

NEWS AND VIEWS OF THE FARMER

Heaves of Horses

Caused by Faulty Feeding and Working—Complete Cure Impossible—Symptoms May Be Relieved.

Heaves is a very common and annoying disease of horses, interfering seriously with the usefulness of the animal, and consequently detracting from its value. Mainly a disease of old horses, it is essentially the result of faulty feeding and working, especially hard pulling or fast driving when the stomach is overloaded. Gross feeders are frequently subjects of heaves.

While in old, established cases there may be alterations in structure of the heart and stomach, the principal changes are observed in the lungs. These consist first in an enlargement of the capacity of the air cells through dilation of their walls, followed by a passage of the air into the lung tissue between the air cells. Owing to such structural changes, it is impossible to prevent progressive development of the disease, which, however, under proper care, may go on slowly, the animal remaining serviceable for certain kinds of work for years.

Except in the very early stages the disease is readily detected. The symptoms are those which would naturally be manifested in a condition where the lungs are involved. A peculiar short, grunt-like cough is usually present, and when the animal is exerted a wheezing noise accompanies the breathing. The principal and characteristic symptom, however, is the jerky or double movement of the abdomen in an effort to force air from the lungs. The air passes into them freely, but the power to expel it is lost to a great extent; therefore the abdominal muscles are brought into play.

Indigestion is frequently observed in these cases, and the horse may have a depraved appetite, as shown by a desire to eat dirt and soiled bedding; and there is a tendency to the condition commonly termed "pot-bellied." The animal, though a heavy feeder, becomes untidy and emaciated.

A poorly ventilated stable, humid weather, severe work, and overfeeding with coarse, dry feeds tend to aggravate the trouble.

As in this condition structural changes have taken place in the lungs, treatment, as a rule, can only be directed to the relief of the symptoms, and it is not possible to effect a complete cure after the disease is established.

In the case of an affected horse it will be an advantage to dampen the food with a mixture of one part of molasses to three parts of water, so that no dust may arise while the animal is eating. It is also desirable to restrict the amount of hay or forage, and to use large quantities of bulky feed which distend the abdomen increase the difficulty, and an animal with heaves should never be driven or worked when full of such material.

In these cases Fowler's solution of arsenic may be given in doses of 1 ounce in the drinking water three times daily. Ordinary lime dissolved in drinking water (limewater) will be found beneficial. Lime may be added to a barrel or cask of water, and after the resulting mixture has become clear through precipitation of undissolved portions of the lime the limewater may be used freely in watering the animal.

GROWING THE WATERMELON SUCCESSFULLY

The Watermelon Flourishes Especially in the Warm, Sunny Regions of the South and West, Where it is Grown Extensively in a Commercial Way, But Good Melons for Home Use, and to a Limited Extent for Market, Are Grown as Far North as Canada.

The watermelon is a native of Africa, but is now more largely grown in the United States than anywhere else. It grows best on rich, warm, sandy loams that are well drained, and on a southern slope should be chosen for early melons.

It is desirable in growing watermelons for market that they follow a crop of clover or cow peas. They should be rotated with other crops, and not planted on the same ground again for three or four years.

The spring preparation of the land consists in thorough cultivation at intervals of three or four weeks before the seed is planted. This is for the purpose of exterminating the weed and putting the soil in the best possible condition. In Georgia, rather shallow plowing, followed by thorough pulverization with the disc harrow, is practiced.

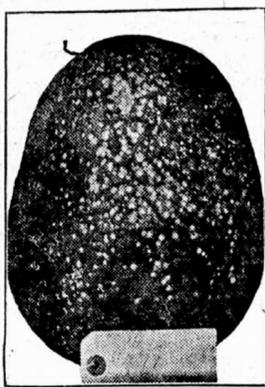
Melons should never be planted until all danger of frost is over. In states as far north as Michigan and New Hampshire, this will not be before the last of May.

In New Hampshire, a very successful grower digs each hill 8 to 10 inches deep and 18 to 24 inches across and fills them full of rich, well-rotted manure. Enough soil is drawn on this

and thoroughly mixed with the compost to fill the hill nearly full. A half pint of unleached wood ashes or fine hen manure or a small handful of phosphates is then sprinkled over the top soil and well mixed with it, after which enough soil is added to make the hill level with the top of the ground.

From ten to twelve seeds are scattered throughout the hill and covered one to one and a half inches deep. Cultivation consists in thorough shallow tillage, with a loosening of the soil about the plants whenever it becomes compact. After the plants have become thoroughly established and danger from insects is past they are thinned out to about three of the most vigorous in each hill.

Watermelon growers in various sections of the country frequently suffer loss from a disease which blights the foliage and spots the fruit. The leaves are covered with irregular dark, dead spots and may die before the melons are ripe. The trouble develops on the fruit in the form of water-soaked and later sunken spots of varying size, which come to have a pink center made up of masses of the fungus spores. As the disease progresses the melons decay. This is



Characteristic Small Sunken Pits Produced by Watermelon Anthracnose.

anthracnose, and is caused by a parasitic fungus related to those which produce the apple bitter-rot and post-spot of bean. The fungus causing watermelon anthracnose attacks cucumbers, cantaloupes and squashes, but probably not, as a rule any other cultivated crops. Warm and moist or rainy weather is especially favorable to the spread and development of anthracnose and for this reason it was more prevalent than usual last season. The losses were particularly severe in some districts where melons are grown on a large scale for carload shipments.

The Department of Agriculture has found that the disease can be controlled by spraying with Bordeaux mixture, and trials of this treatment are recommended. The methods to be employed are substantially those in use for potatoes, cucumbers, and other truck crops. The following points should be observed to insure success: Use fresh home-made Bordeaux mixture. In preparing it, follow directions exactly, as much depends on the way the ingredients are combined. Use a good spray pump, operated at a pressure of 100 pounds or more. Spray thoroughly. The time of application depends on the

weather and the development of the crop. The disease usually appears when the fruit is nearly grown. Watch carefully for the leaf-spot and spray as soon as it appears. In any case, make an application two weeks before maturity and a second a week later.

Ingredients—Copper sulphate, 4 pounds; quicklime, 4 pounds; water to make 50 gallons.

Prepare the copper sulphate by suspending it in a sunny sack just below the surface of several gallons of water in a clean barrel. When the sulphate is dissolved, which requires three or four hours, remove the sack and stir into the barrel enough additional water to make exactly 25 gallons of the copper solution.

Prepare the lime by slacking it slowly and thoroughly in a clean barrel, strain, and add enough additional water to make exactly 25 gallons of lime milk. Stir thoroughly.

Pour the two ingredients together into another barrel, or, better, directly into the spray tank, if it will hold 64 gallons. It is highly important to stir the mixture very thoroughly and to strain both ingredients before they are combined, as otherwise clogging of the spray nozzles might result.

Use a copper or bronze wire strainer of 18 meshes to the inch. Do not put copper sulphate or Bordeaux mixture into tin or iron vessels; use wood or copper containers. Mix the Bordeaux as needed and apply at once. It is never so good after it has settled.

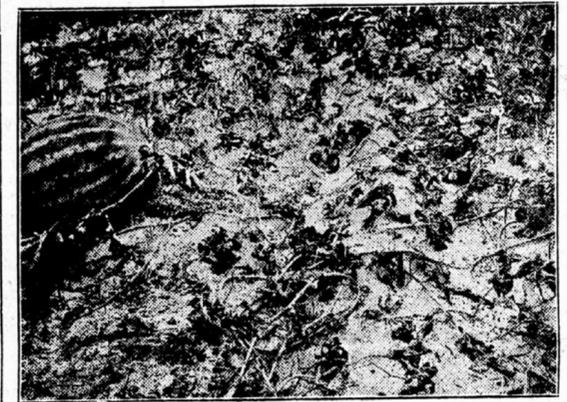
Everyone who uses Bordeaux mixture frequently and in quantity will find it convenient to keep concentrated stock solutions on hand, as these keep indefinitely if the water which evaporates is replaced.

Build an elevated platform to hold the barrels. Suspend 50 pounds of copper sulphate to dissolve in a 50-gallon barrel of water. Slake 50 pounds of lime in another barrel. Add water to make 50 gallons of lime milk. When Bordeaux mixture is needed stir both stock barrels and take from each as many gallons as the formula calls for in pounds. Dilute the copper sulphate in one barrel and the lime milk in another, each with half the water, and let the two run together into the strainer of the spray tank.

To those who expect to spray on a large scale a more detailed instruction about fungicides and their application than can be given here is available in Farmers' Bulletin No. 243, United States Department of Agriculture, Washington, D. C.



A Vine Which Has Been Protected by Two Applications of Bordeaux Mixture.



Destruction of Foliage of Unsprayed Watermelon Vines by Anthracnose.

YELLOW RASPBERRIES.

There is also a yellow raspberry. This is a very perishable, buff-hued fruit, large, soft and of a rich and distinctive flavor. It is a pleasant addition to the house garden, as I can bear witness from memories of my youth, for we used to raise them in abundance. They are delicious, but are not commonly found in the catalogues, probably because they are so perishable that they are of little or no commercial value.

SPRAYING FOR POTATO ENEMIES.

The Colorado beetle, the flea beetle, early blight and late blight are the four enemies that threaten the potato crop. Spraying with Bordeaux mixture, with Paris green or arsenate of lead added, will get the best of all four. This treatment must begin as soon as the plants reach a height of six or eight inches, and must be repeated every fortnight until the potatoes are ready to dig.

FARMERS' INSTITUTES HELP.

Do not allow the idea to get into your head that farmers' institutes are of no use. There is no single feature of educational work that has done more to advance sound thinking among farmers than the institute. If we do not benefit by it, it is our own fault. We can generally learn something even from the foolish talk of people whose ignorance points the way to truth in the minds of those who hear them.

PROFITABLE MARKETING.

Marketing the peach at a profit is the biggest problem in the business. After considering all of the necessary operations in a commercial peach orchard it is apparent that considerable money must be invested in labor. That money is tied up in the crop until marketing time and a large crop often means a large labor expense and a small price per bushel for the fruit.

HUMUS NECESSARY.

A soil may be called fertile in that it contains plenty of plant food, such as nitrogen, phosphoric acid or potash; but if the humus content is low good crops cannot be raised. Humus is decayed organic matter and the amount of humus in the soil can easily be controlled by the farmer. He can get it into the soil by plowing under or working into the soil organic matter in such condition that it will readily decay.

Tests of Insecticides

Foliage Injury to the Peach and Pear by Arsenicals and Lime-sulphur Solutions.

A number of tests to determine the effect of different arsenicals on the foliage of peach trees and of arsenicals combined with lime-sulphur solution on peach and bean foliage have recently been conducted by the entomologists of the U. S. Agricultural Department. The arsenate of lead was used 1 to 50 and 2 to 50 and the arsenate of calcium was used 1 to 50. A number of poisons were combined with lime 1 to 50 and with lime-sulphur 1 1/2 to 50.

Following are the conclusions of the entomologists: "Of the arsenates of lead, the diplobromide form had no burning effect on bean foliage and burned peach foliage very slightly. Arsenate of lead, consisting of a mixture of the diplobromide and triplobromide forms, burned peach foliage slightly, but no injury resulted on bean foliage. The commercial No. 1, consisting of the triplobromide form of arsenate of lead, did not injure peach or bean foliage. The commercial (2) burned the peach so badly that all the leaves were shed and produced moderate burning on the bean, about 25 per cent of the leaves being shed, but no burning where it was combined with lime or lime-sulphur. The commercial (3) produced no burning on bean foliage and very slight burning on peach foliage.

"Arsenate of calcium caused about 15 per cent of the leaves to drop or peach, but had no burning effect on bean foliage.

"The arsenates of iron, chemically pure and homemade, did not burn either bean or peach foliage. "Arsenate of zinc did not burn bean foliage, but seriously injured peach foliage, causing complete defoliation. The homemade form of arsenate of zinc produced very slight burning on peach and no burning on bean foliage. "Arsenic sulphid and arsenic tetr sulphid produced severe burning in all tests.

"Arsenic trioxid burned severely in all cases except when combined with lime, in which case the burning was slightly less. "Arsenite of lime homemade burned the bean foliage moderately when used alone and in combination with lime-sulphur. However, no burning resulted when extra lime was added. The peach foliage was severely burned by this material, causing all the leaves to drop.

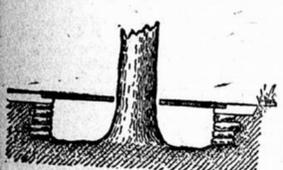
"Arsenite of zinc, chemically pure, burned severely in all tests except where lime was used. In all cases no burning resulted. "Arsenite of zinc powder, commercial, burned moderately on beans except where lime was added. In which case no burning resulted. It caused all of the peach leaves to drop. "Paris green produced moderate burning in all the tests on bean foliage and burned all the leaves off the peach."

The first three years after the setting of the cherry orchard the trees should be kept sprayed, pruned annually, and cultivated the first half of each season.

Allowing eggs to hatch in the nests in the cold days of spring is a source for lack of fertility in eggs.

TREES BETTER THE HEALTH CONDITIONS OF ANY CITY

Washington, D. C., is considered the most beautiful city in America. This is due to the prominence and grandeur of its trees. These trees form attractive backgrounds, which enhance the dignity of every statue and frame every residence in a fringe of green. The people of this country are developing a finer sense for the beautiful, which finds expression in various activities. These efforts have developed a higher appreciation of beauty and art in the home and with this love of better homes comes the demand for more and better trees, which will make the home more attractive all the year.



A "Well" around trees.

ected rays of the sun, foliage, by evaporating large quantities of water from its surface, exercises a marked effect on the temperature. The reduction of the temperature in this way is greatest on dry, hot days when such reduction is most needed. Leaves also absorb impure and hurtful gasses and manufacture the oxygen needed by humans for respiration. Circulation of the air, due to unequal tem-

By A. MURRILL.

perature, is likewise promoted by trees properly pruned and arranged; while the air of basements and cellars is rendered less humid by the removal of surplus water from the surrounding soil through the medium of roots and foliage. Thus it has been shown that trees better the health conditions of a city. And what is true of the city is equally true of the country. A homestead barren of trees and shrubs does not appeal to the occasional visitor, nor does it influence the family in the same way as it would if which dwells thereon as it would if trees, beautiful in form and color, which inspire a constant appreciation of nature.

The trees on city streets suffer most often because of a naturally poor soil and a lack of sufficient water supply. City streets that are macadamized, paved, or concreted, present a surface layer that shuts off almost completely the natural means by which water may reach the roots, and directs all of the surface drainage into catch-basins and sewers. Thus, trees on such streets are subjected to the extreme of adverse conditions, and their natural vitality and soil adaptation must be such that they can withstand the abnormal strain on their vitality or they are certain to meet with an unnatural and premature death.

Grating to Cover "Well."

successful plan for cities and large towns seems to be to place the care of street trees directly in charge of a commission or park board empowered by special ordinances to carry out its plans. This gives opportunity for systematic development of tree culture throughout the entire community and makes it possible to employ experts to direct the work. Similar arrangements can also be adopted in smaller communities with such changes as are necessary to suit local conditions.



Grating to Cover "Well."

PRUNING SUGGESTIONS.

Sterilize all wounds made in pruning. An ounce of copper sulphate in a gallon of water is as good as anything, this solution being applied with a paint brush. As soon as the wounds are dry, paint them over with a good coat of pure lead and oil paint, and renew the paint each season until the wound is healed over.

Seasonable Suggestions

Rest the house plants. Do not encourage growth by fertilizing and overwatering. Cut back and pinch off all the buds as they appear.



The Barberry.

Fight green lice with tobacco-tea and the rose-slug with lime-water. Or try dusting air-slaked lime on the infested rose bushes.

Plant canna one to two feet apart, depending altogether if they be dwarf or the tall-growing sort. They like very rich soil and plenty of water during the growing season. A mulch of straw manure will help to conserve the water that is given them. Cut off all the seed-pods as they form.

If you want brilliantly colored and oddly shaped flowers, plant some Tigridias or Mexican summer blooming bulbs. Don't set them out until settled weather, for they are tender.

The Japanese are still working to perfect the Ipomoas, or moon-flowers. They are most satisfactory annual vines. They are gross feeders and demand cultivation during the growing season. They come in many beautiful colors and shades, splashed, marbled, striped, spotted and blotched.

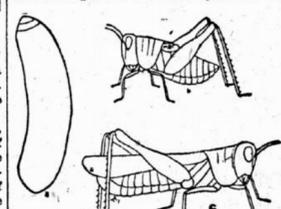
Plan to have a winter garden of shrubs with brilliantly colored berries or twigs which will make your place look cheerful the year round instead of cold and bare. The Japanese or common barberry is invaluable for hedges, boundaries, and for foundation planting. Their bright red berries make a beauty spot all winter long.

LEARN HISTORY OF INSECTS BEFORE COMBATTING THEM

By Z. P. METCALF.

In order that the farmer may successfully combat the different insects which injure his crops, it is necessary to know something regarding insects in general, their life-histories, habits, enemies, and the remedies that may be used against them successfully.

Briefly, insects may be divided into two classes. One develops from the egg to the adult without any resting stage. Insects belonging to this class are said to have an incomplete change of form. The other class has a resting stage in its life-history, and insects belonging to this class are said to have a complete change of form. In incomplete change, of form there are three stages in the life cycle of the



Life-History of the Grasshopper: a, Egg; b, Nymph; c, Adult.

insects. First, the egg, which is laid by the adult and from which an active, usually rapid growing "nymph" is hatched. This "nymph" is wingless, and from it, without any intermediate resting stage, the winged adults develop. Grasshoppers may be taken as an illustration of insects of this class. The wingless young are familiar objects to every one. It is this stage of insect with incomplete change of form that are known as "nymphs."

Insects belonging to the second class have four stages in their life history. Eggs laid by the adults develop into larvae, or worms, as they are commonly known. Horn worms

may be taken as an example of this stage in the development of insects of this class. The larvae is the active growing period, and is followed by a resting period which is known, technically, as the "pupa" or "chrysalis." From this pupa, after a length of time, the adults emerge.

It is necessary for the farmer to know the details of the life-history of the insect he is trying to conquer in order that he may fight it intelligently. Many insects are practically uncontrollable except for a very brief period or a short stage in their life-history.

Take, for instance, the grasshopper. Of all the insect pests which are found in some sections of the west, this is the most destructive, for it injures the most important industries—agriculture and stock raising, by invading the alfalfa fields.

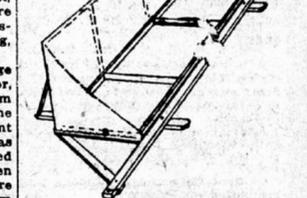
They usually do the greatest damage to the second crop of alfalfa, for though they hatch in spring from eggs laid the previous autumn, the young hoppers do very little apparent injury to the first crop, as soon as it is out, however, they are deprived of their abundant supply of green food. The few leaves remaining are quickly destroyed, and with them every opening bud and newly-formed leaf. The second crop cannot make a start for the new growth is eaten as fast as it appears. The injured fields sometimes look as bare and brown in midsummer as they are early in spring. In many cases this means the loss of many thousands of dollars worth of hay.

In some states very little has been done toward preventing this loss; but in Minnesota and Nebraska, grasshoppers are fought systematically with considerable success. Before we can adopt means for holding this pest in check, we must understand something of its life-history in the alfalfa fields.

Every year great numbers of grasshoppers gather along ditch-banks and roadsides and along little-used roads

through the fields. In such places as these the females lay their eggs, thrusting the abdomen an inch or more deep in the soil and laying a pod or mass of oblong light yellow eggs. Both sexes die with the coming of winter. The eggs in the frozen soil hatch when the ground grows warm in spring. The young hoppers make their way to the surface and at once begin feeding on the tender green leaves and grass.

As the newly hatched young are small and weak it is a difficult matter for them to make their way to the



A Successful Type of Horse-Drawn Hopper-Doser.

surface. If the eggs can be buried a few inches in the soil this becomes impossible.

Grasshoppers in alfalfa fields may be held in check in ordinary years by plowing late in the fall the waste lands where they breed and by disc-harrowing badly infested fields, thus destroying the eggs in the soil.

Sometimes, however, the ground is so full of eggs, that plowing and harrowing do not destroy enough to prevent great numbers from hatching. In such cases two remedies remain, to be applied just after the first crop has been cut. These are poisoning and the use of hopper-dosers.

Five operations enter into production of apples: Pruning, fertilizing, spraying, cultivation, and thinning. The finished product, the fruit is judged on five points also: Color, size, freedom from blemishes, quality, and uniformity.

Nitrate of soda and organic matter supplement each other in furnishing the soil with plant food.

Avoid leggy sheep; it will take more to set rid of them.

Every farmer who plants a tree is a public benefactor.

Do not plant fruit trees, then forget all about them. They need care.

Cane rust is the torment of both raspberries and blackberries. There is only one cure—cut off the tops at the surface of the ground.

Sweet clover, as a green-manure crop, will be more widely used and better appreciated when its virtues become known.

During hot, dry weather when flies are troublesome, it pays to let the calves stay inside all day and let them run in the yards or pasture at night.

Sixty million dollars a year is about the price the farmers of the United States are paying for the privilege of keeping rats on their premises.