

FOR FARM AND GARDEN.

To Sharpen a Hoe.

In sharpening a garden-hoe, that indispensable affair, do not file it so that the bevel will incline inward, but rather the reverse. A hoe sharpened in this way will present a cutting edge to the soil first. Instead of the flat edge of the bevel.—Woman's Home Companion.

Nitrate of Soda for Crops.

When using fertilizers do not overlook the fact that nitrate of soda is as soluble as common salt, and should be applied where immediate effects are desired. It acts almost magically after a rain, and is beneficial on all crops that require forcing head. If a slower substance is required, one that is not so easily dissolved or carried off by heavy rains, dried blood or tankage should be applied, and even then a small proportion of nitrate may also be used.

Celery Growing.

About the first of May I prepare the seed bed for the plants, by spading and manuring with well rotted compost from the pig pen, raking until thoroughly pulverized. Soil sufficient to cover the bed to a depth of one inch is sifted through a fine coal sieve. On this the seed is sown and beaten flat and solid, with a board, after which this surface is covered with old fertilizer sacks, and kept well moistened until germination has taken place, when the sacks are removed. When the plants are large enough to transplant, I make furrows about ten inches deep, filling them half full of well rotted manure and soil, thoroughly mixed. On this I set the plant, allowing the root to extend downward its full length, which is from four to five inches. Hills are about eight inches apart. For several months I keep the soil moist, and then commence banking up with earth. I have never had any but large, tender, juicy bunches, with that nutty flavor that is so much appreciated.—J. W. F. Copenhaver, in the Epitome.

Locust Trees.

Those who have not grown the locust tree may not realize that this tree has the power of enriching the ground on which it stands. We learned this many years ago, and thought then that it was from the blossom which fell from it, but since we have grown older and read more, we have wondered if it might be classed among the leguminous plants, like the bean and pea, which by nodules on the root can attract nitrogen from the atmosphere and store it up in the soil. Certainly the pod of the locust is not unlike the pod of the bean, and while one is a woody plant or tree, and the other only an annual, they may have the same affinity for atmospheric nitrogen. The trees should be desirable to set in pastures or around the edges of them because of this reason, and they are also most excellent trees for fencing purposes. A locust post large enough to saw in two is nearly all heart wood, and while we will not go so far as to say, as did one old man we heard of, that "a locust post would last through three eternities," we will assert that such a post as we have described above will last longer than one man is likely to live. And we can prove it by showing good posts set before we were born, and sound now.—Boston Cultivator.

Milk from Farrow Cows.

The milk of cows that have long passed the season of greatest production, which is soon after farrowing, is much richer in butter fats than that which the same cows give soon after dropping their calves. If they had not been bred the milk also usually contains more of the albumenoids also. For this reason it is harder to digest, and as cow's milk is at best unsuited to the stomach of a young infant, that from new milchcows, where procurable, is always to be preferred. The milk of the cow is too rich in fats, causing the infant to throw it up soon after taking a quantity. It may be improved by diluting it with warm water made quite sweet with pure sugar. Even farrow cow's milk thus prepared may be used with safety if the infant is obliged to suck it through a tube, through which it can only get a small amount at a time.

The milk from a farrow cow is excellent for making into ice cream. It is richer in cream fats than other milk, and is nearly as good as cream. Some people spray their cows when they do not want the trouble of breeding and raising of calves. A sprayed cow that has this operation performed when the flow of milk is greatest will maintain her milk flow two, three or even four years if thoroughly milked so as to get all that she produces. If the milk is left in her udder the cow will soon dry off and become too fat for further milking. After being sprayed she is no good for breeding, and when fat enough to kill she must be turned over to the butcher. A sprayed young cow makes a good beef as a steer. There are a few places in this country where it is an advantage to spray cows. All the best cows should be bred to bulls that are of good milk stock, while the poor cows are not worth keeping as milkers under any circumstances if others can be had.

Two Green Crops a Year.

The cow pea has been well known for over a century and in the south it

has been the salvation of some farmers; nevertheless, this valuable crop has not received as much attention in other sections as it deserved. It was believed until recently that it was adapted to the south only, but farmers in Vermont and Canada report success with it, and in the Middle States experiments show that it thrives as well as in the south. In fact, it will grow on any land, or in any climate, where corn will thrive, and it may be planted in rows and cultivated, or may be broadcasted. About the best method for growing the crop when the object is to improve the land is to sow the seed broadcast and harrow it in, following the harrow with a roller. The land must be deeply plowed and made fine. If manure is used it will grow on almost all soils. It must, indeed, be very poor land that will not grow at least a partial crop. It is really a bean, and thrives best when the warm season sets in, but any time from frost to frost (spring to fall) will answer for the crop, and if intended for plowing under only it will furnish two crops if frost does not appear early in the fall, but of course, two seedings will also be necessary. As a green manure crop, or when intended for hay, it is turned under or mowed when the seed pods begin to turn yellow. If intended for the seed the crop should be grown by planting the seed in rows wide enough apart to permit of cultivation, dropping two or three seeds in a place, and two feet apart in the rows.

As the cow pea is a leguminous plant it has, like clover, the power of storing nitrogen. This is accomplished by bacteria, or micro-organisms, which form nodules on the roots, the nitrogen being derived from the free air of the atmosphere and converted into nitric acid. The nearer to maturity reached by the plant the more nitrogen stored, and nothing will be gained, therefore, by plowing it under too early, or when the plants are very young. Whenever a crop is plowed under it will be of advantage to broadcast fine air-slaked lime over the surface of the land, which will be carried down by the rains and assist in neutralizing the carbonic acid formed by the decomposition of the plants. As all leguminous plants are what may be termed "lime-feeders," the lime will assist the succeeding crop of cow peas. From ten to twenty bushels of lime per acre may be used. Of the fertilizers wood ashes are excellent, but sulphate of potash is also one of the best. A fertilizer composed of 200 pounds sulphate of potash, 100 pounds nitrate of soda, and 100 pounds acidulated phosphate will produce a large crop if the season is favorable. The cow pea can endure considerable drought and will seldom fail if given even a partial opportunity. It thrives well on both clay and sandy soils, and when once it makes a start and is cultivated sufficiently to keep clear of weeds and grass until it gets under way, it can take care of itself, as it soon shades the soil and crowds out the intruders.

About one bushel of seed will plant an acre, but the quantity depends upon how thick the grower desires the plants. If grown on poor land it will show wonderful improvement if plowed under, and the land will be in condition for corn with the aid of a small quantity of mineral fertilizer, but too much from cow peas should not be expected in a single season. The cow pea should enter in the regular rotation year after year. The seed is picked by hand, the long pods being put in bags and carried to the barn, to be threshed by flailing. A separate plot should be planted if seed is desired. The yield is from 15 to 25 bushels per acre, according to the land and conditions. Hogs, cows, sheep and poultry enjoy the hay and pods, the fowls shelling the pods for the seeds. For hay it should be mowed when the pods turn yellow, left until the next day, then put up in cocks. In a day or two more store the hay under shelter or stack it capping the stack to shed water. Horses also like the hay, but it is a special food for cows and sheep. It is doubtful if cow peas can compete with clover as a hay crop, but for green manure purposes they cannot be surpassed. The cow pea, however, can be grown in three months, while clover is a biennial plant. The seeds are equal to beans in every respect; are fully as nourishing and are one of the most wholesome foods known, both for man and animals. As cow peas can be so easily grown and are capable of conferring so much benefit on the farmer they should be placed in the list of staple crops.—Philadelphia Record.

Poultry Notes.

Dogs and cats should not be allowed to stray into the chicken yards.

If chicks appear droopy and let their wings hang down look for mites.

See that the chicks have plenty of shade and fresh water during hot weather.

Whitewash is the cheapest decoration we can put on the inside of poultry houses.

One breed of fowls well kept is more satisfactory than several that are poorly housed and fed.

Fresh dirt or old plaster serves to keep pure the dropping boards and floor of poultry houses.

Poultry houses and yards should always be situated on high, dry land; a sandy hillside is the best of all.

Buff and white fowls are now popular, but it will be hard to supplant some of the old and tested breeds.

Do not feed the young chicks where the old fowls can annoy them. Many are often crippled in their attempts to get a portion.

SCIENCE AND INDUSTRY.

In both south and central India the need of cheap power is specially felt, and in these portions of India are some of the grandest falls in the entire country. The falls of the Himalayas, in the northern part of India, could be utilized were they not too far from places where industries can be profitably carried on.

In a recent number of The Lancet, Dr. Phillip calls attention to the fact that if a small round pebble is carried in the mouth, thirst disappears, and perspiration is diminished. The doctor states that he has gone as long as eight and a half hours in a broiling sun with nothing but dry biscuits and cheese for a lunch, and at the end of that time was not particularly thirsty.

An aeronaut was recently poisoned by hydrogen arsenide, which escaped from the balloon. This shows the necessity of purifying the hydrogen used for balloon purposes. The balloon was filled in the ordinary way and nothing peculiar in the odor of the gas was noticed. A few hours afterward the persons who assisted in the operation were taken seriously ill and one of them died.

One of the interesting pieces of apparatus recently shown at the Royal Society sance, at London, was a clock which was controlled from a distance by means of wireless telegraphy. The signals were transmitted by Hertz waves, and there was a short vertical wire a coherer, relay, and local battery, which worked the mechanism of the clock. It was stated that with the use of a standard pendulum and this apparatus, all the clocks in a town would be kept alike without the use of wires.

Actinium is the name given a new poles of an electromagnetic, with whose coil a telephone is connected, and it is variably magnetized at different portions of its length as the current is varied radio-active element of the iron group discovered by A. Debiere in pitchblende. The substance has now been sufficiently concentrated to show that its rays have the same effect upon barium platinocyanide, photographic plates and a magnetic field as those of radium and polonium, while it is evidently distinct from those elements.

Professor Omiri of Japan, an authority on the earthquakes so frequent in that country, has ascertained that in the case of the injury of two-story buildings, the damage is confined in most cases to the upper story. He affixed a horizontal pendulum seismograph to the top of an external wall of the Engineering college at Tokio, and on the ground below placed a similar instrument. Records of a number of earthquakes were obtained, and it was found that if the duration of the vibration of a shock was comparatively long (say, above half a second), the motion was practically the same in both places; but if the vibration was of a quick period, the motion of the top of the wall was about twice as great as that of the ground.

A curious disease which is just now attracting considerable attention abroad is known as brass-founders' ague. It attacks workers in brass, stampers, metal polishers, etc., and is said to most frequently occur in young women and boys. Absorption of the poison seems to take place through two channels, the lungs by inhalation of brass dust with which the air of the workshop is always loaded, and into the alimentary canal by the eating of food with unwashed, brass-contaminated hands. The symptoms are paleness, neuralgia, emaciation, hacking cough, spitting blood, and a presence of a green line on the teeth, or greenish colored perspiration. A constant metallic taste in the mouth is often complained of. Brass is an alloy of copper and zinc; and the former of these is supposed to be chiefly responsible for the disease. Plenty of milk, personal cleanliness and well-ventilated workshops are said to be prophylactics; phosphorus in small doses is recommended as a useful drug.

A Trunk Full of Dimes.

A trunk belonging to Charles Lenz of Butte City, Mont., bulged open the other morning in the union station baggage room and leaked dimes and nickles. Lenz, who was boarding a train for Vandalia, Ill., was told of the mishap. "That's all right," he said. "Never mind the money; I've got to see mother before starting for Cape Nome." Meanwhile John R. Bentley, general baggage agent for the Pennsylvania lines, guarded the trunk and had it placed in the car.

"You see said Lenz, 'I don't care about that trunk. It's full, of course, but the contents are only nickles and dimes. I'm interested in Montana mines. Out there everything costs a quarter. Every time I've received a nickle or a dime I've tossed the coin into the old trunk for mother.'"

The trunk followed Lenz on the next train. It contained a fraction over \$500 all in dimes and nickles, according to Mr. Bentley. Lenz certainly showed his faith in the honesty of the railroad men, as he did not go near the trunk, but trusted everything to them.—Pittsburg News.

A Winning Card.

"The pastor of the church has been trying to boss the choir for six weeks, but they have won."
"What did they do?"
"Got his wife to join."—Harper's Bazar.

Horsemanship.

The secret of the staying power of the mounted Boer lies, apparently, in the fact that he is not a better horseman, but a better horse-master, than the British trooper or artillery driver. He knows to an ounce how much he can safely take out of his mount, and never calls on the beast beyond that point. He nurses him always, tends him carefully at every opportunity, and knows how to doctor him the moment he is knocked off. Among our men—excepting probably the Colonial irregulars—stolid indifference or ignorance prevails on all such matters. The majority of the mounted infantry have probably never had any instruction whatever in the management of horses outside stables. Nor is the prevailing ignorance confined to the rank and file. If only officers understood all the niceties of nursing horses under a heavy and prolonged strain, they would see that the right thing was done, but competent witnesses affirm that, though there are conspicuous exceptions here and there, the average cavalry or artillery officer never gives his attention to such matters, apparently regarding the management of the horses in his command as a menial matter, to be left to the rank and file. I have even heard it said that the smartest and most successful of our cavalry Generals would have done much better if he had given more attention to the mysteries of "horsemanship."—London Truth.

And All Were Happy.

Appeal to a woman's vanity and her temper will be improved. The Willow Grove car was uncomfortably crowded and a large portion of the passengers were women, decked out in holiday attire. They were squeezed together tightly, and some were obliged to stand, which did not tend to make them happy as they gazed ruefully at their ruffled clothes. On the rear seat was a little girl, with a shrill, penetrating voice. "Oh, mamma!" she exclaimed, "hasn't that lady got a beautiful hat on?" Every woman and girl in the car smiled. They all had their backs turned to the child, and of course could not tell just which had been designated. But, judging from their faces, each one must have thought her hat the one that had aroused the little girl's admiration. It was a little thing in itself, but every woman in the car seemed happier after that.—Philadelphia Record.

Battlefield Reunion, Atlanta, Ga.
The Southern Railway announces round trip rate one fare, \$17.50, Washington to Atlanta, account of Battlefield Reunion. Tickets on sale July 16 and 17, good to return until July 25. For full particulars address Alex. S. Thwait, East Pass. Act., 1185 Broadway, N.Y.

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A New Yorker recently turned out his one hundred and twenty-seventh patented invention, consisting of a finger ring which cuts twine and erases lead pencil marks.

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