

## OF INTEREST TO FARMERS

### USE OF DISINFECTANTS

Most persons seem to think that a disinfectant acts in some magic way, and that all that is necessary to do is to apply it and all will be well. Practically every one knows that disinfectants have something to do with controlling or killing germ life. But how many people know anything about the scientific facts behind the use of disinfectants; and how many know that an understanding of these facts would make it possible to buy and use disinfectants more economically and more effectively? It is not, for example, common knowledge that the concentration at which a disinfectant application is made is extremely important—in fact, this may be the deciding factor in the power of the disinfectant to kill germs. Disinfectants also vary in character, and should be selected for use according to their fitness for the purpose in view. All disinfectants are not alike. All are not designed for the same kind of bacteria, or the same method of usage. A disinfectant is an agent which will kill the vegetation form of disease germs but which will not necessarily kill spores. Spores are resistant forms in the life cycle of certain bacteria and other micro-organisms. Fortunately, only a few species of germs produce spores. The term "disinfectant" should not be confused with "sterilization," which means the killing of all forms of life, including spores. Scientists have found that all germicidal substances do not kill germs in the same way. The process of killing germs is not a simple one, and many factors are involved. Contact is of primary importance. In order for a chemical disinfectant to kill germs the chemical must come into close contact with them. If a germ is protected by a film of grease or albuminous matter, or if it is deeply embedded in the material to be disinfected, the disinfectant will probably not come into contact with it and, hence, will have no germicidal action in that particular case. This means, in most cases, that surfaces to be disinfected must be mechanically or physically clean before effective action can be expected. The concentration of a disinfectant is also to be considered. Carbolic acid in weak solutions will retard the growth of bacteria, and in strong solutions will kill them, but such weak concentrations of carbolic acid can be made that the disinfectant has no effect whatever. Certain disinfectants in very weak solutions are actually stimulating to bacterial life. As a matter of fact, alleged disinfectants containing living germs have been found upon the market. Another deciding factor in the effective use of disinfectants is the time element. We find that at a certain concentration a disinfectant fails to kill certain bacteria in 5 minutes but does kill in 10 minutes. A disinfectant in another concentration may kill in 5 minutes but fail in its effect in 4 minutes, or in 1 minute. Very often the temperature at which the disinfectant takes place has a marked influence upon the mortality rate of the bacteria treated. Probably few people know that disinfection is more effective in the presence of water than in the dry state. This is true whether the process is accomplished by the application of heat or of chemicals. Some manufacturers do not realize this, and they may recommend kerosene solutions of chemicals for disinfecting purposes, whereas the product happens to contain a chemical which is a disinfectant when properly dissolved or emulsified in water, but which has no such power when dissolved in kerosene. Some disinfectants are markedly affected by the presence of organic matter. Hypochlorites and soluble salts of mercury, for example, are effective disinfectants in very weak solution when there is a practical absence of organic matter, but they possess little disinfectant value in the presence of such matter. The election of a suitable disinfectant is no easy matter. Sometimes the selection is complicated by purely outside considerations. A disinfectant may have a vile odor, and therefore be of questionable use in connection with foods or utensils used for food production. Many disinfectants corrode metal and can not be used on metals. Many are caustic and burn the skin or tissues of the body. Practically all of them are poisonous when used carelessly. Some manufacturers who do not maintain research laboratories do not thoroughly understand the limitations of their own products. Because of this, and because of the complicated factors to be considered by the one who uses the disinfectant, it has become necessary to have some disinterested agency see that disinfectants are properly labeled. This work is done by the Food and Drug Administration and by different state and city health officials. The administration has no jurisdiction over articles manufactured and sold wholly within a single state or over disinfectant advertising matter in newspapers, magazines, or broadcast by radio. The federal law says that the labeling of disinfectants shall contain no statement, design, or device which is false, fraudulent, or misleading in any particular. Chemists, bacteriologists, and medical officers who test disinfectants know what substances are present and the amount of each, and they also have before them the results of bactericidal tests. With all this information before them, they are able to form a very good idea of the value of the product tested. When testing a particular disinfectant, federal drugs officials consider every statement on the label very carefully in order

to pick out false or misleading statements. The opinion of one expert is substantiated by the opinions of others, in order that a fair conclusion may be reached. When adulterated or misbranded disinfectants are encountered, proper corrective action is instituted under the federal food and drugs law. Since the present federal insecticide law went into effect in 1910, thousands of samples of commercial disinfectants have been collected and tested.

### LET SPREADER PAY TAXES

Unnecessary manure losses which may be as high as one-half of the quantity produced can be saved by proper handling through the frequent use of the manure spreader. The increased crop yields resulting from this care would be sufficient to pay the taxes on many live stock farms. This assumes a yearly production of 200 tons of manure worth between \$400 and \$500 in crop-producing power at present prices on a 100-acre live stock farm. Four tons of manure applied to corn in a four-year rotation at one experiment station has given increased crops, per rotation, worth \$8.05 an acre even under present conditions. Crop yields of 50 bushels of corn, 25 bushels of wheat, and two tons of hay an acre, if fed on the farm or used as bedding, will produce sufficient manure if saved to make an eight-ton application each year on one-third of the crop land. About one-half of the nitrogen and phosphoric acid and nearly all of the potash of the manure are soluble in water and each 10 tons of fresh mixed manure will contain about 80 lbs. of nitrogen, 45 lbs. of phosphoric acid, and 75 lbs. of potash. If the manure is hauled out and spread directly on the land, any plant food leached from the manure enters the soil where it is largely absorbed and held against loss. The use of manure has also been found to increase the value of either superphosphate or lime phosphate in crop production.

### EARLY INSECT PESTS

There are several insect pests that have started in the South at this season. The harlequin cabbage bug has come from hibernation and will be found on cabbage, turnips and other brassicas. In the small garden they should be hand-picked and over large areas treated with one of the concentrated pyrethrum also are about now. Hand-picking garden rows is easy, but in fields arsenate of lead should be used to spray. As early beans come out of the ground, their leaves are sure to be eaten full of holes by the Diabrotica beetles. These insects may be killed by dusting or spraying with arsenate of lead, calcium arsenate or Paris green. In small patches, dusting often with ashes appears to act as a repellent; but it does not destroy the beetles. Cutworms also are about the garden now. A poisoned bait of bran, molasses and Paris green may be scattered over the ground as a control. On large areas, plow and destroy all plants several days prior to setting; and then just before planting, spread poisoned bait or some green plant, such as clover, that has been dipped into water containing Paris green. In a small way, paper collars give excellent protection against these pests. A piece of writing or other heavy paper two or three inches is put around the little stem after setting; have at least half an inch of the paper below the surface of the soil, and make the circle so the paper does not touch the plant. After bending about the plantlet, lap and fasten with a pin.

### HAVE A GOAL

There is much to be gained by setting a goal toward which to work. In no branch of live stock production is this of greater importance than with swine. Some valuable lessons in this respect may be gained from the practices and results therefrom of those who enter pork production contests as sponsored in several states by the swine departments of the agricultural extension service. When a farmer sets out to produce from 1,800 to 2,000 lbs. of produce in 180 days from each of the litters of the sows in his breeding herd, he knew at the beginning that he must prevent or eliminate certain hazards, peculiar to swine, from defeating his objective. Because of this he is "on the job" all the time when his attention is most needed.

### WATCH FAULTY NUTRITION

Evidence of depraved appetite in cattle and rickets in swine are usually most pronounced at this time of year, the result of faulty winter feeding. A good time to look for evidence of faulty nutrition in cow or swine is during the spring months following the winter feeding period. Green feed during the summer affords a lot of protection against faulty feeding. Without green feed or its equivalent during the winter, pigs may develop rickets. Without essential minerals, cattle may develop depraved appetite as is evidenced by their chewing bones, soil, wood, and such like. If, on close inspection of the herd, swine, or cattle, there is evidence of faulty nutrition it will be worth while to try to correct this in the future.

### DON'T BURN FENCING

Burning off a heavy growth of grass or weeds under a galvanized barbed or woven wire fence, will generally heat enough to melt or blister the zinc galvanizing, and will materially shorten the life of the fencing. If it seems necessary to burn the fence rows, it is advisable to take down the fence, burn the trash, and then thoroughly see that the corner posts are solid and well braced; then e-stretch the fence tightly. Woven wire can be rolled onto barrels or onto the spools on which it is bought.

26.2 lbs. milk a day. A gallon of skim milk weighs 8.6 lbs. It is sufficiently accurate to assume that one gallon of skim milk has a supplemental feeding value equal to one pound of linseed meal under the conditions of this feeding trial.

### GOOD "FIRST AID" CROP.

Sudan grass will grow in all soils where corn and small grain can be grown, and in two crops will yield from two and one-half to four tons of hay per acre of about the same feeding value as timothy.

### A REMINDER

Vaccinate pigs when they are small. It is cheaper.

## SUPREME IN THEIR OWN ENVIRONMENT

### Australian Natives Masters of Woodcraft.

Among the wonders of empire are living men of the Stone age whose forefathers saw the rise and decay of all bygone civilizations.

Ignorant as they seem to us, the aborigines of Australia in their own environment are as much in advance of our most brilliant scientists as our scientists are in advance of the average man. Our cleverest men would starve to death if dropped down without food, clothing, or weapons in the heart of Australia, but the Stone age men thrive and flourish in such conditions.

They live solely by hunting, their knowledge of the habits of wild things being uncanny. If they were not the world's most marvelous trackers they would have died out ages ago. They can read every scratch and mark on the ground as easily as you read this paper, and can tell whether the creature they are chasing is young or old, what it is doing, and where it is going.

They eat anything, even snakes and lizards, and once they get on its track a creature is doomed, for they never give up until they get it. Nor do they make the mistake, common to the whites, of trying to dig out of its burrow an animal that is not at home.

Their crude form of writing by burning or carving dots and lines on sticks—stick messages—enables them to send any information by runner to distant members of their tribes. But even more wonderful are their smoke messages. They seem to converse in smoke as easily as the airplane writes in smoke in our own skies.

Starting the fire by rubbing one piece of wood against another, they select their materials in the most careful manner. Familiar with the type of smoke given off by different woods, they make smoke of various densities, and colors, thick clouds, light spirals, or furies in brown, yellow, black, blue, or pink; and every change of color and form has its meaning in their age-old code.

### Widespread Belief in

#### Unicorn Through Ages

From very remote antiquity down to the present time, China and Japan have preserved a belief in a powerful one-horned wild animal, in the varied form of a horse, an ass or an ox. The encyclopedias tell us that Ctesias, a learned Greek physician and writer, who died about 390 B. C., in one of his treatises speaks of white or red wild asses of beautiful shape, with single, long white horns upon their heads, which existed in India. He goes on gravely to inform us that drinking cups made from the horn of a unicorn rendered safely innocuous any poison poured into

them, a belief which persisted into and past the Middle ages.

The origin of these stories it is difficult to find. No remains of any such animal have ever been discovered, nor do writers claim to have actually seen a specimen of them. And yet the belief in their existence is so widespread in several parts of the world that it might be made to appear foolish to deny that any such creature ever existed. A glance at the heraldic presentation of a unicorn in the British royal coat-of-arms should serve to show the absurdity of attempting to identify the ancient unicorn with so ungalantly a one-horned animal as the rhinoceros, as would some writers.

### Evidence of Antiquity of Hawaiian Islands

Ancient Hawaiian tradition often coincides to a noteworthy degree with modern scientific discovery and conclusion. One such tradition is that the Hawaiian Islands are "so old that 1,000 generations are but ages ago. In other words, that 25,000 or 30,000 years is nothing compared to the age of the archipelago.

And now Dr. Arthur Starr Eakle, mineralogist, of the University of California, who has been doing work, estimates Hawaii is at least 1,000,000 years old. He finds evidence of extreme age in the composition of rocks and soil. The islands yield no trace of silver or gold, but there are indications of copper, although not in commercial quantities. The deep red soils of the islands are rich in iron, but an almost equally large quantity of manganese prevents its commercial use.—Exchange.

### Snakes Are Missed

The importation of great numbers of reptile skins into the United States from French Indo-China is said to be responsible for an alarming increase in the rat population of the territories of the latter country from which the reptiles were taken. Snakes destroy many rats and other rodent pests, so this condition does not seem unlikely in view of the fact that 36,750 pieces of reptile skins were imported to this country from French Indo-China in the final quarter of last year alone.

### Sunshades for Trees

In Germany, arborists are providing specially made sunshades for the protection of saplings. They are made of closely woven netting on a wooden framework. The shades are placed on the south side of a group of young trees to guard them from the scorching rays of the noody sun. The trees are said to have shown unusually rapid growth since the new device has been put into use.

### An Old Racket

"How do you make your living?" "Selling things to men who go fishing." "That's interesting. How is the fisherman's equipment business?" "I don't know. You see, I run a



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### Sees Napoleon as One

#### of Nature's Supermen

Napoleon believed in no religion; he advocated companionate marriage; he suffered terribly from defeat, but never from remorse; he regarded friends, family and women without any affection (barring his early infatuation for Josephine)—in short, he was a superman. He had enough energy for 100 men.

How difficult it is even now to escape from the glamor of his name! Although I know he was one of the most cold-blooded scoundrels that ever lived, and all Europe had to choose between peace and him, that no country, no people and no community were safe while he was at large—although I am aware of all this, if he should appear on earth now and say "It is the emperor!" I might leave all and follow him.—William Lyon Phelps in Scribner's.

### Fire Loss Heavy

The annual fire loss on farms originating from careless handling of petroleum products such as kerosene and gasoline is estimated by the Department of Agriculture to be about \$7,500,000. To curtail this loss as much as possible, the department is issuing bulletins to farmers on the dangers of handling the materials carelessly and giving advice on how they should be stored.

At the library, a book must be returned in two weeks. If borrowed from a friend, you return it after he has forgotten you have it.

### Town That Died

The town of Gretna, Scotland, famous as a marrying place, blossomed into further prominence as a munitions center during the World war. It cost no less than \$45,000,000 to build and equip, and turned out \$75,000,000 of cordite during the war, but is now the most dismal spectacle imaginable. The great plain is dotted with crumbling, roofless buildings. The concert and dancing halls, the cinemas, institutes, and playing-fields—all are in ruins or weed-grown, and of the former population of 6,000 people very few are left.

### Lightning's Freak

Dick Blankenship was sitting on the front porch of his home in Richlands, Va., when lightning struck a tree in the yard and killed a cow and six pigs standing beneath it. Blankenship was unharmed, but the pipe he held in his hand was burned to a crisp, and the soles of both his shoes were neatly ripped away.

### Professional Touch

Doctor—Now, young man, I'll have to have a session with you. What have you to say for yourself? Son—How about a little local anesthetic?

### City of Islands

While Venice is seven miles around it is divided by the Grand canal in two parts. There are 177 islands.

A poor man in a small town has a yard that he'd need a million dollars to own in the city.



Pictured here is Bobbie Holcombe, 1841 Howell Mill Rd., Atlanta, Ga., riding "horse." He has always been an Eagle Brand baby, has never been sick, and at seven months weighs 21 pounds.



This 5-month-old daughter of Mrs. W. Gevekoth, 3 Prospect St., New Rochelle, N. Y., was "small and thin when born, and no formula would agree. On Eagle Brand," her mother writes, "she has gained steadily and is now the picture of health."



This husky life-saver—well-built, and strong—is Edson R. Tamblin, Jr., 150 Union St., Ridge-wood, N. J. He is an Eagle Brand baby—just two years old—and tops the scales at 32 pounds.

## Judge a baby food by the babies it builds

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