AGRICULTURAL.

Soils that are naturally wet and undrained will not grow permanent grasses in good form. Several of the more useful kinds could not sustain themselves in such soils, even though they should secure a foothold for a time. Those of a coarse and inferior character would supplant them, and as the grasses failed there would be no little danger that various forms of weed life would assert themselves. Underdraining would undoubtedly improve such soils very much. In fact, it would make such a change in some soils as to transform them into a condition pre-eminently adapted to the growing of mixed grasses. Soils naturally well adapted to growing permament pastures are not capable of growing them in best form so long as they are foul with various forms of noxious weed life. Indeed the attempt should not be made to grow them on such soils until the weeds have been greatly reduced in numbers by some preparatory process. When lands are sown with mixed grasses for permanent pastures that are foul with weeds, the chances are that the weeds will increase rather than decrease. They will rather crowd the grasses than be crowded by them. And there is no means of removing them in such soils except by hand spudding or by the use of the scythe or mower. If these pastures become polluted with such derennials as the corn sow thistle, the mower will only prevent them from poducing seed—it will not avail to destroy the weeds, or even to reduce their numbers. It is therefore of prime importance that lands are in a fairly clean condition before they are laid down to permanent pastures.

The most suitable soils for permanent pastures are those of a free working character, and which have at the same time the power to retain moisture in a fair degree. They must also be in a fair condition as to fertility. It is better if they have enough sand in them to give them openness of texture. Such lands will generally be found with rather level surfaces, but there are some exceptions. River bottoms and flat lands bordering on the lesser streams are usually well adapted to such uses, and it is not against them in any degree to be subject to occasional overflow from the waters of the streams which border upon them. Usually soils which are very well adapted to the growth of Indian corn are also well adapted to the growth of mixed grasses for permanent pastures. This is true at least in Ontario, and I imagine that, generally speaking, it will be found true in other countries. Lands which grow ordinary bluegrass in fine form will also in most instances grow mixed grasses of a superior character. It may be asked why not allow them to grow bluegrass solely, as it is one of the most permanent of grasses. I answer that a mixture of permanent grasses each of which is at its best at a different season of the year, is much better than any one of the mixture alone.

The attempt should not be made to lay down permanent pasture on soils ill adapted to their growth. This has been tried in Ontario to some extent, but it ended in failure as it always must. Where such attempts have been made a prejudice has arisen against permanent pastures which has wrought much mischief, and which it will take some time to overcome.

Nearly all farms have some field or fields which will answer the purpose, even though the other portions of the same should be unsuitable. Such fields, then, and only such, should be chosen. On this station farm we have some fields well adapted to the growth of permanent pastures, while in the case of others we would not even entertain the idea of devoting them to any such use.

Practicalities.

If an observant man, says a writer in the Prairie Farmer, would stand a short time at the door of one of our all-purpose stores in some country town and take note of the character of the trade, he would be struck with astonishment. It would be no more than we might expect to see the villagers purchasing potatoes and butter and eggs and cabbage, and truck generally; but to see men, owners of 40, 80 and 160 acres of land, buying all these articles would require some explanation in his mind. He would say that he couldn't see the economy in paying twelve and one-half cents for a quart of Snyder blackberries when a half day's work, twice a week, would be sufficient to keep a large family patch fruitful and in order. The merchants can't supply the demands of the farming community for these berries. In the matter of raspberries it was even more so. They could not be had at any price. If there is anything easier to propagate than a Gregg raspberry, it has not fallen under my notice. "O," they say, "we can't afford the time. We must be at other work." If they will count the cost and the time required to have these blessings in their own grounds and compare them with what they pay in money and in going to get them, they would see that they were saving at the spigot and spending at the bunghole.—Farmers, to my certain knowledge, sell hogs at four cents and buy bacon at twelve and fifteen cents, and sometimes more. If this is good financiering, I want it explained so that I may adopt it, for as the matter stands now in my mind, such farmers have in that measure missed their vocation. Really, now, is it any wonder that this sort of management makes hard times on such farms?

I find no fault with a really good show; I like to see ground and lofty tumbling, good horsemanship and the like. But if I go, it is on my own capital, and not on borrowed money, as I have known renters to do. And let me assure them that if they don't turn a new leaf in this respect they will always be renters. I knew a farmer to go in debt at the store for coffee, then sell the coffee at a discount for cash, so that he and his might have the wherewithal to pay their way into a circus. His forty acres was mortgaged to an eastern company and eventually I bought him out in order that he might save a little to commence again somewhere else. The narrative carries its own moral.

It is the little economies that really count with the most of folks. My idea is that we should live within our means and within ourselves. Raise our own beans, and onions, and berries, and meat, and, in short, all garden truck. If all adopted this plan we should soon all draw ahead and be independent of banks and panics, and what is better than all, we would have the satisfaction of being independent, and of finding time to improve the kind and the means to pay for it. A farmer should be quite thoroughly informed upon many matters and a little upon all that fall under his observation and reading. This year men in Iowa have sold large bills of peach trees, saying they were perfectly hardy because they were grafted on plum roots. No peach tree is hardy in Iowa. Yet the fellows sold hundreds of these peach trees at $60 a hundred. A good local paper would have kept them from buying and thereby saved money, and wear and tear of temper, which is something. But if you were to tell them this they would say at once that all newspapers were unmitigated frauds and liars; and yet they would open their mouths and swallow the rot of these tramp tree pedlers.

In the discharge of duty I ride more or less every week over the country. I find that the implement men have driven a thriving trade with the farming community. This is a good indication. We all believe this to be a sign of prosperity. But it is not a token of thrift and permanent gain to see the mowers and binders standing in the field where last used, taking the floods of hot sun and the generous dews, shrinking and warping and rotting. Thousands of dollars worth of farms tools are ruined in this way.

Just as long as these leaks remain in agricultural management, just that length of time will the farmers be at the mercy of debt. I believe it to be a notorious fact that all the failures of the present day, banks or otherwise, fully expect to find recuperation at the expense of the farmer. Mark that!

Fruit Notes.

The bark is the skin of the tree, and care should be taken to see that it is not injured.

August is one of the best months for cutting out small branches and thinning the tops.

In many cases moss growing on a tree shows that the soil is too wet and is probably poor.

If the raspberry and blackberry canes are kept in check the canes will grow stocky and well branched.

Put no weeds that have matured seeds in the manure heap for the garden. The safest plan is to burn all such.

Fruit trees on which the leaves remain after the first hard frost in the fall, may reasonably be regarded as unhealthy.

Tips of black raspberries can be layered through this month. Layering is one of the easiest ways of propagating plants.

A safe rule to follow is, that whenever boughs of trees or vines become troublesome, lop them off regardless of the season.

The plum, to thrive well, needs liberal manuring and clean cultivation. Hence it is an advantage to grow it in the poultry yard.

With no class of fruit trees is it desirable to secure a strong growth of wood, and especially when it must be done at the expense of fruit.

Take care in evaporating fruit. The finer the appearance of evaporated fruit when dried the higher prices it will be possible to realize.

One of the principle advantages in fall planting of fruit trees is that more time can be spared to do the work.

The small outlay of money and time necessary to ornament the door yard with evergreen and shade trees and shrubbery is always well expended.

One advantage in selecting out reasonably young trees is that in nearly all cases better roots in proportion to the tops will be secured than with older trees.

There is no advantage in planting out an orchard unless the soil is thoroughly prepared and in good condition in good season before the time for planting.

It is usually not a good plan to use anything that will tend to induce a late growth with any kind of fruit trees or plants, as this greatly increases the risk of winter killing.

Apples should never be picked or handled when wet with dew or rain, nor should they be exposed to dampness in any way after they are taken from the trees, as dampness is almost certain to start them to rotting.

How to Keep Butter.

Mrs. C. H. Wilming, Elko county, Nevada, inquires how butter can be kept through the summer months. There are several ways of doing it, one of which is to take the butter from the churn in granular condition, first washing every particle of the buttermilk out of it. Then make it in such size rolls as you prefer and wrap it with parchment paper, or perhaps still better place it in a bag made of that material. Before beginning to churn, have a barrel or a suitable cask of some kind thoroughly cleansed and a quantity of strong brine prepared. Partly fill the cask with the brine and place the butter in it and pour in enough more to fill package.

When it is desired to get the butter ready for the market, it should be taken out and rinsed off in sweet milk. Skim milk if perfectly sweet will answer the purpose.

Another way is to put the butter into the brine in a granular condition, and when taken out churn or rather tumble it in sweet milk, which gives it a fresh flavor.

In either case the butter should be rinsed in cold clear water, or, still better, brine, after it has been rinsed or tumbled in the sweet milk.

NINETEEN MILLION BUSHELS.

W. W Ogilvie's Estimate of the Manitoba Wheat Crop.

Mr. W. W. Ogilvie, the miller king of Canada, had some samples of new Manitoba wheat on view in the large room of the Montreal Board of Trade the other day. They were inspected with interest by most of the members of the Corn Exchange. The samples from the Mennonite district, which is a district 25 miles by 40 miles, Mr. Ogilvies says, are the best that have been grown there for many years. The samples from the Southwest of Manitoba are also very fine, but smaller in berry to the west of the Province. Those from Portage du Plain are also fine, but are the only ones that show any signs of smut. Mr. Ogilvie said to a reporter that in his opinion the crop would be the best in quality Manitoba had ever grown. The half of the whole crop was already cut. He said that if it continued favorable for another ten days the crops might be considered safe. He estimated the yield at twenty bushels per acre, which in that country, would represented about 19,000,000 of bushels.

FIGHTING FIRE AT SEA.

The Thrilling Story Told by the Men of the Big Ship Cedarbank.

The tug Vigilant towed a floating volcano into the port of San Francisco one evening last week. The blazing vessel was the fine steel ship Cedarbank from Newcastle, N.S.W., and the story of her long voyage to this port with a cargo of nearly 4,000 tons of coal is a remarkable one.

The Cedarbank left Newcastle for this port on March 5, and for the first four days everything went as smoothly as clock work and then the trouble began. On the morning of the 10th it began to blow, and before the sun went down that night the splendid ship was rolling in the trough of a fearful sea, a dismantled wreck. The mizzenmast and jiggermast were hanging over the side, and every stitch of canvas on the fore and mainmast had been blown away. The big seas were making a clean breach over her, and for nearly twenty-four hours the crew could do nothing to relieve the ship. Then the wind and sea went down a little and the wreck was cut adrift.

A few of the lower sails were got on deck one at a time and bent. Both officers and men worked like beavers, and as soon as possible the ship was headed for Sydney, about 700 miles away. The wind was favorable and Sydney was reached March 21. Enough of the coal was taken out of the after part of the ship to allow the new mast to be stepped. The work of refitting went along with a rush and on April 28 the Cedarbank was once more ready to start for San Francisco.

All went well until June 20, when the ship was discovered to be on fire. The fearful discovery was made when the tarpaulin was taken off No. 2 hatch to allow the hatch combings to be painted. Then a thin column of smoke was seen issuing from the corner of the hatch. The news was at once sent to the Captain, who ordered that the hatches be taken off and an investigation made.

As soon as the hatch was lifted dense clouds of black smoke poured out and drove the crew back from the hatchway. The hatch was then battened down in the hope of smothering the fire. Orders were given to light the fire in the donkey boiler, so that the steam pumps could be set to work if needed. The hatches were kept on until June 24, when they were again taken off, and dense clouds of smoke and gas poured out of the hold. The heat was intense, and then the terrible truth dawned on the crew that they were standing over a volcano which was liable to burst forth at any minute.

The ship was many hundreds of miles from land. After a short consultation it was decided to take more vigorous measures to subdue the fire or at least hold it in check until San Francisco could be reached. The after hatches were taken off and the men went to work with a will digging down through the coal in an effort to reach the fire. As fast as the tubs could be filled they were hoisted on deck and the coal thrown over the side. Ten man took turn about in the hold, and had to be relieved every few minutes on account of the heat and smoke.

Capt. Moody and Chief Officer Laurie took their turn with the rest, for they knew that it was a struggle for life and they must work to win. The deeper they dug the hotter grew the hold, and after a few hours of hard toil the men gave it up and were forced to leave the hold. At that time the coal under the hatch was too hot to be handled, and the stanchions and deck beams were hot enough to blister the hand. The fire appeared to be directly under No. 2 hatch and near the bottom of the ship. The hatches were again battened down, and then all hands set to work clearing away the boats, so that should the fire break through the decks they would be ready to leave her. Food, water, charts and compass were placed in each boat, together with one change of clothing for each man. The boat sails were bent, and each man and boy aboard was notified which boat he was to take. The officers who were to command them were given the course and distance from Honolulu, the nearest port. This done, the crew returned to their work of fighting the fire.

The ship was then headed for Honolulu and the steam pumps started. A heavy stream of water was poured into the hold all that night. When morning came the crew were overjoyed to find that to all appearance the fire had been checked. Once more the hatches were taken off and the work of jettisoning the cargo began. The thermometer registered 128 degrees, but the sailors worked like demons until 6 o'clock at night and then stopped.

At that time 260 tons of coal had been taken out of the ship and thrown overboard. A great part of it was badly charred by the fire. As soon as the hatches could be closed the pumps were started again, and the dense volumes of steam and smoke which poured out of the ventilators showed that the fire was rapidly gaining headway. The pitch was boiling in her decks, and a thermometer held against the mizzenmast registered 135 degrees. A ship was sighted far to leeward and the signal of distress was hoisted, but she passed on and made no sign that the signal was seen. Another vessel was seen, but, like the first, she took no notice of the distress signal and held her course.

Sunday, July 16, is a day not likely to be forgotten by any man on board the Cedarbank. At 1,30 o'clock in the morning a terrific explosion occurred which seemed to fairly lift the big ship out of the water. The pent-up gases in the hold of the ship proved too much for the hatches, and with a roar that could have been heard a mile away No 2 hatch was blown off, and the next instant a volume of flame shot into the air as high as the maintopsail yard. The frightened crew made a rush for the boats and began to lower them into the water, thinking the ship was about to be founder. The first boat had hardly struck the water when a second explosion occurred, and once more the lurid flames shot high into the air, setting fire to the lower rigging and some of the sails.

Not a man of the crew believed at that time that the Cedarbank would ever reach San Fransisco, but Capt. Moody and Chief Officer Laurie did not give up the fight, and calling on the men to follow them they rushed forward and again battened down the hatches. It was then seen that the hold was a seething mass of flames, and even Capt. Moody believed that the end was not far off. By midday the tarpaulins were on fire, and while the crew poured water on them new tarpaulins were dragged from the sailroom and spread over the hatches. The explosions deadened the fire for in a short time the ship seemed to get cooler. Finding that the fire was still in check, the boats were hoisted and the Cedarbank headed for San Fransisco under every stitch of sail she could carry.

For fourteen days and nights the men obeyed every order given without a murmur, and not one of them took off his clothes during the whole of that time. As the ship neared San Francisco the hope of the crew rose higher and higher until last Wednesday night, when several more explosions occurred. The first took place at 9 o'clock and blew the hatches off no 2. The crew covered their faces with wet cloths and after a sharp struggle the hatches were again put on and battened down. Half an hour later another explosion blew the same hatches off, and a few minutes later the hatches of No, 3 were lifted high into the air while flames and smoke poured out of the hold. Two more explosions followed, both in No. 2 hatch, and then the crew thought the ship was going to the bottom.

At 9 o'clock yesterday morning the tug Vigilant was sighted, and it did not take Capt. McCoy long to make his hawser fast to the burning ship. Then for the first time since the fire was discovered the faces of the entire crew were wreathed in smiles, for they realized that they were safe. The Vigilant rushed the burning ship into port as fast as steam could carry her, and at 6 o'clock in the evening the Cedar-bank was safe at anchor off Lombard street wharf.

"I never want another trip like this," said Chief Officer Laurie, "for the ship is a floating volcano, and how we ever got her here is a mystery to all hands."

Tuberculosis in Cattle.

The appearance of tuberculosis at the Experimental Farm, Ottawa, has caused considerable excitement and comment amongst stockmen in this part of the country. That isolated herds of thoroughbred cattle often develop tuberculosis in Canada, the United States and Great Britain is nothing new. But, as a general thing, breeders of high priced cattle have got rid of their stocks thus affected, kept close mouths, and retained a clean bill of health amongst their herds. Then tuberculosis is a very insidious disease, and until recently there has been no way of determining with even approximate certainty, whether, in its early stages, an animal was or was not afflicted with this malady, and as a consequence many perfectly healthy animals have been unnecessarily slaughtered in a heroic attempt to stamp out the disease. And, on the other hand, animals might be fatally affected, and show whilst living but very few symptoms. This, however, can now be obviated, as the new agent, tuberculin, which is now being used by Professor Saunders, Director of Experimental Farms for the Dominion, acts with almost unerring accuracy as a detective of tuberculosis. It may be explained that tuberculin is a modified form of the Koch lymph. Prof. Saunders is to be commended for being so prompt in applying this advanced scientific test to the Experimental Farm herds, and it would be well that other breeders where there were any suspects should apply the tuberculin test. We find that several prominent breeders in the United States are using the tuberculin test. Hoard's Dairyman says Mr. F. A. Converse's fine herd of Ayrshires at Woodville, N. Y., has lately been reduced seven in number by an Albany expert who came up and tested them with tuberculin. Seven were slaughtered and post mortems held, resulting in the finding of six more or less diseased with the malady. One, a heifer, was sound, although her temperature increased after innoculation two degrees. Mr. Converse had the suspected cows quarantined last spring, but official test and slaughter did not take place until quite recently, as he did not want to have the animals killed until very satisfactory evidence was at hand, showing them to be diseased. It does not follow that because tuberculosis exists in the herds of a York State breeder, this disease is common amongst the thoroughbred herds of the United States, or even in the State of New York, or that the disease is anyway in an epidemic form through that country. The same applies to Canada. There is no sequence between the isolated herd at the Experimental Farm and the common herds of stocks of shipping cattle through Ontario and Canada. It is a well-known fact that the finer bred you have any dometic animal, and especially cattle, the more striking is the diathesis, or predisposition to disease. In England especially, some of the highest-bred herds and flocks are hardly ever free from some of the many diseases, or some hereditary taint. So the common live stock of a country should not always be judged by the pampered herds of high-class breeders.

Britain and Germany.

It is stated in European dispatches that the attitude of England towards continental diplomacy has been changed materially by the Franco-Siamese affair and the details of its settlement, and that an offer from Germany looking toward an alliance would not meet with the refusal that greeted Bismarck's tender fifteen years ago. It is also surmised that during the German Emperor's recent visit to Cowes this matter was discussed, and that as an offset to it an effort has been made to withdraw Italy from the triple alliance and join its forces to those of Russia. How much of truth there is in all this diplomatic gossip of course it is impossible to conjecture. The only conditions that can be stated with certainty are that during the settlement of the Siam affair England and France were dangerously near a rupture and that if England and Germany were to form an alliance it forever would dispel France's hopes of revenge upon Germany. From this point of view such a consummation is devoutly to be wished, as it would mean peace, and France would have to postpone indefinitely the carrying out of its resentment.

The testudo navalis, or ship worm, has caused the loss of more vessels than were ever destroyed in war. In tropical countries this worm penetrates the timber of vessels and eats away the wood until there is only a shell left, which will crumble at a slight blow. Large beams, apparently sound, after removal from vessels after the outside crust has been broken have been pulled to pieces by the fingers. During the last century an East Indiaman, docked in London, crumbled to pieces when the supports were placed underneath and the water removed.

"How Distrust Stops Trade."

In connection with the prevailing financial depression across the lines, President Cleveland touched the core of the question in his recent message when he implied that no matter whence lack of confidence arose—whether the paralysing apprehension were groundless or not—the existence of distrust in itself was a menace not to be disregarded. Modern business is almost wholly conducted on trust. Mr. Edward Atkinson, the well-known economic writer, discusses in a late North American, with a formidable array of statistical evidence, the question, "How Distrust Stops Trade." He points out that the object of all trade is to provide food, fuel, clothing and shelter for the members of a community. "The final cost of the support of each member of the community is his own proportion of the consumption of these products; no more, no less," he says. "All that each one gets, rich or poor, is his board and clothing. Consumption is the end of the whole effort, whether it takes the form of what is called fixed capital—in which form it is consumed slowly—or something else for immediate use which is consumed quickly." Reckoning on this basis, he calculates that in the United States the average production is about $200 a head per annum, or $600 for each working man or woman upon whom two others depend. Figuring this out with a patience that is Mr. Atkinson's own, and calculating an average of three transactions of bargain and sale to each article, he arrives at the conclusion that the aggregate yearly trade of the people of the United States totals $37,230,000,000. These figures will be found in the official returns, and are quoted here simply to explain the line of Mr. Atkinson's argument, and show at what a figure one of the most conservative calculators estimates the internal, unrecorded trade of a country. This immense trade, he claims, is necessary that every man, woman and child in the Union may be provided with food, fuel, clothing and shelter; and if it be interfered with in any way-say, by the intrusion of mutual distrust—the total will promptly fall off, and the poorer would be deprived of their usual supply of necessaries. The quantity of money in actual circulation bears an infinitesimal relation to the enormous bulk of actual trade—no matter whether Mr. Atkinson's figures are perfectly reliable or not. The great mass of business is done without money. But the moment men cease to have confidence in the money by which all trade is measured, the wheels of commerce are checked. As Mr. Atkinson says: The quantity of money even now in circulation would not suffice for a single month's transactions, hardly for a single week, if money were required in every purchase and sale. The work of trade is done mainly on credit because men trust each other as they have a right to. "The trust reposed in and deserved by the many makes the opportunity for the fraud of the few." The credit which each man can extend to his neighbor depends not only upon the quality of the man, but also upon the quality of the money which is to be paid and which is to be received. When a doubt exists about the quality of the money trade stops. Credit cannot be given even to those who are entitled to it when the credit of the money itself is doubtful. That is what affects trade now. The quality of the money which is lawful in the United States is doubted. Why? Money that is doubted is bad money. It is not fit to be used. The moment distrust of so necessary a condition of trade as money enters, the modern business machine labors painfully. Under primitive conditions, as the Montreal Star puts it, a man can trade a sheep for an amount of grain without the intervention of either trust or money; but modern trade has assisted itself with so many artificial devices, all based more or less on mutual trust, that lack of common confidence is fatal. Other things, such as bad tariffs, high freight rates and the like, may be hindrances; but a suspicion as to the enduring equity of the common measure of value, is a corrosive force. To quote Mr. Atkinson again: "The man who tampers with his scale is a knave; the man who uses a light weight is a thief; the man who gives false measure is a criminal. What word shall we use to designate the man who makes a bad dollar or a legislator who passes an act to force people to take it?" This is the secret of the distrust that has risen from the coinage difficulty across the border—a lack of faith in money as a constant measure. Under free coinage of silver at a price far above the market value of bullion, a dollar is not always certain to mean the same thing; and this uncertainty is as ominously present when the Government is loading up its vaults with silver bullion, bought on a declining market, which every one fears will some day be heard from again disastrously. Business men make close calculations as their probable profits before they launch upon an enterprise, and they are decidedly averse to trusting to these estimates if they are likely to be jostled out of all calculation by a feverish dollar measure. Mr. Atkinson does not believe that these advocates of "bad money" are true bimetallists. "These men are not bi-metallists," he says. "The bi-metallists scout them. They are either ignorant persons who do not know what bi-metallism is, or else they are special advocates of the so-called silver interests, who are ready to defraud the working-people of this country for their own personal profit." The first duty of the American Government would seem to be to restore confidence in the basis of business, and then the "basis" will provide itself.

Blood Poisoning

Mrs. Mary E. O'Fallon, a very intelligent lady of Piqua, Ohio, was poisoned while assisting physicians at an autopsy 5 years ago, and soon **terrible ulcers** broke out on her head, arms, tongue and throat. Her hair all came out. Her husband spent hundreds of dollars without any benefit. She weighed but 78 pounds, and saw no prospect of help. At last she began to take Hood's Sarsaparilla and at once improved; could soon get out of bed and walk. She says, "I became perfectly cured by

Mrs. M. E. O'Fallon.

Hood's Sarsaparilla

and am now a well woman. I weigh 128 pounds, eat well and do the work for a large family. My case seems a wonderful recovery and physicians look at me in astonishment, as almost **like one raised from the dead.**"

HOOD'S PILLS should be in every family medicine chest. Once used, always preferred.