, the manager, "is to make enough butter to fill our orders. Butter-buyers tell us that the more we can ship them the better. We now take the milk from about 700 farmers, and are gaining right along. Last month we gained 130 farmer patrons, and hope soon to reach our capacity of making 20,000 pounds of butter a day."

### Valuable Experience.

Editor *Forest and Farm*: I have sown rye in my corn for several years past. I sow it by hand, and cover it at the last working of the corn, the latter part of July. I sow a bushel per acre and use a one-horse cultivator with small shovels for the last working so as to leave the ground as level as possible.

I think it helps to keep down the weeds, and the land is not exposed to drying winds or hot sunshine after the corn is cut; nor is it so liable to wash with heavy rains.

I think the above considerations would pay expenses if there were no others. The other objects are the large amount of seed available for two or three weeks before pastures are ready in spring, and the amount of fertilizer afforded both by the droppings of the animals fed, and the residue of roots, etc., not available for feed, left in the soil.

Last fall I turned 350 sheep into fifteen acres of corn and rye and let them harvest the crop and received fair returns for the crop, besides a manifest improvement in the land.

S. O. Y. GURNEE.

### How to Handle a Gun.

Having been asked by friends frequently for advice for their boys in handling guns, a writer in *Forest and Stream* sends a digest of the same. As the shooting season is now on they are worth publication:

1. Empty or loaded, never point a gun toward yourself or any other person.
2. When a field, carry your gun at the half-cock. If in cover, let your hand shield the hammers from whipping twigs.
3. When riding from one shooting ground to another, or whenever you have your gun in any conveyance, remove the cartridges, if a breech-loader, it being so easy to replace them. If a muzzle-loader, remove the caps, brush off the nipples, and place a wad on nipple, letting down the hammer on wads—simply removing caps, sometimes leaves a little fulminate on the nipple, and a blow on the hammer when down discharges it.
4. Never draw a gun toward you by the barrels.
5. More care is necessary in the use of a gun in a boat than elsewhere; the limited space, confined action and uncertain motion making it dangerous at the best. If possible, no more than two persons should occupy a boat. Hammerless guns are a constant danger to persons boating.
6. Always clean your gun thoroughly as soon as you return from a day's sport, no matter how tired you feel; the consequence of its always being ready for service is ample return for the few minutes' irksome labor.

Half a lemon dipped in salt will do all the work of oxalic acid in cleaning copper boilers, brass teakettles and other copper or brass utensils.

### A NIGHT WITH THE WOLVES.

Many years ago I took my family to Wisconsin, and located myself in the woods, about ten miles from the nearest settlement, and at least five from the nearest neighbor. The country round was mostly forest; and wild beasts and Indians were so numerous in that quarter, that my friends at the East, to whom I gave a description of my locality, expressed great fears for our safety, and said they should be less surprised to learn of our having all been out of, than to hear of our still being alive out there at the end of a couple of years. However, I did not feel much alarmed on my account—and my wife was as brave as a hunter; but then we had three children—the oldest only ten—and sometimes, when I was away from home, the sudden growl of a bear, the howl of a wolf, or the scream of a panther, would make me think of them, and feel quite uneasy.

For a while, at first, the night-screaming and howling of these wild animals alarmed the children a good deal—and sometimes my wife and me—especially when we mistook the cry of the panther for an Indian yell; but we soon got used to the different sounds, and then did not mind them so much; and after I had got a few acres cleared around the dwelling, they generally kept more distant at night.

One bitter cold morning—the ground being deeply covered with snow, so crusted and frozen that no feet could sink into it—I brought out the horse for my wife to ride to the nearest settlement, where she had some purchases to make, which she wished to attend to herself. Besides being well muffled up in her own clothing, I wrapped a large buffalo robe around her; and admonishing her that the woods were full of danger after dark, I urged her to be sure and get back before sunset, which she promised to do.

All day long, after her departure, from some cause for which I could not account, I felt very much depressed and uneasy, as if something evil were going to happen; and when I saw the sun about half an hour high, and no signs of my wife returning, I got out my pistols, rifle, ammunition and hunting-knife, saddled a young and rather skittish colt, and bidding the children keep within doors, and the house safely locked, I mounted and rode off to meet her, which I expected to do at every turn of the horse-path.

It was just about dark when I saw the lights of the town gleaming in the distance; but before I reached the place I met my wife hastening homeward—she having been unexpectedly detained. I was greatly rejoiced to find her safe and unharmed—but not a little puzzled to account for my presentiment of evil, which it appeared to me had taken place without cause.

We now set off at a brisk trot homeward—through a dense, dark, gloomy wood, which lined our way on either side—and had safely proceeded about five miles, when we were somewhat startled by a series of long, plaintive howls, at a considerable distance, and in different directions, and which our experience told us were wolves, seemingly calling and answering each other through the great forest.

The wolves of this region were of the larger and fiercer species; and though ordinarily and singly they might not attack a human being, yet in numbers and pressed by hunger, they generally were at this season of the year, I by no means felt certain that we should not be molested. Accordingly we quickened the pace of our horses; and as we hurried on, I grew every moment more uneasy and alarmed, as I noticed that many of the sounds gradually approached us. We had just entered a deep hollow, where a few large trees stretched their huge branches over a dense thicket, when suddenly there arose several loud, harsh, baying and snarling sounds close at hand. The next moment there was a quick rustling and thrashing among the bushes; and then some six or eight large wolves—lean, gaunt and maddened with hunger—sprang into the path close beside us.

This happened so suddenly and unexpectedly that my wife gave a slight scream and dropped her rein; and the horse, rearing and plunging at the same moment, unseated her; and she fell to the ground, right in the very midst of the savage and howling beasts.

Fortunately, her sudden fall startled the wild animals a little; and as they momentarily drew back, she, with rare presence of mind, at once gathered her buffalo robe, which she had dragged with her, in such a manner about her person as to protect herself from the first onset of their fangs. The next moment the ferocious animals, with the most savage growls sprung at her, and at the two horses simultaneously. Hers at once shook himself clear of his foes and fled; and mine began to rear and plunge in such a manner that I could not make use of a single weapon, and only by main strength keep him from running away with me.

It was a terrible moment of exciting agony; and the instant that I could release my feet from the stirrups I leaped to the ground with a yell—my rifle slipping from my hands, and discharging itself by the concussion, and my steed rushing like lightning after his flying companion over the frozen snow. Luckily I had my loaded pistols and knife convenient to my grasp; and scarcely conscious of what I was doing, but thinking only that the dear mother of my little ones lay fairly beneath some three or four of the furiously fighting and snarling wild beasts, I grasped my weapons, one in each hand, cocked them at them at same instant, and, fairly jumping into the midst of my enemies, placed the muzzles against the heads of two that had turned to rend me and fired them both together.

Both shots took effect—it could not be otherwise—and as the two wolves rolled howlingly back in their death agonies, their starving companions fell upon them with the most ravenous fury, and literally tore them to pieces, and devoured them before my very eyes, almost over the body of my wife, and in less, I should say, than a minute of time.

Ascertaining by a few anxious inquiries, that my wife was still alive and unharmed, I bade her remain quiet and picking up my rifle, I proceeded to load all my weapons with the greatest despatch. As soon as I had rammed the first ball home, I felt tempted to shoot another of the animals; but at that moment I heard a distant howling, and fearing we should soon be beset by another pack, I reserved my fire for the next extreme danger, and hurriedly loaded the others. By the time I had fairly completed the operation, our first assailants, having nearly gorged themselves upon their more unfortunate companions, began to sink away; but the cries of the others at

the same time coming nearer, warned me to be upon my guard against another attack.

I had just succeeded in getting my wife more securely rolled in her protecting robe, as the safest thing I could do in that extremity, and myself, pistol in hand, in a defensive attitude, over her prostrate body, when some eight or ten more of the savage and desperate creatures made their appearance upon the scene. There was a momentary pause as they came into view and discovered me—during which their eyes glared and shone like living coals of fire—and then, with terrific growls and snarls, they began to circle round me, each moment narrowing the space between us. Suddenly one more daring or more hungry than the others bounded forward, and received a shot from one of my pistols directly between his eyes, and he rolled back upon the snow, and a part of the others sprang upon him, as in the case of the first.

But I had no time to congratulate myself that I had disposed of him, for almost at the same time I felt the lacerating fangs of another in my thigh, which caused me to shriek with pain; and my wife, with an answering shriek, believing it was all over with me, was about to get up and face the worst, when, shouting to her not to stir, that I was all safe, I placed my pistol against the head of my assailant, and stretched him quivering upon the snow. I still had my rifle in reserve, and pointing that at the pack, I poured its contents among them. How many were wounded I do not know, but almost immediately the space around us became once more cleared of our howling enemies—some limping as they fled, and appearing to be harassed by the rest.

Again it appeared to me that we had met with a wonderful deliverance, and though the wound in my thigh was somewhat painful, a brief examination soon satisfied me that it would not prove serious; and I hastily proceeded to reload my weapon—my wife meantime getting upon her feet, embracing me tenderly, and thanking Heaven for our preservation.

"Oh, the dear children!" she exclaimed with maternal tenderness; "little do they know how near they have come to being made orphans, and left alone in this solitary wilderness! Let us hasten home to them, while we have an opportunity!"

"We have no opportunity," I gloomily replied. "Hark! there are more foes in the distance! Do you not hear them?"

"Are they coming this way?" she tremblingly inquired.

"I fear so."

"Oh, Heaven! what then will become of us?" she cried. "I am almost certain we shall not both survive another attack!"

"I see but one escape," I said. "We must climb a tree and remain in the branches until morning."

"We shall inevitably freeze to death there!" she cried.

"I trust not; but, at all events, as our horses are gone we have no alternative. I think your buffalo robe, well wrapped around you, will protect you from the cold, as it has done from the wolves; and as for myself, I will endeavor to keep warm by climbing up and down and stamping on the limbs."

"But why not kindle a fire?" she asked quickly, her face animated with a hope that I was obliged to disappoint.

"For two reasons," I replied. "First, because we have not time—do you not hear another hungry pack howling? and secondly because we have not the materials—the loose brush and sticks being buried under the snow."

"Heaven help us, then! There seems nothing for us but death! Oh, my poor dear children!" moaned my wife.

I bade her take heart and not despair; and then selecting a large tree, whose lower limbs were broad and thick, but above the reach of our enemies, I hastily assisted her to a good foot-hold, and immediately climbed up after her. We were not there a moment too soon; for scarcely had we got ourselves settled in a comparatively comfortable position, when another hungry pack of our enemies appeared below us—howling, snarling and fighting—their upturned eyes glowing fearfully in the darkness. But we were safe from their reach; and all that long dismal night, we remained there, listening to their discordant tones, and thinking of the dear ones at home.

The night was intensely cold, and in spite of all my efforts to keep my sluggish blood in circulation, I became so numb before morning that I believe I should have given up and perished, except for the pleading voice of my wife who begged me to hold out, and not leave her a widow and my children fatherless.

Daylight came at last, and never was morn hailed with greater joy. Our foes now slunk away one by one and left us to ourselves; a few moments after the disappearance I got down and exercised myself violently; and having thus brought back a little warmth to my system, I assisted my wife to alight, and we at once started homeward.

I need scarcely add that we arrived there in good time to find our poor night-long terrified children almost frantic with joy at our safe return.

### When to Sell the Crops.

The vital question with thousands of farmers to-day, is whether to sell their crops at once or hold them for higher prices later. This is a question which every man must solve for himself. We notice that some of the People's party papers of the West are endeavoring to have the farmers hold their crops, on the theory that prices will be much higher after the new year, and asserting that the commission merchants and others in the great grain shipping centers are acting the part of bears in endeavoring to have the farmers rush their grain to the market at once in order to keep down prices. Our own personal observation is that there is more speculation for lower prices later in the season than there is for higher ones. As an aid to our farmer readers we give the figures on the European crop shortage, as presented by the International Grain and Seed Fair, recently held at Vienna. This is virtually an assemblage of grain men, who met in their nineteenth annual session to compare notes and to buy and sell grain. The estimates of this body cover Germany, France, Norway and Sweden, Holland, Belgium, Switzerland, Russia, Serbia, Bulgaria, Turkey, Spain, Portugal and Greece. Their figures show a shortage over last year's crop of 250,000,000 bushels of wheat and 400,000,000 bushels of rye, thus giving a total shortage of 650,000,000 bushels over the previous year's crop, the great bulk of which will have to be supplied from America. In the light of this estimate, it seems likely prices will be somewhat higher a few months hence than they are now.

### SAVED BY A BEAR.

BY EDMUND COLLINS.

Along the upper waters of the northwest Miramichi, in the province of New Brunswick, live many wild animals in the dense, dark stretches of spruce and pine forests. The clearings and farmhouses are few, but the region is visited in the early summer by hundreds of salmon fishermen.

Of all the beasts that roamed these dense forests there was never one that filled the minds of the inhabitants with half so much dread as the "mad moose." This creature had been seen by a score of people living along the Miramichi. It stood nearly as high as a giraffe, and had in summer two mighty antlers, which curved out and branched so widely as to resemble two trees. Its eyes were large and fierce, and I have been told that in the dark they smoldered like two great balls of phosphorescent flame.

Four or five persons, who were not enabled to get into trees in time, became victims of the wild brute. From the marks found upon them it was clear that he had goaded them to death with his horns and then trampled upon them with his ponderous feet.

The animal did not appear near the settlements in winter, for the snow is usually deep and soft in these woods, and it is difficult for a deer to travel. The popular belief was that the mad moose lived far away in the heart of the forest in what is called "a yard," eating the branches of fir and spruce trees and digging under the snow for leaves, roots and mosses.

One autumn afternoon a boy about 15 years old, named George Adams, left his father's farmhouse near by the edge of the river to get some things at the store in the nearest settlement, which was about three mile distant. He made some delay at the settlement, and when he set out for home it was nearly sunset. When he entered the forest it was already gloomy, and he hurried along, for there was in his heart a great dread of the mad moose which in summer time, made this region his headquarters.

When about two-thirds of the way home and in the densest and most lonesome part of the bush George was horrified to hear a fierce bellowing near him, and then it seemed from the cracking and swishing as if a cyclone were passing through the forest. He at once thought of the mad moose, and looking in the direction of the confusion, saw among the trees and moving swiftly toward him, two globes of smoldering fire.

He flung down his parcel and at once clambered into a pine tree the branches of which grew well down on the bole. It was well that he was so quick, for he had not got more than 10 feet from the ground before he felt a blow upon the foot from one of the moose's horns. When the animal saw that it had been foiled it increased its moaning and bellowing till all the forest fairly rang with the hideous noises.

The boy sat there stiff with terror watching the frightful animal, which in turn looked at him with its dreadful eyes up through the branches of the tree. After a while the moose lay down directly below him, his head resting upon his forelegs, his eyes turned upward.

George knew that he was safe here for the night. He knew but too well from what happened to others that the beast would keep him there all night and how much longer he could not guess.

He sat there in the branches for hours till the constellation of the Great Bear stood upon its end in the heavens and was turning over; then the sky darkened, great masses of black clouds rolled across the heavens, rain began to patter among the branches, and great thunders roared and reverberated across the thunders, all the while the moose glared at him with his two terrifying eyes.

Hour after hour he still lay there upon the branches, drenched to the skin by the driving rain storm. Two or three times he slept for a few minutes, and once upon awakening he nearly lost his balance and fell; so he sat upright, resolved not to doze any more.

How glad he was when the gray dawn came struggling through the murk! And when the day cleared up he raised his voice and cried loudly for help. This startled the moose, who had lain in the same place in the moss through the night, and he jumped upon his feet, made a hasty breakfast from buds and young branches about the base of the tree, and once more took up his position, watching the boy.

Hour after hour passed and the boy's position in the branches became almost unbearable; he was sore, sleepy and weak from hunger and thirst; when he cried out his voice was feeble, and the hideous animal he thought was mocking his helplessness. It was not until the second night had come that his hope completely broke down; then he began to cry, and as if to mimic his misery the moose bellowed louder and louder.

About an hour after dark he saw the moose suddenly start up and thrust its head into the air toward the thickest part of the bush; then it sniffed and snorted, and at the same time the wearied boy heard a sound as if some heavy body were breaking dry twigs, come from the point where his jailer was watching; then through the thick dusk he saw a pair of small burning eyes approaching the moose.

The latter stamped the ground with its fore feet and thrust its head low, waiting for the new comer. Then George heard a deep growl, the moose gave a loud bellow, and the next moment he saw that some other animal had attacked his jailer.

The moon shone clearly through the trees when the conflict began, and he was able to make out that the stranger was a huge black bear, and that it had seized the moose around the neck and was hugging him to death with its huge fore paws.

The bear seized him by the throat, and did not let go while one spark of life remained. He then proceeded to make a meal from the body of his victim, and after half an hour's gorging he waddled away into the deep forest.

George waited till the last sound of the bear had ceased, and then making the best of his exhausted strength, went down out of the tree and set out for home. He was almost blind from sleeplessness and hunger and could scarcely totter along, but as he neared his home he found a party of a dozen people with torch-bark torches continuing the search for him. The path by which he had gone and come was the last they had thought of searching.

To temper earthenware which is to be used for baking put the dishes in cold water over the fire, and bring them gradually to the boiling point. When the water boils around them, remove them from the fire and let them remain in the water till it becomes cold.