THE FARM AND GARDEN.

CROSSING OF CORN.

All farmers are aware that different varieties of corn will mix, as it is called, and some attention is usually paid in planting to prevent it where it would unfavorably affect a choice variety. This crossing, wherever it occurs, is caused by the fertilization of the pistils, the silk, of one variety by the pollen distributed from the tassels of another.

At the Kansas station for three seasons past careful experiments have been made in the artificial pollination of corn. In 1888, forty-one varieties were used; sixty-six attempts at cross fertilization were made, of which thirty-nine were successful. As a practical summary of the results, it is said that the numerous crosses of maize by artifical pollination were mostly successful, the different races, as dent, flint, soft, sweet and pop corn, with apparently equal resistance.

The effects of the crossing are in comparatively few cases (mostly sweet varieties) visible the first year. The second year (the second generation) shows generally ears more or less completely blended, often exactly intermediate between the two parental types; more rarely the grains of a single ear are unlike each other, and each may resemble closely or remotely either parent. The product of the third year is generally true to the seed planted; by selecting diverse grains from any ear or from different years, ears are obtained with grains usually like those planted. Any desired form of a "cross" can therefore apparently be perpetuated.

In view of the above it is possible to effect desired points of improvement in varieties by crossing, and fixing or perfecting by subsequent selection. The experiments the past season were much reduced in value by reason of serious drouth. Favorable seasons will doubtless furnish more favorable or at least more conclusive results in the efforts to improve varieties.

RATIONAL CORN CULTURE.

The necessity for frequent stirring of the soil in a cornfield is paramount for itself alone. If no weed ever appeared there would still be need for frequent cultivation. A few years ago I left ten rows through a cornfield unworked, while the rest of the field was cultivated every week until the tassels appeared. The weeds in those ten rows were pulled by hand, and there were very few, for the ground was a sod deeply plowed, and harrowed thoroughly up to the time the corn was planted. The stalks in the ten rows were more than three feet shorter than those in the rest of the field, and there was scarcely a single ear that was filled out to the end. The rest of the field, which was a few square yards over two acres, yielded one hundred and ninety-eight bushels of shelled corn, estimating two bushels of cars for one of grain. The corn was husked by the bushel and measured twice, so that no mistake was made in the measure. The ten rows made up exactly one-fifth of an acre (thirty-two rods), and gave only eleven and a half bushels of corn. Everything else being equal, the difference, being over forty bushels to the acre, was clearly due to the absence of cultivation, the ground being baked and dry the greater part of the time. Since then I left one strip on the side of a field, measuring exactly an acre, without either cultivation or weeding, and it yielded fourteen bushels of poor corn, the rest of the field yielding forty-two bushels of grain to the acre. In 1889 I had an eight-acre field that yielded enough to completely fill a five-hundred-bushel crib, equal to over thirty bushels of shelled corn per acre, on a very poor old field that was newly broken up, and without manure, but was cultivated eight times, while my half of a rented four-acre field, worked only twice, amounted to one wagon load of ears, equal to twenty bushels of grain, and this small field was much better soil than the old field.

My practice for many years has been to work the corn once a week, beginning on Monday when the weather was suitable, and continue the working as long as a horse can get through the rows without breaking the stalks—and this is usually until the ears begin to hang out in the rows—and the cultivation has always been on the surface. Some years ago a heavy rain washed a slope on one of my fields very badly, and exposed a fine network of roots for several square rods, which completely filled the soil. Several of the plants were washed loose, and could be taken up with the roots. The roots of many plants were eight feet long, spreading over nearly three rows each way, and they lay very near the surface. In places roots were abundant at a depth of two inches, and very few were as deep down as the land had been plowed. More recent examinations, made purposely, have convinced me that this is the habit of the corn plant to send out its roots near the surface. It may be that surface manuring with fertilizers tends to such a habit of root growth, but soluble fertilizers quickly diffuse themselves through the soil, and it may be that the desire for the sun's heat, which corn so much needs, brings these roots to the surface.

It is clear that a plant having such a superficial root growth should not be plowed, but requires only surface cultivation; for the breaking of the roots must necessarily check the growth of the plants. I had once a plain demonstration of this fact. A field of Evergreen sweet corn was partly plowed, contrary to my instructions, by a willful hired man, who laughed at my shallow cultivation of the rest of the field. He plowed it deeply and ridged up the rows until I discovered and stopped him. The weather was hot. The corn wilted at once and never grew afterward. Not one ear was gathered from the plowed rows, while the rest of the field averaged over eleven thousand ears per acre, counted for the market. To break the feeding roots of a plant is clearly to stop its feeding, and to turn all the power of growth to repair the damage and make new roots; at a time, too, when all the strength of the plants is required to form the blossom or the grain. Something has been said of the usefulness of root-pruning corn. It is equivalent to drawing a cow's teeth when she is busy turning good grass into milk and butter, and equally prevents the gathering of nutriment. It is practiced for this special purpose in fruit culture, for checking the growth of trees to reduce the amount of new wood, and it has the same effect upon the corn which we want to hasten to maturity as soon as possible, and to aid in every way in enabling it to gather food and increase its product.

For this reason the cultivation of corn should be early and often, and as late as may be possible, and always on the surface, merely keeping the soil loose and mellow, and absorbent of moisture and the heat of the sun. It helps, too, very much to apply fifty pounds per acre of some active soluble fertilizer immediately after the working of the soil at intervals through the summer, especially when the blossoms, the tassel, and the silk are about to appear, and when the grain is about to form after the impregnation of the silk. These are periods in the life of a plant when extra feeding will greatly assist in the performance of these reproductive functions upon which full ears, and sound grain, and early maturity depend.—*American Agriculturist.*

FARM AND GARDEN NOTES.

Every rod of useless fence is a useless tax.

The younger the weed the more easily killed.

Rye makes a good pasture—better than timothy.

Commercial manures are best for potatoes.

Thoroughly clean, air and whitewash your stables.

Manure well if you want a good crop of lawn grass.

Fewer acres and better culture should be the motto.

The value of manure depends on what it is made from.

Have a system of rotation in the garden, as elsewhere.

Begin to cultivate corn as soon as you can follow the rows.

Only the finest manure should be used on the asparagus bed.

Plowing in green crops is the cheapest method of manuring.

The best prepared soil is the most favorable for germination.

Whenever the sheep comes to the barn give them water and food.

Put in a succession of crops of green peas; the same of green corn.

Old strawberry plants seldom produce as large berries as do young ones.

"Sawdust diminishes the efficiency of stable manure"—but only so far as it dilutes it.

The greatest potato yield at the Michigan Station was with seed planted one inch deep.

Farm products that excel in quality and have an attractive appearance never have to hunt a market.

It would do no harm, but likely destroy vermin and microbes, to fumigate your stable with sulphur.

Cabbages ought to be cultivated often and stimulated with fertilizers if the soil is not sufficiently manured.

Many coniferous plants are increased by cuttings on a large scale, especially retinosporas, arbor-vitaes, and the like.

Cuttings of plants which root with difficulty are sometimes grafted, with good effect, upon those which root easily.

The rhubarb plant may be increased by divisions. Professor Bailey says that each division must contain at least one bud on the crown.

Produce something out of season, make it attractive and delicious, and see how quick it will sell and how soon there will be a call for more.

The soil for beets should be plowed from twelve to fifteen inches deep, and as much of the beet root grown beneath the surface as possible.

Gluten meal is a very excellent feed. It is the corn meal with the starch taken out of it, and consequently has a better feeding rate than the corn meal itself.

The black walnut is designed to cut an important figure on the farm in the near future. It can be made as profitable as the apple tree wherever it will thrive.

Leaf mold is a natural fertilizer for all trees and shrubs, and wood flowers, or any plants that like a shaded place. It is also very useful as an addition to potting soil.

Freshly laid sod is much more likely to succeed if covered with about an inch of fine soil. This will save it even in a dry time, when otherwise it would fail to get a good start.

It is true, much of the breed goes in at the mouth, but to know the best kind of a mouth to put it in is the rub, and necessitates a full knowledge of the herd book and score card.

Paris considers milk pure when it contains one pound of butter and four ounces of solids per quart, says and English journal, but such proportions seem irregular to dairymen here.

The advantage of hatching guineas under common hens is, that properly managed, they are usually more gentle than if the guinea hens are allowed to hatch them out and raise them.

While old hens usually lay larger eggs than pullets the shape of the egg has little or nothing to do with the life germ, and if the broad end is smooth and the egg is properly fertilized it will hatch.

The duration of a raspberry plantation depends upon the variety cultivated as well as upon the nature of the soil and care given the plants. Ten to fourteen years is about the average under good culture.

A good time to apply fertilizers to asparagus is just when we cease to cut the shoots. This causes a luxuriant growth of the plants during summer and autumn and this, in turn, gives thick fat shoots the next season.

Largest Farm in the World.

There is a farm in the southwest of Louisiana measuring 100 miles north and south and twenty-five miles east and west. The 1,500,000 acres of which it is made up were purchased seven years ago from the State of Louisiana and from the United States Government by a syndicate of northern capitalists, by which it is now farmed. This immense tract is now divided into convenient pasture stations or ranches, the fencing alone having cost $50,000. All the cultivating, ditching, etc., are done by steam power, a tract of about half a mile wide being taken and an engine placed on each side. The company has three steamboats upon the 300 miles of navigable waters which traverse their estate, and also possesses a ship yard, a bank and rice mills.—*Commercial Advertiser.*

A Bottomless Spring.

The great seltzer spring at Saratoga, N. Y., has been sounded to a depth of 3300 feet without touching bottom or encountering any obstacle. This strengthens the belief that this great Northern summer resort is built over a subterranean sea.—*St. Louis Republic.*

HOUSEHOLD AFFAIRS.

A CEMENT FOR IRON.

This cement is suitable for stoves which have become cracked and it is desirable to patch up to meet the emergency. Such patching will not last long, but serves for a makeshift at the time. Beat the whites of four eggs to a stiff froth. Stir into them enough powdered quick lime to make a thick paste, and add iron filling dust till a heavy paste is formed. Fill in cracks, and when dry blacken them over carefully. It is best to let the stove remain several weeks before using.—*New York Tribune.*

COOKING POTATOES PROPERLY.

There are many ways of cooking potatoes, and old potatoes need more care in the cooking to make them nice. They should be peeled and laid in clear cold water some time before cooking—changing the water two or three times, or use ice if you have it at hand. "New potatoes" can be made from old ones. Peel the potatoes and cut rather small, into even-sized pieces, put into ice water for an hour or two; twenty minutes before you wish to serve them drain the potatoes from the ice water and throw into boiling salted water, cook quickly, drain off the water and dry the potatoes a moment or two, then put in a deep hot dish, and pour over cream sauce—a pint of sweet cream, seasoned with butter, pepper and salt. It can be thickened if desired, but is more delicate without. Potatoes done in this way are quite equal to "new potatoes," and are usually very well liked in the spring. Another nice way to cook potatoes is to peel them and let them stand some time in ice water, then bake in a hot oven and serve at once. The crisp brown outside is very nice.—*Chicago News.*

ICES.

The fashionable givers of dinners try to outdo one another in their modes of serving ices, calling all their ingenuities to their aid, and, at times, developing some marvelous methods of serving ices and creams.

Ices frozen into the shape of wax candles are a novelty, each of these having a little taper at the end, which, just before being served, is lighted, the cream candle being brought on in a china candlestick, with snuffers of candy.

Then there are baskets made of braided sugar candy filled with ices imitating peaches, plums, etc., and flavored like the fruit.

A green melon can be served filled with rose-colored water ice, filled with seeds of chocolate ice, while one of the latest ideas is a big leaf of green ice holding a handful of real strawberries.

At one dinner cream was served in the hearts of real calla lilies, the centers of which were removed before the filling white at another pale, grayish chocolate ice was molded to represent a large flat oyster shell closely shut.—*Detroit Free Press.*

FRUIT JELLIES.

Strawberry Jelly—Select firm, not over-ripe berries, put them in a stone jar and stand in a kettle of cold water; cover the top, and boil slowly until the berries are soft; pour into a jelly bag, and press out all the juice. Measure, and to every pint allow a pound of sugar; put in a preserve kettle and stand over the fire. Boil the juice twenty minutes; add the sugar, stir until it dissolves; take from the fire, pour in jelly glasses and set to, cool; when firm cover and set in a cool dark place.

Cherry Jelly—Pick over ripe Murillo cherries, select the most perfect; put in a preserve kettle and boil until the cherries are tender and will mash; strain through a jelly press, measure the juice, put on to boil for half an hour; add a pound of sugar to every pint of juice; cook until it will jelly: take from the fire, pour in glasses, cover and set aside.

Gooseberry Jelly—Wash a gallon of gooseberries, and put in a kettle with just enough water to cover; boil for ten minutes, wash and press juice through a jelly bag. Return to the kettle; add a pound of sugar to every pint of juice; boil rapidly for fifteen minutes; take from the fire, fill glasses and set to cool.

Raspberry Jelly—Crush the berries; boil, strain and measure; to every pint of juice allow a pound of sugar; cook until it jellies; take from the fire, fill glasses and set to cool.

Currant Jelly—Strain ripe currants; scald; when cold mash and strain, allow a pint of juice and three-quarters of a pound of sugar together. Boil the juice twenty minutes; add the sugar, let dissolve; cook five minutes, take from the fire, pour in glasses, seal and set in a cool, dark place.

Currant Jelly—Pick ripe currants from the stem, and put them in a stone jar; set the jar in a kettle of boiling water and boil until soft. Pour in a flannel jellybag, and let drip without squeezing. Measure, and to every six pints of juice allow four pounds of sugar. Let boil twenty minutes; keep well skimmed. Put in glasses, and set in the sun until firm.

Currant Jelly—Without cooking squeeze the juice from ripe currants, and strain it through a jellybag; to every pint of juice allow one pound of sugar; mix well until the sugar is dissolved, then pour in small glass jars; seal, and set in the sun two or three days.

Green Grape Jelly—Stem well grown green grapes, put in a porcelain kettle; cover with cold water, and boil until the grapes are tender; drain through a flannel jellybag, but do not squeeze. To every pint of juice allow one pound of sugar. Put in a porcelain kettle and bring to a boil; stir until the sugar dissolves; skim, and boil until it jellies, take from the fire, fill glasses and set aside until firm, and set in a cool, dark place.—*Mrs. Parker, in Courier-Journal.*

Protection for Naval Gunners.

A new system of protection for gunners in exposed places on men-of-war in action is to be adopted by the navy department. Experiments are now being made looking to the attainment of that object, and the best result obtained thus far is from a wire webbing made of intertwining spirals remarkably flexible and strong. It resembles somewhat the old-fashioned chain armor of the crusaders' time, and curtains of this material will be used to protect gunners behind shields from fragments of exploding shells. The resisting quality of this network will be equal, it is confidently believed, to that of a solid plate of steel an inch thick.—*Chicago Times.*

Next year all students in St. Petersburg, Russia, are to have their heads measured.

TEMPERANCE.

THE ANGELS OF EVIL AND OF GOOD.

The Angel of Evil stood and said—
"Take, Mortal, take this cup;
It will cheer your heart and clear your head;
Take, take, and drink it up!

"When your feeling low, 'twill give you tone;
When weak, 'twill make you strong;
It will comfort you when all alone,
And when the world goes wrong.

"You need not indulge to vile excess,
But use your self-control;
Yet wine lightens care, subdues distress,
And stays the fainting soul."

So the Angel of Evil stood and spake,
As on the cup's full brink,
The red wine gleamed, and he whispered—
"Take,
O Mortal! take, and drink!"

But before the tempted one could drink,
The Guardian Angel rose,
And cried—"Nay, Mortal, beware, and think,
Nor taste the cup of woes!

"Beneath its light lies a fatal spell,
Its pleasures turn to pains;
And its countless victims groaning tell
Of its scorching, fiery chains.

"Upon the wine when it smiles look not,
Nor court the joy it brings;
For saintly souls it can foully blot,
And plant a thousand stings.

"Abstain, and seek for the grace Divine,
Which gives you strength to stand,
And labor to save from treacherous wine
Your home and native land!"

The Angel ceased, and the listener blest
The kind and warning voice;
And whosoever heeds the wise behest,
Will surely well rejoice.

For Wisdom's ways are the ways of peace,
And pleasant everywhere;
And the joys of those will never cease,
Who join good work to prayer.
—*Rev. Dawson Burns, D.D.*

EFFECT OF DRINKING ON WORKMEN.

A big Cincinnati manufacturer thus describes the effect of the drinking habit on workingmen: "A drinking man will turn out ten to twenty per cent. less work than a non-drinker, and in addition it is apt to be defective and require overhauling. This is especially true of heavy beer drinkers. A workingman may tamper with whisky to a very considerable extent and still be capable of a bright idea or suggestion; but not so with beer drinkers; they become heavy, sodden, lack ambition and seldom vary the mode of doing their work. When one workman drinks too much it affects the work of others, on the principle that 'a little leaven leavens the whole lump.' The workmen of a shop are parts of a great machine, and the inability of a part to perform its functions will derange the whole. The amount of the derangement will be in exact proportion to the number of parts affected. The employer pays for what he gets. If drink decreases a man's output ten to twenty per cent. he will receive that much less, or the employer will retire from business, unless he can command sufficient sober help to make up the shortage of the drinkers. Arbitration of labor difficulties would be an exceedingly easy matter and long strikes would be unheard of, if saloons were closed. All the trouble we ever had with our hands could be traced directly to saloon influences."

TEMPERANCE NEWS AND NOTES.

The alcohol habit and the sunstroke go hand in hand.

Mayor Hemphill, of Atlanta, Ga., has vetoed all the beer licenses in that city.

The Indiana Grand Lodge of the Knights of Pythias has declared liquor dealers ineligible to membership.

The Irish Temperance League has issued a pledge card in Arabic, which it is believed is the first temperance pledge card sent out in that language.

Walter Besant formerly approved of having liquor sold at the People's Palace, East London; now he says it has been proved that no one there wants it.

That the United States is a beer-drinking nation is evidenced by the fact that for the year ending April 30, 1891, they consumed 30,000,000 barrels of the amber fluid.

Professor Osler writes to the New York *Medical Journal*, that in all the large hospitals of Germany, cases of diseases of the heart coming directly from excessive use of beer are common.

Mrs. Chapin, of South Carolina, writes that she has had a very prosperous campaign in Georgia and Alabama. At La Grange she pledged 135 ladies to total abstinence and to use their influence to prevent social drinking. At Macon College she added thirty-five to the "Ys" and organized a union of sixty in the suburbs. During the three weeks' trip she took over 500 pledges.

A PHYSIOLOGICAL VIEW OF INTEMPERANCE.

It is claimed by high authority, says the writer of an annual report of a home for inebriates, that physiology has in no way settled the question between abstinence versus moderation, in regard to the use of alcohol. But it is a mistake to suppose that nothing is settled on physiological ground about the use of intoxicating liquors. Within the last few years many inquiries, researches and experiments have been made, with all the contrivances of modern science, more intricate, perhaps, and more important, certainly, in their bearings upon this inquiry than the world has seen before, and the results, which are already incontestable, are not inconsiderable, and I believe it must be admitted that they give to the temperance argument a strength, on physiological ground, which it has never been able to use before.

I have found it to be true, from my own observation, that the imbibing of even small quantities of alcohol, or what is deemed a small quantity by the user, will degenerate the nerve and muscular tissues by hardening them, and interfere with the functions, developing disease, or rendering accidental or zymotic diseases less likely to be cured. Of course, with such interference with nerve structure the mental manifestations must be changed. The effect of this agent is always to strike at the higher faculties of the mind. It batters the keen edge of high sensibility, and the man is shorn of those high qualities which make him sensible to the duties he owes to his family, his country and his God.

Science has also revealed to us another fact bearing upon this subject. If science is still in doubt in the matter of total abstinence, it is clear and positive in its affirmation that, beyond a certain degree—a degree as yet unknown, and yet a degree which science has of late years been steadily showing to be less and less—what we call alcoholic stimulants do not stimulate at all, but they paralyze the structure in which they work. The liquor which has intoxicated the man has simply paralyzed him, and every step of intoxication is not merely a step towards, but a stage of increasing nervous paralysis, a stage of what physiologists call devitalization of the nervous system. In other words, alcohol is an anæsthetic, and its constant use, in its secondary action, produces the condition I have before described, —paralysis in its various stages.

I only mention these facts to show that we have to deal with a subtle disease, deep down in the human structure, and with a condition which, in spite of law, will continue to reproduce and perpetuate itself.

Growing Lettuce by Electric Light.

It is now believed that where it is profitable to grow lettuce under glass for market, the electric light can be profitably used. Wm. Rawson, of Arlington, Mass., has experimented for one season and feels encouraged to go on with it. The Worcester Co. (Mass.) Horticultural Society has published an account of what Mr. Rawson did. One house for forcing lettuce, 200 feet by twenty-four, was given in charge of one arc light, active till midnight, at a cost of $15 per month. The crop was advanced in time twenty per cent. One week's advance in five, is a great gain to the market man. When the electric light was brought to some perfection, much was hoped for it as an aid in the artificial culture of plants. Dr. Sieman's experiments indicated some good results, but no attempts have been made to apply the principle to profitable uses. It seems to be conceded that plants can proceed with those changes necessary to healthy plant growth to a great degree under electric light, though not nearly to the extent they can under sunlight; but the open question is, will they do this to an extent to make its use profitable to the cultivator.—*New York Independent.*

The 1890 record for British lifeboats shows a saving of 555 lives besides rescuing twenty-seven vessels from destruction.

"WHY, ARE YOU SICK?"

"I know precisely how you feel; it is that nervous, irritable feeling, your back troubles you, and when you try to read a little, your head aches. Isn't that so? I know it. Oh, bother the doctor! Get a bottle of Vegetable Compound, and take it faithfully, as I have done. I've been through this thing myself, but am never troubled now. Do as I tell you, dear."