

HELPFUL MICROBES.

BACTERIA THAT WORK IN THE FIELDS FOR FARMERS.

Furnished Free by the Department of Agriculture to Replenish the Exhausted Soil with Nitrogen.

Bacteria! The very word has an ominous sound. Every one instinctively wishes to keep away from bacteria as things of fear, says Youth's Companion.

But there are good bacteria as well as bad ones—"benevolent" bacteria, that seek nothing better than to work on the farm, with no reward except that of their own virtue.

Any boy who lives on a farm soon learns that to restore the fertility of worn-out fields, clover or its cousins must be sown.

The farmer does not know why, but he knows the fact. The scientist knows why. It is because clover is a nitrogen-producing crop.

Almost one hundred million dollars' worth of nitrogen is exported from America yearly. It has been estimated, in the form of grain.

These industrious and deserving microbes may be pretty well described by calling them "nitrogen-fixing bacteria."

These bacteria are not new. They have been known to the farmer since the dawn of time. They are the same bacteria that have been known to the farmer since the dawn of time.

Over the most practical discovery, however, is that of George T. Moore. By his process every farmer can grow the nitrogen-fixing bacteria himself.

With this comes two tiny packages of chemicals. One of these he dissolves in a certain amount of water, and drops in the cotton, germs and all, to soak overnight.

This milky fluid is then poured over the seed of the leguminous crop the farmer wishes to plant. The seed is put into the ground, and the germs begin their career of taking in nitrogen.

If they can be cultivated on the roots of corn and wheat—and some of the experiments have been promising—the rotation of crops can be done away with.

All this seems like a fairy-tale. But the fairy-tale of science often turns out to be sober truth. At any rate, the farmer who hitches his wagon to the star of progress is a wiser man than he who sneers at new ideas.

Horrible Punishment. In 1890 the last instance of boiling to death took place in Persia. The offender, guilty of stealing state revenues, was put into a large cauldron of cold water, which was slowly heated to the boiling point.

Rocks vs. Sand. Edyth—I'm surprised to hear of your engagement to old Bully. Was he the only man with sand enough to propose?

How He Got In. Church—Did your friend get into the Four Hundred?

Innocent—Is your antique bracelet authentic? Parvenu—Oh, yes! It was taken from the arm of the Venus de Milo, I am told.—Detroit Free Press.

ABANDONING USE OF MEAT

Consumption of Fruits and Vegetables is on the Increase in This Country.

Striking though the decline in meat consumption as shown by the census report is, none of us will take it as evidence that we eat less generously than our ancestors.

The census gives interesting results. In 1850 Americans consumed 430 bushels of wheat for each 100 persons; in 1900, 523 bushels—a very marked rise.

Now, take the market garden product, fruits and sugars. Anyone who will stop to think of the present day grocery store with its rows upon rows of inviting canned goods—tomatoes, corn, peas, beans and all manner of fruits—and of the excellent displays of green vegetables and fresh fruits, from huckleberries to watermelons, will find himself convinced of the important part these foods play in our common diet.

And then our candy item, our preserves item, no one whose memory can supply a comparison of the candy stores of 30 years ago with those of to-day can fail to be impressed with the increase of sugar consumption.

And here is another interesting point. Ten years ago potatoes outranked market garden products more than two to one. The last census puts them in the opposite relation, potatoes falling behind by nearly \$16,000,000.

One of the most striking features of this increased eating of market garden products is indicated by the remarkable increase of land covered by glass to supply our modern bills of glass to supply our modern bills of glass to supply our modern bills of glass.

It is scarcely a dozen years since this increase began its expansion and yet the census of 1900 reports over 300 acres of land covered with glass in New York state alone and nearly as much in Pennsylvania and New Jersey, with over 200 acres each in Illinois and Massachusetts.

BOTTLE GUN SHOTS OIL.

Invention of a Brazilian Admiral to Smooth the Surface of the Ocean.

While the process of quieting the troubled waters by scattering oil on the surface has been known and practiced for a long time, there are constantly new means being devised for the application of the oil.

The gun is a handy little piece, mounted on a pivot carriage, which is bolted down to the deck, so that there is no recoil. It is made of bronze, but the chamber at the breech which contains the propelling charge is of steel.

The bore of the gun is of much greater diameter than the powder chamber, and the projectile, which is nothing more than an ordinary wine bottle filled with sawdust, is loaded into the muzzle and rammed home.

When the gun is discharged the bottle is, of course, broken, and with its contents scattered over the water for a considerable distance. If fired ahead, to form a smooth pathway for the advancing vessel, it requires to be discharged every five minutes, but if the vessel is stationary or lying to one round every 20 minutes is said to be sufficient.

Touched the Spot. Rodrick—So Freddy is after the rich Gotrox girl? How in the world did he make such a favorable impression with the mother?

Van Albert—Oh, that was easy. When he saw the mother and daughter together for the first time he asked if they were sisters.—Chicago Daily News.

Altogether Too Unpleasant. Would-be Actress—In the third act I simply lose myself. Manager—Well, let us have that act first.—Philadelphia Bulletin.

OLD BACKWOODS SCHOOLS.

Interesting Reminiscences of an Indiana Lawyer, a Pupil of Seventy Years Ago.

Curious and interesting details concerning the earlier years of American educational life come now and then to the surface, says Youth's Companion.

"When I went to a log cabin school down in Harrison county," said an elderly Indiana lawyer, "we had no regular reading books, or 'readers,' as they are now called. I learned first to read at home by the log-cabin fire of pine knots, lying on my breast on the floor, with my elder brothers, pouring over the grotesque print and hair-raising pictures of Davy Crockett's almanac.

Every child who came to school had to bring a reading book of some description. When my wife first went to school she carried a small dictionary. Some of the older scholars laughed at her for bringing a dictionary, and this wounded her feelings so that she returned home, and did not go to school again for six weeks.

"Grammar was almost unknown territory then; but when it came into the log-cabin school curriculum I did three days' work on a man's farm to earn money enough to buy myself a 'Kirkham's Grammar.'

"Before I was 20 years old I myself was a log-cabin school teacher. My pupils all brought Testaments to read in. The print was too fine, therefore troublesome—and I bought the school McGuffey's Readers with my own slim earnings.

"In 1848 I first saw blackboards in the schools of larger settlements, then went back to my own school and had one made. It consisted of boards planed smooth, nailed to the wall, and painted black. This curious innovation was hooted at by my pupils, large and small, and I came to my school one morning to find the door broken in, and my precious new blackboard chopped into kindling wood.

"In those days, when a boy began to cipher, as they then called it, he was given a broken piece of slate, with a piece chipped off the corner for a pencil. I never owned any other kind of slate. My first 'ciphering,' or 'figuring,' as it was also called, was done on our rough wooden log-cabin floor—a puncheon floor—by cutting marks with my jack-knife. The problem was this, which I, a quite small boy, heard my big brother and another boy trying to solve: 'How many heads, tails and legs would 13 dozen dogs and a no-tail pup have?'

"My answer proved correct, and my father, who was then the log-cabin teacher of the district, decided that if I could do so well I was big enough to quit play and go to school."

TEA DRINKING TREMENS.

Shattered Nerves Resulting from Over-Indulgence in the Beverage.

Tea tremens is a recognized disease in China. Its victims are the tea tasters—the judges of the Chinese teas. These men never swallow a drop of tea, but nevertheless they become afflicted with a malady as distressing as insomnia.

"Tea tremens," said a dealer, "is, in a word, shattered nerves. The victim of tea tremens can't sleep, can't eat, can't sit still. Furthermore, he is unhappy—as unhappy as a man who was drunk the night before—and his mind lingers on the thought of suicide.

"Tea tasters of China are Englishmen. Their employers are Russians. Russia is the great tea-drinking country, and it is to Russia that the best tea goes. Some of this Russian tea is worth \$10 to \$12 a pound. The Russian tea firms employ English tasters, because tasting is an art that requires great abstemiousness; alcohol must not be touched, and only the simplest foods may be taken. The Russian is anything but abstemious. He is a great eater and drinker, and the largest salary would not tempt him away from the festive board.

"In tasting tea you don't swallow; you only roll upon your tongue the liquor. Nevertheless you get tea tremens. The powerful aroma of the herb, after a month or so of tasting, wrecks your nerves, and first you have headache and then insomnia attacks you.

"But the disease is curable. Tea tasters, after a vacation of a week or two, are as well as ever again. It is a good thing for them that their calling only has to be piled a few months in the spring. It would inevitably kill them otherwise."

Ball-Bearing Cannon. To prolong the life of big cannon an American has invented a method of substituting spiral grooves of ball bearings in a bicycle, for the rifle grooves. A Glasgow man had fitted ball bearings to the projectile, which is said to be the cheaper method of the two.

Dared. "Tell me what you eat, and I will tell you what you are." "Well, I s'pose I eat more wethers than anything else." "I'm confounded you go on with your wethers if you've got the nerve."—Chicago Record-Herald.

THE APPLE IN COOKERY.

Can Be Used in a Variety of Ways That Are Not Generally Known.

There are almost as many ways of cooking apples as there are of preparing eggs or potatoes, from which it is said that 100 different dishes can be made. The apple has so undecided a flavor of its own that it can be readily used in combination with other fruits, and will take on their flavors most satisfactorily.

For this reason, and also owing to its jelly-making qualities, it is excellent to use as a foundation for grape, peach and any jellies which form with difficulty. Grape jelly will form into a firm mold, if the grapes are mixed with one-third their bulk of apple skins and cores. There will not only be considerably more jelly, but the flavor of the grapes will not be impaired by the addition.

Housekeepers as a rule do not know this. Peach jelly will not form at all unless part apple skins are used. Take equal quantities of apple skins and peach skins, adding also the cores and the peach stones. Barely cover them with water. Then strain and boil the mixture for 25 minutes or until it looks "syrupy." Measure and take equal parts of syrup and granulated sugar and boil until it forms. Plain apple skin jelly can be made by this rule, and flavored with bitter almonds, lemon, quince, orange or grape. If the apples are naturally rich in flavor themselves, as they are apt to be in the fall, there is no need of any extra flavoring.

In making apple jelly take any good tart apple that has a bright red skin. Rich red peeling will impart color to the jelly and make it pretty to look at. Marmalade can be made in exactly the same way, only pressing the pulp through a wire sieve instead of straining it through a jelly bag. Later in the year when apples are losing flavor and richness, excellent marmalade can be made of them in this manner, if it is flavored strongly with orange or lemon rind.

When straining apple jelly through a bag it is well to squeeze out all the fine pulp possible. Apples combine well with quinces. In fact, quince preserves are greatly improved if "put up" with apples. The quince is not especially attractive alone, because it is so strong in flavor. When a preserve of both apples and quinces has stood in sealed jars for some months it is difficult to tell which is which, the apples have so completely taken on the flavor of the other, the quince being distinguishable only by its slight toughness.

A well tried New York recipe calls for half and half quinces and apples. Steam the quinces, after peeling and cutting them in quarters, until they are tender, but not broken. It will take about half an hour. Weigh both the quinces and apples before cooking them. Measure the water in which the quinces were boiled and allow a pound of sugar to every cupful. Boil the quince water and sugar together for ten minutes. Then cook slowly as many of the apples as you can in the sirup until they are bright red. It will take about three-quarters of an hour or more. Take out the fruit, add more, and so on until all of it is cooked. Do not cook it until it breaks, but only until it is tender. Put the fruit in the jars and pour the sirup over it when cold. It should form a delicate jelly around it.

The quinces are better for being simmered until reddish in hue in the same sirup the apples are cooked in. This is a delicious but very rich preserve. It reaches the height of perfection when served with a little cream.

Apples are also delicious preserved with ginger root and lemon. Prepare them as you would ginger pears.

MANY UNHAPPY RETURNS.

Household Commodities That Had Been Borrowed Come Back with a Rush.

"I don't mind lending things," confessed little Mrs. Bliss, who lived in a borrowing neighborhood, relate the Sunday Magazine, "but oh, dear! it drives me almost frantic to have people return things."

"This morning, when I had my house all in perfectly beautiful order, I sat down to write to mother, but I hadn't written three words before Mrs. Brown came in with an armful of old magazines she had borrowed, and piled them on the mantel-piece. Before she was fairly out of sight in came Johnny Green to return last Sunday's paper, and he threw it in an untidy heap on the sitting-room table. Half an hour later Miss Davis came in with a pile of colored studies she had borrowed to copy—she left these on the piano—and right at her heels came Mrs. Black with the napkins and silver I had loaned her for her reception. By that time of course, the house looked as if it had never been straight, and my letter to mother read like a piece of barbed-wire fence, but that wasn't the worst."

"What else could happen?" "Why," returned Mrs. Bliss, "just before noon, when I was busy getting luncheon, in came Mrs. Tucker to return half a cup of liquid bluing and a tablespoonful of paregoric. She was in a hurry and wanted to take her rump back. I was so frustrated by that time that I poured the bluing into the catsup bottle and stirred the paregoric into my soup."

Fried Peppers and Cucumbers. Cut green peppers in two, lengthwise, leaving in the seeds. Pare and slice cucumbers in slices about half an inch thick. Dip both the peppers and cucumbers in egg and flour, and fry in hot butter. The peppers should be done so that they may be pierced with a toothpick before being taken up. This will be found a very appetizing dish, the cucumbers, when eaten with the peppers, taking away the sharpness.—Chicago Post.

EFFECT OF SMELLING SALTS

Frequent Use Brings Out and Produces Wrinkles in the User's Face.

Smelling salts will cause wrinkles. If one uses smelling salts habitually, it will make his face prematurely old and wrinkled. This discovery was made, so the story goes, according to Health, by two ladies sitting by a fire-side, both about the same age, but one looking a great deal older than the other.

The older looking one was constantly taking out her bottle of smelling salts and inhaling it. The other woman noticed that when her friend used the smelling salts all the ugly, unbecoming lines of her face deepened, and that the whole expression of her face was determined by the lines made in using the smelling salts. The present odor of the salts caused her to screw up her face, and these lines had little by little settled themselves into a permanent expression, becoming more and more deep-seated and irremediable every time the smelling salts was resorted to.

Smelling salts or anything else that screws the face day after day into lines and furrows will finally cause these lines to become permanent wrinkles. A habit of frowning will in a very short time produce perpendicular lines between the eyes. Lifting the eyebrows in talking will ruffle the forehead, leaving across the brow. This is often caused, too, by squinting the eyes and wrinkling the forehead when facing a bright light or walking in a glaring sunlight. We see people every day on the streets with their foreheads puckered and contorted into a mass of wrinkles that some day will become permanently fixed in the face.

Allowing the mouth habitually to droop will soon form very unbecoming lines about it, and will give to the face a very woe-begone look.

A person can do a great deal to prevent the coming of wrinkles by simply guarding against screwing or puckering the face into undesirable lines. There is no use to massage the face in the hope of getting rid of wrinkles if you continue to frown or to scowl every few minutes. Cold cream and massage will not be able to eradicate these lines unless the habit that is causing them is stopped. The osteopathic principle of first removing the cause applies to wrinkles as well as to many other things. Remove the cause of the wrinkles and then massage and cold cream will undoubtedly eradicate the wrinkles.

A TRIO OF SLEEVES.

Something Reasonable for Women Who Keep Pace with the Times in Dress.

The modistes said at the beginning of the season that there would be nothing new this winter. Womanhood, having tried every new fancy, had at last given up the endeavor to have something out of the ordinary and had settled down to the routine of wearing the same clothes that were in vogue last summer, says the Brooklyn Eagle.

But events have proved that they were wrong. "I see three distinctly new sleeves this morning," announced an observant woman, "and not less than six new kinds of coats. Of course there are half a hundred novelties, and of skirts the number is not small."

"In sleeves," said she, "I especially like the puffed sleeve. I use the conventional sleeve at the shoulder, but that is small at the wrist. This sleeve is precisely like the sleeve of ten years ago, except that there is a crease in it. It is padded out to make the shoulder square, and it is slightly puffed. But it is not the smartly creased sleeve which was the fashion, then."

"However," continued she, "we shall have the puffed sleeve next all stiffly creased as of yore."

The second new sleeve is one that is all in little lines. There is a puff at the shoulder, another puff midway, a puff at the elbow, and a puff at the wrist. Four big fat puffs, made in this sleeve, which is shirred between the puffs.

"And a third new sleeve is still different. It has no puff, and it is like an elbow sleeve. It is very wide and very full at the elbow, falling open like a great angel sleeve. Inside of this there is a light sleeve that exactly matches, so that the waist has really two sleeves of its own. A tight sleeve and an angel sleeve. And very pretty they are worn together in a handsome gown on a really day when the air suggests a wrap and two sleeves seem appropriate."

"I don't think," said the woman, who is one of the handsomest dressers of the season, "that I ever saw as many novelties—nor did anyone else."

Spice Pudding. One-half cupful of granulated sugar, half a cupful of butter, one cupful of molasses, two teaspoonfuls of cinnamon and one of cloves, one cupful of boiling water in which has been dissolved a teaspoonful of baking powder. Beat well together, then add two cupfuls of flour, and lastly four well-beaten eggs. Steam and when done serve with egg sauce.—Boston Transcript.

Mildew Stains. Mildew may sometimes be removed from white fabrics by covering the spots with lemon juice and laying in the sun. Lemon juice will not serve for colored fabrics, however, and it is said that lard makes a satisfactory substitute. Rub the spots well with lard, and lay in the sunshine day after day for a week. Wash in the usual manner.—N. Y. Post.

DEADLY FOES OF OYSTER.

Estimated That \$2,000,000 Damage Is Done Annually by Starfish Along Shore.

It is estimated by the fish commission that damage amounting to fully \$2,000,000 is done annually to the oyster industry by the starfish, the oyster's most dangerous foe.

For several years a persistent effort has been made by the commission, says the New York Times, to arrest the onslaught of this enemy. While success has come in some measure, reports of ground being almost devastated are frequently received and especially from the beds in the Breakish waters.

Vast swarms or schools of starfish sweep across the oyster beds devouring the oysters in their path. Almost total annihilation of the oyster is the result.

The coming of the pest is without warning. The migration is said to take place in the form of a "winnow" moving in some cases at the rate of 500 feet a day. At first the starfish feeds upon the tiny spat, as it grows, increasing the size of its prey, though even full grown fish rarely feed on oysters over two years old.

Small oysters are often taken bodily into the stomach of the starfish. The larger oysters are opened by the fish by means of the suck or feet, which extend from the mouth to the tips of the arms.

These feet are tubular and are extended by having a fluid pumped into cavities by a special apparatus in the body of the starfish. This force is sufficient to overcome any resistance which the oyster may offer. It is stirred out by the persistency of its enemy. Its shell is forced open, the stomach of the fish is inserted, and with in a short time only the valves remain.

The oyster growers of Long Island sound, who have had more experience in fighting starfish than those of any other section, find that eternal vigilance is the price they must pay for even the comparative safety of their beds. Tugs are kept constantly at work dredging with tanks and thousands of bushels of starfish are caught annually. It requires, however, the expenditure of a great deal of money.

The use of tanks is recommended by the fish commission. Reports indicate that there has been the direct means of saving thousands of dollars' worth of oysters.

Some oystermen pick the starfish out by hand. This is a slow and laborious process, while as many as 100,000 starfish have been taken in a single day with the tangles.

A neglected bed is a menace to others. As soon as the fish have completed getting one bed they move to another.

In the Chesapeake region the "drill" is the worst enemy of the oyster. These pests are also moving into the waters of Long Island, which is accounted for from the fact that seed oysters are sent from the drill-infested waters to this region.

The drill is a small, snail-like mollusk, which, by means of its rasping tongue, drills a tiny hole in the shell of an oyster, through which it extracts the soft parts. The loss sustained from this source is very large.

There are other enemies of the oyster, but none so destructive as the starfish and the drill.

VETERANS WELL BEHAVED.

Old Soldiers Give Caretakers of Benign Institutions But Little Trouble.

"The conduct of the great body of the 32,000 old soldiers who are inmates of the national soldiers' homes is excellent," said Gen. Martin T. McMahon, president of the board of managers of these institutions, at the Arlington, according to the Washington Post.

"Only about three per cent of the veterans give us any trouble, and these are not nearly so annoying as the well-meaning, misguided contingent of outside cronies and temperance fanatics who are continually trying to tell the president and congress how the homes ought to be run. For instance, this outside band of philanthropists would abolish the canteens established in the homes, despite the fact that experience has proved their great usefulness. These canteens, or beer halls—since nothing but beer is sold in them—make directly for the good of the inmates and are in the interest of sobriety and decent conduct. The amount of beer sold to the individual is strictly limited, and no one who is intoxicated is allowed to enter the beer hall, nor can drinks be obtained after five o'clock p. m."

"The evils of intoxication on the part of veteran inmates came from patronizing drinking resorts in the vicinity of the grounds, where the old soldiers can buy cheap whisky, and where they are often drugged and robbed. The abolition of the canteen would simply increase the patronage of these resorts. Instead of reducing temperance, such a policy would promote it and would make drunkards out of many now leading respectable lives."

Diet of Civilization. The chief of the Paris laboratory, who has been lecturing Parisians upon their digestions, puts it this way: "When a man takes milk for breakfast preserved with formaldehyde, when he eats at luncheon a slice of ham kept good by borax, with spinach or French beans made green with sulphite of copper, and when he washes all that down with half a bottle of wine cleared with an excess of plaster of paris, and that for 20 years, how is it to be expected that such a man can have a stomach?"

At the Opera. Enthusiast—She sings like a bird. Dub-at-Ari—What kind of a bird? I don't remember any that makes just that sort of a noise.—Detroit Free Press.