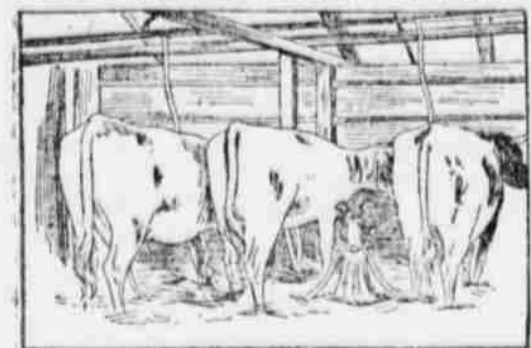




Automatic Milking Device.
The buxom dairy maid will soon be a thing of the past if a new invention which has successfully undergone



numerous tests comes into general use. The ingenuity of man has devised a scheme to accomplish her downfall as a necessity in the agricultural districts. The invention, known as the Lawrence-Kennedy cow milker, is described by a London correspondent of the Chicago Inter Ocean. It can be operated, its inventors claim, by any motive power—steam, water, gas, oil, or electricity. Pictures showing its method of operation have the following explanation:

"Connected by pipes with a vacuum continuing-tank is the tube A. The other end of the tube is connected with the pulsator G, which rests upon the cone-shaped pail placed between the cows. From the pulsator two rubber tubes BB branch out right and left, one to each cow, and each tube is attached to four rubber cups C, which are fastened to the cow. When the vacuum cock is turned on the pulsator commences to work and causes the cups to collapse and expand and thus extract the milk. The milk on its way to the pail can be seen passing through a glass trap or indicator D, which is protected by a wire cage. The number of pulsations per minute can be regulated by screws which give adjustability to the characteristics of each cow."

Lime in Agriculture.
The use of lime on land has not been largely encouraged by scientists in the past, though it has been used to a considerable extent in isolated localities. It was at first considered from the standpoint of plant food, and as such of course it would not receive a very enthusiastic support from men that had found out by various tests that there was already in the soil more lime than the plants could use. When the soils of the various States came to be examined for acid, it was found that many of them were so strongly acid that some of our most important plants would not grow on them satisfactorily. In the soil surveys carried on during the past three years in Illinois it has been found that one-third of the soils of the State are so strongly acid that they will not grow red clover and other legumes successfully until treated with lime. Of the other two-thirds of the State some of the soils are slightly acid and would be improved by an application of lime.

Poultry Leg Band.
The illustration shows a neat and durable leg band, which is easily put on, and one which will be no inconvenience to the fowl. It is made from a 2-inch strip of tin pointed at one end, and a hole made through the larger end. If it is desired to have a number or letter on the band, cover the



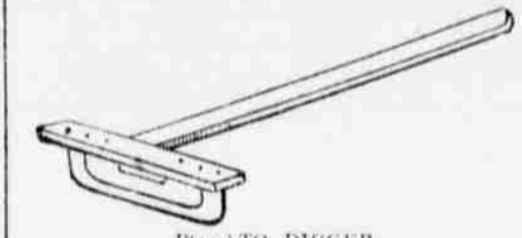
larger end with grease, in which carefully write the number or letter with a pointed instrument. Then apply a little acid, which will cut into the surface of the tin where grease has been removed. After the band has been put around the leg of the bird, the pointed end should be pushed down the larger end and bend point down the

Cooperation Among Granges.
Co-operative buying and selling among farmers means money saving for them. The Michigan State Grange reports the purchase by Patrons of land away last season of 450 tons of better grades, 1,600 tons of hard phosphate, and woven wire fencing in the large contract ever entered into. Ohio is about to establish a central bureau of information to provide for the dispersal of maps, purchase of farm supplies and to keep patrons generally posted on markets and other matters to their interest.

The Farmer's Reverie.
Th' nights is gittin' shorter an' th' days is gittin' long,
An' yest'day, i-jing, I heerd a robin red-breast's song;
Jes' let me say in passin' when a robin starts tew sing
Thet it's a shore-nuff sign we hain't so fur away from spring,
I ealkilate th' grass is sproutin' some beneath th' snow;
Th' sap is sort o' thawin' an' a-tryin' hard to flow;
Th' crow looks down an' sasses ez he flies past on th' wing,
An', somehow, things begin tew sort o' smell tew me like spring.
Fore long I'll be a-trainin' on th' hill behind the plow—
Laste'd o' settin' fore th' fire like I'm a-doin' now—
A-lis'nin' in th' furrow fer th' dinner bell tew ring—
A-cussin' Jeff and Kate an' kind o' happy cus it's spring.
Some folks prefers the winter time an' sam prefers th' fall,
While summer time suits others, yit in sunshon, don't suit all.
Es fur ez I'm consarned, ef I could hev my choice, i-jing,
I reckon I would hev th' hull endurin year jes' spring.

Spraying Fruit Trees.
Spraying fruit trees for the purpose of destroying insects and fungus growths is no longer looked upon as a fad, but is recognized as being an absolute essential where the best results in fruit growing are expected. In the matter of spraying the average farmer who has but a small orchard has much to learn from the specialist. Many thousand carloads of fruit are sold annually in the corn belt that have been raised in other States, under conditions that are no more favorable for fruit growing than those of the corn belt, providing the same care could be exercised in handling the fruit trees. Spraying is an operation that should not be performed in a haphazard manner, and should only be taken up after obtaining specific advice pertaining to it. In this regard the experiment stations of the corn belt stand ready to furnish individuals with formulas and directions for this work.—Iowa Homestead.

Potato Digger.
S. A. Pollock, of Cass county, Iowa, writes: "I have never found much use for any tool to scratch out potatoes after a digger of any kind save my fingers, but I know so many are averse to this habit that I have devised a tool whereby they can scratch out potatoes without using the fingers



for the work. It is made in the shape of a rake, but instead of using teeth, pieces of heavy wire bent as observed in the illustration and riveted in the head will be found very useful. The wires will let all the loose dirt pass through and being close together will bring out all tubers that are not small enough to pass through between the wires."—Exchange.

Straw on Pasture Land.
A Dakota farmer writes as follows: Five or six years ago we tried a heavy coat of straw horse manure on the high ground of our pasture where the grass was quite short. At first the grass was almost smothered out, but within the last year or two a sort of second growth grass has come in, and the feed on the manured spots seems at least 50 per cent better than it was before manuring. We shall try some more of this work next year on land not convenient to plow.

Where worn out pastures are sifted for plowing, a good plan would be to first seed an old plow field with Bromegrass for a pasture and then break up the old pasture, thus starting a system of rotation that should eventually take in the whole farm. Once started Bromegrass as a pasture grass is the best thing I have found. But I hardly think it would be very profitable to try to start it on unbroken prairie.

To Fatten a Horse Quickly.
To fatten a horse quickly in order to improve its appearance before sale, feed liberally of corn meal, steamed oats and clover hay, adding a little linseed meal to the grain ration. Exercise but little, and give purgative salts once a week. Feed at least three times a day and supply plenty of water. A horse not too wild will often gain several pounds a day for a fortnight under this plan.

Good Roads and Social Life.
The advent of good roads will promote attendance at school and the church; facilitate social gatherings in every sodality; dramatize entertainments, and make clubs and lodge meetings possible to the farmer's family in the winter and spring months. Give the bright young men and women of rural districts these privileges and there will be a marked tendency of their drifting to the city.

Port Arthur and Cincinnati are in the same latitude.

Science AND Invention

The migration of birds is being studied in a new manner by German ornithologists. Hundreds or thousands of crows are being captured at Rossitten, in East Prussia, and, after being tagged with a number and date, are again liberated. It is requested that when one of these birds is killed, the tag and date and place of killing shall be forwarded for record.

Some mysterious deaths of cattle in Alderney have been traced to a curious source. Mercury was found in the dead animals, and also in many meadows and gardens, and the presence of the poison is attributed to a recent explosion of a factory for fulminate of mercury. The fumes from the explosion were carried to a distance by a strong gale. As a result of the inquiry, the manufacture of explosives in the island has been prohibited.

A still unexplained effect of the electric light somewhat resembles mild sunburn and sunstroke. The heat of the electric arc employed in the reducing furnace is so concentrated that it melts steel like tallow, but the thermometer a dozen yards away is scarcely affected. Even at this distance from the heat, however, persons experience a burning of the face and other exposed skin much like that produced by intensely hot sunshine. The skin becomes deeply bronzed, and there is temporary blindness in natural light, with pain in the eyes, followed by headache and insomnia.

There is now in operation, on a commercial scale, at Port Chester, N. Y., an artificial camphor factory, the product of which is intended to compete in the market with the natural substance. It is maintained that it does not differ, except in the manner of its origin, from that extracted from the camphor trees of Formosa. Artificial camphor is made from essential oils derived from turpentine. Chemically the only difference between turpentine and camphor is the possession by each molecule of the latter of one atom of oxygen which is lacking in the former. By a chemical process the needed oxygen is supplied. Three-fourths of the whole supply of camphor is used in the arts, and one-fourth in medicine.

The people called the Todas, living in the Nilgiri Hills, India, have a curious religious ritual evolved out of the ordinary operations of the dairy. The priest, says Dr. W. H. Rivers, is the dairyman, and the temple is the dairy. Only the milk of the sacred buffalo is churned in the dairy temple. The milk of buffaloes that are not "sacred" is churned in the front part of the huts in which the people live. The dairy temples are of different degrees of sanctity corresponding to the different degrees of sanctity of the buffaloes tended in each. Even the vessels used in a dairy temple vary in sanctity, those that contain the milk being more sacred than those that only receive the products of the churning.

The N-rays of R. Blondet should interest us especially because they are so common about us. They were discovered while the light from a Welsbach burner was being concentrated by a quartz lens on a sulphide of calcium screen, the lens causing the luminosity of the screen to persist after the light was removed. They are now known to exist not only in the incandescent gas, but also in the ordinary gas flame burning without a chimney, and in the radiation from a red-hot plate of silver or tale, and they excite radio-activity in various substances, such as a plate of lead. The invisible rays can be detected by the slight increase of luminosity of a phosphorescent screen or of a very small gas flame. These rays seem to be given off by the human body, and D'Arsonval has shown that a screen of platinum-cyanide of barium, made slightly luminous by radium, lights up on approach to a muscle, and is so sensitive that it can show the course of a nerve under the skin.

ANIMAL INSTINCT.

President's Opinion on the Question of the Day Among Naturalists.
I am convinced there is nothing in the notion that animals consciously teach their young. It is probable that a mere animal reflects upon the future any more than it does upon the past? Is it solicitous about the future well-being of its offspring any more than it is curious about its ancestry? Persons who think they see the lower animals training their young supply something to their observations, consciously or unconsciously; they read their own thoughts or preconceptions into what they see. Yet so trained a naturalist and experienced a hunter as President Roosevelt differs with me in this matter. In a letter which I am permitted to quote he says:
"I have not the slightest doubt that these lead large amount of unconscious teaching by word-folk of their offspring. In unfrequented places I have had the deer watch me with almost

as much indifference as they do now in the Yellowstone Park. In frequented places, where they are hunted, young deer and young mountain sheep, on the other hand,—and of course young wolves, bobcats, and the like,—are exceedingly wary and shy when the sight or smell of man is concerned. Undoubtedly this is due to the fact that from their earliest moments of going about they learn to imitate the unflagging watchfulness of their parents, and by the exercise of some associative or imitative quality they grow to imitate and then to share the alarm displayed by the older ones at the smell or presence of man. A young deer that has never seen a man feels no instinctive alarm at his presence from merely accompanying its mother, if the latter feels such alarm. I should not regard this as schooling by the parent any more than I should so regard the instant flight of twenty antelope who had not seen a hunter, because the twenty-first has seen him and has instantly run. Sometimes a deer or an antelope will deliberately give an alarm-cry at sight of something strange. This cry at once puts every deer or antelope on the alert; but they will be just as much on the alert if they witness nothing but an exhibition of fright and flight on the part of the first deer or antelope, without there being any conscious effort on its part to express alarm.

Moreover, I am inclined to think that on certain occasions, rare though they may be, there is a conscious effort at teaching. I have myself known of one setter dog which would thrash it, puppy soundly if the latter carelessly or stupidly flushed a bird. Something similar may occur in the wild state among such intelligent beasts as wolves and foxes. Indeed, I have some reason to believe that with both of these animals it does occur—that is that there is conscious as well as an unconscious teaching of the young in such matter as traps."

Probably the President and I differ more in the meaning we attach to the same words than anything else. In a subsequent letter he says: "I think the chief difference between you and me in the matter is one of terminology. When I speak of unconscious teaching I really mean simply acting in a manner which arouses imitation."
Imitation is no doubt the key to the whole matter. The animals unconsciously teach their young by their example, and in no other way.—From John Burroughs's "Current Misconceptions in Natural History" in the Century.

A SAFE DIET RULE.

Eat the Smallest Amount of Food that Will Preserve Good Health.

How shall one determine how much food to eat? Too much mystery has been thrown upon this subject. Let your sensations decide. It must be kept in mind that the entire function of digestion and assimilation is carried on without conscious supervision or concurrence. It should be entirely unfeared and unknown, excepting by the feeling of bien-etre which accompanies and follows its normal accomplishment. Satiety is bad. It implies a sensation of fullness in the region of the stomach, and that means that too much food has been taken. The exact correspondence, in a healthy animal, between the appetite and the amount of food required is extraordinary. As a rule, the meal, unless eaten very slowly, should cease before the appetite is entirely satisfied, because a little time is required for the outlying organs and tissues to feel the effects of the food that has been ingested. If too little has been taken, it is easy enough to make it up at the next meal, and the appetite will be only the better and the food more grateful.

No one was ever sorry for having voluntarily eaten too little, while millions every day repent having eaten too much. It has been said that the great lesson homeopathy taught the world was this: That whereas physicians had been in the habit of giving the patient the largest dose he could stand, they have been led to see that their purpose was better subserved by giving him the smallest dose that would produce the desired effect. And so it is with food. Instead of eating as most people unfortunately do, as much as they can, they should eat the smallest amount that will keep them in good health.—Century.

An Accommodating Cook.
Mrs. A. at the phone—Wait a minute till I ask Bridget. If she has no objections I'll be delighted to lunch with you tomorrow. A moment later Oh, hello! Mrs. B., yes, I can. Bridget says I can. Isn't it lovely? Thanks ever so much. Good-by.
Mrs. B. (gossiping enviously)—What wouldn't I give for a cook like that!—Detroit Free Press.

Statue for the First Volunteer.
A statue of Colonel Josias R. King of St. Paul, said to be the first volunteer in the civil war, will surmount the monument to be erected in Summit park, St. Paul.
People who are trying to succeed are so much more agreeable than those who have succeeded.

THE HOUSEHOLD

Sweet Potato Pies.
Grate a pint of raw potato, add to it two beaten eggs, a cupful of sugar, a cupful of sweet milk, a tablespoonful of butter, and half a cupful of cream. Add spices in generous proportions—cinnamon, nutmeg, ginger and any other that one may fancy. This is usually baked at the open fireplace, if one be convenient. Butter a pan, pour in the mixture and bake very slowly for two hours. Serve cold.
Potato pies are sometimes made the same way, except that more milk is used, the spices are left out, and the custard is flavored with lemon and baked in deep, flaky crusts, with pretty twisted slips across the top.

Canning Pumpkin.
I read in my last Ohio Farmer paper some very good recipes for pumpkin pie, but the writer advised us not to try to can pumpkin for summer pies. I disagree with her. Here is my recipe for canning pumpkin: Use a granite or earthenware kettle. Peel and cut up the pumpkin into small squares, add just a little water to start the cooking. Stew over a slow fire and stir often, cooking the pumpkin until well done; then use water which has been used should have all steamed away. Seal airtight in glass fruit jars. I have canned pumpkin in this way for three years and never had a can explode yet.—Caroline M. Steffens, Fulton County, Ohio.

Maple Sugar Taffy.
Let maple molasses boil until it will stiffen when dropped into cold water; then take from the stove and set the dish or kettle where it will cool as rapidly as possible. Do not stir the syrup until it has become quite a thick wax, and then with a paddle or stout spoon stir until white and hard. An addition of hickory-nut meats to the wax before stirring greatly improves it for some people. The success in nice taffy lies in preventing it becoming grainy. To accomplish this do not stir the molasses any until it is sufficiently boiled and then cooled. If an inch in depth around the top of the pan is buttered the syrup will not boll over.

Cocoanut Snow Pudding.
Cover a half box of gelatin with a half cup of cold water to soak for half an hour, then add the juice of two lemons, one pint of boiling water, two-thirds of a cup of sugar; stir until the gelatin and sugar are dissolved, and strain into a bowl. Stand this in a pan of ice-water or cracked ice, and add one-half a pint of graded or shredded cocoanut. When this begins to thicken beat rapidly with an egg beater until light like the white of egg, then fold in carefully the well beaten whites of three eggs; turn at once into a mould and stand aside to harden. Serve plain or with cream.

Brown Betty.
Peel and chop juicy apples. In the bottom of a buttered pudding dish put a layer of the chopped apple, sprinkle with sugar, a little cinnamon, fine crumbs and bits of butter, put in more apples, more sugar, spice, crumbs and butter and proceed in this way until the dish is full, having the top layer of buttered crumbs. Bake covered for half or three-quarters of an hour. Uncover and brown. Serve with a hard sauce.

Mock Cherry Pie.
Cut rhubarb into lengths as for pies and stew, putting in the water in which it is stewed a few cherry leaves and shoots from the budding trees, when the rhubarb is put in the pies pour in a little of this liquid and it will give the dish the flavor of a cherry pie.

Corn Bread.
One cup of flour; two cups of sifted cornmeal; two eggs; one tablespoonful of salt; two teaspoonfuls of baking powder; three tablespoonfuls of melted shortening; water or milk to make it the right consistency for cornbread. Bake in good oven.
Short Suggestions.
The shells of pineapple cheeses make pretty dishes for the serving of cheese dishes, such as cheese fondue.
When the fat for deep frying looks muddy white very hot, a handful of crushed egg shells would clarify it.
Put sugar in the water used for basting meats of all kinds; it gives a good flavor, to veal more especially.
For making sandwiches bread baked in large-size baking powder cans will be just the right size and free from crusts.
To have celery very crisp but not soggy wash it thoroughly eight or ten hours before using; do not dry but roll in a towel and put on ice till time to serve.
Cranberries are more tempting if strained before sweetened, made into a jelly and cut into cubes when cold, than in the ordinarily used form of sauce.