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BELGIAN HARES AS MEAT PRODUCERS

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In view of the high prices and the need of meat conservation, the advice of the United States Food Administration that Belgian hares and allied breeds be kept as a source of cheap and nutritious meat, putting these animals on a utility basis, has been generally followed. So many inquiries regarding the care of the animals have been received that it has been thought fitting to issue a brief bulletin on the subject.

As popularly and broadly used, the term "Belgian hare" includes the true Belgian, the Flemish Giant, the New Zealand Red, and possibly one or two other breeds. The three mentioned are to be regarded as the utility strains of rabbits on account of their size, rapidity of development, fecundity, and the fine quality of their meat. In fact, the comparative rapidity of reproduction and the consequent large amount of meat produced in a short time, the cheapness of their food and the small amount of space required are to be regarded as their chief recommendations. One doe may produce more than forty-five pounds of meat in six months and the claim has been made that two hundred pounds a year is possible.

The meat of these animals is not at all like that of the cottontail, or snowshoe, rabbit or that of the prairie hare, being much more delicate and lighter in color, that of the hind quarters being nearly as white as the breast of chicken; in fact, when served on the table it is hard to distinguish this meat from that of chicken. The writer has never dressed a wild rabbit without finding parasites in some stage, bot flies or tapeworm, for example. On the other hand he has never found, in handling several hundred Belgian hares, any macroscopic parasites (bots and worms) whatever, tho occasionally white spots noted on liver indicate the presence of coccidiosis. However, this in no way affects the quality of the meat, which is as appetizing in the hot months as in winter.

The breeds of rabbits under discussion (these are really large rabbits bred to the hare type and not true hares) will live and thrive in the winter climate of this latitude altho fecundity may be somewhat checked during the cold months, and in extremely cold weather the newly born young may freeze. If fairly warm quarters can be provided these objections are overcome. Hares in the open or in cold sheds or barns should be given tight nest boxes well provided with straw.

In giving these instructions it is assumed that the would-be breeder is a beginner proposing to raise meat for his family, rather than one intending to establish a business on a commercial scale, an enterprise for which the middle west seems hardly ready.

The decision as to the best variety of the three strains to raise is to a certain extent a matter of personal preference. The Flemish, gray, or steel hares grow larger (from 10 to 15 pounds or more), make good mothers, and generally produce good sized litters. The Black Flemish do not ordinarily grow as large as the gray. On the other hand, the breeding age of the Flemish is commonly later than that of the other two varieties, they demand more food, and their meat is somewhat coarser. They are also somewhat more difficult to handle, that is, to pick up and carry about.



Fig. 1. A Fifteen and One-Half Pound Flemish Doe

Flemish does have a well-marked dewlap. The New Zealanders are attractive in color (a reddish buff or orange in best individuals), are quiet in disposition, the bucks evidently not so quarrelsome as they mature as those of other breeds, and the meat is of fine quality. They are not early breeders. The weight of adults is from nine to ten pounds. The does have a dewlap. The Belgian, standard grade, is graceful, handsome, alert, rufous red or mahogany with wavy black ticking on back and black on tips of the ears; all four feet are reddish. Its meat is finely flavored and it is a desirable animal both for the table and for exhibition purposes. Its pelt may not be so strong as that of the Flemish. Good Belgian does are without dewlap.

PURCHASING STOCK

Too much importance can not be placed on the buying of stock. The beginner should be contented with from one to three does and a buck, and if possible should see the stock before purchasing it. If that is not feasible he should buy of a reputable party and under conditions which will insure getting healthy and well-bred animals. It is not advisable to purchase hares of companies agreeing to buy back young stock. No rabbit should be purchased which is observed to sneeze or one which shows any discharge at the nostrils, or moisture on sides of mouth or on fore-paws. Pot-bellied stock or extremely fat adults or adults too old to breed produc-

tively, should be avoided. Old age is indicated by long, coarse claws and excessive flesh. Occasionally does are very poor breeders, those more than two and a half years old have in most cases outlived their usefulness. A Belgian or New Zealand doe wanted for breeding should be at least seven months old; and a Flemish doe ten months old. Such does cost from \$3.50 to \$10 each, or more if they are highly pedigreed stock. Bucks of corresponding specifications bring from \$2 to \$8 each. Young females cost from \$2.50 to \$5 and young males from \$2 to \$4. It is extremely important that a good foundation for a rabbitry be laid by the possession of healthy, vigorous animals. Generally speaking, pairs made up of animals not closely related should be secured.

RUNS AND HUTCHES

While the Belgian hare requires but little exercise and thrives in a six-foot hutch if it is kept clean, exercise, particularly for the young, is desirable, and ideal conditions are found in runs. These may be of almost any length, one approximately 4 by 20 feet being sufficient to accommodate eight or ten good sized rabbits. These runs should be made of one-inch wire mesh and have a top of the same material to keep off cats and other enemies. The bottom should also be of wire mesh covered with from four to six inches of soil. This prevents their digging out. This soil should be changed occasionally; otherwise it may become impregnated with coccidiosis germs. In this run should be placed a rain-proof nest box about 2½ by 3 feet and from 14 to 16 inches high with the board bottom off the ground. It is well to have the top of the nest box removable to facilitate handling the rabbits and cleaning. The top of the run itself should be made to lift up or the run should be from 3½ to 4 feet high and provided with a door, to facilitate entrance of the keeper. If this run is to be used in the winter, the nest box should, at that time, be kept supplied with an abundance of straw, and other means taken to insure the comfort of the animals.

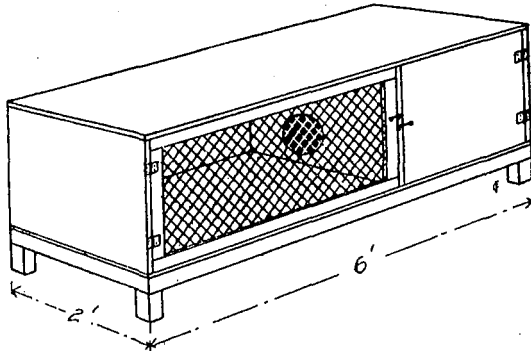


Fig. 2. A Standard Hutch (From Bureau Biol. Survey, U. S. Dept. of Agr.)

However, as was said before, an adult rabbit will be perfectly comfortable in a hutch 2 by 2 by 6 feet, even with a litter of youngsters, and as these hutches can be placed in tiers of three or more, requiring little surface space, they will be more used by the town or city dweller than the runs. About one third of the hutch should be partitioned off as a nest box. The front of the nest box should be provided with a wooden door which can be fastened, and the rest of the hutch furnished with a door on hinges also capable of being fastened. This door is made of a stout frame on which is tacked one-inch wire mesh. The wire prevents the escape of young animals and keeps out rats, which are pernicious enemies of young rabbits.

In the wooden partition between the nest box and the rest of the hutch, about four inches from the floor, a hole seven or eight inches in diameter, preferably round, should be made for the passage of the animal. It is important that the bottom of this hole be four inches above the floor of the hutch. This will to an extent prevent the doe from dragging her young, when nursing, out of the nest box. A building 10 by 30 feet will comfortably accommodate from 12 to 15 hutches on one side, or twice that if both sides are used, leaving an aisle down the center.

The above description is for a standard hutch. As a matter of fact, a capable boy with a few tools and a dry-goods box can make a good hutch with an outlay of a small amount of time and about fifty cents for hinges, netting, hooks, and nails. Rabbits may be kept in pens in old sheds or barns, and boxes approximately 18 or 20 inches square and 14 inches high used for nest boxes. The height of the nest box is important. If too low the doe is likely to injure her young.

A low dish (a flower pot saucer is good) may be used for food but one with high sides is better, since the food is kept cleaner. A dish with higher sides to prevent the rabbits from getting wet and heavy enough to insure against overturning, should be used for drinking water. In freezing temperature, flat tin dishes must be used for water and the ice knocked out of them at each filling. Specially made dishes for water and food may be purchased. Litter should be placed on the floor of the hutch, either sawdust, excelsior waste, or straw, and should be kept in the nest box. Every effort must be made to keep the hutch dry.

Cleaning Hutches

While not requiring much time, cleaning is an important part of rabbit keeping. Most does, particularly those which have been raised in hutches, leave droppings and urine in one corner of the hutch. Twice a week these should be taken out, the corner sprayed with a disinfectant or a deodorizer and clean, dry litter put in. Once every week or ten days it is desirable to clean out all litter in hutches except in the nest boxes, and replace it with fresh. A tin pan not more than an inch high and approximately eight inches square, placed in the corner where droppings are left and covered with litter, will facilitate removal of these and keep moisture from impregnating the wood and penetrating to the hutch below. Nursing does and occasionally others frequently move this pan about, thereby lessening its usefulness; but ordinarily it is quite effective. The nest box should be examined occasionally, for sometimes rabbits which are not used to hutch life will defile it.

FEEDING AND WATERING ADULTS

Cost of Feed

During the spring and summer months, adults and young more than two months old will thrive on waste from a garden: beet and carrot tops, old lettuce, cornstalks, weeds, lawn cuttings, chicory, chard, melon rinds, etc. Rutabagas, mangels, and carrots are relished but not necessary. A little dry hay—clover, alfalfa, wild hay or timothy (heads of timothy will not be eaten)—once a day is desirable, tho roughage may be obtained from cornstalks, which are relished by the animals even tho dried or frozen. Do not feed silage. Clean water in clean dishes should always be before them, tho some rabbit raisers never leave water dishes in hutches, watering once or twice a day and removing water dishes after the animals have drunk. It is evident that during the late spring and summer, the rabbit raiser need be at no expense for food. Green food must be fresh

and clean. If allowed to stand in piles it becomes mildewed or moldy and is not fit for food. In the early spring, late fall, and winter, oats or other grain and hay and roots must be fed, and an occasional warm mash in cold weather is good. Dry bread and waste from vegetables is excellent and will bring down expenses. The morning feed for one adult in winter is 3 ounces of oats (2 fistfuls, not handfals); night feed, 2 ounces of hay (preferably clover or alfalfa, but they will eat timothy or wild hay readily), 3 ounces of carrot, rutabaga, or mangel. This amount and variety of food costs less than 1 cent a day. The Flemish are hearty eaters and will require a little more than this amount. An occasional change of food is appreciated, a bit of cabbage (not too much) or chopped oats or barley, a little bran mash, or bran and alfalfa meal made into a mash with scalding water, bread, or bread and milk, and apple peelings. If the rabbit raiser can not take the time to feed twice a day, one feed may be given. This should be the evening feed and the full day's ration should be given at that time. If possible, two feeds are preferable. However, some breeders practice the one feed plan by preference. One describes his method as follows: "Each one of my rabbits gets every morning (in the winter time) a small piece of carrot (about 2 ounces) and that is all. I do not water in the morning, and never leave water dishes in hutches. In the evening, I feed hay and grain. At night I water by placing full dishes in, say 5 hutches first, before feeding. Then, beginning with the first hutch watered, I put feed in the five hutches. I then take out the water dishes and place them in the next five and so on; but I do not leave the water dishes in the hutches over night or during the day." With only a few rabbits, one can study the tastes of the individuals; for it is a fact that individuals vary in their likes and dislikes, one rabbit sometimes not touching food relished by another. Frequently, however, an animal may be taught to like a certain food by mixing it with its other food. Rabbits are fond of salt, and it is good for them, a piece of rock salt in the hutch therefore is desirable. Here again opinions differ, some breeders preferring to mix a little salt with the feed once a week. During non-freezing weather water should be always before them. Moldy or dusty hay should not be given.

BREEDING AND CARE OF BRED DOE

The period of gestation is thirty or thirty-one days and a doe may have as many as eight litters a year or possibly more, but both offspring and doe will suffer under such conditions, and the young are likely to be poorly developed and perhaps sickly. Four or five litters a year should be the limit, and no doe should be bred until seven or eight months old; the Flemish not until ten months old. Belgians will breed at four months, but this is not desirable. An instance is reported of a Flemish doe breeding at two months but this is an extraordinary case. A doe which refuses to breed may be too fat, in which case she should get less food and more exercise; or she may be diseased or too old for breeding. An unprofitable doe should not be kept. Sometimes trying another buck brings results.

The doe should be placed in the buck's hutch. Never place the buck in the hutch of a doe. If the buck, after mounting, falls over on his side, mating is accomplished and the doe may be returned to her own hutch. As a test she may be again placed with the buck a week or ten days later. If she whimpers and avoids his attentions, it is a fairly good sign that she is with young. A father may be bred to daughter and son to mother. This is frequently practised to preserve form and color. Mating brother to sister is a common usage, tho too much inbreeding should be avoided.

The date of breeding should be noted and the date of probable kindling (littering). This would be thirty or thirty-one days after breeding. Several days before this the animal should be given plenty of clean, dry straw in the nest box and the day before she is due see that she has **plenty of water**, hay, grain, and green food or roots in her hutch. Sometimes, and particularly in the case of a young doe bred for the first time, she may be extremely nervous and kill and partially devour her young. For this reason does about to kindle should not be disturbed. A piece of pork or beef 3 or 4 inches square, if left in the hutch the day before kindling, will afford something for a nervous mother to gnaw and her young will be spared. This weakness is not very common and is generally temporary, affecting only the first brood of a young doe. Any doe which habitually kills her young is fit only for the axe. Under no consideration should the buck be allowed in the same compartment with a doe at littering time and in general it may be said that the adult buck and doe should be together only at mating. A bred doe should be kept in the hutch or run by herself and anything likely to disturb or frighten her should be avoided.

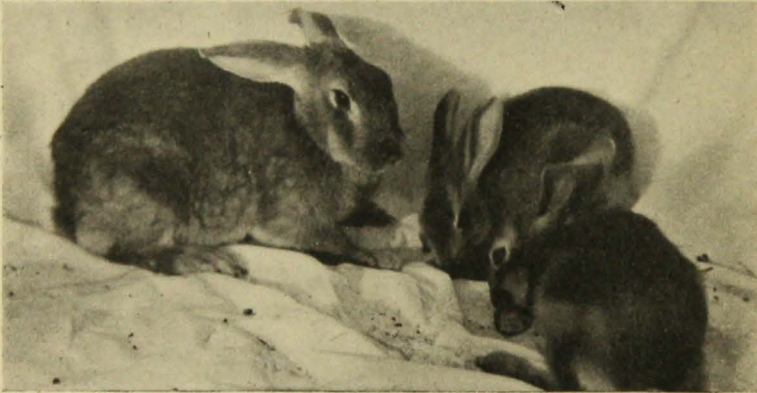


Fig. 3. New Zealand Red Doe and Part of Her Litter

The nest box should not be opened for two or three days after the doe kindles, but then the litter should be carefully examined in order to detect and remove dead individuals if there are any, or to kill any runts if the litter is too large. Do not breed old stock (two years and over). If necessary to do this, mate a young buck to an old doe or a young doe to an old buck.

The number in a litter suitable for a doe to rear is an important factor and one should not allow his ambition to influence him in putting too great a task on a doe. At the same time there is a great difference in the capabilities of does in this respect. Some does successfully raise ten or twelve youngsters. Other does, evidently poor mothers, will hardly carry through six, though the latter number is generally easily taken care of by the normal doe. If two does litter within a day or two of each other and one has but few young and the other many, some of the latter litter can be placed with that of the first doe. This should be done in the morning, so that the introduced youngsters may acquire the odor of the true brood before the doe nurses, and the foster mother must have her attention occupied in the other part of the hutch with some attractive food while the transfer is going on. If a doe habitually rears weak, puny, young dis-

posed to slobbers (indigestion) or other ills, her litter should be cut down to three or four individuals or the doe disposed of as being undesirable.

Rabbits should not be lifted by the ears but by the skin back of the ears, one hand being placed under the hind quarters to help support the weight. Does heavy with young should not be handled unless absolutely necessary. Never breed diseased rabbits.

CARE OF DOE WITH YOUNG

The nursing doe should be fed nearly twice as much as one without young. Grain and hay and roots should be increased at least a half in each case and an extra feed of some milk-producing material at noon is very desirable. Bread is good for this purpose, bread and milk is excellent, or milk alone, if the doe will take it. Here again a great difference in the animals is noted, many does being extremely fond of milk while others will not touch it.

CARE OF YOUNG STOCK

The eyes of the young will be open in about two weeks after birth and very shortly thereafter the young rabbits will come out of the nest box to feed with their mother. From this time until they are two months old is a critical period and the utmost care should be used in feeding. Whole oats must be kept away from the young when first weaned. Feed old bread or crushed oats or rolled barley. Rolled oats make an excellent feed at this time. Clover hay at night with a little green food, fresh alfalfa or clover, is desirable, tho both hay and green stuff, particularly the latter, must be fed sparingly. Normally, the young will keep well on such a diet. Should "slobbers," or indigestion, appear, an immediate change of food is necessary. (See Diseases.) At noon a feed of bread and milk is very desirable and a great help in increasing the weight of the youngsters, tho not absolutely necessary. A piece of carrot occasionally is much relished and is wholesome.

When the young are two months old they may be separated from the mother, and they should then be able to eat the same food given to adults, care being taken not to feed much green food at first. When convenient or possible it is a good plan at this age to force the youngsters, giving them a good start and thus insuring heavy adults. The best way to do this is to give a daily feed of bread and fresh milk. Under no circumstances feed sour milk. However, milk or bread and milk are not absolutely necessary in rearing young rabbits, and under some conditions make an expensive food. Rabbits two to three months old require only about half the amount of food given to adults, but the ration should be gradually increased as they grow older. A young Flemish more than four months old, however, will eat as much as an adult or more; hence it is advantageous to use them on the table or sell them at that age. Exercise is desirable for the growing young, and a run 4 by 15 feet will accommodate twelve or fifteen. Crowding should be avoided. Weak or sickly individuals should be separated from the rest. The runs and hutches occupied by the young rabbits should be kept clean and dry. The soil in the run should be changed occasionally to avoid contamination with coccidiosis germs.

Belgian bucks should be separated when three months old, New Zealand Reds when five months old, and Flemish when six months old. New Zealand bucks will apparently live together amicably until they are considerably more than five months old, while Belgian bucks may quarrel when three months old. There is a great difference, however, in individual ani-

mals, and growing stock should be watched for the first appearance of fighting on the part of the bucks.

KILLING AND DRESSING

The most profitable time to kill rabbits is when they are from four to five months old. They are best suited for the table at this age. Flemish, however, as above stated, should be killed at four months. Belgian or New Zealand Red when five months old will weigh about four pounds, live weight, and a Flemish about five pounds. However, if growth has been forced when young, these weights may be exceeded. Rabbits four or five months old will lose about 50 per cent of their weight in dressing.



Fig. 4. New Zealand Red Buck

Rabbits may be killed by holding them by the loose skin of the back and then hitting forcibly the back of the head just behind the ears with a round stick the size of a broom handle. Skinning and dressing should be done at once if possible. If not convenient to do this, or if animals are to be shipped with hide on, the entrails should be removed immediately, that they may not in the least impart a taste to the meat. The prompt removal of the entrails also removes much of the blood, so that bleeding is hardly necessary, altho if desired, it may be accomplished by cutting the vein on the side of the neck immediately after killing.

In skinning, run the knife under the skin of the hind legs from the heels, the cut meeting that of the opposite side at the anal opening. Loosen skin from muscles of hind legs, cutting or tearing it loose at the heels, then cut through the bony and fleshy part of the tail. It is then possible by pulling to remove the skin over the head in much the same way that one pulls a shirt from a child by turning it wrong side out. The fore legs can be pulled out and severed at the feet, leaving the paws on the hide, or the skin may be cut at the fore feet. If the pelt is not to be saved, the neck may be severed when skinning reaches the head. Cut off feet if not already off. Cut along midline of abdominal muscles from between hind legs (care being taken not to cut into the entrails) through middle of chest to neck; break ribs on either side to better open thorax. Remove lungs and heart from the chest cavity, and diaphragm and all contents of the abdominal cavity. The liver, after the gall bladder has been removed, should be preserved as it makes excellent eating. If the animal is to be shipped with the hide on, remove stomach and intestines only, not opening

the chest cavity. The carcass should be allowed to cool before being packed. The abdominal muscles on each side contain so little meat that they may well be cut off and discarded.

Winter hides (December to March) have a little value, varying with the strain, and the market demand may increase later. When intended for sale, the pelts, removed as above described, are drawn, fleshy side out, over a thin piece of board of a width to accommodate the skin and tapering gradually to a blunt point. The skin is slightly stretched and the free edge fastened to the board by tacks. Any flesh or fat adhering to the pelt should be scraped off, and it should then be hung in a shady and not too warm place to dry. Anyone who has prepared fresh hides of muskrats or other small fur animals for furriers, will readily understand the process.

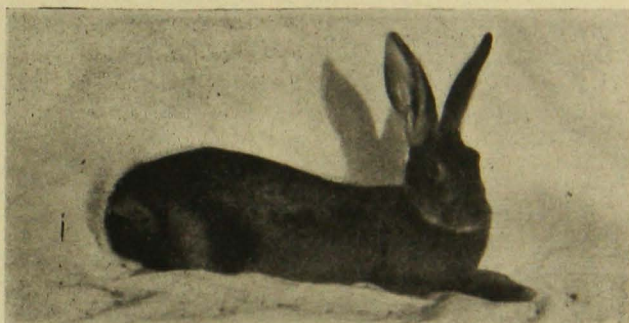


Fig. 5. A Typical Belgian Hare

COOKING

Recipes for cooking rabbits may be found in many cook books and also in publications on rabbits. In general, the methods employed in cooking chicken are applicable, altho frying is perhaps not so desirable with rabbit meat as it is with chicken. Avoid any form of cooking which will dry out the meat. A very good recipe is as follows: Cut each hind leg into two pieces, the saddle and breast into three pieces, and separate the shoulders and front legs from the body, making nine pieces in all. Brown the meat delicately in a little fat in the spider. Add from half a cup to a cup of boiling water. Cover closely and let simmer (not boil) for three quarters of an hour or more, or until tender. Add a little milk or cream, season to taste, and make gravy.

Virginia Style

Cut into pieces; having a frying pan smoking hot, put pieces of bacon in it; when brown, add rabbit, diced bacon, pour over the sauce, cover and fry brown, then sprinkle with flour and keep turning until flour is browned; then add hot water, pepper and salt, and let boil till gravy is smooth; serve on a hot deep platter.

Saddle of Rabbit Broiled

Soak the saddle of the rabbit in warm salted water for an hour, drain and wipe dry. Broil it well over a clear fire, serve on toast with butter, to which has been added a little currant jelly.

Baked Rabbit en Casserole

The rabbit may be boned or not as desired. Put alternate layers of rabbit and thin slices of bacon in the dish, season with thyme, sage, and thin slices of onion. Fill the dish with water, bake in a slow oven for an

hour and a half. A deep covered baking pan may be used instead of the casserole.

Cutlets of Rabbit, Tomato Sauce

Roll the legs first in a mixture of salt, pepper, and powdered poultry seasoning, then in flour, dip in beaten egg and fresh bread crumbs. Place in pan containing melted butter, put in slow oven till tender and brown; serve with tomato sauce.

DISEASES

The diseases which affect rabbits are no more numerous than those of chickens and for practical purposes discussions here may be confined to snuffles, slobbers in young, coccidiosis, and ear canker.

Snuffles

Snuffles is a catarrhal infection and its first appearance is in the form of a slight cold, occasional sneezing and some running at the nose. If not checked, these symptoms are intensified and a thick whitish or yellowish discharge is emitted from the nostrils which the animal wipes off with its front paws, causing the latter and the parts about the nostrils and mouth to assume a wet and more or less disgusting appearance. The sneezing becomes more frequent and more pronounced in character, is sometimes accompanied by bronchial and lung trouble, and the general health of the animal is seriously affected. In severe cases the animal becomes emaciated and may die. Under proper conditions of exercise and food, and in clean dry hutches, a rabbit may recover or appear to recover and for a long time show no evidence of snuffles, though under certain conditions (wet, dirty hutches, poor food, or too much breeding) the disease will reappear in a more or less virulent form. It is infectious and is to be regarded as one of the most common and most serious diseases of rabbits.

Rabbits slightly afflicted with snuffles may, notwithstanding this handicap, breed and rear litters. Further, individuals show a great difference both in the matter of sensibility to the disease and in its effect on the general health of the animal.

The organism causing snuffles is always present in rabbits, only waiting a certain condition of the mucous membrane of the nasal passages to become dangerously active. Ammonia fumes from urine in neglected hutches are contributory to this condition. One of two things or both are highly conducive to snuffles, namely, draughts and unclean hutches. A hare allowed a large amount of liberty outside, in all kinds of weather, is apparently not susceptible to draughts, but not so with the hutch-bred rabbit.

Remedial measures.—Prevent drafts from entering the hutch and keep it clean. Separate, if feasible, the infected individuals from those that are well. Feed regularly good, nourishing food and avoid anything likely to lower the vitality of the rabbit, too frequent breeding, for example. Proprietary medicines and advertised remedies which we have tried give unsatisfactory results. An ounce of prevention in connection with this disease is certainly worth a pound of cure.

Slobbers

This is indigestion, observed only in youngsters or recently weaned rabbits and evidenced by the wet, bedraggled appearance of the fur about the mouth, caused by discharges from the mouth, giving to the side of the face a sunken appearance. The fore-paws may be wet owing to the rabbit frequently rubbing its mouth. The animal is weak and constantly seeking

the water dish or endeavoring to eat. Death generally occurs if the diseased animal is not taken in hand.

This affection is caused by wrong feeding: an excess of undesirable food at a time when the alimentary canal is in a delicate condition; too much green food or too much hay for an animal but recently nursing. Young rabbits congenitally weak, or not properly nursed (mother rearing too large a litter) are likely to contract this disease.

Remedial measures.—Separate the sick young from the well; rub table salt on sides of the mouth (introducing some into the mouth) and on fore-paws. Allow no drink or food of any kind for a day or two. Then feed only bread and milk or rolled oats for a while and put a little permanganate of potash (just enough to color the water a pale red) in the drinking water each day, renewing it daily. Some of the sick ones may pull through and can be returned to their fellows. A small litter is less likely to suffer than a large one.

Coccidiosis

Coccidiosis is caused by a microorganism which affects the intestines and liver and is perhaps more destructive than any other. According to our observations, it is fatal only to young rabbits. It has been reported to be sometimes fatal to adults. Neglected, dirty hutches or runs where food may be infected by contact with droppings, and where the drinking water is allowed to become fouled with fecal matter, are the conditions which cause the spread of this disease. Add to this a run or hutch crowded with young stock and the situation is favorable for the prevalence of this highly infectious and often fatal malady. Many adult rabbits seemingly well and in good flesh still have evidences of coccidiosis as shown by white spots in the liver. This in no way injures their quality for the table. Evidently this is common with a large number of young rabbits but many do not succumb, and lead normal lives in spite of it. In serious cases, the affected animal mopes, eats but little, grows constantly weaker and thinner, suffers from diarrhea and finally dies. Crowded and filthy hutches and runs should be avoided. Infected animals should be removed at once, and the hutches or runs frequently cleaned and sprayed with a disinfectant. As a general rule it may be said that young animals badly affected with snuffles or coccidiosis may better be killed unless they are of special value or are from highly pedigreed stock. Ordinarily it is hardly worth while to attempt to save a badly diseased young rabbit.

Ear Canker

This occasionally occurs in Flemish and New Zealand stock. We have never, personally, observed it in Belgians, tho they also are said to be affected at times. The diseased ear is hot, may droop somewhat, and the sufferer may frequently shake its head as though in some pain. Examination of the inner surface of the ear shows a brownish or yellowish discharge which forms later a waxy incrustation. One or two applications of some good ear canker remedy (a few drops at a time) will cure it. Boracic acid dusted in the ear twice a day for a few days will help relieve it.

Rabbit Pneumonia

This may suddenly develop in a rabbit which has caught cold and results in death very shortly. It is not common.

Boils

Boils may be lanced, the pus squeezed out, and the opening washed with a mild disinfectant not harmful to the animal.

MISCELLANEOUS SUGGESTIONS

A rabbitry should be built to allow the entrance of plenty of sunlight and provision made for an abundance of ventilation in such a way as to prevent a direct draft on the animals. Hutches should be airy and crowding of animals avoided. If possible, windows should be screened to exclude flies in summer.

The droppings of rabbits are normally round. Should they become soft and adhere, forming a mass, the animal is probably getting too much green or other loosening food and the diet should be corrected. Rabbits two months old or older, kept in capacious runs, may be fed green food almost exclusively during the summer without exhibiting such an abnormal condition. Rabbits, particularly adults, should not be overfed. Stock which is always a little hungry is in better shape physically than overfed animals. Nursing does, however, should receive an abundance of milk-producing food. Avoid any sudden or radical change of food such as a transfer from hay and grain to a diet of green food. Such changes should be gradual. The same recommendation applies to sudden changes of temperature. It would be dangerous in a cold climate to transfer in winter, an animal from a heated room to an outside hutch or room, and the opposite change from cold to warm might also cause ill effects. Individuals, however, differ in susceptibility.

While rabbits respond to intelligent care, the raiser should not coddle his stock. The keeper of hares will be frequently surprised at the result attained by turning a sick rabbit out on grass where plenty of fresh air, sunshine, and exercise are available. Many an animal affected with snuffles or other ailment apparently recovers entirely under conditions approaching approximately those of the life of the wild rabbit.

A rabbit raiser should purchase a good manual on rabbit culture and should subscribe to a periodical containing new matter on the subject.

The most economical method of raising rabbits for table use in this climate is to have does litter in May or June at a time when green stuff is available. Rabbits may be fed entirely on garden waste during the summer and will be ready for market or table in September or October, having cost the owner little or nothing for food.

Sudden noises or motions alarm rabbits. Since their well-being depends on an undisturbed condition of life, do not enter the rabbitry noisily or allow others to do so.

In view of the larger and finer animals available and discussed in this bulletin, the keeping of the smaller so-called "pet-rabbits" is not desirable at the present time, tho the future development of the fur industry may possibly change our attitude in this respect.

Prevent young rabbits from stepping into their water dishes, and always provide shelter from rain.

Frequent and gentle handling of youngsters does away with their natural timidity.

These conditions should be constantly in mind: **dry, clean, airy hutches or pens; good ventilation; sunshine where possible; no direct draughts on the animals.**