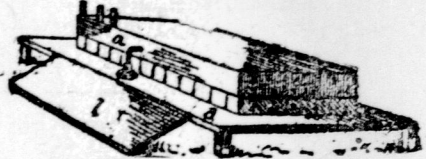




TO MAKE A BROODER.

If Properly Constructed, One Lamp Will Keep It Comfortable.

Make a box 4x3½ feet and six inches high, cover top with boards and bottom with zinc, making a box like the heater cloth, some heavy material, and cut strips four inches wide and long enough to reach all around the box or fourteen feet. Tack this cloth around the bottom edge of the box; it will hang down four inches below the box. Cut the cloth every four inches. The box will then be surrounded with pieces of cloth four inches square. Put a block four inches square under each corner of this box.



HOME-MADE BROODER.

(Description: a brooder, pipe and lamp; b, pipe in incubator; c, brooder table; d, board running up to brooder.)

and the chicks will get in under easily by pushing between the four inch strips of cloth. Fix one tin pipe, to heat the brooder, and one lamp will keep the brooder warm. Place a ¾-inch escape pipe in every corner of the brooder to draw heat over the surface of the zinc evenly. As a lamp cannot be connected to the pipe if the brooder is on the floor, make a table a little larger than the brooder with legs six or eight inches high. A board from brooder to the floor will soon be used by the chicks. Do not set boards around the brooder to keep the chicks in, for they will crowd up in the corners and kill many. As the chicks grow put higher blocks under the brooder so they can get under but not high enough so they can get on top of each other. The floor of the brooder may be covered with sawdust.—C. W. McQueen, in Farm and Home.

FARM MACHINERY.

Some Buy Too Much of It, and Others Not Quite Enough.

One may easily go to either extreme on almost any question. This is certainly true in the matter of buying farm implements and machinery. A prominent place in the causes of failure of a not a few farmers should be given to their habit of recklessly buying farm machinery when not needed, and of neglecting to care for it after it is bought. Where a good implement or machine, it is folly to throw it aside and purchase another because of some trifling claimed improvement. On the other hand, it is at least equally folly to continue to use nearly worn-out or inferior tools, neglecting to avail oneself of important improvements. A noticeable tendency of agriculture in the prairie regions, which are so admirably fitted for the use of the farm machinery, is to reduce hand labor to a minimum. It is not only attempted to do almost all parts of field culture work by the aid of horse-drawn machinery, but to do it with the smallest possible number of men. Wide-cutting or gang plows, harrows or cultivators, or seeders, and so of mowers and reapers, are becoming more common. Many of the new machines are decidedly better than the older ones of the same class; some are not. In many cases it will be a clear gain to buy new machinery; just as in others it would be a needless waste of money.

If the new plow will cut an inch or two wider than the old one with no increase in draft, it will soon pay for itself. If equally good work can be done with a harrow which cuts fifteen feet instead of ten, the saving in cost of labor will soon equal the cost of the harrow. One or two bushels increase per acre in the yield of corn on the area which can be cultivated with a good cultivator will make the price of a good cultivator in one year.—Prairie Farmer.

Importance of the Egg Trade.

The Canadian farmers, as a rule, do not pay enough attention to their poultry for their own good. A young hen is not a worthless nuisance to be left alone to pick her own living. She is valuable property, and, if properly cared for, will pay larger interest on your money and labor than the other farm stock. Increase your flock to 200 hens at once. Build a suitable house for them. It will pay you. Few are aware of the value and importance of the egg trade as a source of wealth to a nation.

The amount of business done in the United States in the egg trade exclusively will amount to over \$200,000,000 each year. New York city alone consumes \$18,000,000 worth in 1890, at an average price of eighteen cents a dozen. The poultry and egg business outranks any single product, except corn, raised and sold in that country.

Notwithstanding these facts, we find people who think it small business and time wasted for the farmer to give his poultry flock a little time and attention. A farmer could do a great deal more than make poultry raising the main branch of the farm industries.

Securing Full Value.

Farmers are often lax in studying market conditions as carefully reported in the columns of the newspapers each week, and in consequence sell produce at lower prices than necessary. In this vein writes an appreciative subscriber who considers these reports especially valuable. "They often save me dollars," he writes. "I sell my farm produce each week in my best home market. Frequently the merchants endeavor to mislead by quoting the city markets lower than they really are, but they have learned that through studying your columns I am posted with the situation and cannot be deceived. Again, other farmers often sold on all their produce for rise in prices when all the conditions plainly indicate a drop, continuing in this slipshod manner and condemning their business as unprofitable. They would be puzzled to name a business that would pay under such management."—American Agriculturist.

Hints on Stacking.

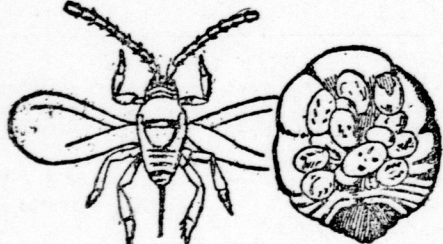
In harvesting wheat, oats and flax a header can be used successfully. If the stacks are long and narrow and not strapped as in the case of oats and flax, the stacking should be done by a man standing on the ground. Wheat can be placed in larger ricks, as it does not hold much moisture. Let the stacker always stand near the middle so the stack will settle straight and the straw on the outside will hang down.

THE SAN JOSE SCALE.

Description of This Pernicious Pest and How to Exterminate It.

Where the San Jose scale has found lodgment its extermination should be immediate. This pernicious scale is injurious to a great variety of deciduous trees, and besides causing the death of the trees, has great power of production. Common in California, it now infests Washington, Oregon, New Mexico and the western country. Among the localities of the Atlantic seaboard known to be infested are limited sections in Florida, Georgia, Virginia, Delaware, Maryland, New Jersey, Pennsylvania and New York. Specimens have also been observed in one or more towns in Ohio and Indiana, the scale probably having been shipped in on nursery stock, or brought on California fruit. The young or newly hatched are almost microscopic creatures of a white or pale yellow color, body of oval form, flattened, with six legs and two short feelers. They are active for a brief period only, sometimes but a few hours or even minutes, rarely more than a day or two, and settle upon the bark near where they are born, unless it is already too thickly covered with the parent scales. A long threadlike proboscis is gradually thrust under the skin of the leaf or bark when the insect becomes fixed and a waxy secretion exudes and covers the scale. This increases until the larva underneath molts. The first larval skin becomes part of the secretion or shield, and is known as the larval scale, and the insect under it after this first molt, leaves its legs and feelers. The covering still further increases and a second molt takes place, and a covering known as the medial scale either surrounds or extends from one end of the larval scale, according to the species. The sexes are readily distinguishable by their scales or shields. The male undergoes a third molt, from which results a delicate two-winged fly. The San Jose scale is quite circular in form, very flat and pressed close to the bark. It grows from one-sixteenth to one-eighth inch in diameter in the female and about half this size in the male. It has the general color of the bark, and the larval scale in the center is a slightly raised point, varying from yellowish to nearly black in color. In the latitude of Washington, D.C., there may be five annual generations, each occupying on an average forty days. Multiplication continues from the beginning of June until late in autumn, or until winter weather fairly sets in.

For the extermination of the San Jose scale, a number of parasites have been found quite effective. But where trees



SAN JOSE OR PERNICIOUS SCALE, MALE AND FEMALE, CONTAINING YOUNG, GREATLY ENLARGED.

are found to be badly infested, the safest and most economical course is to cut and burn trunk and branch. Where the infestation is less marked, insecticide washes and sprays may be used. Before young lice have begun to secrete scales, they may be destroyed by spraying with kerosene emulsion. For the older scales the washes may be divided into those which can be used in summer without damage to the trees, and those so strong they can only be applied while the tree is dormant during winter. Among the insecticides that have been proven more or less successful are formulas of whale oil soap, the resin wash, kerosene emulsion, hard laundry soap, concentrated potash lye, fish oil soap, and California lime-sulphur-and-salt wash. The most effective insecticide for the San Jose scale is to dissolve two pounds of whale oil soap in one gallon of water, and make a thorough spraying.

Getting Best Results in the Fruit Garden.

Whoever has picked the most luscious wild raspberries and blackberries and has noted the conditions under which they grew, has seen that a loose soil and abundant moisture are prime essentials to perfection in these berries. It has been found by experience that the greatest aid the gardener has in securing a light, loose and moist soil, even in the heat of summer, is a heavy coating of the ground with mulch. Applied to the soil, not in a thin coat that soon disappears, but in a very thick one, it keeps down weeds, smothering that most troublesome of pests, with grass, and creates beneath it a surprising condition of the soil. If one will take the trouble to draw aside a thick coat of mulch, he will be surprised to find beneath it as light as though the harrow had just passed through it, while even in time of drought the soil will be well filled with moisture, drawn up from the regions below. In using mulch care should be taken to avoid that having weed seed, unless the plot of land is to be kept permanently mulched. Rather than go without such a covering in the raspberry rows, if straw or hay were not at hand, have evergreen brush cut in the woods and pastures and with this mulch the land; but straw or hay is better, for it decays and forms a vegetable humus in the soil.

The Lack of Lime in Grain.

While corn is a food that has its mission in winter, it will do more harm than good when continued steadily on into spring. Wheat may be classed with corn. These grains are good because they are concentrated, and enable the hens to eat enough from which to derive their warmth, but though they contain a proportion of nitrogen they are very deficient in the mineral elements. There is less than a pound of lime in one thousand pounds of wheat, and if a hen is compelled to subsist on grain entirely, how is it possible for her to furnish eggs, which are not only covered with a shell of lime, but also contain within themselves the substances that are changed into bone, blood, flesh and fat?—Farm and Fireside.

Strawberries for Home Use.

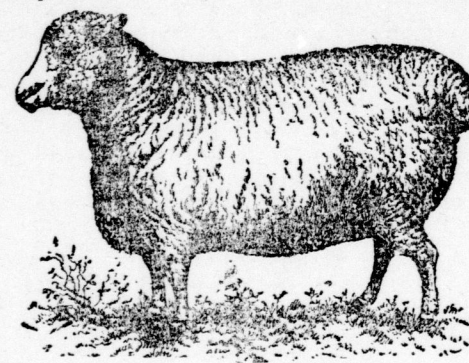
No matter how far from market a farmer may be, he can grow a patch of strawberries and be sure of a market at home. It is astonishing how much fruit of all kinds can be eaten by a small family when the supply is unstinted. There are few neighbors where those who begin by growing a supply of strawberries for home use will not find a market springing up around them for neighbors who keep on in the old rut because they think they haven't time to attend to such small affairs as the culture of berries. They are small in size, but more bushels of strawberries can be grown per acre than of any kind of grain, and the fruit may be sold cheap and yet bring more than grain profits.



THE RYELAND SHEEP.

Long Ago They Stood at the Head of the Short-Woiled Breeds.

There is no other breed of sheep in England that can trace its history and origin so far back, or whose value to the sheep industry has been so continuous and sharply defined for so many centuries as the Ryeland. The accompanying illustration of a Ryeland ewe suggests the origin of the breed, as there is considerable resemblance between her and the Merino ewe. This, with the peculiar character of the wool, leads, according to William Youatt, to the suspicion that the Ryeland breed may be of foreign extraction. The Merino breed in Spain was one of those valuable gifts with which the Romans were accustomed to propitiate and enrich the people whom they conquered; they were never satisfied until they had effected both the introduction of sheep and the establishment of manufactures. It is a historical fact that ten years after the invasion of Britain by the Romans, in the year 43, the victors established a woolen factory at Winchester, and such was the character of the fabrics that they were in great estimation at Rome. It is easy to believe that these fine-wool sheep



TYPICAL RYELAND EWE.

were already in the country, but it is possible that they were a benefactor from the conquerors 1900 years ago.

Believed by Blackbott that the Herefordshire sheep, now called the Ryeland, were the woolen-bearing sheep of England and that gave such value and interest to the wool industry of England in the year 1343. It was recorded by the earliest writers that the Ryelands stood at the head of the short-woiled breeds. Mr. Herbert, who has studied the subject, is of the opinion that the Ryelands extended through England from the Thames to the Tyne, and even intimates that the Cotswolds were produced by a cross of the Ryelands with some heavy sheep. The counties of Hereford, Shropshire, Staffordshire and Oxford breed were only varieties of the Ryeland breed. It was the work of years, but in the evolutions of the sheep industry, a potential factor in good husbandry, the Ryelands were gradually forced to give place to a heavier, earlier-maturing sheep until conditions were reached that the heavier sheep could not supplant them. Until this time they were known as Hereford sheep; but when they were confined mainly to the southern part of the country, where it was the custom to sow great quantities of rye, and to pasture flocks thereon in the winter, season, they received their significant name, Ryeland. That there were two breeds of Hereford sheep we are led to infer from the writings of William Ellis in 1747, for he shows there was "a dark-faced sheep that was much sought for by graziers and feeders in Hertfordshire," where he lived, and in other counties which were then regarded as feeding sections of England. Youatt describes the true Ryeland as a small sheep, seldom exceeding more than 14 to 16 lbs. to the quarter in the wethers, or than 10 to 13 in the ewe. They have white faces and are polled, the wool growing close to and sometimes covering the eyes. The legs are small and clean, the bone altogether light, the carcass sound and compact and peculiarly developed on the loins and hanches. The Ryeland has that form which at once bespeaks it to be patient of hunger and capable of thriving on scanty fare. It scarcely admits of a doubt that old Ryelands would endure privations of food better than any other breed. Sir Joseph Banks, who was well acquainted with their constitution and habits, used to say that the Ryelands deserved a niche in the temple of fame. The weight of fleece rarely exceeded two pounds, but it possessed a degree of fineness unequalled by any other British breed. It was finer than the Southdown of one hundred years ago, but not so fine as the Saxony. The Ryeland mutton was always spoken of as of the best quality. The sheep was at its best at five or six years old.

What to do With a Profitless Field.

What to do with a profitless field is a matter of consideration by all farmers who are so unfortunate as to have such fields. The majority use these lands as pastures, upon which they turn the stock, but it will pay to aim to grow green crops on the land to be sown under. If this is done for two or three years in the land limed, it will be found that such method will restore fertility at a small cost compared with the increased value of the field.

An outlay sufficient to meet all demands and to afford the land a full proportion of plant food is not extravagance, but economy, as greater profits will result when the crops are harvested.

Weight of Young Pigs.

A pig at its birth should weigh about three pounds. At the end of the first month the weight should have increased to fifteen, and it should continue to grow until at the tenth month it weighs attained a weight of 300 pounds. That, if it is kept so long, but the most profitable hog is the one marketed when seven or eight months old. The cost of pork is fifty per cent. greater if made in the tenth month than in the fifth month in the food consumed. Quick returns and as quick profits should be the aim of the swine breeder.—Field and Farm.

The New Diphtheria Cure.

In obtaining the serum for the anti-toxin treatment about ten quarts is the amount drawn from each horse at one time on the average. The animals suffer no perceptible exhaustion, and are made useless for other purposes. Among the twenty-five horses now owned by the British Institute is a grandson of Blais Athol.

Good Way to Test Eggs.

When four ounces of salt are dissolved in four ounces of water, an egg a day old will sink to the bottom; one two days old will float near the top, and one five or more days will project above the surface more and more as it becomes older.

TAMWORTH SWINE.

A Short Description of the Modern English Bacon Breed.

The breed is practically unknown in this country. It is in every respect so totally unlike the kind of hog which it is the ambition of the swine breeder to produce that many will be surprised to learn that the accompanying cut is an excellent illustration of the type most popular among the English, being considered a very fine specimen of the breed.

The explanation of their popularity lies in their thin, long bodies, which supply great quantities of well-streaked bacon, the inevitable dish at every English breakfast table. Indeed, in the production of this article they are without a rival save the improved Yorkshire, which they greatly resemble in many ways.

In color the Tamworths are generally



PRIZE TAMWORTH SOW.

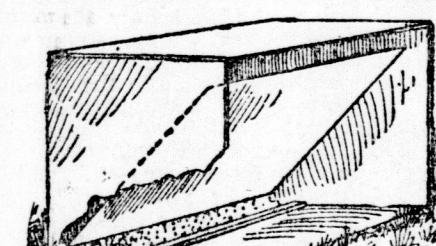
a sandy red, though some are a dark gray with black spots. They are hardy and prolific and have been improved so that they are now an early-maturing breed. The long, deep sides, light shoulder and jaw make them an ideal bacon hog. The flesh is lean, pink and well-flavored.—N. Y. World.

Protect Sheep Against Grub in the Head.

Many American shepherds advise smearing the salt trough with tar, but this is seldom thorough enough. A practice to be recommended, where the flock is not too large, is to smear the noses of the sheep periodically, at least once a week, during the season of greatest activity of the fly, with a mixture of equal parts of tar and grease, or of tar and fish oil, or of tar and whale oil. Some have used whale oil alone with good results. A brush will be found convenient to apply these mixtures. A reliable authority speaks in flattering terms of the use of an ointment made as follows: Beeswax, one pound; linsed oil, one pint; carbolic acid, four ounces. Melt the wax and oil together, adding two ounces of resin to give body, then, as it is cooking, stir in the carbolic acid. The same authority mentions the use, by some breeders of choice stock, of a canvas face cover smeared with this mixture, or with one of asafetida and tallow, which may be adjusted in such a fashion as not to interfere with the sight or with grazing, and yet protect the lambs against the fly that lays the egg from which the grub hatches. Some farmers plow a few furrows in the pasture so the sheep may put their noses in the fresh earth and thus keep the fly away.—American Agriculturist.

Feeding Grit to Poultry.

Get a box about one foot square and eight or ten inches deep, remove the top, and place it inside at an angle from one corner of the bottom of the box, leaving about three quarters of an inch space from the bottom and one side, and the other side of the board about two inches from the other side to allow space to fill; or it may be filled tight, and the side of the box removed and hinged so as to open and fill. Place a strip of wood about one inch square, about two inches from the three-quarter inch space at the



FEEDING GRIT TO POULTRY.

bottom of the box, to keep the grit in place. Bore two small holes in the bottom of the box near what is to be the top, and hang on nails so as to raise the box a few inches from the ground, to prevent the chickens from scratching dirt in. Put in the grit, oyster shells, charcoal, etc., and the fowls will have it fresh and clean, as it will drop down as they eat it. There will be no waste as when fed on the ground or in open boxes. The same arrangement may be used for feed when it is desirable to keep feed before the poultry all the time. The device is shown in the cut.—Rural New Yorker.

Live Stock Notes.

Of all the meats, mutton is the freest of disease. As much as breeding and growing animals need exercise for their prosperity, the hogs for fattening need rest and quietness.

The quicker the sheep reaches maturity the less food it consumes. Early maturing sheep, therefore, means lower cost of production.

If wool is low in price it will add something to the profits of sheep husbandry. But now, as never before, mutton is the standby.

The cheapest food for hogs that we can raise is clover or grass, and in corn we have perhaps the best food for fattening that can be found.

The best thing the sheep breeder can do is to recognize that conditions affecting sheep have changed and prepare to conform to them.

As the American people come to use their brains more and their muscle less fat meat—mutton included—goes out of favor. People want flesh and not fat more and more.—Farmer's Voice.

Sows Eating Their Young.

To prevent sows eating their pigs, give the sow two to three lbs. of salt pork (cut in pieces half an inch thick) immediately after farrowing, provided there are any signs of trouble that way. This has proved a sure remedy in many cases, we having had letters from thirteen farmers to this effect, since the subject was mentioned in our veterinary department recently. Feeding sows mostly on wheat middlings for about two weeks before farrowing often avoids this trouble. Fresh beef may be used instead of salt pork, and raw potatoes may be fed with both. Give soppy or cooling food just before parturition.—American Agriculturist.

Unsound Horses in France.

The French law enumerates the various forms of unsoundness to which a horse is liable, and provides that an animal found to be suffering from any of these within ten days after its sale may be returned to the seller. Such a law in this country would do much to protect buyers, and it would also be welcome to the reputable men who are engaged in selling horses.

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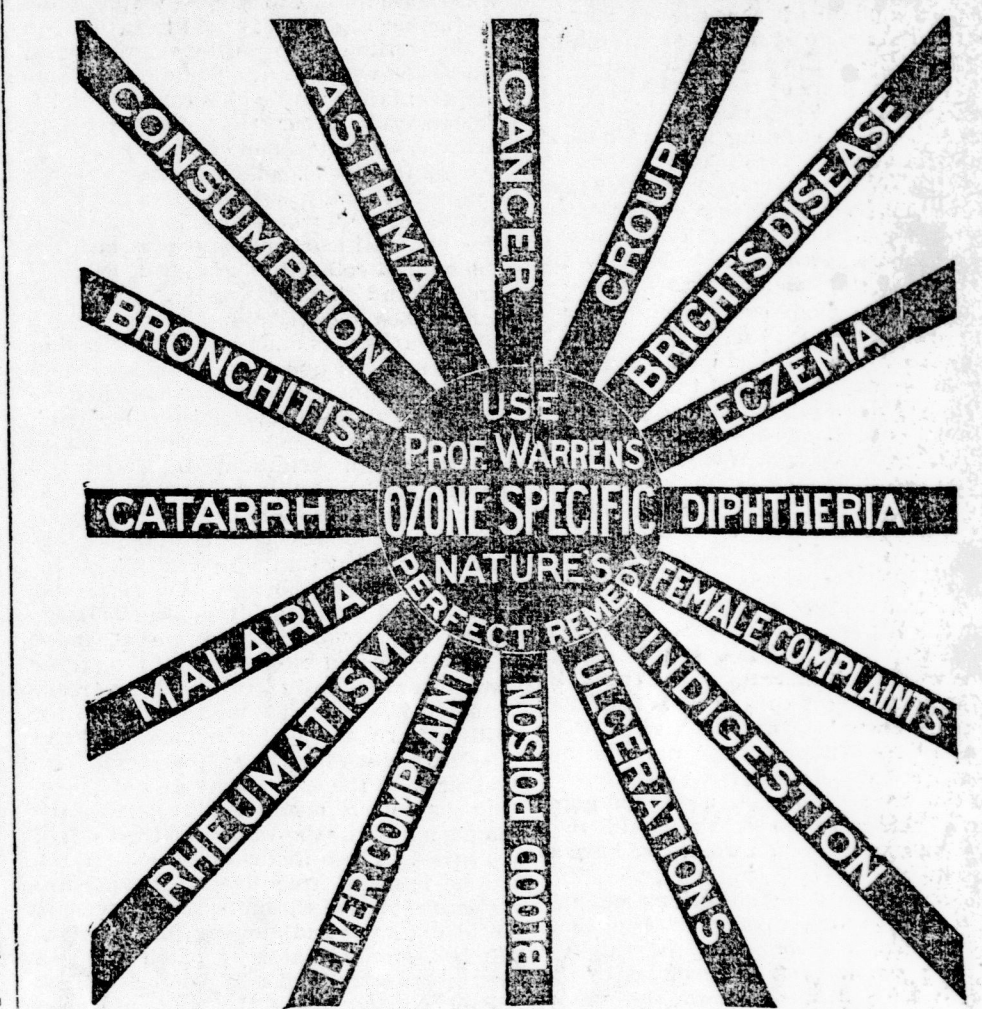
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