

AGRICULTURAL

which also assists in warming up the land, and permits more direct rays of the sun, increasing earliness from ten to fifteen days. To level land again, turn top of ridge back into the bottom of north side furrows.

Bare Places in Meadows.
It sometimes happens that meadows which were good one year are eaten out by grubs in the root in fall, or are destroyed by winter freezing, making bare places. These are not only unsightly, but as nature abhors a vacuum, such places are quickly filled up with weeds. If there are many such places, it is better to apply what manure can be spared and reseed. But if there are only a few, harrowing the bare places and throwing on some grass seed and a top dressing of manure will probably make a sod by fall. But no crop of grass can be expected from such land this year, and if possible, it should be plowed for a year's cropping, to be reseeded the following year.

The Draught of Chimneys.
Many chimneys have defective draught because more pains is taken to make a smooth outside where the mason work shows, than on the inside, where the efficiency of the chimney to carry off superfluous smoke depends on how the chimney was constructed. A well-proportioned chimney should be at least as large at its top as it is at bottom. This rule is often violated, so people having the idea that if the aperture at the top is made smaller the smoke will be forced out more violently. It may seem to be so, but such chimneys will soon clog up by the smoke condensing on their sides, besides throwing a good deal of smoke through the lower rooms of the house.

Charcoal for Lawns.
The dark color of charcoal makes it absorb heat, and thus warm the land to which it is applied as a dressing. It may also have considerable manurial value, as the charcoal easily absorbs ammonia, and if soaked in strong manure water from a compost, it will carry the ammonia to the lawn in less offensive form than in the manure, which is so often used for that purpose.

Cultivation of Beets.
Clay loam is often the finest beet soil, but on account of subsiding and because of the need of good drainage, it must not have a rough clay or hard-pan underneath. Perfect beets demand not only depth, mellowness and fertility as soil characteristics, but, as well, freedom from standing water for any length of time and from such stones as would interfere with cultivation.

Selecting a Calf.
A correspondent suggests a novel idea for selecting a calf which is intended for a milk cow. He says: "Never keep a calf with a thick, short, stubby tail or otherwise of an ox-like appearance unless for the feed lot. This is a simple way of ascertaining a desirable piece of information, and the writer wishes some would try it."—*Journal of Agriculture.*

Shippers' Improved Milk Can.
A milk can for shippers that will always hold a given quantity of milk is shown in the accompanying illustration. The method of securing this result is by having an exterior corrugated skin or covering, and within it the regulation can. Then, no matter if the can should be dented in transit, the interior receptacle will still hold its original shape. This alteration of capacity in cans when they become dented or battered is a very serious one in the dairy industry, resulting in frequent disputes and much litigation.—*Philadelphia Record.*

Sheep Feeding.
Feeding sheep for market should be a separate business from simply raising them in the usual manner. They should receive clover hay and a liberal allowance of ground grain, as well as be sheltered in a large yard, in order not to have them travel over the fields while fattening, the object being to fatten them quickly, and sell as soon as they are ready.

Marketing Parsnips.
The demand for parsnips is best in winter, and in the Southern States they are allowed to remain in the ground until wanted, while in the northern States they are dug late in fall and stored in trenches. They are shipped in small ventilated barrels, the tops having been removed and the roots washed when necessary.

Shelter Saves Food.
A herd of twenty cows that are not properly sheltered and kept warm in winter will eat enough additional food to more than pay for shingling the leaking roof over them, and they will also lose more than enough in the product of milk or butter to paint the building. Shelter saves food and promotes health.

Have a Trade Mark.
Business men have trade marks; so should the farmer. The farmer who uses a trade mark, and puts it on everything he sells in packages, advertises his goods and creates a market for his products. In adopting a trade mark, however, only the best and choicest articles should be sold.

For Early Vegetables.
If you have a south slope, plow a heavy furrow on the north side of the row, throwing the soil as high as possible. Turn a light furrow slice back against this. Rake the south slope to any pitch desired, and plant midway from top to bottom on the south side. This secures an earlier drying out of the soil, especially if rather coarse manure is covered inside the ridge,

wholesale are also given in the diagram. It will be seen that there is a wide range in the price per pound of the various parts, and that only a small portion commands the highest price. It is to be said of the pieces into which a steer is cut up that the choicest bits sell too high and some of the other portions too low.

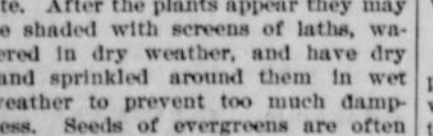
Maple Sugar.
Is it not possible to utilize our maple trees more fully for making sugar? They are everywhere giving out as shade trees. In fact, the maple tree thrives admirably in groves, but you rarely find a perfect specimen standing alone on the lawn or in the street. Let us go back to the old habit of having a maple grove, and making our own sugar. Whether the best-sugar enterprise will prove a success or not, we know that maple-sugar making is a natural enterprise throughout all the Northern States. There ought to be fifty pounds made where there is one made now. Those who are fortunate enough to be in condition for making sugar this spring should not be turned aside from it, and hope to make more money by growing beets. Let us have the largest possible crop of maple sugar. It will pay better at 8 or 10 cents a pound than beet sugar at 4.—*New York Independent.*

Care of Farm Tools.
Tools on the farm may be costly when they are not kept in place. When the hurry of work comes the implement most required may be out of its location—really lost—and a new one must then be procured. Some implements may then need repairs, which should have been procured weeks before. Cases are known in which farmers who have changed locations found themselves loaded with tools that they did not suppose they had, the clearing up of goods for removal bringing to light those that had been put in some out-of-the-way place. Another careless class of farmers is that which stores the tools in places so safe that they forget them, and though intending to be careful they endeavor to keep in remembrance the location which they cannot recall. An inventory of farm implements and tools once or twice a year would change such conditions.

Evergreen Trees from Seed.
Evergreen seeds may be planted in beds of leaf mold mixed with sand. The seeds should be covered with a little sand wet down, and clean hay put over the beds, until the seeds germinate. After the plants appear they may be shaded with screens of lath, watered in dry weather, and have dry sand sprinkled around them in wet weather to prevent too much dampness. Seeds of evergreens are often germinated and the plants well started only with great difficulty, and skill is requisite of success.

Points in Gardening.
A garden is not complete unless it contains a full variety of vegetables. It should not contain anything that is not desired. Peas should be grown for early, medium and late pickings, and early and late cabbages should be in the list. Tomatoes are essential in all gardens. The tomato is a plant that will have blossoms and fruit at all stages of growth, even to ripening, at the same time bearing a continuous crop until frost. There is nothing so easily grown as early beets, and they are luxuries compared with the field kinds. Carrots and parsnips are favorites with many, but the seeds should be planted early. A hundred strawberry plants will entail little or no labor, and are not only ornamental, but useful in a garden. Before next spring the bed will multiply to over 1,000 plants. They should be set out as early as the land will permit. Unless the garden is large, such crops as sweet corn and potatoes should be omitted. Try one or two plants, for experiment, of pepper, okra, eggplant and cauliflower, if not accustomed to growing such, and they will surely be added to the crop next year. The greater the variety the more enjoyment with a garden.

To Cut Up a Beef.
The following diagram shows the number and style of cuts into which a beef is divided at the Chicago Stock Yards. The average weight of each cut and the price paid per pound for it at



HOW A BEEF IS CUT UP.

NAVY SIGNAL SERVICE

HOW SHIP CAPTAINS SEND SECRETS ACROSS THE WATER.

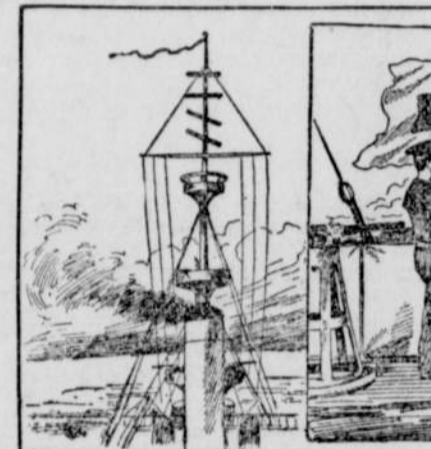
This Manner of Giving Orders Is Now a Matter of Science—Messages Can Be Sent at Night—Electric Lights That Talk.

Signals of Ships.
Of all the things that went down in the Maine, nothing was more vital to the navy than the safe recovery of the signal books from the captain's cabin. Should they have fallen into the hands of the Spaniards, our secret codes would be common property and a whole corps of Spanish spies, right in our service, could scarcely embarrass us more.



FLEET SIGNALS OR FLAGS.

New books would have to be issued, and before every ship could be notified and supplied anew with other "keys," months of priceless time would be lost and our service severely crippled. Signaling between ships is as old as the hills, almost; but only within recent years has it become the scientific necessity it is to-day. A ship without some means of distant signaling is even worse off than a dumb man without arms, for she is not only pitifully mute, but dangerously so as well. It is seldom possible, even in times of peace, at



SPEED CONE AND FLAG SIGNALS. "THE INFORMAL WIG-WAG." "SEMAPHORE."

sea to hail a passing vessel by speech, and in times of war to do so would be practically denied by the conditions of service. Some sure and accurate means of visual communication must serve instead; and with us we have recourse to colors, form and sound. At present we have no less than eight means of signaling; and, paradoxical as it may



ROCKET AND SEARCHLIGHT.

seem, we are most in the dark by daylight, for then we must depend for the greater part upon the doubtful fluttering of our flags, and the questionable interpretation of color and form which distance and refraction tend easily to confuse. At night, backed by the deep setting of gloom, it is an easy matter to flash for miles our messages with accuracy and quickness and be sure of their proper reading. For day use—setting aside that polyglot international flag code common to all maritime nations—we have the service flag code, the wig-wag or single-flag code familiar to nearly every modern school-boy, the semaphore code, an elaboration of the railway signals, and the whistle code to be used either day or night in foggy weather. The use of the speed code, hoisted on the yard arm to give the gradation of concerted speed, can hardly be called a code. Aside from the flag code, consisting essentially of thirteen elements or flags representing the numerals from 0 to 9 and three repeaters—substituted in place of duplications, and the semaphore covering the same numerals and all the letters of the alphabet, the two remaining—the wig-wag and the whistle are based upon the familiar telegraph codes of dots and dashes. The semaphore in our service can hardly be counted upon in time of war, for the New York is the only vessel so fitted, and the rest of the ships are practically unpracticed in reading it. In the British service, the semaphore is one of the most tried day-time methods of signaling; and the rapidity and accuracy with which they can dispatch messages is truly wonderful. With our blue-jackets they look upon it as something akin to marine railroad, and are not complimentary in their remarks. With the thirteen principal flags of our day code, supplemented by a half dozen designating pennants, it is possible to make about 12,000 different "hoists" or combinations, varying from one to two, three, or four flags, not counting the pennants. These hoists indicate the numbers of certain established orders or instructions carried in the "key" books of the service, and, with very few excep-

mon exceptions, these orders are not memorized. Each ship carries a number of signal books or "keys" for various uses—all arranged in the same manner and perhaps many having duplications of the numbers, and it is necessary first to tell in which "key" the answer is to be read before the signal can be properly translated. In one book "4130" may mean "Attack," and still something else in the cipher book. On going into action covers weighted with lead are slipped about them, and it becomes the signal officer's duty to cast them overboard and beyond the reach of a victorious foe.

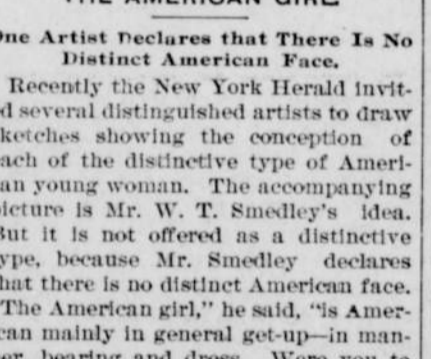
Good for the Cow.

The other day a bicycle rider found a rare chance for sport. He was near the suburbs of Worcester. A farm wagon appeared, with a cow trailing behind, patiently submitting herself to be led by a rope from the front seat. The bicycle idiot rode up to the cow and began a series of tactics to annoy her. He punched her in the ribs, yelled in her ears and dodged around her legs. Occasionally he fell back and taking hold of her tail, attempted to make her tow his bicycle. The cow objected and kicked viciously. This only amused the rider, and he directed his attention to an annoyance that would induce her to continue kicking, meanwhile keeping out of reach of her heels. Finally the animal stopped kicking and appeared to become indifferent. Some spectators on a passing street car observed, however, that she had turned her head so as to keep an eye on her persecutor. It took her a few minutes to get the range, and meanwhile the bicycle idiot grew bold and reckless, encouraged by her quiet behavior. Suddenly the animal darted forward, so as to get a slack in the rope, stopped short and let both heels fly. Her aim was sure this time, and the bicycle went out from under the idiot's feet. The street car spectators raised a shout, the motorman rang a chime with his gong and the farmer and his boy whif-

led up the horse. The impassive cow only wiggled her ears and gave an imaginary fly on her side a triumphant slap with her tail. The wheel was so twisted that the rider had to walk home as helplessly as the cow was being led. He will not sue the owner of the cow.—*Worcester (Mass.) Gazette.*

THE AMERICAN GIRL.

One Artist Declares that There Is No Distinct American Face. Recently the New York Herald invited several distinguished artists to draw sketches showing the conception of each of the distinctive type of American young woman. The accompanying picture is Mr. W. T. Smedley's idea. But it is not offered as a distinctive type, because Mr. Smedley declares that there is no distinct American face. "The American girl," he said, "is American mainly in general get-up—in manner, bearing and dress. Were you to dress a number of men or women of different nationalities exactly alike you could not, I believe, easily pick out the representative of one from the other. I've seen Russians who looked like Uncle Sam and Americans who looked like Russians, and I've known any number of similar instances. Similarly in a na-



THE AMERICAN GIRL.

tion, its beauty often comes from the outside; yet the nation gets the credit for it. Nor is the highest beauty to be found among the aristocracy, but among the 'people'."

How Chinese Catch Fish.

The drug used by the Chinese in catching fish is Coccus indicus, which is powdered and mixed with dough and scattered broadcast over the water after the manner of sowing seed. The fish seize and devour it with avidity and instantly become intoxicated and turn up by hundreds on the top of the water. They are then gathered up and placed in vessels containing clear wa-

SPAIN'S AMERICAN POSSESSIONS.



Spain owned one hundred years ago a great part of what is now the United States, all of Mexico, Central and South America save Brazil, and the Guianas, and many of the West Indies.

Within one hundred years Spain has lost all of her territory on the Western Hemisphere, except the islands of Cuba and Puerto Rico.

sight and friendly ships are passing in and out, the break is left open at the shore station, so that a mine if struck will not explode.

The contact, electro-contact and observation mines can only be used in comparatively shallow water and in places where the current is not very strong. When the depth of water is considerable, or when the current is rapid, "ground mines"—heavy mines similar in construction to the others, but resting on the bottom—must be used. Ground mines have been planted in sixty-five feet of water. For this depth a charge of about 1,200 pounds of gunpowder, equivalent to 4,800 pounds of gunpowder, should be used. The method of firing the ground mine is very simple and ingenious. The mine is held in position on or near the ground by a heavy anchor or sinker. Two observers are usually employed to determine when the enemy is directly over the mine. The mine is then exploded by means of electric cables.

High explosives like gunpowder, dynamite or explosive gelatine are used in submarine mines at present. They are superior to gunpowder in that they are not seriously affected by moisture. A leak in the case containing the charge will not render it useless, as would be the case with gunpowder mines. Besides, the high explosives are from four to six times as powerful as gunpowder. The pressure necessary to blow a hole through the double bottom of a modern ship has been estimated to be between 6,000 and 12,000 pounds per square inch.

The important function of the submarine mine defense is to check the first advance of a naval enemy against a seaport, thus giving the defenders time to concentrate their ships to meet the attack.

An Instrument of War.

The bagpipe, whose stirring music freed the blood of the Gordon Highlanders as they scaled the heights of Dargal, enjoys, though it is not generally known, the unique distinction of



THE RAM KATAHDIN IN ACTION.

having been declared by a court of law to be "an instrument of war." In an early volume of the Scots Magazine we find it reported that on the 15th November, 1746, a James Reid, of Angus, was tried for taking part in the rebellion. It was proved for his defense that he had never carried arms of any kind, but, on the other hand, it was shown that he had for some time officiated as a piper in a Highland regiment. It is not unlikely that he had been pressed into the service, for we are told "he behaved very devoutly, prayed fervently, and sang part of a psalm." Notwithstanding these most untraditional piper traits, however, the court found poor Reid guilty of high treason, and sentenced him to suffer the punishment which that crime involved. It was held that a "Highland regiment never marched without a piper, and therefore, his bagpipes in the eye of the law was an instrument of war." There is little wonder, in the face of such a decision, that Pennant when he came north later in the century found the "bagpipes becoming scarce."

Li and the Woman Doctor.

Li Hung Chang's visit to England is said to have had the most beneficial effect on the destinies of women in China. Since his return he has appointed the first Chinese lady practicing medicine in her own land to be physician to the women of his household. Two delegates, Miss Wang and Dr. Eng, are to represent the Celestial empire at the women's congress in London in 1898. The latter is the daughter of a mandarin who was converted to Christianity and graduated in an American university; and she obtained the degree of doctor of medicine at the Women's Medical College, Philadelphia. She has been so successful in the healing art that she is now known as the miracle lady.—*St. James Gazette.*

Queer Restaurant Sign.

In Sweden the railway stations where meals are served are known by the picture of a crossed knife and fork opposite the name of the station.

THE RAM KATAHDIN.

The Powerful U. S. Turtle-back Ship Recently Placed in Commission.

The belief prevails among naval officers that in a naval fight the country would be electrified with the havoc caused among the enemy's fleet by such a vessel as the Katakhdin. No modern vessel of this kind has ever been used in actual warfare, and, in fact, the Katakhdin is about the only craft of her kind in the world. She resembles the old-style ram Merrimac only in the use of armor, the employment of steam power and the pointed steel prow.

The Katakhdin has a length on the load water line of 250.9 feet and her beam or width, which is below the water line, gives her an extreme length of about 254 feet. Other statistics of the vessel are: Displacement under normal coal supply, 2,155; tonnage, 582; extreme breadth, 43.5 feet; mean draught, 15 feet; indicated horse power, 5,068; speed, 16.11 knots; capacity of coal bunkers, 192.70 tons. The Katakhdin is propelled by twin screws. Her full complement consists of 90 men.

The most peculiar feature of the Katakhdin is her concealment under water. Only her smooth turtle back, covered with armor plate and surmounted simply by a small conning tower and a smokestack are visible. The tower is made of steel 18 inches thick, and unless squarely hit by a heavy shot at close range, is proof against any attack. Aside from her dangerous sharp beak of steel and her covering of armor plate the Katakhdin is equipped with slight means of offensive or defensive character. She carries four six-pound, rapid-firing guns, which are intended as defense against torpedo boats or boarders. Her speed is low, hardly higher than that of a battleship; but with her tremendous momentum and powerful propelling force behind a sharp steel prow the Katakhdin is calculated to do a lot of mischief among the enemy's fleet.

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Changed His Opinion.

Spinner—I'm surprised to hear you talk as you do about Belle Sprockets. You used to say she was the most foolish girl you ever knew. Now you simply rave over her. What's happened, old chap?

Scorchey—What, me say she was foolish? Never! Why, say, do you know that she's rode her wheel every day this winter?

When a man is making a night of it he usually discovers that the darkest hour is just before the dawn.

He may be called Senor de Lome in Spain, but his name is Mud in this country.

Taking Life Seriously.

This exceptionally clever photo of children was taken in Dublin. The two mites who in their garb of monk and nun look so solemnly out on the



SISTER MARTHA AND BROTHER PAUL.