AGRICULTURAL.

Frost-Proof Cellars.

While a perfectly frost-proof cellar is desirable we find many under country farmhouses which are not so. This is more generally the case that cellars are not frost-proof when snow is late in coming to remain on the ground, and the weather is so cold as to freeze the ground to a considerable depth.

Many people, especially farmers, find it necessary to bank up their houses in the Fall to prevent the frost penetrating the cellar. For this purpose various materials can be used, ranging through quite a list, from earth to evergreen boughs. The latter are of some benefit as a protection against frost, but their main use lies in holding the snow after it comes. Damp sawdust, like moist earth, freezes solid and is a poor non-conductor of cold. Forest leaves pressed down in quantities against the underpinning are very good for the purpose of keeping out the frost, and better than either of the above, but entail considerable labor and trouble to gather in sufficient quantity. I have tried all of the above, and can give a method and material far preferable to either, and far more efficient, besides being neater and cheaper in the end.

This is banking the house with boards in the following way: Form some panels of matched boards in length convenient to handle, wide enough so as to reach from an inch or two above the underpinning to the ground on a slant of 45 degrees. Have the panels mitered at the corners of the house and the joints covered by a cleat beneath, so also the joints at the ends of the panels where they join. A set of these banking boards, well put together and painted, and housed during the Summer, will last a lifetime.

The protection against frost this plan affords is superior to any other, as when all other materials used in banking up the house have failed to keep out frost from cellars, the board banking formed a perfect barrier. The boards are secured to the clapboards over the sill by small, slim screws, which shows no disfigurement on the painted clapboards or other finish when removed.

No matter how cold the weather in Winter, or light the fall of snow, the grass will grow in the space enclosed if the boards fit closely to the turf, and are well matched, and good joints are made where the ends of the panels join. The dead air space the arrangement affords is the secret of its success.

After a set of boards are once fitted and properly marked, so as to be placed back again in the same position in the Fall, after being taken up in the Spring, a half-hour serves to put them in place and the same time in the Spring to put them away. There is no clutter of boughs or other material to clear away, but a carpet of green grass to greet one when the banking boards are removed.

Heavy Land Best.

When a country is new there is no deficiency of fertility even of the lightest soil. Its advantages of easy working and quick response to stable manure make it preferable over the slower and later soils of heavier texture. Then as the vegetable matter of clay land becomes exhausted it becomes still later and harder to work. It loses its former capacity for drying out early in the Spring, and thus becomes filled with cold, stagnant water that needs expensive underdraining to put into condition for profitable working. Meanwhile if the light soil had been frequently seeded with clover, and not overcropped, it maintains its early capacity for production, and generally increases it. Clover is a richer manure, containing more of both nitrogen and mineral fertility than did the humus composed of fallen leaves of which the fertility of virgin soil mainly consists.

Even in early days, however, there were many lapses from the careful policy needed to keep sandy land in good tillable condition. These showed that when the sandy soil was exhausted it was in less hopeful condition than was the heavier soil which was harder to work after its vegetable matter had been exhausted. In the case of clayey soil nature puts in a veto against such thorough exhaustion as was possible with land whose texture is mainly sand. The latter interposes no obstacles to passage of roots through it, and what it contains of plant food the plant can more speedily exhaust. In a clay soil fertility after vegetable matter is exhausted is locked up in clods. Underdraining and thorough cultivation break up these clods, but in any case the clay always retains more of mineral plant food than the sand. It may, however, be better helped by the commercial fertilizers, mainly because these are partly composed of sulphuric acid, which doubtless helps to make part of the soil more soluble, and therefore able to give its fertility to crops.

There is no reason why, with fair management, a clay soil, well drained, may not be cropped forever without decrease, but rather increase, of fertility. If clover seed is sown once in three years, and allowed to grow until nearly two years old before plowing the sod under, the manure made on the farm, with phosphate whenever the clover is sown will keep it in good heart for all grain crops. Fruit and garden crops require heavier fertilization, partly for the reason that they are always sold from the farm and return less to the land. But it is easier to grow fruit and garden vegetables a long term of years on heavy land, if well drained, than it is the same time on sandy soil. The latter requires much more manure, and is, after all, little, if any, earlier for most crops than is a well-drained soil with clayey texture.

British Bogus Butter.

An English correspondent says: There has recently been introduced into this country yet another substitute for butter in the shape of a substance—said to be wholesome, as well as economical—known for the present as "Le Dansk." M. Auguste Pelleman of Paris, is the pioneer.

The manufacture of "Le Dansk" has been begun at large works at Southampton. Its basis is the fat obtained from freshly slaughtered cattle, which is first converted into oleomargerine, and afterwards treated and made into "Le Dansk." The process consists in first reducing the fat to small pieces of uniform size in special machines, and then melting it at a temperature of fifty degrees Centigrade. It is then transferred in a liquified condition to water-jacketed tanks, in which it is kept for about two and one-half hours at the same temperature. After this it is drawn off into shallow vessels, where it remains for thirty-six hours at a temperature of thirty-two degrees Centigrade, during which time it assumes a crystalline condition. The product now consists of oleo and stearine, and these are separated by means of hydraulic presses, the oleo being pressed out and the stearine remaining in the press cloths.

The oleo is then placed in churns with certain proportions of new milk and oil and some pure butter, and the ingredients are churned for fifty minutes. The contents of the churn are then removed and cooled in iced water, and the margarine is afterwards placed in mixing machines. Here it is salted and thoroughly incorporated, and afterwards packed in boxes and baskets for the trade. The cooling apparatus and the general machinery are driven by a horizontal compound engine of eight-horse power nominal, which also drives a dynamo, the works being lighted by electricity. The factory is well laid out and every precaution appears to have been taken to insure the absolute wholesomeness of the product, scrupulous cleanliness being everywhere observable.

Preserving Potatoes.

Everybody knows how difficult it is to keep common potatoes from sprouting and spoiling in the spring so as to render them unfit for the table. An American experiment station calls attention to a French method of preserving potatoes for a year and a half in a condition fit for food. It has proved so effective that it has been adopted by the French war department for preserving potatoes for use by the army. The process is essentially as follows: Plunge the tubers, before storing them, into a two per cent. solution of commercial sulphuric acid in water—two parts of acid to 100 parts of water—and let them lie there for 10 hours. During this time the acid will penetrate the eyes about one fortieth of an inch, thus destroying their germinating power, but not in the least injuring the skin. When taken out of the solution the potatoes must be thoroughly dried before storing. The same solution may be used over and over again, any wooden tank or vessel being used for the operation, as the acid so diluted in no way injures the texture of the wood. Chemical analyses show the potatoes to remain as nutritious and wholesome at the end of 18 months as they are when first dug. It strikes us that this method is worth knowing and putting into practice where potatoes are needed for long keeping. But it strikes us that great care should be taken not to break the skin of the potato before it is soaked in the solution.

The General Purpose Cows.

Col. John Stevens, in an address before McLeod County, Minnesota, Fair, said the following about the general purpose cow:

"And the general purpose cow. I contended long for my favorite blooded Bates' Shorthorn, a combination for milk, butter, cheese, beef and stock. In fact, an unadulterated, genuine simon pure general purpose cow, not only for the farmer, but for everybody. My esteemed friend, Governor Hoard, of Wisconsin, took issue with me; so did Prof. O. C. Gregg, superintendent of the Minnesota Farmers' institute, so did a large majority of the prominent writers and dairymen in the United States and Canada. But I persevered to the best of my humble ability, only to be defeated at every corner. We have read of a politician carrying water on both shoulders; we have heard of men running for office wearing two hats, over one head; but a cow is not capable of acting in a double capacity—she is either a beef or a milk. Not but that cows which do not partake largely of either quality may be, and were in the more early days of Minnesota farming, profitable on the farm, but not so much so now, as those which have been tried exclusively for milk or beef."

Progress in Science.

A device has been patented in England by which all kinds of wood can be cut into veneers or boards. The logs are cut into suitable lengths, steamed in a close box through which a current of electricity is sent, and finally placed in a lathe, where they are rotated against a knife. The thin sheets are afterward nipped at the edges and can be used to make barrels, pails, &c., from one stave.

An electric device for clearing a track of obstructions is among the newest ideas. It consists of a triangular steel folding frame, over which a net is stretched. This is placed on the front of a locomotive, and can be opened at will, catching the obstruction upon it. An additional arrangement is a scoop to drop on the track. The recent tests were very satisfactory.

To cut sheet brass chemically, the following method meets with great success: Make a strong solution of bichloride of mercury in alcohol. With a quill pen draw a line across the brass where it is to be cut. Let it dry on, and, with the same pen, draw over this line with nitric acid. The brass may then be broken across like glass cut with a diamond.

A valuable find of skeletons belonging to the fourth dynasty was recently made in Egypt. This is the earliest known date of Egyptian remains.

The wife murderer, Loppy, who was legally killed at Sing Sing, New York last week, was the sixth person put to death in that State under the new capital punishment statute. Conflicting reports as to how this man passed into eternity come from the death chamber. On the one hand we are told that his sufferings were horrible; that the spectacle presented in the death chair when the awful current was turned on was shocking to every feeling and instinct of humanity. On the other hand the assurance is given that there was no undue suffering and that the new method of execution is an improvement on the old one.

This was the objective point when the ancient system was swept away—that when it was necessary to take life it should be done as humanely as possible. Science came forward and offered the remedy. Is it or is it not an improvement? Owing to the secrecy thrown around electrical executions by the law no satisfactory answer can be given. In this respect the law is faulty and should be amended. While the State is under no obligation to make smooth the pathway of the murderer and send him out of the world painlessly it should not torture him. Is electrocution torture? This is the question, and science should be able to furnish the answer. If it is, then electricity as a death penalty instrumentality should be abandoned. If it is not, we should adhere to it. Let us have the cold, clear light of science on the subject. The doubts must be dispelled or the law repealed.

FAR WESTERN RAILROADING.

Animal Life as Seen from the Locomotive—An Atmosphere that Deceives.

Many a strange story the locomotive engineers tell of their experience with animals on the prairies of the far West, says the Rocky Mountain News. Between the Missouri River and the Rocky Mountains are the great plains, spreading out for hundreds of miles. Probably in no part of the country do the engineers come more in contact with animal life. They have taken the place of old jehus of the overland mail and express in the more modern days of rapid transportation. Often the old stages were in great danger of the great herds of stampeding buffalo. The driver, express agent, and passengers, all of whom were well armed, only found safety in the sharp crack, crack of the rifle. This would either turn the buffalo, rushing with almost the roar of thunder over the plains, or would split the herd, so that it would pass in two droves on either side of the stage. It required men of nerve, for sometimes the buffalo would hardly swerve from their course until almost upon the stage and passengers. The rear of the herd, crowding and urging on the leaders, made it a difficult task, testing the courage of the men who faced them.

The buffalo, or bison, more correctly named, still roamed the plains after the railroads came. The old engineers of the Union Pacific, Kansas Pacific, and the Santa Fe used to cut their way through the herds of buffalo. The blow of the whistle and the discharge of firearms would make them scamper away. Sometimes they would blockade a train, but often raced with the locomotive, giving the passengers an easy chance to slaughter them. Trains were also stopped to give the passengers a chance to kill them. The

RACING OF THE LOCOMOTIVE.

with the wild horse and the buffalo is a thing of the past. The buffalo is almost extinct and the wild horse is rarely found. Roping the wild horse used to be a rare sport and industry. A few are still said to roam the Laramie plains and remote sections of country.

But notwithstanding these changes there is still much of interest to the engineer, as well as to guard against, on the great plains. Recently at Holyoke, in Northeastern Colorado, near the Nebraska and Kansas line, I was detained over Sunday. It is in the heart of the plains country, and is the division station of the Burlington branch that extends from Holdredge, through western Nebraska, northeastern Colorado, to Cheyenne. Wy. Locomotive engineers are good story tellers, and many an incident was related that Sunday afternoon of their experience on the great plains. J. S. Willard, who then pulled a freight train between Holyoke and Cheyenne, I found an interesting talker.

"Sheep," he said, "cause more trouble than any other stock. An engineer always tries to guard against killing stock, but if I had my choice I would rather run into cattle, horses, hogs, or any other animals, rather than sheep. Many thousands of sheep are in the great flocks that sometimes cross the tracks of the western railroads. Where there are no fences, a quick turn in the road through a cut may find the locomotive mowing right through them. It is well known how sheep follow their leader. Notwithstanding the moving train they continue to rush under the cars, and sometimes many are killed that the locomotive never touched. They really commit suicide crowding under the wheels before the train can be stopped. Sometimes over 200 or 300 sheep have been killed. But the wool gets into the running gear of the engine, and this causes the engineer more trouble than the killing of other stock. Sometimes the engineer is compelled to stop and clean out the wool that works its way into the more delicate machinery. At the end of the trip a search is also made for wool that may have escaped the attention of the engineer in his examination.

"Yes, we have a good deal of experience with wild animals," he continued, "but not so thrilling as that of the engineers on the Western roads when the buffalo was common on the plains. But there is enough still left of wild animal life to make it interesting. The eyes of the wolf, coyote, wildcat, jack rabbit polecat, and other animals look like a red light when

FACING THE HEADLIGHT

Did not the animals quickly undeceive us by turning their heads, an engineer might think his train was being flagged and stop his engine. There are plenty of wildcats between Wellfleet and Elwood, Neb. On Medicine Creek they trap for beaver. It seems to be a favorite fishing place for beaver and coons. Yes coons will fish. They have little paths down to the edge of the stream, and there, secreting themselves, catch fish with their paws.

"Wolves and coyotes are numerous, but are rarely struck by an engine. Near the Herbert ranch, east of Cheyenne, I have seen a coyote on a wire fench, which seems to have been thrown there by an engine. The wolf of the plains is caught in traps or by sportsmen closing in on a pack in a drive. Sometimes they are killed by ranchmen putting poison on the carcasses of cattle and sheep. Wolves hamstring and then kill stock. Coyotes suck the blood of sheep. The wolf drive is a fine sport on the plains. The wolf, wildcat, and coyote are quick, and jump from the track. But the jack rabbit is less fortunate. The headlight has a strange fascination for this animal, and often it is killed."

A story was told on how a wolf caught in a steel trap had escaped with the trap, but was again caught by the chain becoming entangled in a wire fence. The engineer stopped the train, and the express messenger and mail clerk tried to kill it, but failed. The engineer called "time," rang the bell and the live wolf was left, still tangled in the wire fence.

The antelope still wanders, sometimes down into the section of wire fences. Being unable to escape, this fleet animal runs from the train, making one of the prettiest races in the West. One engineer told a story of how in eastern Wyoming a pet antelope was kept on the ranch of a stockman. The owner had

TWO FINE DEERHOUNDS,

but they and the antelope were great friends. Often from his cab window the engineer had seen the antelope and the hounds playing together.

Incidents were related by some of the party of the slaughter of birds. In the spring time prairie chickens, on a wet morning often sit on the rails and are sometimes killed by the engine. Quail also meet a similar fate. Thousands of snow birds are also killed. An engineer related an interesting incident of a meadow lark that was pursued by a mouse hawk. The frightened lark took refuge on the running board, having less fear of the engineer and fireman than its enemy. It remained with the engine till safe from the hawk, and then left its perch on the running board. Owls and mouse hawks are sometimes killed by breaking through the glass windows of the cab.

Engineer Willard again resumed, saying, "I think the swift is one of the most interesting animals on the plains. I saw one at Akron, Col., that was about eighteen inches long and ten inches high. It was reddish in color, had a white belly, and a bushy tail. It is very fleet as its name signifies, and can outrun a deerhound. They feed mostly on birds. I have seen meat held out to this one, but the swift would not touch it. But turn your head, and the swift would grab the meat in a second. I never heard of a swift being

KILLED BY AN ENGINE.

Prairie dogs? Well, they are pretty thick, but they nearly always get out of the way of an engine. "The prairie dog," said the engineer, philosophizing, "is being driven westward, like the Indian, by the march of civilization. The cultivation of the soil is gradually driving the prairie dog from the plains to the mountains."

A story was then told of Engineer Hurd and his pet mouse, when laying the track from Holyoke to Cheyenne. The mouse found its way into the engine and made its home in the waste box. Two or three times a day it would leave its cosy nest and feed on the grease of the swab of the piston. The engineer and fireman made a pet of it. The mouse was with this engine about three months. It would run and play around the cab and then seek its place in the waste box.

As the railroads on the plain begin to near the Rocky mountains the light atmosphere extends the vision and you can see further than in the murky, moist weather of the East. An engineer from an Eastern road is at first greatly deceived as to distances. At one section of the Burlington, in eastern Colorado, a headlight can be seen forty miles. A tenderfoot would think it was not more than two or three miles away. "In this clear atmosphere," said an engineer, "when it seems that I am close to a headlight I look to see if the reflection of the opposite light is on the rails."

At Stonhan, Col. a station on the Cheyenne branch of the Burlington, there is a straight track of eight miles, where trains meet half way for the side track. It took some new engineers a long time to get used to it, for at first they would slow up their trains long before they were near the oncoming train, which at first seemed so near.

Stories have been told of how new engineers have whistled down brakes on the plains, in mistaking the morning star for a headlight. There may be more truth than romance in it.

A Lively Tussle with a Wolf.

"Did you ever see a wolf?" asks a friend of mine. "Yes, more times than once. The first first time was in this wise: We were boys together, Johnson and myself, born in the same neighborhood, strapped with the same piece of leather in the red school-house that topped the hill, behind which was a pond in which we bathed and swam together; gathered beechnuts into the same basket, shot partrdges in the same woods, and last, but not least, trapped wolves and other game, honestly dividing the proceeds between us.

It was winter, the snow two feet deep in our settlement, which was in the province of New Brunswick. Wolves were plenty, and Johnson and myself were doing a good business trapping them. On each was a bounty of $10, and each skin was worth $3 more.

One Sunday morning, after Johnson had made himself ready for church, he thought he would examine one of his traps set in the edge of the woods near his father's field. Putting on his heavy boots, and without gun or axe, he strolled across the field. When near the spot, the rattling of the chains by which the trap was fastened quickened his pace; and, behold, a large wolf was in the trap.

Johnson saw at a glance that he was slightly caught by the end of his paw. Now, he soliloquized: "If I go back for the gun he may succeed in getting free before my return," for the brute was making frantic efforts to free himself. The bounty $10, skin $3, it would not do to miss him. Being a fine athlete, Johnson made a bound for the wolf, catching him by the throat. In the mean time the wolf had cleared himself from the trap. Then came the tug-of-war in that two feet of snow. The struggle was short and furious.

Johnson held his death grip, sometimes on top and again underneath the brute, both so covered with snow it was difficult to distinguish wolf from man. The wolf at last was overcome, kicked and choked to death by his powerful antagonist. Johnson did not attend church that day, for his Sunday clothes hung in tatters; besides, there were some ugly scratches from the sharp claws of the now dead game.

"I will never try that again, Mack," he said to me. "I thought myself a match for almost any wild animal of these woods, but this fellow was a bigger job than I reckoned on."

The Legislature of the North-west territories, which met for the transaction of business on the 10th inst., will for the first time in the history of the territories have authority to expend a considerable proportion of the money voted by the Parliament of Canada for territorial purposes. One-half of the financial year will have expired on January 1 and, subject to all expenditure made or liabilities incurred up to that time, the following sums have been placed at the disposal of the Assembly or to any committee it may appoint for the purpose of dealing with the subject of finance:

Travelling expenses of officials	$ 2,000
Probable cost of elections	10,000
Stationery, telegrams, etc	2,000
Subscriptions to newspapers	500
Management of well-boring machines	3,000
Schools, $100,000 less (less $5,000 required to cover grants in support of schools in unrepresented territory)	95,000
Roads and bridges	35,000
Printing and advertising, including translation and publishing of ordinances	7,000
Publication of magistrates' returns	1,500
Books, North-west Government library	1,660

TIT-BITS.

Juvenile Generosity.

Mrs. Grayneck—Johnny, I am very glad to see that you gave your sister the larger half of your apple.

Johnny—Yes'm, I was glad to give it to her.

"My little son, do you know how it delights me to hear you say so."

"Yes'm; there was a big worm hole in that half."

She Succeeded.

Asker—"I've often wondered how Mrs Etna would make out in her married life. She's been married about three years now, hasn't she?"

Tasker—"About that, yes."

"Well, I've often heard her say, in days gone by, that if she ever had a husband she'd make him stand around."

"She's succeeded. She's made him stand around the tavern barroom in preference to enduring the daily anathemas she breeds for the home atmosphere.

A Good thing Recommended.

"Good bordig, Browde. I see you still have that bad cold."

"Yes; I'be pretty biserable."

"You ought to try Sbithers's Idfiuedza Bixture. It gobpletely cured be."

Too Much of a Show.

Jack—I know Ethel loved me.

Tom—But you had no show with her father, eh?

Jack—Oh, didn't I? I had a regular circus with him. That's where the trouble came in.

Insuring a Perusal.

Fangle—What are you cutting that piece out of the paper for?

Cumso—I'm going to take the paper home and I'm very anxious for my wife to read the article, as it is on economy in dress. If I merely take the uncut paper home she won't see it.

Fangle—But I don't see how she's going to see it if you take the paper with the item cut out.

Cumso—Well, when she sees the place where the article was she'll be so curious to know what was cut out that she'll send and get another copy.

True Philosophy.

First Chappie—Deah boy, are you ill? You are on that couch most of your time.

Second Chappie—No, Cholly. Not ill. Only me bwain is so beastly wigowous it tires me out, and I must always lie down when I thwink. Evewy day I pawsitively envy the common fellahs who can thwink standing up.

Too Mild for Description.

Beauty: This is a nice simple little bonnet; don't you think so, John?

The Beast: It is more than simple, my dear; it is idiotic.

He Cured it!

A country gentleman employed a half-witted youth to do odd jobs about the house and garden. One day he gave him half-a-crown, and watched to see what he would do with it. The boy hid it under a stone in the garden. As soon as he had gone away the gentleman put in its place a shilling.

The next day the boy went to look at it. He took it in his hands and said:

"You have grown less!"

He replaced it beneath the stone again. His master took it away, and put in its place a sixpence.

On the following day the boy went again, and took it out, and said:

"You grow less every day!" and then replaced it again.

His master then put a half-sovereign beneath the stone.

Next day the boy went to the stone again, and when he saw the gold he took it in his hands, and said:

"Poor old chap! You look as if you were going to be ill, so I had better take you away, or I shall be losing you altogether," and so he picked it up and put it in his pocket, and walked away.

Little Johnny Tells a Story.

One time there was a young gote which felt butty, and there was a ole ram wich lay in the road, haf a sleep, chune his cud. The gote he had been shet up in a paster ol his life, an had never saw a ram, an he sed to his sister, the gote did. "You jest stan stil an se me whipe that freek off the face of the erth."

So the gote he went up before the ram an' stomp his feets an' shuke his head real friteful, but the ram he dident git up, but only jes kep a chune his cud and wotched out between his i lashes. Bime by the gote he backed of and tuke a run, an' then arose up in the air an' come down with his hed on the ram's hed, wack! The gote's hed was busted, but the ole ram he never wank his eye. Then the ole ram he smiled with his mowth, an' sed to the butt gote's sister. "Pears to me, miss, that kangaroo of yourn is mity careless where he lites, he come gum dasted near making me swoller my cud."

Æsop With the Chill Off.

A wolf who was taking a constitutional through the forest one day before breakfast came across a nice young kid, and prepared to make a meal of him.

"Spare me!" said the kid; "I'm such a little one; I'll only make you feel hungrier than before."

"I certainly regret you aren't bigger," replied the wolf, with tears in his eyes; "but we cannot expect to get all we would like on this side the grave. I must just get along as best I can with a light breakfast and an early dinner."

"Do let me off this time!" said the kid; "I'm a poor, friendless orphan, and my aged parents have no other means of support but myself."

"I resemble your aged parents," answered the wolf, looking round with a heavy sigh, "for I don't see that means of support but yourself either."

"Then," continued the unhappy kid, "I'm a helpless stranger."

"Quite so," interrupted the wolf while a hospitable smile played around his expressive lips, "you are, and I will take you in. Welcome, little stranger!"

And he took him in!