

FARM AND GARDEN NOTES.

NOTES OF INTEREST ON AGRICULTURAL TOPICS.

Points in Caring for Sheep—Clay Soil for Pears—A Substantial Granary—A Handy Cattle Trough, etc.

Points in Caring for Sheep.
Visit the flock frequently and salt regularly. In hot weather watch for maggots. If a sheep is lame examine its feet and apply a remedy at once. A thinly-wooded, hilly tract is an excellent place for pasture. Sheep are great eradicators of weeds and brush. They improve the soil by adding to its fertility and are a profit to the owner.

Clay Soil for Pears.

It is universally agreed that a heavy clay soil is best for the pear. There are various reasons for this, the principal one being that a clay soil is always rich in mineral fertilizers, while a sandy or gravelly soil is deficient in this kind of plant food. But the clay soil, though rich in phosphates and potash, may not have them in available form, and it may need a dressing in the spring of these minerals in available form. Trees on a clay may need dressings of available potash and phosphates in the years when the tree is bearing. On sandy soil the pear tree always needs these manures. The pear roots develop, so that it is never affected by droughts, and in clay soils it doubtless draws mineral fertilizers from the subsoil below where the roots of grain and other crops usually grow. It is a great mistake to allow the tap root of a pear tree to be cut off before it is transplanted.

A Substantial Granary.

The following plan for building a granary for wheat, corn and oats, and at the same time to have it rat and mouse proof and well ventilated, is a good one:

Put up frame of wood sufficiently heavy to carry the weight of grain desired to store. Put in plenty of studding. Box with green lumber six inches wide. This will shrink enough to let in plenty of air from outside. Lay the floor with same material. Then line floor, sides and overhead with perforated sheet iron. For corn perforate with larger holes than for wheat. This will give plenty of circulation and will sure keep out rats and mice.

Make your frame to take on equal lengths and width of iron without having to cut it. Thus you will have clean, sweet feed for your stock, and for yourself it will be a pleasure to know that you are not eating out of the same dish with rats and mice.—*South-Corn Farm and Truck Grower.*

A Handy Cattle Trough.

It is often desirable to move cattle troughs from one place to another, hence they should be light and strong. Most troughs in our western feed lots are too heavy and cumbersome to be easily handled in moving or loading them on a wagon. A trough made as described below will be very strong and light enough to be handled by two men.

Make two supports or benches, the upright posts to be 3 by 3 inches, 2½ feet high and the crossboards or cleats to be 1 by 8 inches, 3½ feet long, either nailed or bolted on the uprights. The upper crossboards are nailed 7 inches from top of uprights and the other near the bottom. Next place these two benches 8 feet apart and bolt a brace plank on each side of them, running diagonally from under the crossboard of one bench to the foot of the other. Now make a tight box 12 feet long, 3 feet wide and 6 inches deep. This should fit snugly on your support, to which it can be nailed or bolted if desired. If good lumber is used, as should be, this trough will give entire satisfaction.—*Orange Judd Farmer.*

How to Make a Cement Tank.

In building cement water tanks it is preferable to make them either square or oblong for convenience in constructing the frame in which to mold the cement. For the foundation dig down until solid soil is reached, or below any danger of frost, and then fill this excavation with small stones up to within seven inches of the top, or if the bottom of the tank is wanted above the level of the ground it can be filled up as much as three or four inches more. After this is done put on five inches of concrete, which is made of six parts clear gravel and one part Portland cement, just damp enough to firmly pack. This is a part of the work to be very particularly about, as the firmer you pack it the better the job will be when finished. As soon as the concrete is put down, and before it dries any, put on a top coat one inch thick, which is made of two parts sharp, clean sand and one part cement thoroughly mixed and just wet enough to be like common mortar.

The side walls should be at least twelve inches thick, ten inches of the coat on the inside and outside. A wall of less width than this is apt to spring if the tank is very large. The walls must be built inside of a frame, and as soon as the wall begins to dry the frame can be removed. In building the wall the frame can be put up as the wall is built. After the frame is started, take some of the finishing coat and put an inch thick on the frame, so that when the frame is removed it will make both the inside and outside of the tank smooth. After plastering up six or eight inches in this manner, fill in the centre with concrete and firmly pack it. These operations can be continued to any height desired. The boards should be planned, to prevent the cement sticking when the frame is removed. A tank any size or shape can be built in this manner and it will stand the test if

care is taken in building. It is not practical to build a frame, and then lay it and plaster with cement, for it is not only hard to make the cement stick, but in a short time the wood will decay and the work is lost.—*American Agriculturist.*

Poisonous Mushrooms.

The edible mushroom is a very valuable article of food, and as the wild edible mushroom could often be secured and made use of on the table, saving meats that are more valuable—and, upon the whole, being a much better food than meats—people should be encouraged to eat mushrooms when they are to be found. But there are several poisonous varieties, and the utmost care must be exercised in avoiding these varieties. Some varieties are not dangerously poisonous, while others are deadly. A poisonous mushroom may be told by the "cup" at the bottom of the stem. The bottom, or lower part of the stem, is swollen or bulbous, and the upper part of the bulbous portion is covered by a ragged surface that sometimes looks like the margin of a cup, or containing, in the absence of the cup formation, rings that are not entirely complete. Any mushroom that has a cup or the "suspicious" of a cup" should be rejected as poisonous. It is deadly so. Reject it. And if the mushroom does not have a cup or such other indications as we have described, it is better to taste a little of it. A tender, palatable mushroom is usually not poisonous. If the little portion tasted is not palatable it may be considered poisonous.

Dr. W. C. Farlow, of the United States Department of Agriculture, gives the following rules: 1. Avoid fungi in the button or unexpanded stage; also, those in which the flesh has begun to decay, even if only slightly. 2. Avoid all fungi which have stalks with a swollen base surrounded by a sac-like or scaly envelope, especially if the gills are white. 3. Avoid fungi having a milky juice, unless the milk is reddish. 4. Avoid fungi in which the cap or pleats is thin in proportion to the gills, and in which the gills are nearly all of equal length, especially if the pleats is bright colored. 5. Avoid all tube-bearing fungi in which the flesh changes color when cut or broken, or where the mouths of the tubes are reddish, and in the case of other tube-bearing fungi experiment with caution. 6. Fungi which have a sort of spider-web or flocculent ring around the upper part of the stalk should in general be avoided.—*The Epitomist.*

Keeping the Cans Clean.

There is serious trouble in every creamery in the land over certain of the patrons not keeping their milk cans clean. The difficulty is largely because the patron does not understand the necessity of a clean can. He has never made any special study of this point, and there is no reason why he should know all there is to be known on this subject; but in such a case he ought to be willing to take some other man's word for it, who does know, and because he will not do this is the cause of all the loss and trouble that ensue.

Farmers claim that their skim milk sours too quickly after leaving the creamery. If every patron would thoroughly clean and scald his cans with boiling hot water before he puts his milk into them to bring to the creamery, his milk and all the milk would be in much better condition to keep, to start with.

Then, if he would do the same thing, and add to it, scouring the seams with a brush after the skim-milk is emptied from them, the can would be in much better shape to receive the fresh milk at the next milking.

It is evident that a great many patrons and their wives do not really know what it means to clean a can so it can safely hold milk and not taint it. Experiments have shown that milk stored in sterilized cans will keep nearly twice as long as when kept in cans washed in the ordinary way. To clean a can thoroughly, or free it from germs, C. B. Lane, of the New Jersey Experiment Station, states that it must first be scrubbed, then scalded with boiling water, care being taken that it is boiling; or, better still, use live steam under pressure. No living organism can withstand steam, not even bacteria spores, although some of them will resist a temperature of 200 degrees Fahrenheit. If dairy-houses are supplied with a boiler, it can easily be managed to turn cans over a jet of steam having a pressure of fifteen or twenty pounds. After steaming, cans should be kept bottom side up, as bacteria tend to go downward. There are patent "milk-can washers" on the market, which run by power, but for the ordinary dairyman hand-brushes will be found just as effectual and economical.

The ideal way to be sure of having clean milk would be for the patron to have two sets of cans, one for fresh milk and the other for taking home the skim milk. Then, when he empties the fresh milk cans, have them thoroughly cleaned and steamed at the creamery, and at the same time have the skim-milk cans cleaned and likewise steamed before being filled with skim milk. The creamery always has the hot water and steam, and it could easily fix up a can-cleaning plant in addition. This method would greatly help the creamery to get sweet, pure milk, and help the farmer to longer keep his skim milk sweet.—*Hoard's Dairyman.*

Safeguards.

"The cashier informed me," said the president, "that he was strongly tempted to skip with the funds, but that he locked himself up with them and prayed over them all night and overcame the temptation."
"I know it," said the chief director. "I had a detective at his door, one at each window and one on the roof—at the chimney flue—while he was praying."—*Atlanta Constitution.*

OUR YOUNG FOLKS.

INDEPENDENCE DAY.

I.
On the Fourth of July long ago,
That honored and fortunate day,
Our ancestors boldly said "No!"
To the stranger's imperious ways.

II.
And undaunted by hardship and pain,
Those sturdy old heroes declared
Independence they all would maintain,
And bravely for battle prepared.

III.
And long shall our chronicles tell
On that glorious page of the past,
How our fathers fought nobly and well,
And our fetters were broken at last.

IV.
So now on the Fourth of July
Let children and elder folk, too,
To that old voice of freedom reply
With a cheer for the Red, White
and Blue.

A KOREAN BOY IN WASHINGTON.

A well-known youthful figure at Washington is that of the youngest son of the Korean minister to the United States. The name of the minister is Chin Pom Ye. His younger son, Chong We Ye, is thirteen years old, and is a promising pupil in the sixth grade of the Denison School. As he is an extremely bright pupil, he would probably be much further advanced if he had been instructed in the English language from the start.

As might be inferred, this Korean boy of high degree has become quite Americanized as the result of his American schooling. He speaks English perfectly well, and also Korean, and this makes him a valuable interpreter for his father, who takes him about with him a great deal. His remarkably courteous manners have made him popular with his playmates. Although he is generous and amiable, he can resent being imposed upon by street boys who take him for a Chinaman. He can also look out for himself with boys of that disconcerting sort.

Sometimes ago, when he was taunted thus by street boys, he went to a telephone and called up the police station. He recited the provocation, and asked that a policeman be sent. The answer was a laugh over the wire. "Oh, well," answered Chong We Ye, "if you won't send up, I'll tend to them myself!"
Whereupon he went out and "tended to them."

A SLY OLD CAT.

A lady who has a small menagerie of pets remarked the other day:
"I have come to the conclusion that the cleverest and slickest animal in the world is the cat. They are cautious and suspicious, and while a dog can be taught implicit obedience, you can never get more than eye service from a cat."

"I own a very intelligent specimen. Though he is old enough to be more dignified, he has a mania for playing with and pulling at anything that flutters in the wind, whether it be curtain or plant or ribbon, and his sharp claws do very destructive work. When I am present I have only to say 'Roger' in a quietly reproving tone, and he stops his mischief at once; but I see daily many proofs that he takes advantage of the turning of my back. He is forbidden to go into the parlor, and never enters it while I am in the house, and were it not for the presence of black cat's hairs on my soft cushions I might fancy Roger a model of obedience."

"One day as I approached my house I saw Roger on the parlor window sill, viewing the passers-by with much interest. He did not see me until I tapped on the window-pane with my umbrella, and then he disappeared like a flash. He was up stairs before I opened the front door, and when I went to my room there he was stretched upon the hearth rug, apparently in the deep slumber of innocence. I gave him a slap as a slight punishment, and he opened his eyes and gazed at me in mild surprise as if to say, 'What's the matter with you?' He evidently wanted to persuade me that I had been the victim of an optical illusion. No human being could have done a cleverer piece of acting."

FOURTH OF JULY TRICKS.

There are any number of tricks that may help to vary the Fourth of July programme of firecrackers and torpedoes which are home made, interesting and inexpensive. What is also of great importance, they are perfectly harmless, although fire plays an important part, tempered with water, however.

Some of these experiments are imitations of Greek fire, which is described as wildfire, liquid fire, wet fire and fire rain.

To make a well of fire, for instance, to twelve ounces of water in an earthenware basin add gradually two ounces of sulphuric acid, then add to this, also gradually, about three-quarters of an ounce of granulated zinc. A rapid production of hydrogen gas will instantly take place. Then add, from time to time, a few small pieces of phosphorus. A multitude of gas bubbles will be produced, which will fire on the surface of the effervescent liquid. The whole surface of the liquid will become luminous and fireballs, with jets of flame, will dart from the bottom through the fluid, with great rapidity and a hissing noise.

To illuminate the surface of water, wet a lump of fine loaf sugar with phosphorized ether, and throw it into a basin of water. The surface of the water will become luminous in the dark, and by gently blowing upon it,

phosphorescent undulations will be formed, which illuminate the air above the fluid to a considerable distance.

To set a combustible body on fire, by the contact of water, fill a saucer with water and let fall into it a piece of potassium of the size of a peppercorn; the potassium will instantly burst into flame, with a slight explosion, and burn vividly on the surface of the water, darting at the same time from one side of the vessel to the other with great violence, in the form of a beautiful red hot fireball.

For the experiment called animated fire, put some small pieces of camphor in a basin of pure water; a very peculiar motion commences at once: some of the pieces turn as if on an axis, others go steadily around the vessel, some seem to be pursuing others, and thus they continue, forming a curious and pleasing appearance. But if a single drop of sulphuric acid be put into the water, the motion of the camphor stops instantly. If a piece of camphor is lighted and then carefully placed on the water it burns with a bright flame, moving about with great rapidity, as if in search of something, but is instantly stopped by a drop of sulphuric acid.

To make livid green-colored fire under water, put into a large tumbler two ounces of water, and add first a piece of phosphorus about as big as a pea, and then thirty grains of chlorate of potash. Then, by means of a funnel, with a long neck, reaching to the bottom of the glass, add six drachms of sulphuric acid. As soon as the acid comes in contact with the other materials flashes of fire begin to dart from under the surface of the fluid. When this takes place drop into the mixture a few lumps (not powder) of phosphoret of lime of the size of a pea. This will instantly illuminate the bottom of the vessel, and cause a stream of fire, emerald green in color, to pass through the fluid. By a fresh addition of the same materials the action may be kept up when it begins to subside.

To change a blue liquid to a red pour a little of the infusion of litmus into a wineglass, and add to it a single drop of nitric or sulphuric acid, and it will be changed instantly to a beautiful red color.

To change red or blue liquid to green, take a little of the liquid mentioned in the above experiment, either before or after it has been converted to red, and add a few drops of the solution of soda, and, upon stirring it, a fine green color will be produced.

To make the same liquid assume various colors, mix some powdered manganese with a little nitre, and throw the mixture into a red-hot crucible, and a compound will be obtained possessed of the singular property of different colors, according to the quantity of water that is added to it. A small quantity gives a green solution; a greater quantity changes it to blue; more still to a purple, and a still larger quantity to a beautiful deep purple. The last experiment may be varied by putting equal quantities of this substance into separate glasses and pouring hot water on the one and a portion of cold water on the other; the hot solution will be green and the cold one deep purple.

ON THE ALKALI PLAINS.

A Way in Which Irrigated Farms Are Sometimes Hopelessly Ruined.

Everybody knows that in the western half of the country there are large tracts covered with alkali, which, at a distance, resemble fields of snow. The investigations carried out last year by the Department of Agriculture in the Yellowstone Valley of Montana threw light on the occurrence of alkali at the surface of the ground, and the results of these studies are of special interest because they relate to conditions that are found more or less throughout the western part of the country.

The Yellowstone Valley is arid, and irrigation is necessary for agriculture. Only a small amount of land is under cultivation, and water has been used to irrigate these fields only twelve to fifteen years; but already a considerable area of the fertile fields has been destroyed by the accumulation of earthy salts near or at the surface preventing the growth of crops.

Last year's investigation showed that the source of this salt is the underlying shales and other rocks whose decay produces the soils. If the climate were humid, the soluble materials in the soil would be removed, but in this arid region they tend to accumulate. Too much water has been applied to the soil in irrigation and the consequent evaporation draws to the surface the water that has percolated into the soil. This water leaves at or near the top of the ground all the mineral matter that has been in solution and in time the snow-like crust is formed.

The result is that though one farmer may be exceedingly careful not to water his lands too liberally, his farm may be ruined by the carelessness of neighbors working at a higher elevation from whose land the excess water may slowly percolate to the acres of the more careful landholder carrying the load of saline matter in solution. The Department of Agriculture will carry out similar investigations this season in the Pecos Valley of New Mexico and the great Central Valley of Utah, paying particular attention to the occurrence of alkali and the evil effects of its development and spread over the surface of the ground.—*New York Sun.*

Railroad Man's Perfect Record.

It is said that L. L. Mathews, an operator in the employ of the Pittsburg and Lake Erie Railroad, has worked 1,523 days without a break and has received pay for every day of that time.

NOTES AND COMMENTS.

It is predicted that the census of 1900 will show a total of accumulated wealth of \$110,000,000,000 in this country.

To-day the productive capacity of the labor-saving machinery of the United States more than equals that of 400,000,000 of people not using labor-saving devices.

The ratio of illiteracy among the nations of America and Europe is the highest in Romania, where it is eighty-nine per cent of the population. Portugal is next in order, with seventy-nine per cent of her people illiterate.

Pittsburg manufacturers are building steel cars for the railroads of Egypt. This will offend English builders as deeply as did the fact that a Philadelphia firm is constructing a steel bridge for the same country. Nevertheless, the laws of nations do not yet regard the gentle American art of "hustling" as an indictable offense.

Gelototherapists is the name given to physicians who treat patients suffering from various diseases ranging from bronchitis to anamia by prescribing hearty laughter. A medical journal suggests that there is a great opening for physicians in studying various ways of exciting laughter, such as tickling, farcical comedies, puns, etc.

Statistics have been prepared by the government showing that American exports of manufactured goods now average \$1,000,000 a day. There were 204 working days during the first eight months of the past fiscal year, and during that time the total exports were \$201,000,000. This was a gain of \$25,000,000, or fourteen per cent, over the corresponding period of the previous year.

A preliminary statistical statement of the mineral production of Canada during 1898 has been issued by the Canadian Geological Survey. The total value of the metallic minerals produced is placed at \$21,622,601, while other mineral products have a value of \$15,884,596. The grand total shows an increase of nearly 32 per cent, as compared with 1897, which year showed an increase of 27 per cent, compared with 1896.

Great Britain is preparing to expend \$800,000 per year for a period of thirty years in the development of the agricultural region of upper Egypt by the construction of a series of gigantic irrigation works. The arable area of the Nile valley at present is about 10,500 square miles and it is proposed to augment this amount by the reclamation of at least 2,500 square miles of arid lands within six or eight years. Active work on the construction of the first great dam across the river has begun.

Mrs. Stanford's gift of the bulk of all her health to the Stanford University of California places her up in the very front rank of the philanthropists of her sex. To be sure, she is only carrying out the wishes expressed by her husband before he died, but the manner in which she has undertaken to carry out those wishes is creditable to her intelligence, fidelity and generosity. The vast estate which now goes to swell the funds of the Stanford University is larger by several millions than it was when it was bequeathed to her, and the benefits to be derived from it will be correspondingly increased.

Having sold to Germany the last remnant of her former insular domains in the Pacific, Spain still has an outlying asset, for which she could readily find a purchaser in Great Britain. We refer, of course, to the Canaries, which, in the hands of France, Russia or Germany, might seriously obstruct the route to India round the Cape of Good Hope. The Canaries are worth more to England than they are to any other European power, and they have become, practically useless to Spain since the loss of all her former possessions in Asia and in the New World.

More than five billion gallons of petroleum are now produced annually in the world. Of this two and one-half billions are produced in the United States and two and one-fourth billions in Russia. The amount of refined illuminating oil supplied by the United States is more than double that produced by Russia. This is due to the fact that a given quantity of United States oil produces three-fourths of its lulk in refined illuminating oil, while the same quantity of Russian oil produces only about three-eighths of its bulk. The United Kingdom is the largest consumer of mineral oils exported by the United States, our total export to that country in the last fiscal year being 212,265,563 gallons, against 155,203,222 to Germany, the next on the list.

A very practical use of the automobile is promised soon in St. Louis, the initiative having been taken by the St. Louis Terminal Board, under whose jurisdiction is the bridge over the river to East St. Louis. This bridge is used by an electric-car service, but it is intended to supplement this by the employment of automobile stages, to be propelled by electricity or by compressed air, relieving in some measure, the growing burden on the street railroad, and providing additional accommodation for the increasing travel over the bridge. It is thought that the automobile-conveyance system will greatly serve the convenience of the public by moving over the principal business streets in

the city, stopping at the hotels and other public places, and taking their passengers to, or receiving them from, the network of street railroads in East St. Louis, which converge at the bridge entrance.

The coal-exhaustion scare has again seized upon the English mind. There is probably no foundation for it, no reasonable ground for believing that England's coal supply will be exhausted within the fifty years now set as the limit of its lasting, or indeed within many hundreds of years to come. And there is now every prospect that through liquefied air, or the utilization of the inexhaustible power of the tides, or the harnessing of terrestrial magnetism to electrical-power uses, or in some other of the many ways open to inventive genius, the need of coal for the production of power will be done away with in large part if not in whole long before England's coal fields shall cease to yield their precious product.

Atmospheric impurity, says that solid medical authority, the London Lancet, was largely responsible for the recent epidemic of influenza. "If the proper ventilation of private houses, and especially of places of business, were insisted upon by their owners," it says, "we should hear much less than we do of the infectious forms of so-called cold." The imperfect provision of ventilation in churches and chapels is referred to in the same connection by the Hospital, which "considers such buildings as hotbeds for influenza on this account, and on account of the gathering together of persons whose power of resistance has been diminished by recent illness or by other circumstances."

A FEATHERED WONDER.

Bird Worth Considerably More Than Its Weight in Gold.

Possibly the rarest of all feathered creatures is the "takake" bird of New Zealand, says a writer in the London Mail. Science names it *notornis mantelli*. The first one ever seen by white eyes was caught in 1843. A second came to white hands in 1851. Like the first, it was tracked over snow and caught with dogs, fighting stoutly and uttering piercing screams of rage until overmastered. Both became the property of the British museum. After that it was not seen again until 1879. That year's specimen went to the Dresden museum at the cost of \$500. The fourth, which was captured last fall in the flocks of Lake Te Anau, in New Zealand, has been offered to the government there for the tidy sum of \$1,250.

Thus it appears that the bird is precious, worth very much more than its weight in gold. The value of course comes of rarity. The wise men were beginning to set it down as extinct. Scarcity, it is, it must be worth looking at—a gorgeous creature about the size of a big goose, with breast, head and neck of the richest dark blue, growing duller as it reaches the under parts. Back, wings and tail feathers are olive green and the plumage throughout has a metallic luster. The tail is v-ry short, and has underneath it a thick patch of soft pure white feathers. Having wings, the takake flies not. The wings are not rudimentary, but the bird makes no attempt to use them. The legs are longish and very stout, the feet not webbed, and furnished with sharp, powerful claws. The odd feature of all is the bill, an equilateral triangle of hard pink horn. Along the edge, where it joins the head, there is a strip of soft tissue much like the rudimentary comb of a barnyard fowl.

Oriental Judgment on Mixed Babies.

The Greek ecclesiastical authorities at Aleppo have been called upon to decide a case which strongly recalls Solomon's famous judgment, relates the Constantinople (Turkey) Mohamat. By a strange coincidence a woman and her daughter both gave birth to a female child at the same time. But the babies got mixed, and as one of them was ugly and the other pretty and healthy, both mothers claimed the latter. The elder woman maintained that, as all her other children were handsome, the ugly child could not be hers, whilst her daughter claimed that being young, handsome and strong, she could not be the mother of a weak and ugly babe. The religious chief of the town settled the affair in a summary way. He adjudged the beautiful child to the daughter on the ground that, it being her first, the occasion was not to be made one of humiliation and disappointment, whilst the elder mother could afford to forego her claim since she had already had several handsome children.

Tone of Voice and Perfume.

Mrs. John Eitch, Jr., of Denver, who has been very successful as an animal trainer, says of her methods: "After getting intimate with them by feeding them I follow up the acquaintance by being kind to them, never teasing them, and always carrying them something of which they are fond. In speaking to them I always pitch my voice in the same key. I always use one kind of perfume which they readily recognize, even in their sleep, awakening at the scent."

One Grave Fault.

The milliner displayed the hat with some pride.
"Oh, it will never do!" cried the patron. "Just look at those flowers."
"They're splendid imitations," protested the milliner. "They look like real flowers."
"Precisely," answered the patron. "And real flowers are so cheap at this season of the year, I want something that looks more expensive."—*Chicago Post.*