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no internal fixtures, fills the bill as completely as the more elaborate house. The floor should be kept well bedded for sanitary reasons. A shed 8 x 16 feet gives ample area for 25 geese and may be as low as the stature of the caretaker will permit. The yard should be as large as possible, though 100 breeders may be kept on an acre of pasturage. The larger the pasturage the less feed will

WITH THE POULTRYMAN

Friday, July 3, 1908

be required. Growing grass will furnish the greater part of a breeding goose's living, and while they pick the growth close they do not destroy the roots as do chickens. Now in regard to the water question: As mentioned above, a pond or a stream is not necessary, but either is a benefit to the breeding stock. Personally I would prefer a swamp where the water is about six inches deep so that they can work and feed at the bottom of the bunch grass and other semi-aquatic vegetation. It adds to the fertility of the eggs. The main thing to remember where the water is supplied is this: Have the utensils whatever they may be, of sufficient depth that the fowls can bathe their entire heads. Neglect of this precaution will result in sore eyes. Mate for early spring one gander to four hens, and a little later the number of females may be increased. Keep the flock confined until after 8 o'clock and you will be able to find all the eggs without hunting. They drop them any place. The eggs may be dirty; simply wash the dirt off, not the greasy coating. A good ration (morning) for breeders: Steamed cut clover, 25 parts; corn, oats or barley chop, 25 parts; middlings, 25 parts; grit, 5 parts; scraps, 10 parts.

This is fed in a deep trough, mixed rather soft. A hundred pounds of this mixture will require about 125 pounds of water. Night feed, steamed clover (cut) and bran, equal portions, and some whole corn, or cut vegetables (mangels, turnips; etc.) and whole corn ; the amount of green food to be varied according to the available pasturage. If you use a machine for hatching use a good one-one that can be depended upon-then operate it carefully according to directions furnished by the manufac-turers, air the eggs freely, and the result will be good, strong goslings if the parent stock is all right. If you use hens for hatching, select good, steady and proved mothers, that may be depended upon to keep at her job four weeks, and above all keep her free from lice. Geese in their natural state do not have lice and do not take kindly to them when forced upon them. Do not feed the goslings for from 24 to 36 hours. If you brood in a machine select a model that provides well for ventilation and carry the heat at 90 degrees, or a little above, the first three days, and then gradually reduce. The first feed is an important one-oatmeal 10 parts; sifted bran 15 parts, white middlings 5 parts, clover meal 10 parts, fine grit 2 parts. Mix with hot water and allow to cool. Feed four times a day-better five times-on shallow tin plates. Wash the plates after each feeding. Use above ration for first week. For second week replace middlings with commeal and add one pound of beef scraps. Allow heat to drop to not less than 80 degrees. At the end of the second week and until the sixth feed framing ration: Cornmeal 10 parts, oat chop 10 parts,



VICTORIA SEMI-WEEKIAY COLONIST

E SIMPLE LI

is to be carried on abundantly and readily. To increase the store of plant food in naturally poor soils, and at the same time compel the soil to yield profitable crops is the problem set be-

Phosphates are formed by the chemical

FIRST PRIZE BASKET OF ROSES

birds. The Toulouse and Embden are the largest, while the Chinas produce the largest number of eggs.

It is claimed that the African has the finest grained flesh, but personally I can not see any difference. All things considered, the Embden would make the finest market bird. It dresses nicely and makes a good appearance. To be sure of fertile eggs breeders should be at least two years old, and their usefulness lasts until they are ten years old or more. Sometimes a gander will only mate with one goose, sometimes with as many as five, but I believe one gander to two geese is the best mating. Confine the selected mating alone for a week or so and the probabilities are that they will stay mated for life. Feed the breeders cut clover, vegetables

and bran. Scraps can be added to force eggproduction. Best results will come by incubating under large hens rather than under geese and the period varies from 30 to 33 days. Generally speaking, a hatched goose lives, as they are subject to hardly any disease. They must have shade and plenty of water. Twenty-four hours after hatching feed a mash of corn, oats and barley chop, 5 parts, bran 10 parts, scraps I part. After they are a week old increase the scraps. After three weeks of age they can pick their living from the pasture with only one feed of mash a day-at night. If incubator hatched do not commit the error of brooding in large flocks; thirty in a bunch at most. Twenty would be better. At four months of age they should be fit to kill and they do make good eat-



work of the preparation of plant food in the soil

How Phosphates Are Formed

union of the element phosphorus, with the gas oxygen, which union the chemist terms an oxide, and this oxide combines with moisture to form phosphoric acid, and phosphoric acid last-



and is another of the perfected foods that all our crops require.

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2. When organic matters, such as animal and vegetable, roots of plants, stubble and farmyard manure, begin to decompose, its nitrogen combines with oxygen and forms am-, monia gas. The ammonia gas combining with moisture through the agency of soil germs forms nitric acid, and nitric acid combining with the lime of the soil forms muriate of lime or nitrates, which is one of the most soluable of plant foods.

What Is Potash?

Potassium oxide, or potash, is the so-called "actual potash" that figures in the analysis of plants and valuation of fertilizers.

Although potassium, like phosphorus, is never found in a free state in nature, yet in some form it is present in most soils and in many kinds of rock. Where united with oxygen in the proportion of two of potassium to one of oxygen, there is formed the potash of commerce.

Lime Is Necessary

From the foregoing outline it can be seen that if phosphates and nitrates are to be formed! in the soil, there must be present a sufficiency, of lime to enable phosphoric acid and nitric acid to form phosphates and nitrates respectively. Lime is a necessary ingredient of every, agricultural soil; without it plants cannot grow. Lime is not, however, usually considered a plant food in itself, yet it is a most important element of plant food, because it converts the insoluable and unusable plant food in the soil into a soluable and usable plant food. By its mechanical action lime corrects the damp and acid conditions so common to our clayey and marshy soils. It lightens and drains the heavier, soils and so allows a free access of warm air to circulate amidst the soil particles; in other words it helps the mechanical implements to prepare a good seed bed or tilth, and a good tilth is of the utmost importance if profitable crops are to be grown.

Lime also consolidates the lighter and more sandy soils, so that they are better able to retain moisture and warmth. Lime further helps the crops to ripen earlier, and, above all, on our heavier soils, it strengthens the straw of the cereal crops so that they can develop a heavier yield of grain. By strengthening the straw the crops are better able to stand up against heavy storms of wind and rain, which otherwise would considerably "lodge" the crops, and interfere! with satisfactory ripening, and add to the expenses of harvesting. The miller maintains that lime in the soil

helps the wheat plant to develop a harder berry -a berry richer in that variety of gluten which is so essential, from a baker's point of view, to ensure a good-looking, well-risen, digestible and strengthening loaf of bread.-Maritime Farmer.

RATIONS FOR GROWING PIGS

oplicability crete boats by a ship-Tiber, at ork. The and the it than the ery rough so far as and, of that the nish offers the botseaweed. In case n. In case at repairs cement or with steel boat can steel and the cost is "Liguria," ructed by to, in 1905. working in Rome. In om Rome also tow-Vecchia.

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bran 10 parts, clover meal 20 parts, beef meal or scraps 5 parts, grit 5 parts. At six weeks of age the birds should have built a good frame. If for market confine in pens and feed cornmeal bran and clover meal, equal parts. If to be kept for breeders, allow free range, decrease the cornmeal and feed more green food. The most profitable time to market geese is just as soon as they are full fledged; therefore figure to have them in good flesh at that time. They dress easier and look nicer than at any other time. The goose is a very healthy bird, and the saying is: "A sick goose is a dead goose." Generally speaking, they are subject to only two ailments-rheumatism and appoplexy. The first is caused by dirty or wet quarters, and the latter (confined almost exclusively to brooder stock) is caused by absence of shade. Either of these can be guarded against.

At the beginning of this article I spoke of cheap food, and in enlarging on this phase of the subject will say that any vegetable, if cooked or cut fine, can be used; turnips, small potatoes, cow beets or even pumpkins. Any meat scraps can be used instead of beef scraps. Geese cannot be fed off their feet like chickens can. The market possibilities are very good. A

limited amount of land will not, however, fill the requirements for goose culture. They need and must have, to produce profitably, plenty of pasturage. It is said that ten geese will consume as much grass as a cow. The standard recognizes seven varieties of diversified types: Toulouse, Embden, Brown and White China, African, Canadian and Egyptian. Of these the latter named two are strictly ornamental and cannot be considered of any value as a market

I do not believe there is a demand or a need for any new water fowl varieties. In shapes, sizes and colors we have sufficient to select from to enable the most fastidious to satisfy his desire whether for utility or fancy. There is room for improvement in the different varieties that will keep the best breeders thinking to accomplish.-B. C. Poultryman. --0-

AROUND THE FARM THE A B C OF MANURING

VEN if we think we know our subject sufficiently, it is advisable, that we should from time to time again more fully study its alphabet, to yet once again take up and read through the book. The subject will by this means become more real and self-evident to us, more a part of our every day working life. And if the beginnings of our subject be simple and connected in our minds we can acquire all future knowledge concerning it much more easily and with much clearer insight.

There are really only very few principles in connection with practical manuring that the farmer need concern himself with. If his farming is to pay he has to see to it that his land contains a certain amount of humus, a sufficiency of phosphates, nitrates, potash and lime. That the carticles of soil are surrounded with a plentiful supply of warm, pure air; that the soil holds a sufficient but not an excessive amount of moisture; and lastly, but not least, that the soil is stored with healthy, vigorous germs of life called "bacteria." If any one of these important principles is

absent from the soil, or not present in sufficient quantities, the crops will suffer and starve. The soil may be rich in phosphates, and yet if the nitrates are absent, or not present in sufficient quantities, the crops will show a small and therefore an unprofitable yield. The same will



yet if there be not present in the soil a suffi-

ciency of lime to enable the phosphoric acid to

to allow nitric acid to combine with it to form

Bacterial germs and a circulation of warm,

nitrates the crops will suffer.

ly combines with the lime of the soil to form phosphates absent, or if both phosphates and phosphates, and phosphates, when in a soluable condition, can be taken in by the roots of nitrates be present in sufficient quantities and plants, and is one of the perfected foods that potash be absent, or if potash be present and phosphates or nitrates absent. Or the soil may all our crops require. be rich in phosphoric acid and nitric acid, and

How Nitrates Are Formed

There are two ways by which nitrates are formed

combine with it easily to form phosphates, or 1. Nitrogen gas combines with oxygen gas and forms an oxide, and the oxide combining with moisture forms nitric acid, and nitric acid combining with the lime of the soil forms nipure air and moisture must also be present in rightful and healthful quantities if the important trates, and nitrates when in a soluable condition can be taken in by the roots of the plants

The following suggestions concerning feeding rations for swine of different ages are contained in a bulletin published by the federal department of agriculture:

Twenty to sixty pound pigs-Three ounces of cornmeal to each quart of milk. Sixty to 100 pound pigs-Six ounces of cornmeal to each quart of milk. One hundred to 180 pound pigs-Eight ounces of cornmeal to each quart of milk :

1. Twenty to 180 pound pigs-Three ounces of cornmeal, wheat, rye or hominy meals to each quart of milk, and then gradually increase meal to satisfy appetites.

Twenty to sixty pound pigs-Milk at dis-posal, plus mixture of one-third cornmeal, onethird wheat bran and one-third gluted meal to satisfy appetites.

2. Eixty to 100 pound pigs-Milk at dis-posal, plus mixture of one-half commeal, onefourth wheat bran, and one-fourth gluten meal to satisfy appetites.

Twenty to sixty pound pigs-Three ounces of cornmeal to each quart of milk and four ounces of gluted feed as a substitute for quart of milk.

3. Sixty to 100 pound pigs-Milk at dis-posal and mixture of one-half cornmeal and one-half gluten feed to satisfy appetites.

One hundred to 180 pound pigs-Milk at disposal and mixture of two-thirds cornmeal and one-third gluten feed to satisfy appetites.

Whey has a feeding value about half that of milk. It should be fed carefully, as it frequently causes stiffness of the joints and lame ness.

Dairy by-products obtained from the creamery, cheese factory or skimming station should be pasteurized before feeding. If the feeder used only milk produced on his farm and knows that his own cows are free from tuberculosis, this precaution is unnecessary.

PASTE FOR POLISHING HARNESS

Put 2 ozs. of soft soap into a jar, and pour over it a gill of hot water; stir till it is dissolved, then add 2 ounces of shedded mutton suet, 6 ounces of shredded beeswax, 6 ounces of powdered sugar candy (this can be home-made-sugar boiled to the sandy stage), and I ounce lamp-black. Place the jar in a pan of boiling water, or on a warm but not too hot part of the stove or hob, and stir together till the whole of the contents are melted and well mixed together. Remove from the fire, and allow it to get almost cold; then stir in by degrees a gill of turpentine. It may either remain in the jar, or more conveniently put into small pots and covered when not in use.