

EDITORIAL COMMENT

WE have become interested in the articles being run on this page on farming for profit. The writer, Prof. Gregory, is evidently a man of experience and good judgment. The present article on growing oats deserves attention right now. Oats is a crop that requires early planting. He suggests an early variety and for our climate that is especially desirable, for an early variety would mature early, before our long summer drought would strike them. The early sort would also be better, whatever soil sowed upon. The early varieties on gravelly soil will mature before it gets too dry; if on wet land the early variety requires less time to mature if sown late. But you'd better read the article—"Oat Growing."

PORTLAND and the Northwest will have their share of conventions this Summer. The Ancient Order of Hibernians, which organization will probably draw 30,000 people west, will meet in July. The Retail Grocers Association will meet Jan. 26-27 at Eugene. And there are numerous others, and already other conventions are being listed for next year, the first being the wool growers which will be in January, 1911.

An example of the big money in hog raising was given at Portland during the past week when a single porker, weighing 680 pounds, brought \$61.20. This is the highest price that a single hog ever brought at the stockyards. The hog was raised by Henry Larkin of Colfax, Washington. Hogs reached \$9.20 during the week.

How to care for a horse, how to know a good horse, how to avoid a bad one, how to prevent bad habits in these animals, is all told in the "Horse Book," a new addition to our clubbing list, along with the Farm Journal. Don't fail to consider this opportunity and let us hear from you tomorrow.

Not the least of the influences which are tending to boost the already unprecedentedly high price of corn to a still higher level is the unusually wet condition of the soil to be found in many sections of Illinois, one of the banner corn states of the Union, which has rendered impossible in many cases the plowing of last year's fields. Many of them lie untouched, with the old stalks still standing gaunt and bare. So heavy has been the rainfall that it has been next to impossible to get on to the ground with a team, let alone working the soil with any satisfactory results. The above conditions, perhaps aggravated in portions of Illinois, exist in greater or less extent through considerable portions of the entire corn belt. One of the discouraging features about the situation is the fact that there is hardly any other crop that can be grown in the short portion of the season remaining. The situation described insures hard times locally, at least, of a very depressing character.

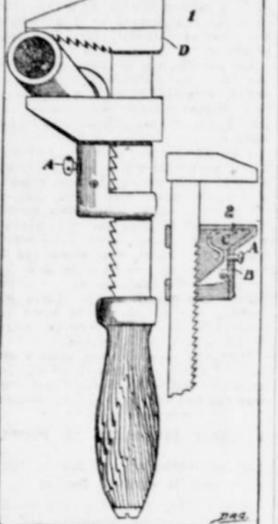
How often as a result of keeping the curtains down in the parlor, which both in practice as well as theory ought to be the best room in the house, dampness, mustiness and cheerlessness prevail! True, the posies in the carpet may lose some of their brightness, though none of their fragrance, if curtains are put up for awhile each day and the glorious germ destroying sunshine is allowed to pour in, but it will mean cheeriness, light and health for the members of the family, who ought to be entitled to more consideration than carpets and wall paper.

A new kind of piano, the choraleo, has the ordinary keys and hammers, which may be used if desired, but is also provided with electro-magnets arranged to vibrate the wires without striking with the hammers. The tones when produced by the action of the electro-magnets are said to resemble those of an organ combined with a stringed instrument, giving novel possibilities of melody.

A COMBINATION WRENCH.

The wrench illustrated herewith differs materially from the ordinary in the fact that the usual screw mechanism is entirely dispensed with, and the jaws may be instantly opened or closed to any desired extent. The wrench is also provided with a removable jaw piece, which may be quickly applied to adapt it for use in gripping pipe or round work.

Fig. 1 illustrates the wrench with the pipe gripping attachment applied



PIPE AND MONKEY WRENCH.

thereon, while Fig. 2 shows the wrench adapted for ordinary use. In this view the lower jaw is cut away to show the interior details.

It will be observed that the ratchet mechanism with which this wrench is equipped in place of the screw mechanism is controlled by a button, A, that projects from the forward face of the lower jaw. When the button A is depressed the dog B is disengaged from the ratchet teeth, permitting the jaw to be moved downward on the shank of the wrench. A spring, C, serves to hold the dog in engagement with the ratchet teeth when the button A is released. It is not necessary to operate the button A when closing the jaws on a piece of work, but merely when it is desired to open them. The pipe gripping device consists of a slotted member, which may be fitted over the shank of the tool and is provided with inwardly inclined teeth, as shown in the illustration. The inventor of this improved wrench is Mr. Charles Waller of Hamilton, Wash.

Formic Acid For Dyeing.

Formic acid, which has become a formidable competitor to acetic acid in the dyeing trade of Germany, is found in a natural state in ants, caterpillars, leaves of fir and pine trees and in the common nettle. It also forms itself in a distillation of sugar, starch and tartaric acid. It is extracted commercially by heating crystallized oxalic acid with glycerin, from which it is withdrawn by means of distillation. Although chemically pure formic acid is used in small quantities for medical purposes and to some extent in the manufacture of fruit essences, its chief commercial application is in the dyeing and tanning trades, in which its corrosive effect is of great value. For dyeing purposes it is now substituted where formerly 30 per cent acetic acid was used. It gives to mercerized cotton the rustling effect of silk, and in silk trades it is used advantageously to produce the sheen.—Popular Mechanics.

Horsepower of the Waves.

Ricardo Salvadori, an Italian engineer, has been trying by experiment to determine the power of the waves of the sea, not, be it noted, of the tides, but of the real waves. He has just announced the result of his calculations, showing that the power depends upon the height of the wave, in accordance with the following table:

Height of wave.	Horsepower.
1 foot 7 inches	1.5
2 feet 4 inches	1.7
3 feet 5 inches	2.5

It is not often that waves attain a height of more than six feet on the coast, although they may appear to the eye to be much higher. The plant necessary to utilize the force of the waves would cost about \$1,000 per horsepower.

Mounting Photo Prints on Glass.

Photograph prints can be mounted on glass with an adhesive made by soaking one ounce of sheet gelatin in cold water to saturation, then dissolving in three and one-half ounces of boiling water. Let the solution cool to about 110 degrees F., then immerse the print in it and squeeze face down on a clear piece of glass. When dry take a damp cloth or soft sponge and wipe off any surplus gelatin on the glass.—Popular Mechanics.

Making Money On the Farm

IV.—Oat Growing

By C. V. GREGORY,
 Author of "Home Course in Modern Agriculture"
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NEXT to wheat, oats are the most widely grown small grain crop. It is a crop that is needed on every farm for feed, especially for young stock and horses. In the corn belt oats fill in a place in the rotation that cannot well be taken by any other crop. The work of seeding and harvesting fits in well with the work of growing a corn crop; hence oats are and probably always will be an important crop in the corn belt.



FIG. VII.—GOOD AND POOR STACKS.

ly considerably lower. Most farmers raise oats more because they have to than because they think there is any money in it. If handled rightly, however, oats can be made a money crop. One of the most important points in oat growing is the selection of seed that is adapted to the locality. Oats are a cool weather crop. The hot midsummer weather of the corn belt is one of the chief factors causing low oat yields. When the hot weather strikes the oats they blight and rust badly. Many times they crinkle down and do not fill well.

Advantage of Early Varieties.

The only way this can be avoided in the corn belt is to sow early varieties. These ripen before the hottest weather comes and escape many of the troubles that affect later ones. Early varieties are much less susceptible to rust than late ones are. The selection of rust proof varieties is the only way of combating this disease, since, unlike smut, it cannot be prevented by treating the seed.

Experiments at the Iowa experiment station show nine bushels more to the acre in favor of early varieties. The average of twelve years' experiments at the Nebraska station gave the early oats fourteen bushels to the acre advantage. In good oat years—that is, those with a cool summer—the difference is not so marked. In such seasons the late oats yielded seven bushels to the acre less than the early, while the medium oats yielded a little more. In bad oat years—and in the corn belt four years out of five are bad from the oats standpoint—the early varieties yielded twenty-one bushels to the acre more than the late and thirteen bushels more than the medium.

The medium varieties are more convenient, as they do not crowd in on haying and corn plowing like the early ones do. The use of improved haying machinery is shortening the time required for putting up the hay crop, however. The advantage of early oats in yield will in most cases more than make up for the disadvantage of haying the work crowded during the first half of July.

Early oats have another advantage in that they give the clover a better chance. Where the oats are not got off the ground until the last of July and dry weather follows, as it so often does, the clover makes little growth and is often killed out entirely. With the adoption of a systematic rotation clover will nearly always be seeded with oats, so that this is a point that cannot be ignored.

It is not advisable to ship in oats from a distance to seed the entire field. Often you can get good early seed from a neighbor at little more than market price. If there are no early oats in your community you can send away for a few bushels of a new variety and plant them in a corner of the field by themselves. If they give good satisfaction enough seed can be saved from them to seed the entire field the next season. In the northern part of the United States and in Canada, where the summers are cool, late varieties can be profitably grown. In such localities they give a greater yield and a larger plumper out.

Preparing the Seed.

After the seed has been procured the next step is to get it into shape to sow. This means a liberal use of the fanning mill. A large per cent of the oats sown are shoveled from the bin directly into the seeder. Most farmers who do fan their oats simply run them through once to blow out the sticks and dirt and sieve out the weed seed. It pays well to run the oats through the mill two or three times to blow out all the light seed. The work can be done in winter when there is little else to do. The light oats that are blown out are just as good for feed as the others, and the heavy ones that are left are worth several times as much for seed. In experiments carried on to show the comparative value of light and heavy oats the light seed yielded forty-seven bush-

els to the acre, the medium fifty-four and the heavy sixty-two. The difference may not be this great every time, but it will always be great enough to pay well for the labor of fanning. There is an objection to using the heavy oats for seed in that they tend to become a little later each year. This can be avoided by introducing some new seed of an early variety every few years. Directions for breeding seed oats will be given in article 7.

After the oats are cleaned and graded they should be treated for smut. Smut is a black fungus that grows from a tiny spore that lodges beneath the hull when the oat is in bloom and the kernel open. When the hull closes the spore is held inside until the next season, when it sprouts and sends a thread up through the stem to the head. There the smut grows, producing a black mass where the head should be. Often as many as 15 per cent of the heads will be affected in this way. These black heads are not easily noticed, so that the damage is usually underestimated.

The simplest method of treatment is to spread the oats out on a tight floor and sprinkle them with a solution of one pound of formalin to forty gallons of water. This amount is sufficient for forty bushels of oats. Shovel the oats over two or three times until they are thoroughly wet, and then pile them up and cover them with blankets or sacks. The fumes from the formalin will penetrate beneath the hull and kill the smut spores. In the morning the oats should be spread out again and shoveled over occasionally until dry. They can be sowed wet, but in that case the seeder should be set to sow about a bushel to the acre more, as they do not run through as readily. This work should be done on a warm day, as freezing while the oats are wet will injure the germination. This treatment costs only about a cent a bushel and is very effective.

Preparing the Seed Bed.

One of the most neglected points in oat culture is the preparation of the seed bed. Oats do better on a rather firm seed bed. If the field was in corn the year previous it will not be necessary to plow unless the ground is very hard. It should be disked thoroughly, however, to cut up the stalks and pulverize the upper two or three inches. It will usually be profitable to let the disk "lap half," as this does away with ridges and leaves the land in better shape. One harrowing after the disk will level the ground in splendid shape to receive the seed.

Methods of Seeding.

There are several methods of seeding, of which the end gate seeder is the worst and the disk drill the best. The two main objects in seeding are to get the seed in evenly and at approximately the same depth. The end gate seeder fulfills neither of these requirements. The broadcast seeder scatters the seed evenly, but it is covered no better than with the end gate seeder since both depend upon the disk for covering. The disk drill is more expensive and does not get over the ground as rapidly, but it distributes the seed evenly and puts it at the same depth. The seed is dropped in furrows made by the disks and thoroughly covered, so that one harrowing is all that is necessary after drilling. Experiments show a considerable advantage in yield in favor of the disk drill.

At the Iowa station the average of four years' experiments showed nine bushels to the acre in favor of drilling over broadcasting. From half a bushel to a bushel less seed to the acre is required when a drill is used, as all



FIG. VIII.—HAVE GRAIN WELL SHOCKED.

the seed is put where it can grow to the best advantage. Clover has a better chance in drilled grain. The drill should be run north and south, so that the sun can shine in between the rows on the little clover plants.

Harvesting the Crop.

Preparation for harvest should be made by having the binder in perfect running order beforehand. If oats are not cut as soon as ripe they will almost surely go down and be lost. Great care should be taken in shocking to see that the bundles stand up firmly. If the straw is not too green the shocks should be capped, as a capped shock will shed rain better. A shock that stands up straight and is well capped will shed a great deal of rain without wetting in much. It is much better to stack than to thrash out of the shock. The oats will sweat somewhere, and they will be of better quality if they do it in the stack instead of in the bin. It has been proved many times over that there is nothing to be gained by thrashing oats from the shock. Oats that have been permitted to go through the sweating process in a well protected stack are always of better quality than those which have been hurried into the thrasher.

INDIA'S PRECIOUS STONES.

Ruby and Jadeite the Most Valuable Stones Produced.

Diamonds, rubies, sapphires, spinels, tourmalines, garnets, rock crystals and various sorts of amber and jadeite are the precious stones found on India's coral strand, says the Chicago Tribune. The ruby and jadeite are the only stones of considerable value produced. Large quantities of turquoise come from Sikkim and Tibet, that from the latter country being harder, darker blue and therefore more valuable. The importation of precious stones into India amounts annually to about \$4,500,000.

The diamond industry is limited and is carried on in southern India, the northern part of the Indian peninsula and in the central provinces. Ruby mining is carried on in upper Burma and, next to petroleum, is the most profitable of the mineral resources of the state, the value of the product being about \$300,000 annually. One ruby of seventy-seven carats was taken out a few years ago and valued at \$133,350. Sapphires used to be mined in Kashmir, but the mines are now said to be exhausted. The yellow, white, blue and green varieties of sapphire are found in the ruby bearing gravels in Burma. The spinel is found in considerable quantities in Burma.

Tourmaline stones of blue, green and black coloring are found in upper Burma. Garnets are mined in Jaipur. Rock crystal, cut for cheap jewelry, known as valeam diamonds, is found in Madras. Another quartz crystal, found in Kalgobh, is cheaper and used for necklaces. Chalcedonic silica is called jaspik and embraces many forms of agate mined in the Deccan. Agates and carnelians are cut and prepared for market in Bombay. They come mostly from Rajpiper. Large quantities are shipped to Europe and China. Jadeite of beautiful green veins is found in upper Burma, and an inferior jade is found in other parts of India. The stone sells for \$50 to \$100 a hundredweight.

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FREQUENT RAPID COMFORTABLE

Springwater Division

STATIONS	EASTBOUND															Freight
	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	
PORTLAND	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	
Golf Junction	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	
Stanley	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	
Lents Junction	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	8:30
SYRACUSE	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	8:30
Jenno	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	8:30
LINSEMAN	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	8:30
GRESHAM	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	8:30
Hoguen	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	8:30
Anderson	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	8:30
Barton	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	8:30
Siefer	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	8:30
Curry Creek	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	8:30
Deep Creek	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	8:30
Eagle Creek	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	8:30
Stanley	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	8:30
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Deep Creek	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00
Barton	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00
Siefer	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00
Haley	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00
Hoguen	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00
GRESHAM	6:07	8:45	9:45	10:15	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00
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