AGRICULTURAL HINTS.

CHURNING IN PERSIA.

Nomads in the Shah's Realm Cling to Methods in Use Thousands of Years Ago.

A method so primitive that it is almost unknown elsewhere is still used by the Persian nomads in churning their butter.

In the shelter of the goatskin tent is swung a crusade receptacle, also of goatskin, in which the milk is dumped. Then it is rocked gently by hand until the separation of the fat from the milk is complete, when the resultant oily

CHURNING IN PERSIA.

mass, unsalted, as is all oriental butter, is ready for the consumer.

There are few more interesting people, in these days of rapid progress, than the Persian nomad. His home is where night overtakes him, and he sleeps when weariness suggests that he fall. Ordinarily his roof is heaven's starry dome, but in case of storms he crawls into the shelter of his little goatskin tent, where a surprisingly large family can be made comfortable.

The Persian, like the Moor, does not encourage the establishment of prisons, death being a quicker and less expensive method of punishing criminals. Torture in countless forms is so common a sight as to attract little attention, and when death supervenes the body lies where it falls until taken away by relatives.—Chicago Journal.

APPLES FOR THE COWS.

No Other Green Food Produces as Much Milk or Greater Gain in Healthy Flesh.

There is no better green food than apples for cows, but, of course, it won't do to let them have all they will eat at first, as such a course will be sure to make them sick; I have known it to kill them. Years ago I had a friend who owned a cider mill and kept a large number of cows. He was careful at first in letting cows have but little pomace, but after once accustomed to it he let them run in a field where all the pomace was drawn, and the cows ate all they desired. They gave a large quantity of milk and gained much in flesh during the season. To feed apples or potatoes safely to cattle the same may be fed by placing the cow in a stanchion, having a bar across over her neck so as not to allow her to raise her head up quite level with her body. What causes them to choke is, when the mouth is full they raise the head so high that the round apples or potatoes roll down their throat without being masticated. If to be fed out of doors two stakes or posts may be set into the ground and holes bored through them for a rod or pole, and feed placed in a box so the cow can reach it when placed with neck between stakes. This is very much easier than to take pains to cut or mash the apples.—J. S. Woodward, in Rural New Yorker.

Oleo Makers Are Active.

The dairyman who thinks that the oleo makers are going to stop coloring oleo without making a vigorous attempt to find a method that the law will not forbid is very much mistaken, says Hoard's Dairyman. Ever since the law was passed all the skill of some of the best chemists in the country has been at work on the question of finding a natural color for oleo. At one time palm oil seemed to furnish what was wanted and a color that the analyst could not identify. But what one chemist puts together another one can usually pull apart, and a method of identifying the palm oil color has been found, and the successful manufacture of colored untaxed oleo is still in the distance.

War on Canada Thistles.

Canadian thistles can be effectually destroyed by covering several inches deep with a heavy mulch where they grow in small clusters only. Any kind of mulch will do, but it should be applied liberally in order to smother out the weeds effectually, say from six to ten inches deep. But when large areas are covered with thistle, mulching is not practical, and in all such cases we find that clean culture is the most effective method of destroying same.—Farm Journal.

TREES AMONG STUMPS.

A System of Orchard Cultivation That Is Highly Recommended by Some Authorities.

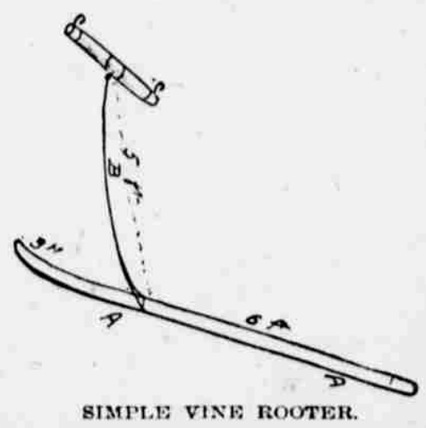
Mr. Samuel B. Woods, president of the Virginia Horticultural society, writing to the Rural New-Yorker, says: I gave the matter of planting orchards in new ground much study some years since. The result was that we planted 34,000 trees and will set 20,000 more this spring, among the stumps. We cut the trees down, saw up what will do for lumber and burn the rest on the ground. Then we plant the trees in rows very regularly laid off, and hoe and bush them thoroughly, going over the ground about four times a season. We are planting rough mountain land from 1,000 to 1,800 feet above the sea level. We bush with blades and mattocks, and we are very anxious to learn what cheap chemical will kill a stump, and the best way and time to apply it, as the cost of work would be much reduced if we did not have to take off so many sprouts from the big stumps. As we kill out the growth we use a colter, putting the land into corn or peas, and will thus eventually give all the orchard cultivation with a plow. I am satisfied that it is a positive advantage to leave the stumps; they carry the moisture deep into the ground, help the drainage and enrich the soil by decay. You may have noticed that a young tree planted by an old oak, hickory or chestnut stump is the best tree in the orchard. I have. At the same time I believe that the more cultivation given to the new ground the better for the trees. Some people fear that the worms always found in decayed wood will attack the growing trees, but there is no danger from that source, as the worm which lives on decayed wood is of a different kind entirely from the worm which attacks growing trees. You might as well expect a dove to eat a hawk's food.

We have in Albemarle county some orchards now in fine bearing raised on above plan. I have been told of a peach orchard, the returns from which have in recent years run up to $25,000 per annum, which was grown among the stumps. I was talking last year to a man who has one of the largest orchards in the state, and who had spent a good deal of money in pulling up stumps and getting the land absolutely cleared, and he stated to me that if he had to do it over again he would leave the stumps, as he regarded their advantages as outweighing their disadvantages, and in addition the cost of the work was tremendous. He told me that it cost as much to fill up the hole as it did to pull the stump, which I had not thought of.

REMOVING VINE ROOTS.

A Handy Tool Which Does the Work of Several Men and Does It Neatly, Too.

It is sometimes desirable to pull out a vineyard and use the land for other purposes. I send a sketch of a simple tool which is effective in tearing out



SIMPLE VINE ROOTER.

the roots. A wire (b), five feet long, is fastened about three feet from the end of a nine-foot pole (a a), or hard wood sapling, and to a single tree. The larger end of the pole should be slightly bent at the bottom so it will scoop under a vine. If vineyard rows are long, begin tearing out vines at center, dump in a pile at each end and burn.—J. B. McDonald, in Farm and Home.

The Variations in Milk.

It is difficult to educate dairymen into the fact that both milk and cream vary widely in fat contents, and that for no reasons that can be given as satisfactory, says Hoard's Dairyman. No cow can be kept in such regular conditions as to food, drink and surroundings that the composition of the milk will not change from day to day and from hour to hour. The action of the nervous system of the cow is beyond measurement by any instrument possessed by the experiment station, and until such instrument is invented the reason why a cow gives 4.5 per cent. milk Monday and 3.5 per cent. milk Tuesday will be beyond explanation. The men who buy sugar beets trust nothing to the theory of averages; they sample and analyze every load of beets; the man who mines gold also samples and analyzes, but the man who produces milk trusts to averages, and only kicks when he finds his returns sometimes below the point that he considers proper.

Nervous cows, like the Jerseys, are sensitive to rough handling. The amount of butter produced is materially affected by the treatment they receive.

Popular Science

TYPEWRITING EXPERTS.

Find New Field for Their Abilities in Furnishing Testimony in Lawsuits.

It will come as a surprise to many people to know that there is a great deal of character in typewriting. Were half a dozen operators to use the same machine, paper and actual words, each printing off a dozen sheets, and were all these to be mixed up indiscriminately, a practiced eye could distinguish each operator's work instantly, says the Chicago Tribune.

In a recent law case, where a lengthy typewritten document of many sheets was in question, it was alleged that one of the pages included had been substituted for another sheet. Although to a casual eye all the sheets seemed to be the work of one hand, experts showed that the spacing was quite different, especially between the end of one sentence and the beginning of another, and on the substitute sheet the new paragraphs began in quite a different position on the lines, and the letters were shaky instead of upright and firm. And the punctuation—the crucial test—was wholly different.

The experts were unable to trace the person who had done the bogus typewriting, but they agreed that it was a woman, young, and only a beginner at typewriting; that she was nervous, not strong, and that her education was only moderately good.

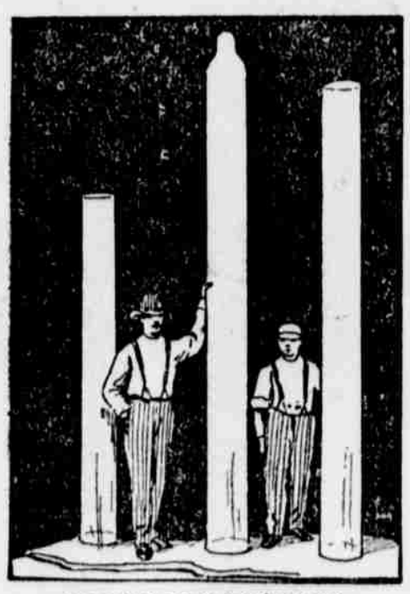
The writer of the other sheets comprising the document was defined from the evenness, correctness and firmness of the typewriting to be an experienced "typist."

WONDERFUL MACHINE.

Blows Glass Better Than Men, and Will Drive Many Workmen Out of Their Jobs.

The accompanying photograph is the first ever taken of machine-made window glass in the world. These three rollers were produced a few days ago at the Alexandria (Ind.) branch of the American Window Glass company's plant, and where the Lubbers machine, the first successful of many made, was completed and experimented with until perfected.

So perfect has this machine been made that the company is risking millions of dollars in the proposition to install it in its 41 plants distributed over the country, and dispense with hand blowers entirely. The men were at first skeptical when told that the machine would destroy their trade, which has yielded many of them $450 to $600 per month; but they have at last been forced to admit that it has been but too true, and as a result many of the best



BLOWN BY MACHINERY.

double-ring Belgian blowers are going back to the old country, and others are seeking other pursuits.

The machine is the patent of John H. Lubbers, of Allegheny, Pa., a practical glassblower, who has also made several other labor-saving inventions. Lubbers will reap millions as his share of the proceeds of the invention. Skilled mechanics from the Westinghouse works, Pittsburg, Pa., have been working behind high walls and barred gates for months in the erection and installation of the machines, which no man other than old and skilled employes of the company was allowed to see. The gates are yet closed to outsiders, and the photos were made at the request of the company, but that of the machines was denied, as the latest improvements to them have not been patented. When all have been allowed the company will let the public see the machines work, but not until then. These rollers are respectively 10 and 19 feet in length and 30 inches in diameter—larger than any hand blower could possibly make. The glass is perfect in temper and free from blisters.—Cincinnati Enquirer.

MAKES ITS OWN LIGHT.

Buoy, Invented by a German Genius, Is Lighted by Direct Action of the Waves.

An inventor in Germany has proposed a novel method of supplying electricity to light a harbor buoy at night. He dispenses with a cable from a power-house on land and generates his own current by the rocking of the buoy. The audible signals given by bell buoys in a fog are produced in the same manner. The motion of the waves tilts the apparatus first in one direction and then in the other and makes the clapper strike at short intervals.

A full description of the mechanism employed in the new buoy is not yet at hand, but one can easily fancy how it

BUOY LIGHTED BY WAVES.

is arranged. A small dynamo is operated by the motion of the apparatus, and the current is first fed into a storage battery, so that the supply to the lamp may be kept uniform. If the brilliancy of this light varied with the condition of the sea the system would be unsatisfactory. Hence it would not do to lead the electricity directly to the lamp. It is said that experiments with the invention are already in progress on the German coast.

HISTORY OF GUNPOWDER.

Evidence That It Was Used Long Before the Christian Era Is Direct and Irrefutable.

With reference to the early use of gunpowder and firearms, long before the popularly accepted, but erroneous, date of gunpowder discovery, Gen. Joseph Wheeler, United States army, in a lecture a short time ago before the Franklin institute, remarked that in many localities in China and India the soil is impregnated with niter, and the probable discovery of gunpowder there, many centuries before the Christian era, may be explained in this way:

All cooking at that time was by wood fires and the people lived in tents and huts with earth for their floors. Countless fires made of wood upon ground strongly impregnated with niter must have existed every day, and when such fires were extinguished a portion of the wood must have been converted into charcoal, some of which would, of necessity, become mixed with the niter in the soil. By this means two of the most active ingredients of gunpowder were brought together, and it is very natural that when another fire was kindled on the same spot a flash might follow. This would lead to investigation, and then the manufacture of gunpowder was conceived. Whether this be true or not, there is abundant evidence that the origin of gunpowder and artillery goes far back in the dim ages of the past.

The Hindoo code, compiled long before the Christian era, prohibited the making of war with cannon and guns or any kind of firearms. Quintus Curtius informs us that Alexander the Great met with fire weapons in Asia, and Philostratus says that Alexander's conquests were arrested by the use of gunpowder. It was also written that those wise men who lived in the cities of the Ganges "overthrew their enemies with tempests and thunderbolts shot from the walls." Julius Africanus mentions powder in the year 275. It was used in the siege of Constantinople in 668; by the Arabs in 690; at Thessalonica in 904; at the siege of Belgrade, 1078; by the Greeks in naval battles in 1098; by the Arabs against the Iberians in 1147, and at Toulouse in 1218. It appears to have been generally known throughout civilized Europe as early as 1300, and soon thereafter it made its way into England, where it was manufactured during the reign of Elizabeth, and we learn that a few arms were possessed by the English in 1310, and that they were used at the battle of Crecy in 1346.—Cassier's Magazine.

He Saved the Cow and Cow Saved Him.

Belonging to a family in North Topeka was a cow which had been made much of a pet by the children. When the flood came, relates the Kansas City Journal, the nine-year-old boy of the family ran to the barn to liberate this cow. The next moment the agonized father and mother saw the boy swept away holding to the rope around the neck of the cow. For four days the family were marooned in the house. All this time they mourned their boy as lost. But he was not lost. He managed to mount the cow and she carried him four miles to the bluffs, swimming and wading.

FARM AND GARDEN

HOW TO WEED ONIONS.

Unless One Has the Right Sort of Tools It Is a Task That Tries One's Patience.

"Working onions" is a little harder than talking about it. I found it difficult to find the tools needed, or rather I needed in this section. All hoes had too wide handles, too short and not of proper shape, onions being two to six inches apart. I made what I needed from an old hinge, cut and bent round, as at (a), sharpened from inside and nailed on suitable handle. Another was made from a narrow plow fitted on an

ONION WEEDING HOES.

old handle, curved and sharpened from inside also; it is shown at (b). A third was made from an old hoe (c), cut two inches wide.

All these were kept sharpened by filing. They are not for deep or rough hoeing. They are used more as scrapes, to be drawn gently across rows. They cut grass and weeds and break the crust. Without these simple tools I do not see how I could have cleaned my crop out, as our little winter weeds set close to the ground were the greatest trouble. Have plowed and hoed three times and feel with one more thorough working my crop will be made.—J. J. Carmichael, in Farm and Home.

THE QUIET FARM LIFE.

There Are But Few Failures, Moral or Financial, Among the Tillers of the Soil.

I would not try to make every boy a farmer, or every girl a farmer's wife, but it does seem to me that we should impress upon the children that, while the opportunities to make great fortunes will not often open to them on the farm, there are less failures among those engaged in our business than any other. When we read eulogies on the captains of industry, who have accumulated fortunes in mining, commerce and manufacturing, we do not hear of the poor, miserable privates who have fallen by the wayside, financial, moral and physical wrecks.

Do not teach the children that life's pathway is strewn with thorns and brambles in all directions. Too much teaching has already gone forth, and the masses are pushing, crushing, surging and jostling against each other, even to madness and destruction. Still, in all this wild rush, we occasionally see individuals who are quietly and gently, with a pleasant word and smile making their way through the seething mass of humanity, almost without disturbing it, and reaching the desired goal. "As sorrow and weeping may endure for the night, but joy cometh in the morning," so will peace come with earnest, conscientious effort, accompanied with consideration for others.—Carrie L. Dawley, before the New York State Grange.

POTATOMATO PLANT.

It Bears Tomatoes Above and Potatoes Below and Is a Triumph of Grafting Art.

An anomaly in grafting, being a plant which is growing first-class potatoes at the roots and bearing fully developed tomatoes at the stalk, was brought about by Prof. Green, of the Minnesota state school of agriculture, when he cut off the young shoots of a potato vine, making a V-shaped slit in the top, into which he inserted a freshly clipped young tomato plant, bound the joint with straw and supported it by long rods. Nature did the rest.

The tomato drew sustenance from the earth through the roots of the potato, and in return furnished what was required in the way of the action of light and air upon its own leaves to its adopted roots.

The plant is now three months old. On pushing aside the earth several fairly developed potatoes are shown, each a trifle larger than a large hen's egg. From the vines a half-dozen tomatoes are hanging, in different stages of maturity. Several have ripened and the others promise to do so, as well.

The tomato vine loses its identity at the place where the graft was made. There are no leaves at all suggestive of the potato. The vine is fully three feet high.—N. Y. Herald.

Common ferns may be gathered in the woods, and packed away in a cool place. They will keep a long time.