The Ward of King Canute

A Romance of the Danish Conquest.

By OTTILIE A. LILIENCRANTZ, author of The Thrall of Lief the Lucky.

Copyright, 1902, by A. C. McCLURG & CO.

CHAPTER II.—Continued.

Snatching up her slackened rein with one hand, his rider managed to secure her leaping cap with the other; and after the first bounce she caught the jerky gait instinctively and swayed her body into its uneven swing. But her heart was all at once a-throb in a wild panic. Was this what a boy must expect? "If these other men behave so, it is in my mind to tell them that I am a woman," she decided. "Since they are my own people, no evil can come of their knowing; and I dislike the other feeling."

The recollection that she had always this escape open gave her a new lease of boldness. When a sentinel stopped her near the top, she faced him with a fairly firm front.

"I have war news for King Canute," she told him haughtily; and he let her pass with no more than a grin.

She had come in by the back door, but now she had begun to reach the better quarters. Her nose reported sooner than her eyes that a meal was in making; and a glow of anticipation braced her famished body. There, a dozen yards to the left, the meal was nearly over; between the gnarled trunks the fire shone like a red eye; and bursts of merriment and snatches of boisterous song marked the beginning of the drinking.

Sometimes a woman's lighter laughter would mingle with the peal. Sometimes, through the swaying branches, Randalin caught sight of the flower-fair face of an English girl bending between the shaggy yellow heads of the captors. Once she came upon a brawny Viking employing his huge fingers to twine a golden chain around a white throat. The girl's face was dimpling bewitchingly as she held aside her shining hair. Randalin had an impulse of triumph.

"I wish that Sister Wynfreda could see that, now since it is her belief that Danes are always overbearing toward their captives," she told herself.

"I have war news for the King."

Another sentinel hailed her and she gave him absently her customary answer. He pointed to a great striped tent of red and white linen, adorned with fluttering streamers and guarded by more sentries in shining mail; and she rode toward it in a daze.

More revelers sprawled under these trees, and she looked at them curiously. The women here did not seem to be amusing themselves so well. One was weeping; and one—a slip of a girl with a face like a rose—was trying vainly to rise from her place beside a drunken warrior, who held her hands and strove to pull her lips down to his wine-stained mouth. In imagination Randalin felt again Norman's arm around her waist, and a wild pity was quickened in her. This was worse than drudgery, worse than blows! For the credit of Danish warriors, it was well that Sister Wynfreda could not see this.

Again her own words raised a startling apparition. What had been the Sister's last cry of warning?' "It is not their cruelty I fear for you. Child, listen! It is not their blows—" Could it be possible that this was what—

Like a merciless answer came a scream from the girl—a short, piercing cry of horror and loathing and agonized appeal as she was drawn down upon the leering face. At that cry, childhood's blind trust died forever in Randalin. As she rode past the pair, with clenched hands and flashing eyes, she knew without reasoning that tortures would not tear from her the secret of her disguise.

When the sentinel before the tent challenged her roughly, it was her tongue, not her brain, that answered him.

"I have war news for the King."

In a twinkling he had dropped his spear, plucked her from her saddle, and was marching her toward the entrance by her collar.

"In the Troll's name, get in to the chief, and let nothing hinder you!" he growled. "From your snail's pace I got the idea that you had come a-begging. Get in and set your tongue wagging as speeding as you can! Why do you draw back? I tell you to make haste!"

Before she could so much as catch her breath, he had raised the tent-flap, pushed her bodily through the entrance, and dropped the linen door behind her.

CHAPTER III.

When Royal Blood Is Young Blood.

Three richly dressed warriors, clinking golden goblets across a table—so much Randalin caught in her first glance. On the spot where the sentinel had released her she stopped, stock-still, and with eyes bent on the ground tremblingly awaited the royal attention.

Her first thought was that a king's tent was very like a trader's booth. Spears and banners and gold-bossed shields decorated the walls, while the reed-strewn ground was littered with furs and armor, with jeweled altar-cloths and embroidered palls and wonderful gold-laced garments. The rude temporary benches were spread with splendid covers of purple and green, upon which silver lilies and gold-eyed peacocks had been wrought with exquisite skill. Randalin's gaze lingered, dazzled, then slowly rose to examine the master of all this wealth.

He was not so easy to pick out. Of the three men around the table, only one was a graybeard; and of the two striplings left, either might have been the son of Sven of Denmark. Both were finely formed; both were dressed with royal splendor, and the hair of each fell from under a jeweled circlet in uncut lengths of shining fairness. The hair of the shorter one, though, was finer; and no red tainted the purity of its gold. When one came to look at it, it was like a royal cloak. Perhaps he might be the king! Then she noticed that his shoulders lacked the breadth of his companion's by as much as a palm's width; and her mind wavered. Surely so great a king as Canute must be broader-shouldered than any of his subjects!

Though the men were too intent to notice her, in some sub-conscious way her moving seemed to rouse them. Their discussion had been growing gradually louder; now the bearded man and the young Jotun rose suddenly and faced their companion, whose voice became audible in an obstinate mutter:

"Nevertheless, I doubt that it was wise to join hands with an English traitor."

The older man said in a tone of slowly gathering anger, "I told you to make the bargain, and I stand at the back of my counsels. Have you become like the wind, which tries every quarter of the sky because it knows not its own mind?"

While the young man warned in his heavy voice, "You will have your will in this as in everything, King Canute, but I tell you that if you keep the bargain, you will act against my advice."

He raised from his hands now a face of boyish sullenness, and sat glaring over his clenched fists at his counsellors.

"Certainly it would become a great misfortune to me if I should act against the advice of Rothgar Lodbroksson" he made stinging answer. "It was he who gave me the advice, when the English broke faith, to vent my rage upon the hostages. Men have not yet ceased to lift their noses at me for the unkingliness of the deed." His eyes blazed at the memory. They were not pleasant eyes when he was angry; the blue seemed to fade from them until they were two shining colorless pools in his brown face.

The son of Lodbrok shrugged his huge shoulders in stolid resignation, but the wrinkled forehead of the older man became somewhat smoother. He said in his measured voice, "In that matter my opinion stands with Canute. When bloodshed is unnecessary, it becomes a drawback."

Over the brown fists the fierce bright eyes bent themselves upon him in his turn. The biting young voice said, "It is likely that Thorkel the Tall speaks from experience. It stands in my memory how well craft served him when he deserted my father for Ethelred and then became tired of the Englishman. To procure himself peace, he was forced to creep back to my feet like a dog that has been kicked. Was there gold enough in his bribe to regild his fame?"

The gnarled old face of Thorkel the Tall grew livid; growling in his grizzled beard, his hand moved instinctively toward his sword. But Rothgar caught his arm with a boisterous laugh.

"Slowly, old wolf!" he admonished. "Never snarl at the snapping of the cub you have raised."

The King had not moved at the threatening gesture, and he did not move now, but he echoed the laugh bitterly.

A snort of impatience distended the nostrils of Thorkel the Tall.

"At such times as these," he said, "are brought to my mind the words of Ulf Jarl, that a man does not really stand well upon his legs until he has lived twenty-five winters."

Up came the King's yellow head. There was no question now about his temper. A spot of fiery red marked each cheek-bone, and his colorless eyes were points of blazing light.

"Better is it to stand unsteadily upon two legs than to go naturally upon four," he retorted. "If I also am a beast, at least there is a man's mind in me that tells me to loathe myself for being an. Even as I loathe you—both of you—and all your howling pack! Make me no answer or, by the head of Odin, you shall feel my fangs. Oh, leave me, leave me, before I lose my human nature and go mad like a dog! Leave—You laugh!" As he caught sight of Rothgar, he interrupted him with a roar. His hand shot to his belt and plucking forth the jeweled knife that hung there, hurled it, a glittering streak, at the grinning face. If it had reached home, one of Rothgar's eyes would have gone out in darkness.

But the son of Lodbrok had known his royal foster-brother too long to be taken by surprise. Throwing up a wooden platter like a shield, he caught the quivering blade in its bottom, whence he drew it forth with good-humored composure.

"If you wish to give a friend a present, King, you should not throw it at him so angrily," he suggested. "Had you given me the sheath, too, your gift would have been doubly dear."

Gradually the color flowed back to the young king's eyes and softened them; gradually his mouth relaxed from its fierce lines and drooped in bitter curves. When at last his fingers stopped their nervous beat, it was to unfasten the sheath of chased gold which was attached to his waist, and stretch it out to Rothgar.

"Have it your own way," he said gravely. "It is right that I pay some fine; I have a troll's temper. Take the sheath. But do not make the mistake again of laughing at me because you cannot understand me. But one person may do that and live, and that person is a woman, and my wife. There is a strange feeling in my heart that we have begun to travel different paths, you and I—and that it is because we no longer walk on the same level of ground, that we no longer see any object in the same light. And my mind tells me that in time to come your path will lead you down into the valley and my road will take me up the mountain-side, until even our voices shall no longer reach across." He came out of his dreaming abruptly. "It is not worth while to speak further. Leave me, as I ordered you. There is no unfriendliness in my mind at this, but I can command myself no further. Go."

Rothgar said, with some approach to formal courtesy, "I ask you to pardon it that I have done what you dislike, for I wish that the least of all the world. And I give you thanks for your gift." Their hands clasped strongly as the trinket passed from grasp to grasp.

Then the sage and the soldier turned and strode past the cowering figure of Randalin and out of the linen doorway.

(To be continued.)

GETS OUT OF HIS DEPTH.

Musicians' Oddities Make Amusement for Companions.

Among such a mass of players as comprises a great orchestra there are "characters" enough to supply a new Dickens. One of these characters, according to the Philadelphia Saturday Evening Post, is noted more for his love of big words than knowledge of their meaning. During Mr. Seidl's lifetime he played in the orchestra at Brighton beach. One day the tuba player, who sat back of him, had a very difficult part to play in Liszt's symphonic poem, "Mazeppa." Hearing his heartfelt sigh of relief on its conclusion, Mr. Malaprop turned and asked, "Barnum had one, hadn't he?"

"What?" was the query.

"A Mazeppa, of course," was the answer. He had confounded the hero of Byron with a zebra.

"Do we play this with or without reputation?" he asked one day of a colleague.

Playing in a new theater on tour, the man who sat next him looked up and announced: "The acoustics are bad here."

"Are they?" he said critically, sniffing the air. 'I have such a cold that I can't smell. But I take your word for it."

THE LOCUST PARTY FAILED.

Fly "Mixed In," and the Excitement Was Over.

The last years of Justice Dykman's life he delighted to sit in his yard and watch the insects and all the small life with which the summer teemed. He was especially interested last year in the locusts, which would burst out of their old skin one by one, and one morning he invited a party of his neighbors over to watch a particularly fat locust break out of its old prison. As the shell slowly cracked the judge became more and more excited, until suddenly a big fly pounced on the locust and stung it through the crack, on its fresh, new back. Of course, this killed the locust instantly, and there was no more squirming within the old shell. The judge was highly indignant. "The confounded rascal," he exclaimed, 'stung the locust, did he? The beastly fly! Isn't that too bad, now; isn't that too bad!" and then he apologized to his neighbors for the fly's bad behavior and the failure of his locust party.—New York Tribune.

Palace for Empress Taitou.

A new palace for the Empress of Abyssinia has been built at Jerusalem for the accommodation of her majesty Taitou and her retinue during her visit to the Holy City next Eastertide. The building cost about £4,000 and the furniture, which has been ordered in England and France, will cost over £3,000. The empress is expected to bring with her a large retinue, and will stay in Jerusalem three months. During this time she will visit Bethlehem, Gethsemane, Hebron, Jericho and the Jordan valley. Her majesty is reported to have expressed a wish to end her days in the Holy City.

Only One He Knew.

The other day a teacher in a West Philadelphia primary school was hearing her arithmetic class.

"What is a half?" she asked. The answer was given.

"What is a third?" A little girl answered correctly.

"What is a fourth?" Johnny was at the foot of the class. Here was his opportunity.

"Please, ma'am," he answered, excitedly, "It's the day we celebrate."

Experience Teaches.

"Of course, the more children a couple have the larger their doctor's bill becomes."

"Not at all. The more children they have the less likely the parents are to become alarmed at every little thing."

Had Heard Them All.

Agent—Madam, could I sell you this book of fairy tales?

Mrs. Hawkwed—No; I've been married four times and fairy tales are a drawback with me.—New Yorker.

Wary.

Lady—I have nothing to give you, my poor man, but some cold sausages.

Knight of the Road—'Scuse me, mum, but don't your sign say, "Beware of the dog?"—Exchange.

His Recording Angel.

"Who was that stunning blonde you spoke to?"

"That's my recording angel."

"Come again?"

"My typewriter."—Town Topics.

His Impolite Query.

"Women claim that the way to get on with a man is to give him plenty of nicely cooked food."

"Well," answered Mr. Shrimp Barker, irritably, "why don't some of them try it?"—Washington Star.

Same Old Things.

"Did you see anything new out West in the way of automobiles?" asked the first chauffeur.

"No," replied the other; "the same old chickens, pigs and things."

DAIRY

Dairying in Mexico.

Mr. Loughnane, the United States consul at Tuxpan, Mexico, in a report to the government, says: The old methods of milking, churning, and general manipulation of milk products are still in existence here, thereby rendering it impossible to produce good butter. Cows are allowed to roam over the grazing lands and are rarely sheltered or given the least care. The milking process is performed in the most unskilled manner conceivable. The cow is tied by the head, and the operator proceeds to milk the animal in his rough and unsystematic manner until he finally forces a quart or two of inferior milk from the cow's udder. The milk is placed in untidy wooden vessels and transferred to some shed or outhouse, where it is allowed to remain unprotected over night. The following morning the cream is skimmed and either beaten with a forked stick or violently agitated in a bottle until the butter granules are formed. It is then indifferently washed and offered as butter. It quickly turns rancid. It sells at from 30 to 40 cents per pound United States money, and is good neither to look at nor to taste. The sour milk is compressed in a coarse cloth, salted and allowed to dry for several days. It is then an insipid, spongy mass, which sells for from 5 to 8 cents (U. S.) a cheese. Each of these cheeses is round, about an inch thick and about 8 inches in diameter. They find a quick sale in this market. Such a thing as the most simple, modern dairy appliance is unknown or at least not used.

Selecting the Dairy Bull.

The profitable dairy bull is one that will produce female calves with high milking powers and that will be able to show a great amount of vigor. It is not enough that he be able to produce calves with high milking powers. The vigor is an essential point, as under heavy methods of feeding, such as are now practiced in modern dairies, many of our best developed cows break down. The bull therefore must have in himself every indication of great bodily vigor. The more he has of this, the more likely will he be to impress the same on his offspring, and place in them the power of continuing his good qualities. It is not at all easy at this time to find the kind of a bull that is likely to have the good points we are looking for. There are a great many poor bulls in service, and their male offspring are growing up into the bulls that are to be used in the future. We have to-day few herds that we can go to for the right kind of a supply.

The carelessness of the public in this regard is shown in the low prices prevailing for bulls. The bull should bring a far higher price than a cow and yet we find the bulls selling at lower prices. We can but infer that the breeders think that anything is good enough for the male so long as we have first class females. This has been the great obstacle in the way of the improvement of the milking qualities of our dairy breeds. A man can afford to pay a fancy price for a bull provided he can get the kind of a bull he really needs.

Mold on Parchment Paper.

Many of our readers use parchment paper for lining the boxes in which they pack their butter, and now and then they have trouble with mold that appears on it and which not infrequently gets into the butter. The parchment paper is for the purpose of preventing this very thing. The mold generally gets into the paper when the latter is allowed to lie for some time in ice boxes, refrigerators or storage rooms in which the mold has already developed. The mold cannot grow spontaneously but comes from minute seeds called spores. Unless these spores were on the paper there could be no growth of mold. When the parchment paper was lying where mold was growing the spores ripened and fell on this paper. If the paper is kept in dry clean places where no mold ever appears it will not in turn develop mold when it is placed in contact with the moisture that comes from the butter. Spores cannot grow without moisture. When such paper has been subject to conditions that would make the growing of mold possible the best way to prevent the development of the mold is to soak the parchment paper in a strong brine in which has been mixed one pound of formaldehyde to three gallons of brine. This soaking will not injure the parchment paper, but it will kill the spores of the mold. When the same brine is to be used several times in succession it should be boiled between times to make doubly sure that the spores do not escape.

Feeding the Bull.

The feeding of the bull is a very important matter, more so than the feeding of the cow, for the reason that the bull is generally kept up all the time. Under such an abnormal condition he becomes too fat if he is fed a too large ration of corn. It is better to feed him on a mixed grain ration, including oats, and to give him a rough feed rich in nitrogen rather than rich in carbon. Bran, which is comparatively low in carbon and high in nitrogen, should be a part of the daily ration. For the bull at least roots should be fed in considerable quantities, unless he has an abundance of exercise, which most of our bulls do not get. If under a properly balanced ration the bull becomes too fat it is indicative of a lack of vigor, and such a bull should be disposed of and one substituted that has the vigor desired.

Reject Decayed Food.

The farmer is sometimes tempted to feed decayed or musty food to his poultry. It should never be done. Just what effect it might have on the eggs produced by the fowls we do not know, but it may have a very serious effect on the digestive apparatus. We have seen it urged not to feed such foods because they would give to the eggs the same taints they had themselves, but this may be doubted. One writer tries to prove his case by asserting that onions fed to fowls produced the smell of onions in the eggs. This may well be true, as the onion contains a very penetrating oil that will pass through the systems of most animals. It will appear in the egg of the hen or the milk of the cow. But that does not apply to the general run of foods. They should be rejected, but rejected for the reason that they endanger the health of the birds.

Only the weak have time to worry.

LIVE STOCK

The Horse Still Popular.

The horse industry is to-day in a flourishing condition, little corresponding to the predictions of some of our commercial prophets ten years ago. At that time we were told that we were on the eve of a horseless age. To prove it the savants pointed to the thousands of people that were using bicycles. It was said that agents had been placed at the entrances to the great parks in New York and other cities and there counted the thousands of wheelmen and wheelwomen that daily passed through the parks and reported that only now and then a carriage or mounted horseman was seen. That was true ten years ago in all the great cities of the country. But how is it to-day?

Sit down at the entrance to any of our great city parks in the summer time and watch the passers-by. There will be seen a steady stream of carriages, with only now and then a man or woman on a wheel. It is evident that the wheel was only a temporary plaything for the public, and that when the public grew tired of the wheel it went back to the old friend of man—the horse.

Within ten years there has been a material increase in the number of horses in the country and an increase also in the value per head. The demand has been greater than the supply, and with the larger use of horses has come an increased rapidity of their wearing out. While the wheels were being so freely used, many of the driving horses in the cities spent much of their time in the barns or in the pastures, but since the public returned to the use of the horse the work of the horse has increased, and the consequent wear and tear incident to service and accidents has also increased.

The horseless vehicles that have been introduced in the cities are but an insignificant factor in the general situation. Such vehicles are but the playthings of the wealthy or are in service in only a slight degree commercially. They in no sense keep pace with the tremendous increase in population and business that our country is witnessing. The value of horses in the United States is placed by the taxing bodies at more than $1,000,000,000, which valuation, as every man knows, is far short of the real, since values for taxing purposes are never anywhere near the actual values. Yet, though the undervaluation is considerable, this item of over one billion dollars is an enormous one and gives some idea of the great riches in horseflesh possessed by the nation.

That farmers should pay more attention to the raising of good horses is evident. There is no doubt that the demand for horses in the future is to be even greater than it is at the present time and that any man that raises good horses of almost any kind will be sure to realize good prices for them.

Breeding Light Horses.

George M. Rommel, of the United States Department of Agriculture says: Stand by the auction ring of any great horse market and observe closely the horses that fail to bring prices sufficient to cover cost of production. In the great majority of cases trotting blood predominates if any breeding at all is noticeable. Ask a dealer what is the breeding, if any, of most of the large numbers of the unclassified horses on the market, his answer will be: "Trotting and coach blood." This is not because draft blood is more valuable or that the blood of the light breeds is not wanted, for the great cry of the market at present is that good drivers and saddlers are extremely scarce. It is because performance and style are much more difficult to acquire in breeding than size and weight. It is because men with a fascination for the race track attempt to produce trotters without the slightest regard for nature's laws, and no disappointment or failure seems sufficient to bring them to realize their folly. Breeding to a trotter without system and study, but only in the hope of getting a speedy foal as a possibility or an accident, is "playing with fire." The breeding of light horses requires not only a considerable amount of capital, but demands a knowledge of horses of the very highest order. It necessitates concentration of effort and years of waiting and planning. It is not every man that brings such qualities to bear when he takes a 1,600-pound draft mare to a 1,200-pound harness or saddle stallion, and it is largely because of this, and not on account of the breeds themselves, that so many poor horses are forced onto the market. A high-class roadster, coacher, or saddler is by far the most difficult horse to produce that the market calls for. In addition to careful plans of breeding and high individual excellence in the resulting progeny, a course of handling, mannering, and training must be pursued before the horse will figure as a really marketable animal. These facts must be thoroughly understood if a man would breed light horses for market.

New Meat Preservative.

A new meat curing process is reported from Germany, where Professor Emmerich claims to be able to preserve meat in a fresh condition, by injecting into the veins of the dead animal acetic acid. The blood is first permitted to run out and then the acid is put in. It permeates the flesh, so the professor claims, and that prevents all decay and makes the use of refrigeration unnecessary. It is obvious that if this process proves to be all that is claimed for it, it will revolutionize the meat curing industry, as acetic acid is not an expensive preservative. The reports say that meat so cured has been shipped from Germany to South African ports and was found on arriving at its destination to be of good quality and perfectly preserved. Our readers must remember however that great things are claimed for all new processes.

Potato Chowder.

Pare and cut six good sized potatoes into dice and chop one onion fine. Cut one-quarter pound ham into small pieces. Put the ham and onion into a frying pan and fry until of a light brown. Now put a layer of potatoes in the bottom of a sauce-pan; then a sprinkling of ham and onion, one tablespoonful chopped parsley, salt and pepper to taste; then another layer of potatoes, and so on until all is used. Add one pint of water, cover closely, and simmer for twenty minutes. Then add one pint of milk. Rub one tablespoonful of butter and one tablespoonful of flour together, add to the boiling chowder, and stir carefully until it thickens.

A mill may be in excellent condition for things at its surface, but yet be too wet for things below.

AGRICULTURE

Success With Alfalfa.

Previous to five years ago most of the attempts to grow alfalfa in Illinois and neighboring states had resulted in failures, but since that time there have been many successes, and these successes have led many farmers to embark quite heavily in the growing of alfalfa. To a large extent perhaps the successful growing of this depends on the proper inoculation of the soil with the bacteria that makes the nodule in which is gathered the nitrogen from the air to be changed into a form that can later be used by the rootlets of the plants for food. The sending out by the Illinois experiment station of large quantities of inoculated soil has been a step in advance and has commenced the inoculation of the soil in many widely separated sections. In the meantime the apparent fact that the bacteria that works on sweet clover is the same that works on alfalfa is another sign pointing to the successful growing of alfalfa in states where it has been little grown in the past.

There are many sections of Illinois and Michigan where the writer has seen sweet clover growing in abundance, and it is very likely that alfalfa on such lands will prove successful. Perhaps one reason why alfalfa has not in the past done well on such lands is that the bacteria on the sweet clover did not come into contact with the roots of the alfalfa. Sweet clover does not in the main grow in cultivated fields, but by the hard roadside. In fact it is averse to cultivation. We would suggest to our readers that those living in a region where sweet clover grows thickly by the roadside should sow some alfalfa in a cultivated field and carry some soil from the roadside where the sweet clover grows for inoculation, and at the same time plant a patch of alfalfa in a place distant from the places where the sweet clover and other alfalfa are growing, but on the same kind of soil. This latter will be a check plot by which the success of the other treatment can be judged.

A few cases of this kind will prove of little value, but there should be several hundreds of farmers that are in a position to make this experiment this spring. The results may be far reaching, for if a way is found to grow alfalfa successfully in the counties where it is not now grown it will add immensely to the profits of the farms in such localities.

Spraying for Potato Blight.

Where there has been trouble with potato blight, spraying has been resorted to successfully for the checking of this fungus disease. It has been found that some varieties of potatoes are more resistant to blight than are others, and that as a general thing the early varieties are first attacked. This may be due to the possible fact that the early potato vines reach a partly mature stage before the others. Spraying will delay the attack on all varieties but will not entirely prevent the attacks. But always the spraying will give results that will more than pay the cost, and will frequently stop the blight altogether. The spray used is the well-known Bordeaux Mixture, which is made as follows: Four pounds copper sulphate, four pounds lime and fifty gallons of water. Dissolve the copper sulphate in hot water or from a coarse bag suspended in cold water. Slake the lime separately. Dilute the copper sulphate to about twenty gallons and dilute the lime to ten gallons. Pour the diluted lime into the diluted copper sulphate. Stir the mixture while the mixing is being done. Then dilute to 50 gallons. Some make it stronger by diluting only to forty gallons. The sprayings should be done about July, but this will depend on the time of planting. Three sprayings should do the work. But it is well to keep a good watch over the vines till the middle of August.

Some of our potato growers that have had heavy losses from the presence of blight have received great benefits from the use of this spray and have increased the yield of their potatoes from 30 to 50 per cent, the comparison being made with plots left unsprayed. The spray mentioned is not expensive and can be quickly used. Its benefits are far in excess of cost and labor.

Green Manuring Crops.

There are many soils that are not benefited by green manuring crops. Such soils are those already rich in nitrogen and in humus. An investigation by the University of Illinois has shown that on many of the soils in Illinois an addition of humus and of nitrogen would be a positive detriment. This leads to the remark that we must have a reason for every farm operation. The green manure crop is needed on the soil that is deficient in humus and nitrogen, but is labor lost on many other soils. It is obvious that we cannot lay down rules that can be followed blindly on all farms. The green manuring crop is valuable where it is needed, but worthless or worse, where it is not needed. The intelligence of every farmer must determine the necessity for each operation on the farm.

Nurse Crops for Clover.

The agricultural world will be interested in noting the results of some experiments being carried on this summer by Professor Olin of the Iowa Agricultural college. Mr. Olin has arranged with Mr. Cook, the proprietor of the Brookmont farms, near Odebolt, Iowa, to seed 1,920 acres with clover with various nurse crops. On a part of this area clover was seeded with oats at seeding time, on another part with barley, and the third part will be planted to corn, and the clover will be sown just ahead of the cultivators the last time the corn is cultivated. Mr. Cook furnishes all seed and labor, while the Iowa Experiment station supervises the work and makes accurate observations on the growth of the clover.

Cheese Scoring Contest.

The Dairy and Food Commissioner of Minnesota, Mr. W. P. McConnell, has inaugurated a cheese scoring contest that is to continue six months from May 1st. Mr. E. H. Vroman of the commission will be in charge of the contest. Prizes of money and of silver cups are to be awarded. Two expert commercial cheese men will assist Mr. Vroman in making the scorings of the cheese to determine the accuracy of the scorings of the contestants. Many of the managers of cheese factories in Minnesota have applied for permission to enter the contest.

SCIENCE AND INVENTION

To Prevent Rear-End Collisions.

A model illustrating a method of averting a large class of railway accidents that are known as rear-end collisions was exhibited a short time ago in New York city.

On the track, 30 feet from the ordinary semaphore, is placed a dwarf semaphore, whose movements are made to correspond with those of the other, whether the latter is operated by hand or electricity. From the side of the locomotive projects downward a rod of glass, in such a position that it will strike the dwarf semaphore when the signal is set at danger. Contact breaks the glass. The immediate effect of this is to bring into play in the cab a steam mechanism which shuts the throttle, locks it, applies the air brakes, and finally deposits sand on the track. Only when the train stops can the engineer unlock his throttle. He must first adjust a fresh glass rod in place of the broken one. Thus an effective safeguard is provided against running past a signal on account of the sickness, death or carelessness of the engineer, or fog or smoke.

The apparatus is so designed that if the engineer, having his wits about him, and having his train under control, wishes to do so, he can prevent the smashing of the glass rod, and run slowly to the main semaphore. To keep the rod from hitting the dwarf semaphore, he touches a mechanism in the cab which shifts the position of the "destructible member," and saves it from injury. When he does so, however, a record of the time is made automatically on an indicator, so that he cannot play any tricks without the fact being known.

Each Spout is a Handle.

To obviate this difficulty many a hostess provides both in sufficient quantity to meet the wants of her guests, necessitating the use of two pots and two stands. Why not dispense with this trouble and utilize the combination tea and coffee pot which has recently been designed by a Pennsylvania inventor? As the illustration shows, it is capable of pouring a cup of either beverage on a moment's notice, and that, too, without burning the hand by contact with either spout handle. As will be seen, the two spouts, which also serve as handles for the pot, are surrounded by coils of wire, which prevent the hand from grasping the heated metal when reversing the pot to pour a cup of drink from the spout that has previously been used as the handle. The pot is divided through the center by a partition which reaches from top to bottom, and when it is not desired to utilize it for brewing two beverages at the same time one side can be filled with hot water, for the double

purpose of maintaining the warmth of the coffee or tea and for use in weakening the beverage should it prove too strong.

Harry W. Gander of Rudy, Pa., is the inventor.

A Collapsible Stretcher.

It has been said that Japan went to war with China simply to secure the discipline and training necessary for the impending conflict with Russia, which is but another example of a nation profiting by the motto, though admittedly peculiar in the manner in which it was carried out. But nations are not alone in heeding this admonition. The inventor has taken it upon himself at all times to strive for the improvement and advancement of all that goes to make war terrible, from the ship-burning mirror of Archimedes to the rapid-fire gun of the modern inventor. But if war has been made more horrible, the hospital equipment has in a measure kept pace with it from the humane point of view, until the sick or wounded men can now be properly cared for until claimed by the grim reaper or restored to health, with the chances more in favor of the latter outcome than they were even a few years ago.

In the matter of stretchers for carrying the wounded from the field of battle the hospital corps may be interested in the idea of a Swiss inventor. It consists principally of a set of lazy-tongs, with a canvas cloth extending from head to foot when the stretcher is extended. The handles by which the carrier is lifted are attached to the lower section of the folding frame, serving to fold the stretcher when they are turned down against the legs and to extend it when in position to carry a wounded soldier off the field.

Human Passions Photographed.

Some photographic records of human emotions, obtained at Geneva by Dr. E. Magnin and M. Edward Flegenheimer, are of remarkable interest. The experiments have been made upon a very susceptible hypnotic subject, who has been influenced by both musical and oral suggestion, and the entire range of human passions—joy, anger, fear, sadness, gluttony, greed, etc.—have been recorded in about 500 photographs of the woman under the various forms of suggestion. The intensity of the expressions is said to have been rarely equalled by the great artists.

Tea or Coffee, Which?

Why is it that if you have tea when company comes to dine they seem to desire coffee, and vice versa? Of course, they assure the one presiding over the beverage that it really makes no difference and that they prefer whichever the hostess happens to have on the table, but there generally follows the uncomfortable feeling that the drink which is not to be had is the one most desired.

World's Railway Milage.

The total length of the railways in the world is stated to be about 454,000 miles. Russia comes out first numerically with about 34,000 miles. Great Britain has 22,000 miles, which, if the size of the country be allowed for, places her at the head of the list.

Saw the Human Fright.

Maud—Did you hear about that fright George got on his wedding day?

Mabel—Yes, I was there. I saw her.

An Attractive Cottage . . .

Here is a plan for an attractive cottage that can surely be built for $1,000 anywhere. Entering the house you find yourself in a fairly large hall, with an attractive staircase immediately before you, and on the right a cheerful sitting room. The staircase is designed with a seat at one side, and is an open stair to the first landing, with nicely turned balusters and rail. The space under the stair is used as the stair to the basement from the combined dining room and kitchen.

The sitting room has a corner arrangement, showing a pleasant bay to form a sort of circular alcove addition to the room, yet the expense of it is not great, as it is partly supported and roofed by the porch, and the remainder extends over the foundation. The dining room and kitchen are combined, with a pantry and wash room. The downstairs bedroom can be used as a library, if desired, cutting out the closet, and having a large cased opening between this room and the sitting room.

On the second floor there are two bedrooms, one on each side of the hall, which are lighted by the dormers, as is seen by the exterior view. This dormer also gives good ventilation, as the transoms over the bedroom doors give a circulation of air through the second story rooms. Although it may appear in the exterior that there are sloping ceilings in the second floor bedrooms, such is not the case to a great extent. There is only a foot cut off of the wall and ceiling for the roof. There is a single chimney, and it is nicely located for heating the house either with stoves or a furnace. At each side of the second floor bedrooms are large spaces left under the roof, which make excellent storage closets.

The house is 24 by 28 feet. The interior woodwork is finished in natural finish, and half of the space under the first floor is excavated for a large cellar.

Cream Needed for Pound of Butter.

Mrs. W. H. P.—How much cream is required to make one pound of butter?

Replying to the foregoing question I would say, at the outset, that it is difficult to give a definite answer to it, as cream varies so much in butter-fat content. It is nothing unusual to meet cream obtained from the deep-setting process which contains considerably less than 20 per cent butter fat, while shallow pan cream is usually considerably richer, and cream obtained by the use of a separator will test all the way from 20 to 40 per cent. Cream testing 20 per cent butter fat—a very common test for cream from the deep-setting process—will make between 2 and 2½ pounds of butter per gallon of cream, or about one pound of butter per 4½ pounds of cream.—J. W. M.

Cement Anchor Posts.

C. C.—How would cement answer for constructing anchor posts for a fence of 11 strands of coil spring wire; the posts would be sunk 5 or 6 feet in the ground. In what proportion should cement and sand be mixed?

Cement answers well for making ordinary fence posts, but where there would be a side strain, as on an anchor post it would be well to build iron rods into each post; this would add greatly to their strength. The cost of concrete anchor posts would require to be composed of one part cement to five parts of gravel, which would require a barrel of cement for 20 cubic feet of posts, so that each post would require nearly half a barrel of cement.

A Tonic for Fowls.

Mrs. M.—Would a small quantity of ground gentian, say a quarter of a teaspoonful, fed in a mash once a day to a dozen hens, be harmful or beneficial to the fowls? They get no vegetables, only a few boiled potatoes daily.

If the hens appear to be down in condition and need toning up, a small quantity of ground gentian fed daily as indicated would undoubtedly prove beneficial. It is not advisable, however, to be dosing healthy fowls, but a light tonic at the end of a long winter should be all right until the birds can get out to the green grass.

Feed for Chickens.

Mrs. J. P.—Last year I hatched chickens with an incubator, but they died when a few days old. They appeared to have bowel trouble. I gave them curd and bread soaked in milk Was this proper food for them?

Chickens should receive no food for the first thirty-six hours, and then they should have light food such as bread soaked in milk and squeezed almost dry, besides coarse cracked wheat or oats groats. Curd is very indigestible and likely to cause bowel trouble.

Cabbage Maggot.

F. R.—What will destroy the little white grubs that are hatched around the roots of young and early cabbage plants?

For the cabbage maggot, probably the easiest and best remedy is pulling away the soil down to the true roots and pouring in about a teacupful of a tea made by soaking one or two ounces of pyrethrum insect powder in a gallon of warm water and then pulling the earth around the roots again.

Converting Silo Into Root House.

T. A. C.—I wish to convert a silo into a root house; it is constructed of 10-inch studding, double boarded and paper between. It is inside of the barn and the bottom is level with the barn floor. How can it be made frost proof?

Probably the best plan to follow would be to fill in between the studs and on the ceiling with dry sawdust. A double door would be necessary to keep out the frost.

One From Many.

Miss Bragg—Oh, yes; I've had six proposals since I saw you last.

Miss Wise—Indeed? And did you finally reward his perseverance by accepting him?